アジア地域 ASEAN 災害リスク低減（DRR）と気候変動適応（CCA）の統合に対する制度･政策枠組みに関する基礎情報収集･確認調査

ファイナル・レポート
添付資料編

平成 30 年 2 月
(2018 年)

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添付資料 1：ASEAN における DRR と CCA の統合に関する制度・政策枠組みの評価[1]

Evaluation: Very advanced Advanced Progressing Initial stage Not relevant / no relevant activities

Bd: Brunei Darussalam; Ca: Cambodia; In: Indonesia; La: Lao PDR; Ma: Malaysia; My: Myanmar; Ph: the Philippines; Si: Singapore; Th: Thailand; Vn: Viet Nam

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
1. Laws, regulations and policies												
1) National development plan	DRR and CCA concepts are incorporated in the national socio-economic development plan				■			■				DRR and CCA concepts are incorporated in the national development plans individually. • *DRR and CCA concepts are integrated in the national development plans in Lao PDR and the Philippines.* ***[GP-1.1]***
2) DRR laws, regulations and policies	DRR is mainstreamed in each ministry's policies											DRR is promoted through the activities of national DRM committee, but the degree of mainstreaming is not clear.
	DRR laws, regulations and policies are formulated and enforced (with consideration of CCA)											Degree of DRR policy enforcement is not clear. • *DRR and CCA are being converged by the coordination of the National Development Planning Agency (BAPPENAS), Ministry of Agrarian and Spatial Planning and Ministry of Home Affairs in Indonesia particularly for formulation of 5-year local development plan and associated spatial plan and annual budget.*
3) CCA laws, regulations and policies	CCA is mainstreamed in each ministry's policies		■									CCA is promoted through the activities of the UNFCCC. • *A study report on DRM to advance CCA was compiled by the Institute of Meteorology, Hydrology and Climate Change (IMHEN), Ministry of Natural Resources and Environment (MONRE) in cooperation with the UNDP in Viet Nam.* • *Each ministry in Cambodia drafts CC action plan.* ***[GP-1.2]*** • *Local CCA action plans are developed in selected cities in Viet Nam.* ***[GP-1.3]***
	CCA laws, regulations and policies are formulated and enforced (with consideration of DRR)											All Member States have CCA policies and or plans in place but the degree of their implementation is not clear.

[1] The assessment is based on literature review, interviews with relevant government officials and site inspections by the JICA Project Team, which was conducted for around two weeks in most countries, while lesser, between two and eight days in some countries.

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
4) Relevant sectoral laws, regulations and policies	DRR and CCA concepts are incorporated in relevant sectoral laws, regulations and policies including land-use and urban plans, building codes;											DRR and CCA concepts are being incorporated in land-use and urban plans in few Member States (e.g. Philippines, Indonesia), but the degree of the implementation is not clear.
	water resources and river basin management;											Importance of the water resources management is recognised in sectoral laws and regulations in each Member State. • *River Basin Management Offices (Balai) and National Water Resources Management Agencies (Perum Jasa Tirta) are set up in Indonesia and Malaysia (e.g. MADA). Singapore has an integrated water resources management system. The Law on Water Resources (2012) in Viet Nam mandates integrated operation of hydroelectric reservoirs to reduce flood risks.* ***[GP-1.4]***
	forestry management											Forestry management is promoted in each Member State. • *Brunei Darussalam maintains high forestry coverage in accordance with the Heart of Borneo Initiative. Payment for forest environmental services is legalised in Viet Nam.* ***[GP-1.4]***
2. Institutional arrangement												
1) National DRM system	National DRM committee has been setup for inter-ministerial coordination											All Member States have an inter-ministerial DRM committee.
	National DRM committee also coordinates with the CCA committee											Coordination between the national DRM and CCA committees seem to be rare despite the similar constituent member ministries. • *DRR and CCA focal points signed a cooperation agreement in the Philippines.* ***[GP-2.2]*** • *There are potentials to integrate the plans and activities of DRM and CCA committees as they often have similar constituent member ministries.*
	A national-subnational DRM system has been set up for integrated DRM											All Member States have a national-subnational DRM system. • *The Philippine DRRM Act (2010) mandates setting up of a Local DRRM Office in each local authority.* ***[GP-2.1a]***

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
												• *Integration of DRR and CCA by the Ministry of Public Works and Housing (PU), Indonesia.* ***[GP-2.1b]***
2) National CCA system	A national CCA committee has been set up for inter-ministerial coordination											All Member States have an inter-ministerial CC committee.
3) Transboundary DRM	A multi-stakeholder transboundary DRM system has been set up for floods, storms and droughts											River basin management is still at a development stage in most Member States. • *River Basin Management Offices (Balai) coordinate multiple stakeholders in the same river basin in Indonesia. Rivers in Malaysia are managed by the Department of Irrigation and Drainage together with relevant State Governments. River Basin Organizations are being established in major river basins for efficient water resources management in Viet Nam.* ***[GP-2.3]*** • *Operation of multiple multi-purpose dams in a river basin is regulated in an integrated manner by national water resources management agencies (Perum Jasa Tirta: PJT) to reduce flood and drought risks in Indonesia.* ***[GP-2.3]*** • *Ormoc City in the Philippines established a Flood Mitigation Committee (FMC) for river management from upstream to downstream with engagement of multiple stakeholders.*
3. Funding												
1) Funding for DRR	Funds are allocated for DRR activities											DRR measures are implemented (funded) by the line ministries. • *The Philippine DRRM Act (2010) mandates each local authority to set aside a local DRRM fund. The Office of Civil Defense (OCD) has been awarding the best performing Local DRRM Councils since 1998.* ***[GP-3.1]***
	DRR expenditures are monitored and tracked											Most Member States do not have a monitoring and tracking system of DRR expenditures. • *DRRM expenditures are monitored and tracked in the Philippines. Local authorities can carry over unspent Quick Response Fund for 5 years.* ***[GP-3.2c]***

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
2) Funding for CCA	Funds are allocated for CCA activities											Fund allocation for CCA activities is limited in most Member States. Some activities are funded by supporting organisations (e.g. NAPA development support in Cambodia, Lao PDR and Myanmar). • *National funds are set up for CCA activities in Indonesia (Climate Change Trust Fund (ICCTF)) and the Philippines (People's Survival Fund (PSF)).* ***[GP-3.2a & b]***
	CCA expenditures are monitored and tracked											Most Member States do not have a monitoring and tracking system of CCA expenditures. • *There is a climate change expenditure tagging system in the Philippines.* ***[GP-3.2c]***
3) Payment for ecosystem services	Payment for ecosystem services is implemented based on the economic assessment											Most Member States do not have a payment for ecosystem services. • *Payment for forest environmental services which levies hydropower generators and water suppliers, among others, for forest protection and rehabilitation has been successfully implemented in Viet Nam since 2011.* ***[GP-3.3c]***
4. Risk assessment												
1) Disaster database	Disaster data is recorded and publicised											All Member States record disaster data. • *Disaster database is publicised in Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam.* ***[GP-4.1]***
	It is used for science-based analysis											Whether the disaster database is used for science-based analysis is not clear.
2) Hydro-meteorological data management and climate risk analysis	hydro-meteorological data is managed											All Member States have a hydro-meteorological data monitoring and management system, but the geographical coverage and accuracy vary from country to country.
	Downscaling from Global Climate Models (GCMs) is conducted											• *Downscaling from GCMs is conducted in Indonesia, Malaysia, the Philippines, Singapore and Viet Nam. Other Member States obtain the downscaled values from external agencies.* ***[GP-4.2b]***
	Climate risk is analysed based on hydro-meteorological data and downscaling from GCMs											• *Climate risk analysis is advanced in the above-mentioned Member States.* ***[GP-4.2a]***

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
	Standard values of CC impacts on rainfall etc. have been set											No Member States have set the standard values of CC impacts yet.
3) Hazard and risk mapping	Hazard maps and risk maps for flood are prepared (by assessing the damages of the past disasters and the capacity and vulnerability of local authorities and communities)											Flood hazard maps are prepared in all Member States (with support from supporting organisations in some countries). • *Flood hazard maps are prepared in Brunei Darussalam, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam.*
	Climate risk is analysed and incorporated in the flood risk maps											Flood risk maps incorporating climate risk is still limited. • *Flood risk maps incorporating climate risk are developed in some areas in Malaysia and Viet Nam.* ***[GP-4.3a & b]***
	Hazard maps and risk maps for storm surge are prepared											Hazard maps and risk maps for storm surge is still limited in most Member States.
	Hazard maps and risk maps for landslide are prepared											Hazard maps and risk maps for landslide are prepared in some Member States. • *Good quality ones are available in Indonesia, Malaysia, the Philippines, Thailand and selected areas in Viet Nam.* ***[GP-4.3c]***
	Hazard maps and risk maps for drought are prepared											Drought hazard maps at the national scale are present in Cambodia, Indonesia, Lao PDR, the Philippines, Thailand and Viet Nam and drought risk maps are prepared by external agencies for all ASEAN countries. However, drought risk maps are largely absent in all Member States.
	Hazard maps and risk maps are provided with high resolution for local land-use planning											Hazard maps and risk maps with high resolution and detailed topography for local land-use planning is still limited in most Member States.
4) Data sharing and dissemination	Disaster and climate risk data including hazard and risk maps are accessible											Access to hazard and risk maps is still limited in most Member States. • *These maps are publicised in the Philippines and Thailand.* ***[GP-4.4a]***

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
												• *Hydrological data of Mekong River in the Lower Mekong countries (Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam) is shared by the Mekong River Commission (MRC).* ***[GP-4.4b]***
5) Early warning system and disaster risk communication	Early warning system is set up and disaster risks are communicated through traditional media, social media and mobile phone networks											All Member States have an early warning and a disaster risk communication system, but the outreaching capacity differs from country to country. • *There is a national flood forecasting and warning system in Malaysia* ***[GP-4.5a]*** • *There is a region-wide satellite-based drought monitoring and early-warning system and also a Specialised Expert System for Agro-Meteorological Early Warning (SESAME) in Myanmar* ***[GP-4.5b & c]***
5. Planning and implementation												
1) Guideline and standard	Guidelines and standards incorporating disaster and climate risk are developed and used											Guidelines and standards incorporating disaster and climate risk are not developed in most Member States. • *All planning divisions of the Ministry of Public Works and Housing (PU), Indonesia, are integrated into one division which provides standard structural designs incorporating disaster and climate risk.* ***[GP-5.1a]*** • *Guidelines and standards incorporating climate risk for river structures are drafted by the Department of Public Works and Highways (DPWH) in the Philippines and are being prepared by the Department of Irrigation and Drainage (DID) in Malaysia.* ***[GP-5.1a]*** • *Houses in flood-prone areas are mandated to be elevated in Brunei Darussalam.* ***[GP-5.1b]***
2) Land-use and urban planning	Land-use and urban plans are prepared by incorporating disaster and climate risk and with an assessment of ecosystem services											There are some land-use and urban plans which incorporate disaster and climate risk in some Member States. • *A flood control plan in the Mekong Delta incorporates climate risk in the land-use plan. A flood control and drainage project at the river mouth of Pahang River protects the downtown with river dykes and river walls. The Bago River flood control system with a 140-year old Bago-Sittaung Canal, Moe Yin Gyi Lake and newly constructed several flood control and irrigation dams in Myanmar has a*

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
												• *potential to incorporate climate risk by improving these structures in a stage-wise manner.* ***[GP-5.2a, b & c]*** • *Landslide risk management including relocation of the affected families, land-use control and monitoring of rainfall and slope movement is implemented in Indonesia and the Philippines.* ***[GP-5.2d & e]*** • *Integrated operation of Jatilhur Dam in the Citarum River, Indonesia* ***[GP-5.2f]***
3) Disaster-resilient investment	Public and private investments are channelled to strengthen resiliency of critical facilities, including evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and wetlands, etc. and they are implemented in a stage-wise manner											Development of DRR plans and the implementation (without consideration of CC impacts) are insufficient in general. Development of DRR plans and the implementation with CCA is being experimented in some Member States. • *There are several projects incorporating climate risk or having a potential, such as river management in Ormoc City and polder wall construction for protecting low-lying areas in Metro Manila, the Philippines; flood control by Neyama floodway tunnel in Tulungagung, Indonesia; and SMART Tunnel and retention ponds in Kuala Lumpur, Malaysia, among others.* ***[GP-5.3a, b, c, d & e]*** • *Cyclone shelters and coastal dykes are constructed for storm risk management in Ayeyarwady Delta, Myanmar and Mekong Delta, Viet Nam.* ***[GP-5.3f]*** • *Riverbank protection using the Soda method in Lao PDR* ***[GP-5.3g]***
	Public and private investments in forests and wetlands											• *Forest management and rehabilitation including coastal mangrove rehabilitation are actively promoted in Brunei Darussalam, Myanmar, Thailand and Viet Nam.* ***[GP-5.3i]*** • *Hanging fertigation in Malaysia* ***[GP-5.3h]***
4) Drought risk reduction	Drought risk reduction measures including water resources management are implemented;											Some Member States have set up a water resources management committee with involvement of multiple stakeholders and started implementation of pilot projects at selected sites. • *Drought information platform in Malaysia and Thailand* ***[GP-5.4a]***

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
												• *Storage of flood water for the use in dry season is commonly practiced in countries including Cambodia, Indonesia, the Philippines and Viet Nam.* ***[GP-5.4h]*** • *Formation of water user associations and farmer associations for efficient natural resources management is commonly applied in countries including Cambodia, Malaysia and the Philippines.* ***[GP-5.4b]*** • *Other agricultural practices in water-scarce seasons include sprinkler irrigation in Viet Nam, recycled water for supplementary irrigation in Malaysia, and groundwater irrigation in Indonesia and other countries, among others.* ***[GP-5.4c, d & i]*** • *Installing salinity monitors in water courses and sharing the data with relevant stakeholders to reduce the damage is practiced in Viet Nam.* ***[GP-5.4e]*** • *Water resources management is actively implemented in Singapore particularly with rain water harvesting by a network of rivers and canals connected to 17 reservoirs covering two-thirds of the land surface as a catchment area.* ***[GP-5.4f]***
	Agricultural measures are implemented;											• *Conservation farming which improves the soil quality and conserves it from erosion in the undulated topographies in Indonesia provides needed buffer from short to medium dry spells.* ***[GP-5.4g]*** • *Microfinance is instrumental in livelihood diversification of the poor in Indonesia.* ***[GP-3.3a]*** • *Climate-smart agriculture principles and practices are being introduced into the region by FAO and other agencies* • *Climate-field schools are being promoted extensively in Indonesia and the Philippines.* ***[GP-6.2]***
	Risk transfer measures are implemented											• *Weather index insurance is being piloted in Indonesia, the Philippines and Thailand to hedge climate risk for agriculture and other Member States are planning to introduce insurance in the near future (e.g. Myanmar).* ***[GP-3.3b]***
6. Capacity building												

Assessment category	Evaluation criteria	Country assessment										Evaluation *and selected good practices*
		Bd	Ca	In	La	Ma	My	Ph	Si	Th	Vn	
1) DRR and CCA training	DRR and CCA trainings for national and local government officials and other stakeholders are provided											Community-based disaster risk management projects and associated capacity building activities are implemented in most Member States. • *National Development Planning Agency (BAPPENAS) in Indonesia has developed a 2-week training course for integrating DRR and CCA in local development plans for government officials.* ***[GP-6.1]*** • *Community-based DRM projects and associated capacity building activities are implemented in most of the Member States.*
2) Sector-wise training	Special training programmes are implemented for specific purposes, such as downscaling from GCMs;											Special training programmes are implemented for specific purposes in some Member States. • *Regional collaboration for downscaling from GCMs is being implemented with involvement of national agencies from Indonesia, Lao PDR and Malaysia.* ***[GP-4.2b]***
	A climate school for farmers											• *Climate field schools which train farmers to use location-specific weather forecasts for better agricultural practices are actively implemented in Indonesia, Myanmar and the Philippines.* ***[GP-6.2]***

添付資料 2: DRR と CCA の統合における制度・政策枠組みの強化のための作業計画

目次

I. Introduction

Disasters in Southeast Asia

The number of disasters occurring in ASEAN Member States, as shown in Figure 1, is increasing. Among them, a significant portion of these disasters are water-related or rain-induced, including storms, floods, landslides and droughts, as shown in Figure 2. The situation is getting worse with more intensive and frequent rainfalls. ASEAN suffers damage in excess of USD4.4 billion each year on average as a consequence of natural hazards (AADMER 2016). During the period of 2004 to 2014, the region contributed to more than 50% of the total global disaster fatalities, or 354,000 of the 700,000 deaths in disasters worldwide (ASEAN Vision 2025 on Disaster Management). With this new normal, there is a need to anticipate and prepare for the unknown, such as unprecedented risks and unanticipated affected areas, magnified by climate change (AADMER 2016).

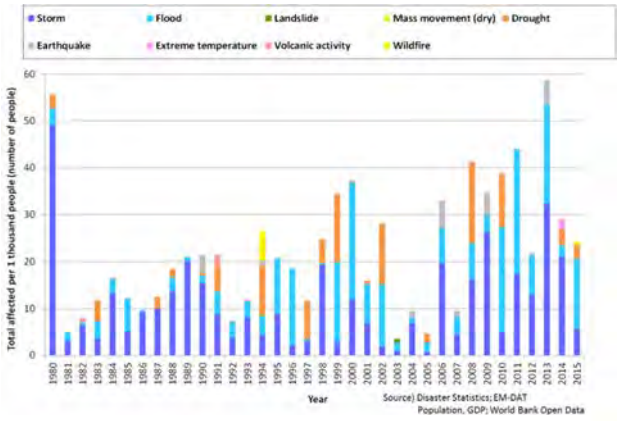


Figure 1: Number of disaster affected people in ASEAN Member States

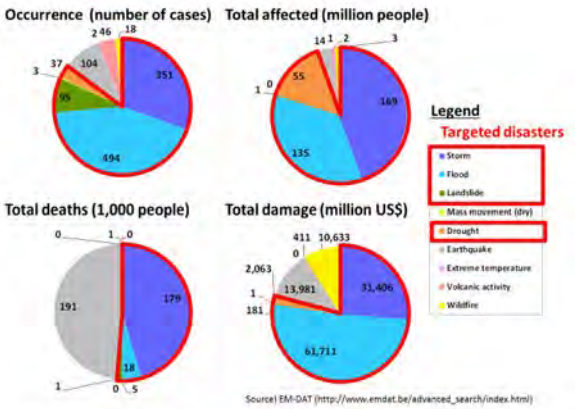


Figure 2: Types of disasters in ASEAN Member States in last 30 years (1987-2016)

Related decisions in ASEAN

In response to such challenges, ASEAN has agreed on a number of decisions related to disaster risk reduction (DRR) and climate change adaptation (CCA). With regard to DRR, **the ASEAN Committee on Disaster Management (ACDM)** established in 2003 developed **the ASEAN Agreement on Disaster Management and Emergency Response (AADMER)** in 2005 in association with **the Hyogo Framework for Action (HFA) 2005-2015**, a 10-year multi-stakeholder and multi-sectoral plan to invest in DRR as a means of building the disaster-resilient communities. **The AADMER Work Programme 2010-2015** laid the regional mechanisms for joint response and DRR at the regional level. During the Phase 1 (2010-2012), **the ASEAN Coordination Centre for Humanitarian Assistance on disaster management (AHA Centre)** was established in November 2011 as a main operation engine of the AADMER that currently serves as a chief regional body for disaster monitoring and coordinated response; and during the Phase 2 (2013-2015), 21 flagship and priority projects were identified for strengthening regional cooperation towards a disaster-resilient ASEAN community. Among them, the Concept Note No. 20 (CN20) is for "Strengthening Institutional and Policy Framework on DRR and CCA Integration", which implementation is being supported by the JICA Project Team currently in 2016-2017. The concept of strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions is succeeded in the Priority Programme No. 3. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under **the AADMER Work Programme 2016-2020**, which corresponds to **the Sendai Framework for DRR 2015-2030**, the successor instrument to the HFA consisting of seven global targets and four priorities for actions. In association with that, the ASEAN also stressed its commitment in reinforcing complementarities of DRR, CC and sustainable development in the Joint Statement in March 2015.

With regard to CCA, **the ASEAN Action Plan on Joint Response to CC** was adopted in 2012 at the 12th ASEAN Ministers Meeting on Environment (AMME). In the action plan, sharing information

on ongoing and planned efforts in hydrological management and practices that aim to enhance water resources sustainability and adaptation efforts in urban, rural and coastal areas; assessing CC impacts on socio-economic development and environmental protection; promoting regional climate information and data sharing in order to develop ASEAN CC impact scenarios; enhancing climate/meteorological/oceanographical observatory systems in the ASEAN region; and downscaling global climate models to produce CC impact scenarios at the regional, national and local levels, are stressed. All ASEAN Member States have also submitted Intended Nationally Determined Contributions (INDCs) to **the United Nations Framework Convention for Climate Change (UNFCCC)** Secretariat under **the Paris Agreement** in 2015 that outlines each national efforts and needs for CCA.

The Heads of States/Governments of the ASEAN also adopted **the Declaration on Institutionalising the Resilience of ASEAN and its Communities and Peoples to Disasters and Climate Change** at the 26th ASEAN Summit in Malaysia in April 2015. The Declaration stressed the importance of systematically mainstreaming disaster risk management (DRM) and CCA in relevant sectoral policies, strategies, plans, programmes, and projects; further institutionalising DRM and CCA at the national and local levels; encouraging all stakeholders to participate in planning and implementation; accelerating investments in disaster risk prevention and reduction and CCA focusing on key development sectors such as water management, ecosystems management, agriculture, education, infrastructure and construction, transport and telecommunication, and risk financing and risk transfer; addressing underlying risk drivers and compounding factors, such as CC and climate variability, uncontrolled urbanisation, ecosystem degradation, weak governance, limited risk management capacity especially at the local scale, poor management of urban and rural development, consequences of poverty and inequality; continue sharing and dissemination of risk and climate information to further support risk-informed policy development, decision-making and investment programming; allocating resources to strengthen disaster preparedness; and enhancing cooperation and collaboration among ASEAN Member States; among others, and assigned the ACDM as the focal point for cross-sectoral cooperation at regional level with the support of other relevant sectoral bodies.

In addition, all ASEAN Member States also adopted **the 17 Sustainable Development Goals (SDGs)** of **the 2030 Agenda for Sustainable Development** at the United Nations Summit in September 2015 that promote to build resilient infrastructure in Goal 9; make cities and human settlement inclusive, safe, resilient and sustainable in Goal 11 by significantly reducing the number of deaths and the number of people affected caused by disasters, including water-related disasters; and take urgent action to combat CC and its impacts in Goal 13 by strengthening resilience and adaptive capacity to climate-related hazards and natural disasters and integrating CC measures into national policies, strategies and planning.

II. Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration (CN20 Project)

The Concept Note No. 20 (CN20) of **the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2013-2015** focuses on Strengthening Institutional and Policy Framework on DRR and CCA Integration with following aims, objectives and expected outputs:

Aims:

(i) Strengthen institutional and policy frameworks for DRR and CCA;
(ii) Enhance the integrated planning for DRR through the implementation of national development plans and action plans that integrate DRR and CCA at all level; and
(iii) Build partnership in linking DRR and CCA at all levels.

Specific objectives:

(a) Promote the development of umbrella laws and regulations that govern the integration and synchronisation of DDR and CCA in Member States;
(b) Foster relationships between national ministries and agencies responsible for DRR and CCA;
(c) Facilitate the establishment of a clear institutional and policy framework on DRR and CCA integration in Member States;
(d) Strengthen participatory risk assessment, incorporating disaster and climate risks as a basis for decision-making;
(e) Promote the development of joint funding mechanisms for both DRR and CCA at the national level; and
(f) Support joint training, meetings, and other opportunities for increased interaction and cooperation.

Expected outputs:

1. Documentation of good practices in institutional strengthening and policy development on linking DRR and CCA in ASEAN Member States
2. Assessment of the implementation of national action plans on DRR and CCA and the effectiveness of national platforms
3. Senior official-level roundtable discussions on policy and programme interventions to strengthen the connection and coherence of DRR and CCA efforts at all level

The concept was succeeded in **the AADMER Work Programme 2016-2020** as Component 1. Strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions of **the Priority Programme No. 3 ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community**. Targeted outputs of the Component 1 are as follows with associated key activities to be implemented by 2020 as shown in Attachment 1:

1. Documentation of good practices in strengthening institutional capacity and policy development on DRR and CCA in ASEAN;
2. Capacity building programme on DRR and CCA, to strengthen institutional capacity and policy development; and
3. Established ASEAN cross-sectoral collaboration on DRR and CCA.

Results of the baseline study in ASEAN

The JICA Project Team conducted a series of field studies to identify the status of DRR and CCA implementation and their integration in ten Member States from September 2016 to February 2017 under the Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration (CN20 Project). The Project Team assessed the situation on targeted water-related disasters – flood, storm, landslide and drought – using an assessment framework consisting of four categories, namely institutional and policy development (including policies, laws and regulations; management system; and financial arrangement), risk assessment, planning and implementation, and capacity building, as

shown in Attachment 2. The assessment framework was formulated based on the key words extracted from the aims and specific objectives of the Concept Note No. 20 and it also corresponds to the Priorities for Action of *the Sendai Framework for Disaster Risk Reduction 2015-2030* as shown in Table 1.

Table 1: Assessment categories for DRR and CCA integration

Key words from the aims and specific objectives of the CN20 Project	Categories		Priorities for Action of the Sendai Framework for DRR
Umbrella laws and regulations	Institutional and policy development	Policies, laws and regulations	Priority 2
Institutional and policy framework			
Relationships between national agencies responsible for DRR and CCA		Management system	
Partnership in linking DRR and CCA at all levels			
Joint funding mechanism		Financial arrangement	
Participatory risk assessment	Risk assessment		Priority 1
Integrated planning of DRR and CCA	Planning and implementation		Priority 3
Support joint training and meetings	Capacity building		Priority 1-4

As a result, main findings of the Project Team were (see Attachment 3):

- DRR and CCA concepts are well integrated or incorporated in national socio-economic development plans but legal framework for DRR and CCA is generally not integrated;
- Inter-ministerial and national-subnational disaster risk management system has been well established in general but the coordination with the CCA management system is still at a development stage in many Member States;
- Regular budgetary arrangements for DRR and CCA activities of line ministries are not tracked systematically except in few Member States;
- Disaster and climate risk assessment capacity, including hydro-meteorological data monitoring and analysis, downscaling from Global Climate Models (GCMs) and hazard and risk mapping, varies from country to country;
- DRR planning and implementation incorporating climate risk as well as development of planning guidelines is still rare in the region; and
- Community-based disaster risk management pilot projects are implemented in most Member States, but integrated DRR and CCA training at national and local levels is still rare in the region.

The Project Team also identified a number of good practices on DRR and CCA integration, or the ones which have a potential to be integrated, that are transferable, applicable and a good reference for other Member States, through interviews with government officials and site visits during the field study. These practices includes (see Attachment 4):

- Development of a network of national-subnational DRR management and funding system in the Philippines;
- Development of a river basin management system with a stakeholders coordination mechanism in Indonesia;
- Creation of a forest protection fund based on payment for environmental services in Viet Nam;
- Synchronisation of hydro-meteorological data projections and downscaling of GCMs to determine standard values of climate change in Indonesia;

- Preparation of detailed hazard and risk maps in selected areas in Malaysia, the Philippines, Thailand and Viet Nam;
- Development of guidelines and standard for river and coastal structural designs in the Philippines;
- Forest and mangrove rehabilitation and the implementation of water saving measures in various Member States.

Outputs of the National Workshops

Subsequently, three National Workshops were held in Myanmar, Viet Nam and the Philippines in May-July 2017 with about 30-40 participants each from agencies responsible for disaster management, climate change adaptation, hydro-meteorological data management, DRR for floods, storms, landslides and droughts, including forest and water resources management, to identify necessary actions to improve integration of DRR and CCA in each country as well as in ASEAN. As the Project Team explained the baseline study findings and the identified good practices on DRR and CCA integration, the participants of the workshop discussed the issues and necessary national activities to improve the situation as well as expected regional activities to push it forward as listed below (see Attachment 5):

Identified main necessary national activities:

- Strict enforcement of relevant laws and regulations;
- Integrated management of water resources and river basin through coordination of relevant stakeholders;
- Setting up of a central database and data sharing system;
- Upgrading and improving the coverage of hydro-meteorological monitoring system;
- Improving climate risk analysis capacity;
- Provision of high-resolution hazard maps;
- Updating sectoral design, guideline and standard incorporating climate risk and provision of associated training for national and subnational government officials; and
- Prioritisation of projects based on risk and cost-benefit analysis.

Expected regional activities in ASEAN:

- Sharing of good practices and lessons learned on integrated policies, inter-agency coordination and management systems, funding systems, data management, risk assessment and hazard mapping methods, and guidelines, standards and planning methods;
- Development of a standardised database and a data sharing system; standardising risk analysis methods;
- Developing a regional climate model; and
- Organising training and cross-visits for mutual learning and actual observation.

As seen here, each hosting country of the national workshop is facing challenges in integrating DRR and CCA policies, institutional and management systems, risk analysis, planning at national and subnational levels and capacity building, among others, and all of them are keen to learn good practices and lessons learned in other Member States. The challenge and demand here are a facilitator who can manage those regional knowledge by setting up a regional knowledge management system.

III. Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration

In order to strengthen institutional and policy framework on DRR and CCA integration in each ASEAN Member State as well as in the region, the ASEAN Committee on Disaster Management (ACDM) Working Group on Prevention and Mitigation (WG on P&M) will adopt a **Work Plan for**

Strengthening Institutional and Policy Framework on DRR and CCA Integration (hereinafter, Work Plan) consisting of the following components:

1. Objective

The ultimate objective of mainstreaming DRR and CCA into national and regional activities is to significantly reduce disaster risks and increase resilience through creating an enabling mechanism for capacity building, knowledge sharing and cross-sectoral collaboration leading to developing suitable policies, good practices, including data sharing platforms, among ASEAN member states.

2. Scope

As described in the rationale of the Concept Note No. 20 as well as confirmed by the CN20 JICA Project Team, there has been some progress in mainstreaming and integrating DRR in development plans in most ASEAN Member States and with integration of DRR and CCA in many of them. It has also been widely acknowledged that effective implementation of those plans is imperative, as well as cost effective, to reduce disaster risk and increase resiliency at national and local levels and access to DRR and CCA information, including assessed risks and vulnerability, is essential for effective formulation of such development plans.

With that general trend and direction in mind, this Work Plan focuses on effective integration, or incorporation, of climate change impact in development plans with particular focus on DRR. Suppose there are five components for managing and reducing disaster risk, namely institutional and policy development, risk assessment, planning, implementation and reviewing, like a cycle of plan-do-check-act (PDCA) management method, climate change impact assessment directly affects the risk assessment and planning but also other components as illustrated in Figure 3.

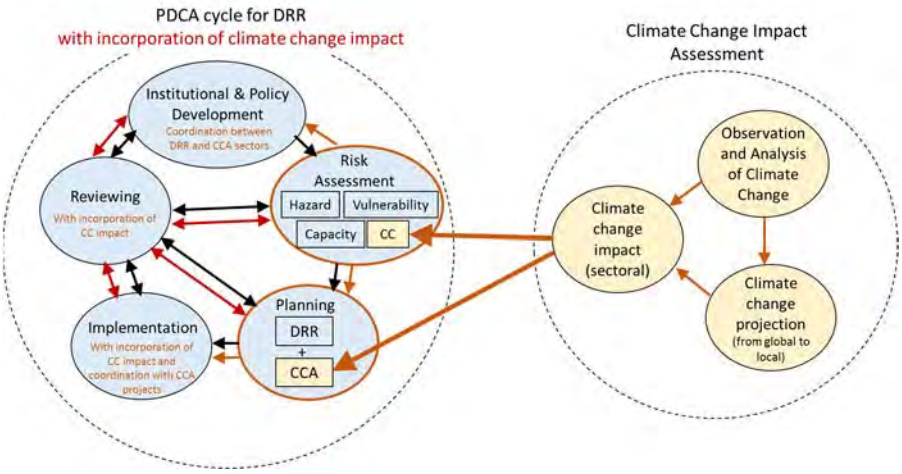


Figure 3: Incorporation of climate change impact in a PDCA cycle for DRR

3. Expected outputs

Through continuous implementation and revision of the PDCA cycle for DRR with improved climate change impact assessment and its incorporation, it is expected that the institutional capacity for DRR, including policy formulation, risk assessment, planning and implementation through coordination of multiple agencies at national and subnational levels, will be strengthened. Targeted outputs of the Work Plan are implementation of such demonstrable actions with engagement of multiple agencies catalysed and facilitated by national disaster management offices (NDMOs) and documentation and arrangement of cross-learning mechanism for their diffusion. By doing so, it is expected that the ACDM develops an autonomous knowledge management and capacity building system for building a disaster resilient and climate adaptive ASEAN in a long run.

4. Implementation period

The Work Plan will be implemented for three years from the date of its adoption along with the AADMER Work Programme 2016-2020 with annual revision and the Working Group on Prevention and Mitigation (WG on P&M), which oversees the Priority Programme No. 3 ADVANCE, decides how to continue it beyond that.

5. Implementation structure

Toward that end, the WG on P&M plays a central role with support from ACDM members. Practically, in the Work Plan, each ASEAN Member State plans and implements DRR and CCA activities in an integrated manner and the National Project Focal Point appointed by the ACDM National Focal Point in each Member State reports the progress and issues to the WG on P&M annually. Following that, the WG on P&M compiles the information and reports it to the ACDM Meeting. Then, the ACDM Meeting, which will endorse the Work Plan, provides suggestions for improvement. Other development partners and resource institutions identified in the Member States may provide capacity building and technical assistance services through WG on P&M's coordination. The WG on P&M is a manager of the Work Plan that is responsible for the knowledge management, coordination of the stakeholders and overall management as shown in Figure 4.

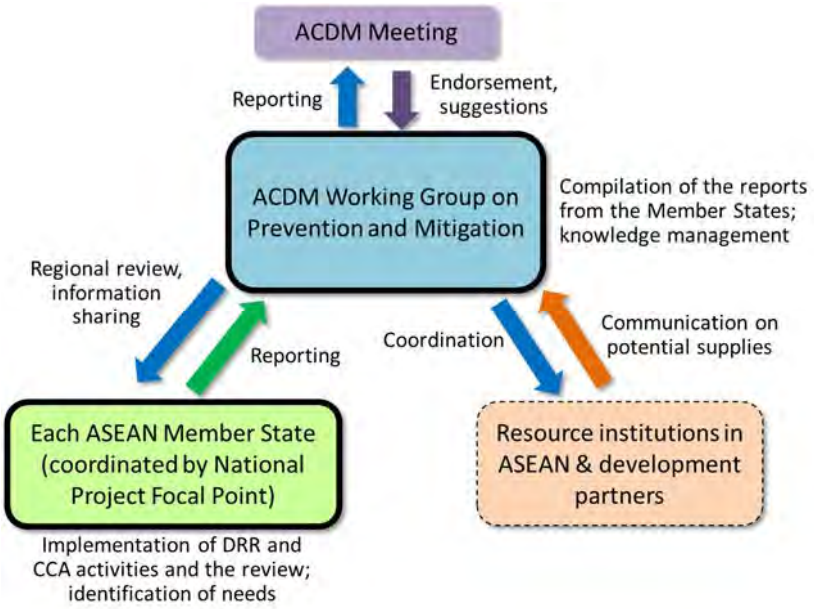


Figure 4: Implementation structure of the Work Plan

Detailed activities of the WG on P&M and the National Project Focal Points are listed below:

a. Working Group on Prevention and Mitigation

The WG on P&M is responsible for:

- Facilitate coordination of mutual cooperation activities among the Member States by referring to the Focal Point reviews;
- Facilitate collection, processing and dissemination of relevant information and knowledge, including the local knowledge, for DRR-CCA integration from the Member States and reporting it to the ACDM Meeting;
- Facilitate sharing of technical resources, matching regional needs and develop programmes for DRR and CCA integration with development partners;

- Enable capacity building measures for accessing global and regional finances for DRR and CCA integration activities in ASEAN Member States;
- Facilitate data management, standardisation of data collection, processing and use for robust decision-making, including improved resolution of hydro-met information collection at the local level and feeding into national and regional databases; and
- Facilitate development and adoption of integrated monitoring and evaluation frameworks through development of appropriate guidelines, tools and capacity building measures.

b. National Project Focal Point

Each Project Focal Point collects relevant information listed in Table 2 from line agencies, reviews it and reports it to the WG on P&M annually with particular focuses on:

- Promote management of data necessary for DRR-CCA integration and share the same with relevant agencies with specific focus on the vulnerable sectors, ecosystems and societies;
- Facilitate monitoring and evaluation of DRR and CCA related plans and activities and share among relevant agencies, including the DRR expenditure of line ministries, considering the need for inter-agency coordination;
- Promote capacity building through training programmes and provide related services regionally with specific focus on understanding resilience at the community level;
- Promote bottom-up approaches for DRR and CCA integration, as well as develop guidelines for mainstreaming DRR and CCA at the grass-root level;
- Enable stakeholder engagement for integration of DRR and CCA, including the engagement of the private sector by promoting various forums and networks; and
- Promote consolidation of climate change laws and regulations and put in place appropriate measures for monitoring the progress in the same.

Table 2: DRR and CCA activities to be implemented and reported by each ASEAN Member State

Activities		Review points*
1. Institutional and policy development		
1.1 Policies, laws and regulations	National socio-economic development plan	• Monitoring of Current National Socio-economic Development Plan
	DRR and CCA laws and regulations	• Progress of enactment and enforcement of individual DRR and CCA laws and regulations • Progress of enactment of integrated laws and regulations of DRR and CCA
	DRR and CCA related sectoral laws and regulations	• Progress of enactment and enforcement of relevant sectoral laws and regulations
1.2 Management system	National and subnational DRR and CCA management systems	• Progress in risk management system at national and local levels
1.3 Financial arrangement	Regular budgetary arrangements of line ministries for DRR and CCA	• Progress in budget allocation and monitoring of DRR and CCA expenditures
	Special funds for local and community-based DRR and CCA activities	• Progress in creation and operation of national and local DRR and CCA funds
	Payment for ecosystem services (PES) and insurance scheme	• Progress in PES and insurance measures
2. Risk assessment		
2.1 Climate change impact analysis	Observation and analysis of hydro-meteorological data	• Progress in monitoring systems and data sharing and analysis
	Climate change projection	• Progress in projection of climate change impacts on rainfall, sea level rise, etc.
	Standard values of CC impact	• Progress in setting standard values for climate change.
2.2 Hazard and risk mapping	Hazard and risk mapping of flood, storm surge, landslide and drought	• Progress in preparation of hazard maps considering the limitation of information disclosure by each Member State.
3. Planning and implementation**		
3.1 Disaster risk reduction	DRR plans and implemented projects for flood, storm surge, landslide and drought	• Progress in planning, implementation and updating prevention and mitigation measures. • Progress in legally authorized DRR and CCA plans.

3.2 Standard guideline for disaster and climate risk assessment and planning	• Progress in preparation of guidelines.
4. Monitoring and evaluation (by the National Project Focal Point)	
4.1 Data management	Basic disaster, hydro-meteorological, risk, vulnerability and socio-economic data are periodically managed, updated and shared with relevant agencies for synthetic analysis and decision making
4.2 Reviewing	DRR and CCA related plans and activities are periodically reviewed for close coordination and knowledge sharing among relevant agencies
4.3 Capacity building and needs assessment	Based on the reviewing results, capacity building needs are identified and corresponding training programmes are arranged using domestic resources; other required external technical assistances and identified resource institutions and agencies possible to provide capacity building services regionally are reported to the WG on P&M

**Use appropriate SDG target indicators wherever possible while reporting (to be developed later)*
*** Planning and implementation are merged here as the review points for both components are similar.*

6. Immediate collaborative activities

Following immediate collaborative activities will be implemented under the Work Plan:

- Knowledge sharing and training on (with references to the good practices of DRR and CCA integration identified by the Project Team (Attachment 4) and recommended by the ASEAN Member States):
    - Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level;
    - Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level;
    - Building capacity for accessing regional and global funds for integrating DRR and CCA;
    - Measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies; and
- Develop guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA and conduct associated training.

7. Further challenges

In order to strengthen integration of DRR and CCA further beyond this Work Plan, following activities shall be planned in parallel:

- Linking the activities with the national reporting of the global frameworks including the Sustainable Development Goals (SDGs) and the Sendai Framework for DRR and use their designated indicators
- Strengthening collaboration with regional groups and organisations such as ACDM Working Group on Knowledge and Innovation Management (WG on KIM), AHA Centre, ASEAN Working Group on Climate Change (AWGCC) and Climate Change International Technical and Training Center (CITC), among others
- Strengthening human resources development and capacity building for implementation of local and national socio-economic development plans after integrating DRR and CCA with appropriate budget and fund allocation

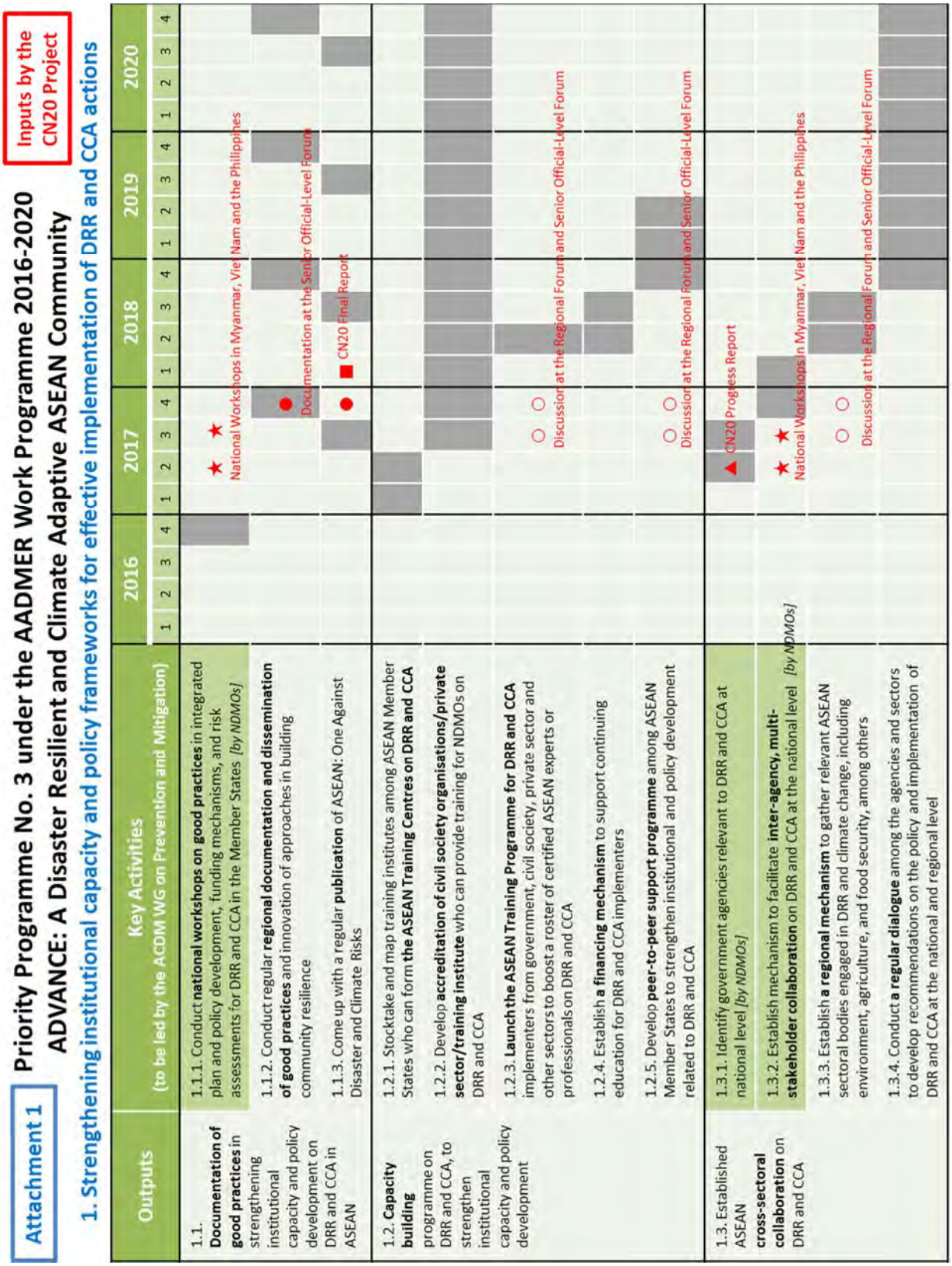
Endorsement

The **Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration** was endorsed by the 31st ACDM Meeting in Luang Prabang, Lao PDR, on 17 October 2017.

Attachments:

1. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community, Priority Programme No. 3, AADMER Work Programme 2016-2020
2. Assessment framework of institutional and policy framework on DRR and CCA integration
3. Current status of DRR and CCA implementation and their integration in ASEAN: An assessment result by the JICA Project Team
4. Current situation and good practices of institutional and policy framework on DRR and CCA integration in ASEAN
5. Main outputs of the National Workshops in Myanmar, Viet Nam and the Philippines

Attachment 1



Attachment 2

Assessment framework of institutional and policy framework on DRR and CCA integration

Assessment category	Evaluation criteria
1. Policies, laws and regulations	
5) National development plan	DRR and CCA concepts are incorporated in the national socio-economic development plan
6) DRR laws, regulations and policies	DRR laws, regulations and policies are enforced with consideration of CCA; DRR is mainstreamed in each ministry's policies
7) CCA laws, regulations and policies	CCA laws, regulations and policies are enforced with consideration of DRR; CCA is mainstreamed in each ministry's policies
8) Relevant sectoral laws, regulations and policies	DRR and CCA concepts are incorporated in relevant sectoral laws, regulations and policies including local land-use and urban plans, building codes, water resources and river basin management, forestry management, etc.
2. Management system	
4) National disaster risk management system	A national disaster risk management committee has been setup for inter-ministerial coordination and it also coordinates with the CCA committee; A national-subnational disaster risk management system has been setup for integrated disaster risk management;
5) National CCA system	A national CCA committee has been setup for inter-ministerial coordination and it also coordinates with the disaster risk management committee
6) Transboundary disaster risk management	A multi-stakeholder transboundary disaster risk management system has been setup for floods, storms and droughts
3. Financial arrangement	
4) Financial arrangement for DRR	Funds are allocated for DRR activities with a monitoring and tracking system
5) Financial arrangement for CCA	Funds are allocated for CCA activities with a monitoring and tracking system
6) Payment for ecosystem services	Payment for ecosystem services is implemented based on the economic assessment

Assessment category	Evaluation criteria
4. Risk assessment	
6) Disaster database	Disaster data is recorded and used for science-based analysis
7) Hydro-meteorological data management and climate risk analysis	Climate risk is analysed based on hydro- meteorological data monitoring and downscaling from Global Climate Models (GCMs)
8) Hazard and risk mapping	Hazard maps and risk maps for flood, storm surge, landslide and drought are prepared by assessing the damages of the past disasters, the capacity and vulnerability of local authorities and communities, and the climate risk and they are provided with high resolution for local land-use planning
9) Data sharing and dissemination	Disaster and climate risk data including hazard and risk maps are accessible
10) Early warning system and disaster risk communication	Early warning system is set up and disaster risks are communicated through traditional media, social media and mobile phone networks
5. Planning and implementation	
5) Guideline and standard	Guidelines and standards incorporating disaster and climate risk are developed and used
6) Land-use and urban planning	Land-use and urban plans are prepared by incorporating disaster and climate risk and with an assessment of ecosystem services
7) Disaster-resilient investment	Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner
8) Drought risk reduction	Drought risk reduction measures including water resources management and agricultural measures are implemented
6. Capacity building	
3) DRR and CCA training	DRR and CCA trainings for national and local government officials and other stakeholders are provided
4) Sector-wise training	Special training programmes are implemented for specific purposes such as a climate school for farmers

Attachment 3

Current status of DRR and CCA implementation and their integration in ASEAN:
An assessment result by the JICA Project Team

Category		Current status
Institutional and policy development	Policies, laws and regulations	• DRR and CCA concepts are well integrated in national socio-economic development plans in the Philippines and Lao PDR; whereas they are incorporated individually in other Member States. • Legal framework for DRR and CCA composed of several legal documents is not well integrated in general.
	Management system	• Inter-ministerial and national-subnational disaster risk management systems have been well established in general. Inter-ministerial CCA management system has been well established but national-subnational linkage is not so strong compared to the disaster risk management system in most Member States. • Coordination between the disaster risk management and CCA management systems need to be improved in most Member States. Indonesia and Malaysia have an advantage in this aspect for their institutional arrangement.
	Financial arrangement	• Regular budgetary arrangements for DRR and CCA of line ministries of each Member State need to be strengthened. • Fund allocation for subnational DRR and CCA management activities in Indonesia and the Philippines is advanced compared to others. • Payment for forest environmental services which levies hydropower generators, water suppliers and tourism service providers has only been implemented in Viet Nam.
Risk assessment		• Disaster database has been set up in Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. • All Member States have hydro-meteorological data management system and the conditions in Malaysia, Singapore, Thailand and Viet Nam are better than others. Coverage of the observation stations in upstream river basins and rural areas is not sufficient in some of them. Hydro-meteorological data sharing of international rivers is insufficient except in the Lower Mekong River. • Downscaling from Global Climate Models (GCMs) is conducted in Indonesia, Malaysia, the Philippines, Singapore and Viet Nam. There are no standard values of CC impacts set in any Member States yet. • Flood hazard maps or risk maps without incorporating climate risk are prepared in Brunei Darussalam, Malaysia, the Philippines, Thailand and Viet Nam, but their resolution is insufficient for DRR and preparedness planning in general. Malaysia and Viet Nam have prepared flood hazard

	maps with climate change impacts in selected areas. Preparation of hazard maps or risk maps of landslide are generally insufficient except some areas in Indonesia, the Philippines and Thailand and the situation for storm surge and drought hazard maps or risk maps are similar.
Planning and implementation	• DRR planning and implementation without considering CC impacts are insufficient in general except some areas in Malaysia. DRR planning and implementation with CC impacts are lacking or insufficient in general except some good practices or potential good ones seen in Brunei Darussalam, Indonesia, the Philippines, Singapore and Viet Nam. Guiding tools for planning and implementation including the related risk assessment have not been prepared in most Member States.
Capacity building	• Community-based disaster risk management are conducted in most Member States, but integrated DRR and CCA training is rarely conducted except in Indonesia.

Attachment 4

Current situation and good practices of institutional and policy framework on DRR and CCA integration in ASEAN

Assessment category	Evaluation criteria	Current situation *and selected good practices*
7. Laws, regulations and policies		
1) National development plan	DRR and CCA concepts are incorporated in the national socio-economic development plan	DRR and CCA concepts are incorporated in the national development plans individually. • *DRR and CCA concepts are integrated in the national development plans in Lao PDR and the Philippines.*
2) DRR laws, regulations and policies	DRR is mainstreamed in each ministry's policies	DRR is promoted through the activities of national disaster risk management committee, but the degree of mainstreaming is not clear.
	DRR laws, regulations and policies are formulated and enforced (with consideration of CCA)	Degree of DRR policy enforcement is not clear. • *DRR and CCA are being converged by the coordination of the National Development Planning Agency (BAPPENAS), Ministry of Agrarian and Spatial Planning and Ministry of Home Affairs in Indonesia particularly for formulation of 5-year local development plan and associated spatial plan and annual budget.*
3) CCA laws, regulations and policies	CCA is mainstreamed in each ministry's policies	CCA is promoted through the activities of the UNFCCC. • *A study report on disaster risk management to advance CCA was compiled by the Institute of Meteorology, Hydrology and Climate Change (IMHEN), Ministry of Natural Resources and Environment (MONRE) in cooperation with the UNDP in Viet Nam.* • *Each ministry in Cambodia drafts CC action plan.*
	CCA laws, regulations and policies are formulated and enforced (with consideration of DRR)	All Member States have CCA policies and or plans in place but the degree of their implementation is not clear.
4) Relevant sectoral laws, regulations and policies	DRR and CCA concepts are incorporated in relevant sectoral laws, regulations and policies including land-use and	DRR and CCA concepts are being incorporated in land-use and urban plans in few Member States (e.g. Philippines, Indonesia), but the degree of the implementation is not clear.

Assessment category	Evaluation criteria	Current situation *and selected good practices*
	urban plans, building codes;	
	water resources and river basin management;	Importance of the water resources management is recognised in sectoral laws and regulations in each Member State. • *River Basin Management Offices (Balai) and National Water Resources Management Agencies (Perum Jasa Tirta) are set up in Indonesia and Malaysia (e.g. MADA). Singapore has an integrated water resources management system. The Law on Water Resources (2012) in Viet Nam mandates integrated operation of hydroelectric reservoirs to reduce flood risks.*
	forestry management	Forestry management is promoted in each Member State. • *Brunei Darussalam maintains high forestry coverage in accordance with the Heart of Borneo Initiative. Payment for forest environmental services is legalised in Viet Nam.*
8. Institutional arrangement		
1) National disaster risk management system	National disaster risk management committee has been setup for inter-ministerial coordination	All Member States have an inter-ministerial disaster risk management committee.
	National disaster risk management committee also coordinates with the CCA committee	Coordination between the national disaster risk management and CCA committees seem to be rare despite the similar constituent member ministries. • *DRR and CCA focal points signed a cooperation agreement in the Philippines.* • *There are potentials to integrate the plans and activities of disaster risk management and CCA committees as they often have similar constituent member ministries.*
	A national-subnational disaster risk management system has been set up for integrated disaster risk management	All Member States have a national-subnational disaster risk management system. • *The Philippine DRRM Act (2010) mandates setting up of a Local DRRM Office in each local authority.*

Assessment category	Evaluation criteria	Current situation *and selected good practices*
2) National CCA system	A national CCA committee has been set up for inter-ministerial coordination	All Member States have an inter-ministerial CC committee.
3) Transboundary disaster risk management	A multi-stakeholder transboundary disaster risk management system has been set up for floods, storms and droughts	River basin management is still at a development stage in most Member States. • *River Basin Management Offices (Balai) coordinate multiple stakeholders in the same river basin in Indonesia. Rivers in Malaysia are managed by the Department of Irrigation and Drainage together with relevant State Governments. River Basin Organizations are being established in major river basins for efficient water resources management in Viet Nam.* • *Operation of multiple multi-purpose dams in a river basin is regulated in an integrated manner by national water resources management agencies (Perum Jasa Tirta: PJT) to reduce flood and drought risks in Indonesia.* • *Ormoc City in the Philippines established a Flood Mitigation Committee (FMC) for river management from upstream to downstream with engagement of multiple stakeholders.*
9. Financial arrangement		
1) Financial arrangement for DRR	Budgets are allocated for DRR activities	DRR measures are implemented (budgeted) by line ministries. • *The Philippine DRRM Act (2010) mandates each local authority to set aside a local DRRM fund. The Office of Civil Defense (OCD) has been awarding the best performing Local DRRM Councils since 1998.*
	DRR expenditures are monitored and tracked	Most Member States do not have a monitoring and tracking system of DRR expenditures. • *DRRM expenditures are monitored and tracked in the Philippines. Local authorities can carry over unspent Quick Response Fund for 5 years.*
	Budgets are allocated for CCA activities	Budget allocation for CCA activities is limited in most Member States. Some activities are funded by supporting

Assessment category	Evaluation criteria	Current situation *and selected good practices*
2) Financial arrangement for CCA		organisations (e.g. NAPA development support in Cambodia, Lao PDR and Myanmar). • *National funds are set up for CCA activities in Indonesia (Climate Change Trust Fund (ICCTF)) and the Philippines (People's Survival Fund (PSF)).*
	CCA expenditures are monitored and tracked	Most Member States do not have a monitoring and tracking system of CCA expenditures. • *There is a climate change expenditure tagging system in the Philippines.*
3) Payment for ecosystem services	Payment for ecosystem services is implemented based on the economic assessment	Most Member States do not have a payment for ecosystem services. • *Payment for forest environmental services which levies hydropower generators and water suppliers, among others, for forest protection and rehabilitation has been successfully implemented in Viet Nam since 2011.*
10. Risk assessment		
1) Disaster database	Disaster data is recorded and publicised	All Member States record disaster data. • *Disaster database is publicised in Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam.*
	It is used for science-based analysis	Whether the disaster database is used for science-based analysis is not clear.
2) Hydro-meteorological data management and climate risk analysis	hydro-meteorological data is managed	All Member States have a hydro-meteorological data monitoring and management system, but the geographical coverage and accuracy vary from country to country.
	Downscaling from Global Climate Models (GCMs) is conducted	• *Downscaling from GCMs is conducted in Indonesia, Malaysia, the Philippines, Singapore and Viet Nam. Other Member States obtain the downscaled values from external agencies.*
	Climate risk is analysed based on hydro-meteorological data and downscaling from GCMs	• *Climate risk analysis is advanced in the above-mentioned Member States.*
	Standard values of CC impacts on rainfall etc. have been set	No Member States have set the standard values of CC impacts yet.

Assessment category	Evaluation criteria	Current situation *and selected good practices*
3) Hazard and risk mapping	Hazard maps and risk maps for flood are prepared (by assessing the damages of the past disasters and the capacity and vulnerability of local authorities and communities)	Flood hazard maps are prepared in all Member States (with support from supporting organisations in some countries). • *Flood hazard maps are prepared in Brunei Darussalam, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam.*
	Climate risk is analysed and incorporated in the flood risk maps	Flood risk maps incorporating climate risk is still limited. • *Flood risk maps incorporating climate risk are developed in some areas in Malaysia and Viet Nam.*
	Hazard maps and risk maps for storm surge are prepared	Hazard maps and risk maps for storm surge is still limited in most Member States.
	Hazard maps and risk maps for landslide are prepared	Hazard maps and risk maps for landslide are prepared in some Member States. • *Good quality ones are available in Indonesia, Malaysia, the Philippines, Thailand and selected areas in Viet Nam.*
	Hazard maps and risk maps for drought are prepared	Drought hazard maps at the national scale are present in Cambodia, Indonesia, Lao PDR, the Philippines, Thailand and Viet Nam and drought risk maps are prepared by external agencies for all ASEAN countries. However, drought risk maps are largely absent in all Member States.
	Hazard maps and risk maps are provided with high resolution for local land-use planning	Hazard maps and risk maps with high resolution and detailed topography for local land-use planning is still limited in most Member States.
4) Data sharing and dissemination	Disaster and climate risk data including hazard and risk maps are accessible	Access to hazard and risk maps is still limited in most Member States. • *These maps are publicised in the Philippines and Thailand.* • *Hydrological data of Mekong River in the Lower Mekong countries (Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam) is shared by the Mekong River Commission (MRC).*

Assessment category	Evaluation criteria	Current situation *and selected good practices*
5) Early warning system and disaster risk communication	Early warning system is set up and disaster risks are communicated through traditional media, social media and mobile phone networks	All Member States have an early warning and a disaster risk communication system, but the outreaching capacity differs from country to country.
11. Planning and implementation		
1) Guideline and standard	Guidelines and standards incorporating disaster and climate risk are developed and used	Guidelines and standards incorporating disaster and climate risk are not developed in most Member States. • *All planning divisions of the Ministry of Public Works and Housing (PU), Indonesia, are integrated into one division which provides standard structural designs incorporating disaster and climate risk.* • *Guidelines and standards incorporating climate risk for river structures are drafted by the Department of Public Works and Highways (DPWH) in the Philippines and are being prepared by the Department of Irrigation and Drainage (DID) in Malaysia.* • *Houses in flood-prone areas are mandated to be elevated in Brunei Darussalam.*
2) Land-use and urban planning	Land-use and urban plans are prepared by incorporating disaster and climate risk and with an assessment of ecosystem services	There are some land-use and urban plans which incorporate disaster and climate risk in some Member States. • *A flood control plan in the Mekong Delta incorporates climate risk in the land-use plan. A flood control and drainage project at the river mouth of Pahang River protects the downtown with river dykes and river walls. The Bago River flood control system with a 140-year old Bago-Sittaung Canal, Moe Yin Gyi Lake and newly constructed several flood control and irrigation dams in Myanmar has a potential to incorporate climate risk by improving these structures in a stage-wise manner.* • *Local CCA action plans with resilient city concepts are formulated in several cities in Viet Nam.* • *Landslide risk management including relocation of the affected families, land-use control and monitoring of rainfall and slope movement is implemented in Indonesia and the Philippines.*

Assessment category	Evaluation criteria	Current situation *and selected good practices*
3) Disaster-resilient investment	Public and private investments are channelled to strengthen resiliency of critical facilities, including evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and wetlands, etc. and they are implemented in a stage-wise manner	Development of DRR plans and the implementation (without consideration of CC impacts) are insufficient in general. Development of DRR plans and the implementation with CCA is being experimented in some Member States. • *There are several projects incorporating climate risk or having a potential, such as river management in Ormoc City and polder wall construction for protecting low-lying areas in Metro Manila, the Philippines; flood control by Neyama floodway tunnel in Tulungagung, Indonesia; and SMART Tunnel and retention ponds in Kuala Lumpur, Malaysia, among others.* • *Cyclone shelters and coastal dykes are constructed for storm risk management in Ayeyarwady Delta, Myanmar and Mekong Delta, Viet Nam.* • *Investment in reinforcing roofs and walls and elevating the ground floor against storm is promoted for low-income house owners by provision of soft loans in Da Nang, Viet Nam.* • *Traditional houses in Cambodia are elevated to adapt to recurrent floods.*
	Public and private investments in forests and wetlands	• *Forest management and rehabilitation including coastal mangrove rehabilitation are actively promoted in Brunei Darussalam, Myanmar, Thailand and Viet Nam.*
4) Drought risk reduction	Drought risk reduction measures including water resources management are implemented;	Some Member States have set up a water resources management committee with involvement of multiple stakeholders and started implementation of pilot projects at selected sites. • *Storage of flood water for the use in dry season is commonly practiced in countries including Cambodia, Indonesia, the Philippines and Viet Nam.* • *Formation of water user associations and farmer associations for efficient natural resources management is commonly applied in countries including Cambodia, Malaysia and the Philippines.*

Assessment category	Evaluation criteria	Current situation *and selected good practices*
		• *Other agricultural practices in water-scarce seasons include sprinkler irrigation in Viet Nam, recycled water for supplementary irrigation in Malaysia, and groundwater irrigation in Indonesia and other countries, among others.* • *Installing salinity monitors in water courses and sharing the data with relevant stakeholders to reduce the damage is practiced in Viet Nam.* • *Water resources management is actively implemented in Singapore particularly with rain water harvesting by a network of rivers and canals connected to 17 reservoirs covering two-thirds of the land surface as a catchment area.*
	Agricultural measures are implemented;	• *Conservation farming which improves the soil quality and conserves it from erosion in the undulated topographies in Indonesia provides needed buffer from short to medium dry spells.* • *Microfinance is instrumental in livelihood diversification of the poor in Indonesia.* • *Climate-smart agriculture principles and practices are being introduced into the region by FAO and other agencies* • *Climate-field schools are being promoted extensively in Indonesia and the Philippines.*
	Risk transfer measures are implemented	• *Weather index insurance is being piloted in Indonesia, the Philippines and Thailand to hedge climate risk for agriculture and other Member States are planning to introduce insurance in the near future (e.g. Myanmar).*
12. Capacity building		
1) DRR and CCA training	DRR and CCA trainings for national and local government officials and other stakeholders are provided	Community-based disaster risk management projects and associated capacity building activities are implemented in most Member States. • *National Development Planning Agency (BAPPENAS) in Indonesia has developed a 2-week training course for integrating DRR and CCA in local development plans for government officials.*

Assessment category	Evaluation criteria	Current situation *and selected good practices*
		• *Community-based disaster risk management projects and associated capacity building activities are implemented in most of the Member States.*
2) Sector-wise training	Special training programmes are implemented for specific purposes, such as downscaling from GCMs;	Special training programmes are implemented for specific purposes in some Member States. • *Regional collaboration for downscaling from GCMs is being implemented with involvement of national agencies from Indonesia, Lao PDR and Malaysia.*
	A climate school for farmers	• *Climate field schools which train farmers to use location-specific weather forecasts for better agricultural practices are actively implemented in Indonesia, Myanmar and the Philippines.*

Attachment 5

Main outputs of the National Workshops in Myanmar, Viet Nam and the Philippines

Category	Necessary national activities	Expected regional activities
Institutional development		
Policies, laws and regulations	• Strict issuances of environment compliance certificate, building permits, no build zones and safe zones; • Development of relevant sectoral laws and regulations; • Integration of DRR and CCA policies and plans	• Share the effects of DRR and CCA integration
Management system	• Strict implementation of integrated water resources management (IWRM) through coordination of relevant agencies; • River basin management for drought, flood and landslide risk and sedimentation management; • Coordination between DRR and CCA national committees and the focal points; • Mainstreaming DRR and CCA in each ministry by appointing a focal unit; • Strengthening the functions of subnational committees for DRR and CCA	• Share coordination mechanisms of DRR and CCA integration
Financial arrangement	• Increase funds for DRR and CCA activities; • Budget tagging of DRR and CCA expenditures; • Develop a payment system for environmental conservation	• Share resource mobilisation methods; • Fund raising by an ASEAN-wide approach
Risk assessment		
Data management	• Set up a central database and a data sharing system through coordination of relevant agencies; • Upgrade and increase the coverage of hydro-meteorological monitoring system (groundwater monitoring system too) and mobilise social capital and private funds for that	• Establish standardised database and a data sharing system; • Share experiences on database development and management

Climate risk analysis	• Build capacity on sectoral climate impact modelling and socio-economic impact analysis; • Improve climate risk analysis capacity including downscaling from global climate models	• Share climate risk assessment and modelling methodologies; • Standardise the methodologies; • Develop a regional climate model
Hazard and risk mapping	• Integration of climate projections to geo-hazard maps; • Provision of high resolution base maps covering the entire country; • Provision of simplified guidelines and standards for hazard mapping and risk assessment; • Capacitate subnational governments' access and usage of database and tools; • Monitoring system for landslide	• Share hazard mapping and risk assessment technologies; • Share salinity intrusion monitoring and analysis system
Planning and implementation		
Guideline and standard	• Update sectoral design, guideline and standard incorporating climate risk; • Translate climate projection to flood return periods; • Improve dam safety against floods; • Train national and local government officials to capacitate designs of water-related structures; • Updated training programmes for community-based disaster risk management based on past experiences	• Share guidelines, standards, planning methods and good practices and benchmark it; • Share dam management protocols and flood risk assessment methods; • Experts exchange programmes and cross-visits for learning and actual observation
Land-use and urban planning	• Strengthen monitoring and evaluation of local development plans in accordance with the comprehensive land-use plan, zoning ordinance and national building code	• Share monitoring and evaluation mechanism of land-use plan, zoning ordinance and building code
Disaster resilient investment	• Further promotion of forest protection and rehabilitation; • Prioritisation of development projects based on risk levels; • Cost-benefit analysis of DRR and CCA expenditures to justify the investment	• Training for geo-technical measures for flood- and landslide-prone areas; slope protection methods; • Capacity building for coastal zone management;

		• Share cost-benefit analysis of DRR and CCA measures

Attachment 5a

National Workshop in Myanmar: Main Outputs of the Group Discussion

Key issues and necessary actions in Myanmar	Expectations to ASEAN
Laws/ Regulations/ Policies ● Integration of DRR and CCA policies and plans ● Development of relevant sectoral laws and regulations	● Clarification of the effect of DRR and CCA integration in other ASEAN countries
Institutional Arrangement ● National coordination mechanism (weak coordination and cooperation among implementing activities, particularly for river basin management from upstream to downstream to manage flood, drought and landslide risks and sedimentation) ● Mainstreaming DRR and CCA in each ministry (by appointing a focal unit in each department and exchanging staff between the RRD and line ministries) ● Strengthening the functions of committees at district and township levels to deal with DRR and CCA issues	● Coordination mechanism for DRR and CCA integration
Financial arrangement ● Insufficient budgets for DRR activities in line ministries (the National Disaster Management Fund is mostly for response, recovery and reconstruction; not for prevention and mitigation) ● Lack of budgets for CCA ● Budget tagging of DRR and CCA expenditures ● No payment system for environmental conservation	● Resource mobilisation methods in other ASEAN counties ● Fund raising by an ASEAN-wide approach
Risk Assessment	

Knowledge sharing on good practices of policies, institutional arrangement and funding

Data and knowledge sharing on risk assessment methods and technology

● Integration of disaster database with all sectors ● Improved hydro-met monitoring system for flood and drought (incl. groundwater monitoring) ● Climate risk analysis capacity incl. downscaling from GCMs ● Monitoring system for landslide ● Insufficient hazard maps and risk maps ● Improved data accuracy and reliability ● Dam safety against floods; flood risk assessment for each basin ● Improved early warning and communication systems at local level ● Require cost-benefit analysis of DRR and CCA expenditures to justify the investment	● Data sharing among ASEAN countries with a unified standard (by establishing a regional responsible body) ● Regional climate models for ASEAN ● Hazard mapping and risk assessment technology ● Flood risk assessment for dam safety ● Salinity intrusion monitoring and analysis ● Cost-benefit analysis of DRR and CCA expenditures	Justification of DRR and CCA investment
Planning and Implementation ● Sectoral planning capacity of each ministry ● Climate and disaster resilient design of infrastructures (for reducing the long-term maintenance cost) ● Urban and land-use plan with DRR and CCA ● Slope protection methodology ● Catchment (river basin) management against drought; water storage facilities ● Climate smart agriculture, crops diversification	● To develop guiding tools for integrating DRR and CCA (and build capacity by implementing a pilot project using it) ● Slope protection pilot projects ● Climate smart agriculture	Guiding tools for climate and disaster resilient design
Capacity Building ● Education of DRR and CCA; development of curriculums for schools ● Public awareness with easy to understand materials ● Training of trainers and experts ● Usage of ICT equipment	● Training and capacity building ● Technical assistance ● Exchange program	Training opportunities; DRR and CCA education and public awareness

Attachment 5b

Group discussion summary of the National Workshop in Viet Nam

Assessment category	Priority issues	Necessary actions and roles of relevant agencies	Proposed common approaches in ASEAN and required technical assistance
Risk assessment			
Data management	• Fragmentation of information related to disaster among the different ministries due to lack of data sharing mechanism • Different layers of data need to be integrated; data sharing system needs to be established • Sectoral barriers; vertical information sharing is not an issue • Cross-sectoral data sharing needs to be promoted (e.g. forest data can be useful for hydro-mapping) • Hydro-meteorological data monitoring system needs to be upgraded and the coverage needs to be expanded	• Develop national disaster database by engaging relevant agencies; standardize type and contents of database[DNDPC] • Inter-ministerial data sharing[CCNDPC] • Install automatic hydro-meteorological monitoring system [DNDPC, DMC, NHMS] • Mobilize social capital (communities, LGUs) for hydro-meteorological data monitoring by providing training courses on knowledge and equipment use; engage private companies for developing smart phone apps and software for monitoring and data integration [DNDPC, NHMS]	• Information and data sharing (however, there are confidential data and limit of data sharing in Viet Nam) • Sharing software for monitoring to develop standardized database • Exchange experiences on database development and management
Climate risk analysis and hazard and risk mapping	• Hazard and risk maps need to be included in the database	• DNDPC needs to incorporate other information in disaster and risk maps / database including	• Exchange experiences on DRR and CCA integration, techniques,

	• Standardize and digitize base maps are required	land-use change data, forest coverage data; • DNDPC also needs to specify necessary data, indicators and parameters and direct other agencies[MARD, MONRE, LGUs]	including risk assessment • Multi- and bilateral cooperation
Data sharing and dissemination	• Insufficient facility for disseminating information	• Cooperation mechanism between network service providers, forecast agencies, receivers • Access to data by provincial government needs to be improved [DNDPC, NHMS, LGUs]	
Early warning system and disaster risk communication	• Multi-hazard early warning systems is needed • Insufficient communication with local people based on early warning system	• Develop an early warning system for multiple disasters and disseminate it to vulnerable communities[MARD, MONRE, MoCom, LGUs] • Capacity building of communities on early disaster warning using mobile SMS and smartphone apps [DNDPC, LGUs]	
	• Equip skills to response to disaster for communities; education of communities to respond to additional risks is required	• Early warning and preparatory training (to prevent forest fire; cannot do much once the fire starts) [DNDPC, VN Forest]	
Planning and implementation			
Guideline and standard; Land-use and urban planning; Disaster-resilient investment	• Each ministry has guidelines for specific areas and disseminated at local level • Generally local authorities are waiting for guidelines from the national government • Capacity building needs at local level; quality of training matters	• Develop guidelines incorporating climate risk and review of existing structures adapting to disasters and extreme weathers and disseminate it to LGUs [DNDPC, DCC, MOC] • Training program needs to be developed based on actual needs assessment using the 10-year experiences of community-based	• Share standards and guidelines • Share planning techniques

		disaster risk management; it needs to be integrated in the socio-economic development plan[MPI, DNDPC, DCC]	
	• Water resources management requires coordination among relevant agencies to avoid overlaps between agricultural, urban and environmental sectors	• Coordination office is required for water resources management (a successful case in NinhThuan Province)[MONRE, MARD]	
	• CC is cross-cutting; different sectors have different laws; there are two different national strategies	• Two national committees on DRR and CCA need to coordinate (and to be integrated and covered by a single agency) [CCNDPC/DNDPC, NCCC/DCC]	
	• Developing disaster infrastructure work does not look into CC; only technical specification to be fully complied	• Technical standard for infrastructure design incorporating CC risk is required[DNDPC, DWR, MOC]	
	• Forest protection is not sufficient	• Forest protection and rehabilitation need to be further promoted [DNDPC, VN Forest, DCC]	
	• Risk levels need to be determined to prioritize development areas	• Determine risk levels to prioritize development projects [DNDPC, DCC]	

DNDPC: Department of National Disaster Prevention and Control (to be upgraded to a Directorate in July or August 2017)
CCNDPC: Central Steering Committee for Natural Disaster Prevention and Control
DWR: Directorate of Water Resources; DMC: Disaster Management Center
MONRE: Ministry of Natural Resources and Environment; DCC: Department of Climate Change; NHMS: National Hydro-Meteorological Service
MoCom: Ministry of Communication; MOC: Ministry of Construction; MPI: Ministry of Planning and Investment

Attachment 5c

Group discussion summary of the National Workshop in the Philippines

Assessment category	Priority issues	Necessary actions and roles of relevant agencies	Proposed common approaches in ASEAN and required technical assistance
Risk assessment			
Data management	• Lack of central database system; Lack of coordination among agencies involved • Data usage by government agencies is charged	• Set up a central database / data sharing system through coordination among relevant agencies [NDRRMC/OCD, PAGASA, MGB/DENR, NAMRIA, DPWH, CCC]	• Establishment of standardized database and data sharing
	• Hydro-meteorological monitoring system needs to be upgraded • Data reliability needs to be improved	• Upgrade manually-operated monitoring system to automated ones; install extreme weather resilient devices; increase the coverage; validate the data on the ground [NDRRMC/OCD, PAGASA, DPWH]	
Climate risk analysis	• Limited basis of CC information for spatial analysis and impact modeling; limited capacity for sectoral climate risk analysis	• Build institutional capacity on sectoral climate impact modeling (socio-economic impact analysis); translate climate projection methodologies to flood return periods [NDRRMC/OCD, PAGASA, DPWH]	• Sharing of climate risk assessment / modeling methodologies; standardization of the methodologies; implementation of pilot projects
Hazard and risk mapping	• Varied methodologies and parameters for hazard maps and risk assessment; climate risk is not integrated in hazard and risk maps • Limited availability of	• Simplified guidelines and standards for hazard mapping and risk assessment [NDRRMC/OCD, PAGASA, MGB/DENR, DPWH, CCC] • Integration of climate projections to geohazard maps; provision of high	

	multi-hazard and climate risk maps (only in Greater Metro Manila); high resolution base maps do not cover the entire country	resolution base maps covering the entire country [PAGASA, MGB/DENR, NAMRIA]	
Data sharing and dissemination	• Online accessibility; limited exposure to information database and tools; redundancy in sharing the data to the public	• Capacitate LGUs's access and usage of database and tools [NDRRMC/OCD, PAGASA, MGB, DILG]	
Early warning system and disaster risk communication	• Need an impact-based forecast / warning system; no localized (dialect-based) early warning	• Implement an impact-based warning system in local languages [NDRRMC/OCD, PAGASA, DILG]	
Planning and implementation			
Guideline and standard	• Lack of sectoral design, guideline and standard incorporating climate risk • Coastal roads are easily washed away; some LGU officers are not knowledgeable with designs of water-relates structures	• Update sectoral design, guideline and standard incorporating climate risk; train national and local government officers to capacitate designs of water-related structures [DPWH]	• Benchmarking and sharing of guidelines, standards and good practices • Experts exchange program; cross-visit to other countries for learning / actual observation • Training for geotechnical measures for flood-prone, landslide-prone and high elevation areas • Capacity building in coastal zone management • Updated dam protocols based on hydrology
	• Some project proposals are not compliant with national and regional development plans and river basin master plans • Slow implementation of approved and ECC (Environment Compliance Certificate) issued projects due to budget constraint and conflict of interests between stakeholders (e.g. politicians,	• Build capacity of LGU officers in designing project proposals in compliance with the master plans [DPWH, HLURB, DILG, DENR] • Strict issuance of ECCs, building permits, no build zones, safe zones, among others [HLURB, DILG, DENR]	

	national government and LGUs)		
	• Weak water resources management among relevant agencies	• Provision of guidelines and strict implementation of integrated water resources management (IWRM) [DPWH, DENR, DA, NIA, MWSS]; strict implementation of the National Greening Program (NGP); revision of the Water Code [DENR]	
Land-use and urban planning	• Weak monitoring and evaluation (M&E) of local development plans • Conversion of land-use from agriculture to residential areas	• Strengthen M&E of local development plans in accordance with the comprehensive land-use plan, zoning ordinance and national building code [LGUs, DENR]	• M&E mechanism on the implementation of land-use plan, zoning ordinance and building code
Disaster-resilient investment	• Outdated drainage systems and inefficient solid waste management	• Improve drainage and solid waste management systems [LDRRMC/OCD, DPWH, DILG, LGUs]	• Sharing of cost-benefit analysis of DRR & CCA measures for justifying the investment
	• Limited number of LGUs accessing the People's Survival Fund (PSF)	• Revisit guidelines of the PSF and build capacity of LGUs [DILG, CCC] • Active engagement of concerned implementing agencies [NDRRMC/OCD]	
	• Limited insurance for disasters	• Promote insurance [NDRRMC/OCD, DA]	

NDRRMC: National Disaster Risk Reduction and Management Council; LDRRMC: Local DRRM Council; OCD: Office of Civil Defense;
PAGASA: Philippines Atmospheric, Geophysical and Astronomical Services Administration; DPWH: Department of Public Works and Highways;
DENR: Department of Environment and Natural Resources; MGB: Mines and Geoscience Bureau; NAMRIA: National Mapping and Resource Information Authority;
CCC: Climate Change Commission; NEDA: National Economic and Development Agency; NIA: National Irrigation Administration;
MWSS: Metropolitan Waterworks and Sewerage System; DA: Department of Agriculture; HLURB: Housing and Land Use Regulatory Board;
DILG: Department of Interior and Local Government; LGUs: Local Government Units

添付資料 2a: DRR と CCA の統合における制度・政策枠組みの強化のための作業計画の概要

Work Plan for Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration

Disasters in Southeast Asia

The number of disasters occurring in ASEAN Member States is increasing as shown in Figure 1. Among them, a significant portion of these disasters are water-related or rain-induced, including storms, floods, landslides and droughts. The situation is getting worse with more intensive and frequent rainfalls. ASEAN suffers damage in excess of USD4.4 billion each year on average as a consequence of natural hazards (AADMER 2016). During the period of 2004 to 2014, the region contributed to more than 50% of the total global disaster fatalities, or 354,000 of the 700,000 deaths in disasters worldwide (ASEAN Vision 2025 on Disaster Management). With this new normal, there is a need to anticipate and prepare for the unknown, such as unprecedented risks and unanticipated affected areas, magnified by climate change (AADMER Work Programme 2016-2020).

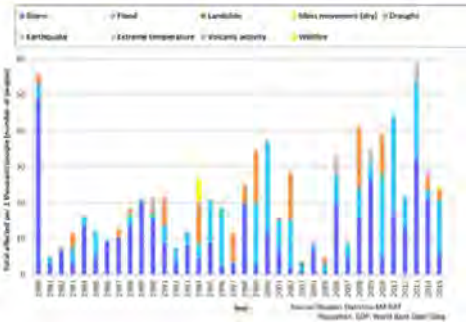


Figure 1　Number of disaster affected people in ASEAN

ASEAN's response

In response to these challenges, ASEAN has agreed on a number of decisions. The **ASEAN Committee on Disaster Management (ACDM)** established in 2003 developed the **ASEAN Agreement on Disaster Management and Emergency Response (AADMER)** in 2005 in association with the **Hyogo Framework for Action (HFA) 2005-2015**. The **ASEAN Coordination Centre for Humanitarian Assistance on disaster management (AHA Centre)** was established during the Phase 1 (2010-2012) of the **AADMER Work Programme 2010-2015** and 21 Flagship and Priority Projects were identified during the Phase 2 (2013-2015). Subsequently, the **AADMER Work Programme 2016-2020** was adopted corresponding to the **Sendai Framework for DRR 2015-2030**.

The **ASEAN Action Plan on Joint Response to Climate Change** was adopted in 2012 that stressed the importance on promoting regional climate information and data sharing in order to develop ASEAN CC impact scenarios at the regional, national and local levels. All Member States have also submitted Intended Nationally Determined Contributions (INDCs) to the **United Nations Framework Convention for Climate Change (UNFCCC)** Secretariat under the **Paris Agreement** in 2015 that outline each national efforts and needs for CCA.

The Heads of States of the ASEAN also adopted the **Declaration on Institutionalising the Resilience of ASEAN and its Communities and Peoples to Disasters and Climate Change** in April 2015 that stressed the importance of accelerating investments in disaster risk prevention and reduction and CCA focusing on key development sectors such as water management, ecosystems management, agriculture, education, infrastructure and construction and assigned the ACDM as the focal point for cross-sectoral cooperation at regional level.

In addition, all Member States also adopted the **17 Sustainable Development Goals (SDGs)** of the **2030 Agenda for Sustainable Development** at the United Nations Summit in September 2015 that promote to build resilient infrastructure in Goal 9; make cities and human settlement inclusive, safe, resilient and sustainable in Goal 11; and take urgent action to combat CC and its impacts in Goal 13.

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

The Concept Note No. 20 (CN20) of **the AADMER Work Programme 2013-2015** focuses on Strengthening Institutional and Policy Framework on DRR and CCA Integration with following aims, objectives and expected outputs:

Aims:

(i) Strengthen institutional and policy frameworks for DRR and CCA;
(ii) Enhance the integrated planning for DRR through the implementation of national development plans and action plans that integrate DRR and CCA at all level; and
(iii) Build partnership in linking DRR and CCA at all levels.

Specific objectives:

(a) Promote the development of umbrella laws and regulations that govern the integration and synchronisation of DDR and CCA in Member States;
(b) Foster relationships between national ministries and agencies responsible for DRR and CCA;
(c) Facilitate the establishment of a clear institutional and policy framework on DRR and CCA integration in Member States;
(d) Strengthen participatory risk assessment, incorporating disaster and climate risks as a basis for decision-making;
(e) Promote the development of joint funding mechanisms for both DRR and CCA at the national level; and
(f) Support joint training, meetings, and other opportunities for increased interaction and cooperation.

Expected outputs:

1. Documentation of good practices in institutional strengthening and policy development on linking DRR and CCA in ASEAN Member States
2. Assessment of the implementation of national action plans on DRR and CCA and the effectiveness of national platforms
3. Senior official-level roundtable discussions on policy and programme interventions to strengthen the connection and coherence of DRR and CCA efforts at all level

The concept was succeeded in **the AADMER Work Programme 2016-2020** as Component 1. Strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions of the Priority Programme No. 3 ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community. Targeted outputs of the Component 1 are:

- Documentation of good practices in strengthening institutional capacity and policy development on DRR and CCA in ASEAN;
- Capacity building programme on DRR and CCA, to strengthen institutional capacity and policy development; and
- Established ASEAN cross-sectoral collaboration on DRR and CCA.

CN20 Project

To support implementation of the CN20, the JICA Project Team conducted a baseline study to identify the status of DRR and CCA implementation and their integration in each ASEAN Member State with specific focus on water-related disasters, including flood, storm, landslide and drought, from September 2016 to February 2017.

Based on the findings, the Project Team organised three **National Workshops** in **Myanmar, Viet Nam and the Philippines** in May-July 2017 to identify necessary actions to improve implementation of DRR and CCA and their integration in each country as well as in ASEAN. Subsequently, a **Regional Forum** was held in Bangkok, Thailand, on 5-6 September 2017 to develop a **Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration** in ASEAN.

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration: 2017-2020 *(to be revised in 2020)*

Objective

The objective of the Work Plan is to mainstream DRR and CCA into national and regional activities thereby significantly reduce disaster risks and increase resilience by creating an enabling mechanism for capacity building, knowledge sharing and cross-sectoral collaboration leading to developing suitable policies, good practices, including data sharing platforms, among ASEAN Member States.

Scope

The scope of the Work Plan is effective integration, or incorporation, of climate change impact in development plans with particular focus on DRR. Suppose there are five components for managing and reducing disaster risk, namely institutional and policy development, risk assessment, planning, implementation and reviewing, like a cycle of plan-do-check-act (PDCA) management method, climate change impact assessment directly affects the risk assessment and planning but also other components as illustrated in Figure 2.

Reporting from each ASEAN Member State

The National Project Focal Point appointed by the ACDM National Focal Point reports the progress of DRR and CCA integration in line with the following items to the ACDM Working Group on Prevention and Mitigation (WG on P&M) annually.

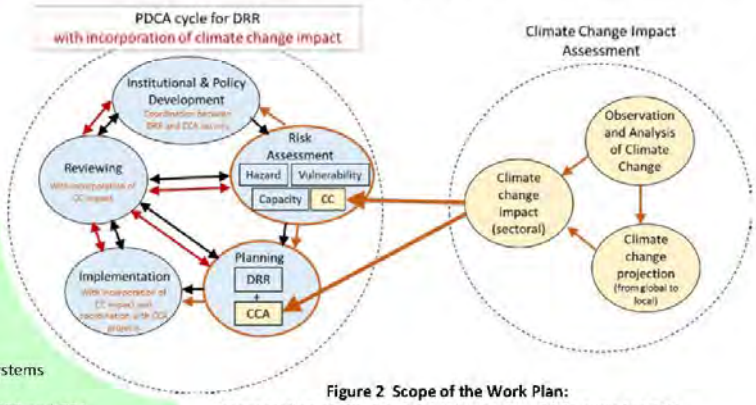


Figure 2 Scope of the Work Plan: Incorporation of climate change impact in a PDCA cycle for DRR

1. Institutional and policy development

Policies, laws and regulations
- National socio-economic development plan
- DRR and CCA laws and regulations
- DRR and CCA related sectoral laws and regulations

Management system
- National and subnational DRR and CCA management systems

Financial arrangement
- Regular budgetary arrangements of line ministries for DRR and CCA
- Special funds for local and community-based DRR and CCA activities
- Payment for ecosystem services and insurance schemes

2. Risk assessment

Climate change impact assessment
- Observation and analysis of hydro-meteorological data
- Climate change projection
- Standard values of CC impact

Hazard and risk mapping
- Hazard and risk mapping of flood, storm surge, landslide and drought

3. Planning and implementation

Disaster risk reduction
- DRR plans and implemented projects for flood, storm surge, landslide and drought

Standard guideline for disaster and climate risk assessment and planning

4. Reviewing (by the National Project Focal Point)
- Basic data are managed, updated periodically and shared
- DRR and CCA related plans and activities are reviewed periodically for close coordination and knowledge sharing among relevant agencies
- Capacity building needs are identified and corresponding training programs are arranged using domestic resources; other required external technical assistances are also identified and reported

Implementation structure

The ACDM WG on P&M is a manager of the Work Plan that is responsible for the knowledge management, coordination of the stakeholders and overall management of the Work Plan as shown in Figure 3. Each ASEAN Member State implements DRR and CCA activities and the National Project Focal Point reports the progress. The WG on P&M compiles the information and reports it to the ACDM Meeting annually.

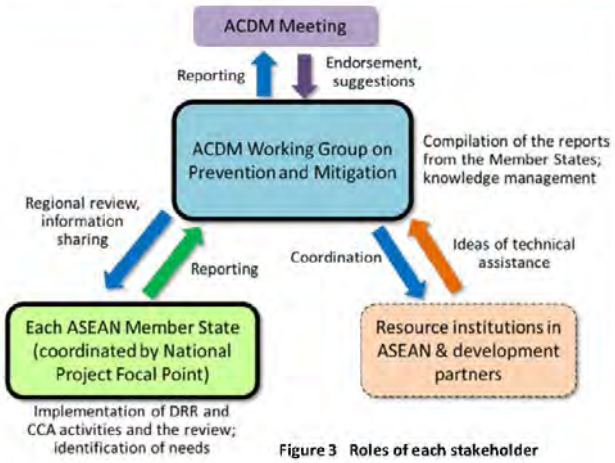


Figure 3 Roles of each stakeholder

Immediate collaborative activities

Knowledge sharing and training on:
- ✓ Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level;
- ✓ Integration of DRR and CCA laws and regulations, where appropriate, with coordination of relevant agencies for the effective implementation at the national and sectoral level;
- ✓ Building capacity for accessing regional and global funds for integrating DRR and CCA;
- ✓ Measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies; and
- ✓ Developing guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA.

Endorsement: The Work Plan was endorsed by the 31st ASEAN Committee on Disaster Management (ACDM) Meeting on 17 October 2017 in Luang Prabang, Lao PDR.

2

添付資料 3：第 6 回災害管理と緊急対応に関する ASEAN 協定締約国会議及び第 5 回 ASEAN 災害管理閣僚会議 議長声明

添付資料 3:第6回災害管理と緊急対応に関するASEAN協定締約国会議及び第5回ASEAN災害管理閣僚会議　議長声明

Final

CHAIRMAN'S STATEMENT OF THE SIXTH MEETING OF THE CONFERENCE OF THE PARTIES TO THE ASEAN AGREEMENT ON DISASTER MANAGEMENT AND EMERGENCY RESPONSE AND THE FIFTH ASEAN MINISTERIAL MEETING ON DISASTER MANAGEMENT

19 October 2017
Luang Prabang, Lao PDR

1. The 6th Meeting of the Conference of the Parties (COP) to the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) and the 5th ASEAN Ministerial Meeting on Disaster Management (AMMDM) were convened as a joint session in Luang Prabang, Lao PDR on 19 October 2017. The Meeting was opened by H.E. Dr. Bounthong Chitmany, Deputy Prime Minister of Lao PDR, followed by activities in commemoration of the 2017 ASEAN Day for Disaster Management. The Meeting was chaired by H.E. Mr. Kampheng Saysompheng, Minister of Labor and Social Welfare of Lao PDR. The Meeting was attended by Ministers in charge of disaster management, representatives from all ASEAN Member States and the Secretary-General of ASEAN.

2. As an auspicious year when ASEAN celebrates her 50th Anniversary and the first year after the signing of the Declaration on One ASEAN One Response, the Ministers congratulated the chosen of the theme "Safe and Resilient Communities for Resilient ASEAN" for ASEAN Day of Disaster Management this year that calls upon the ASEAN Community to scale up community resilience through promoting community-led and innovative approaches on disaster risk reduction, harvesting good practices on resilience and mainstreaming disaster management into development initiatives, and investing in early warning.

3. The Ministers commended the achievements of the ASEAN Committee on Disaster Management (ACDM) in the implementation of the AADMER Work Programme 2016-2020 as well as the Governing Board of the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre) in overseeing and guiding the operationalisation of the AHA Centre. Accomplishments on both the policy and operational front are essential in achieving the aspirations of the ASEAN Vision

2025 on Disaster Management and fulfilling the objectives of the ASEAN Socio-Cultural Community Blueprint 2025.

4. The Ministers noted with satisfaction the accomplishment across all the priority programmes of the AADMER 2016-2020 Work Programme that include the adoption of the Risk and Vulnerability Assessment Guidelines, the AADMER Monitoring and Evaluation Framework, the convening of the 1st ASEAN Recovery Forum, the Framework for ASEAN Standardisation and Certification for Expertise on Disaster Management (ASCEND), the completion of the Disaster Emergency Logistic System of ASEAN (DELSA) Phase I Project, completion of the ASEAN Disaster Risk Financing and Insurance (DRFI) Programme Phase 1, Development of the Guideline for Urban Resilience, the Work Plan for Strengthening Institutional and Policy Framework on Disaster Risk Reduction and Climate Change Adaptation, as well as the convening of the 2017 ASEAN Strategic Policy Dialogue on Disaster Management.

5. The Ministers shared the views of the ASEAN Leaders at 30th ASEAN Summit held on 29 April 2017 in Manila, the Philippines, for a more holistic and stronger coordination across different pillars and sectors in order to have a more coherent whole-of-society response to broad and important issues which require actions from different sectors. In this connection, the Ministers reflected upon the multi-sectoral and multi-stakeholder coordination under the leadership of ACDM, in particular through the ASEAN Joint Task Force on Humanitarian Assistance and Disaster Relief (JTF-HADR) and the Technical Working Group on Civil-Military Coordination (TWG-CIMIC), which provided good platforms for coordination with other sectors in ensuring ASEAN's synergy and collective response to disasters. The Ministers further supported various initiatives in engaging the involvement of various sectors and relevant stakeholders in the implementation of AADMER such as the ASEAN Recovery Forum that brought together ASEAN private sector and civil society organisations, through the AADMER Partnership Group, to discuss ways forward to enhance the resilience of ASEAN Communities and establish pre-disaster arrangements.

6. The Ministers recognized the important role of the AHA Centre in operationalizing the One ASEAN One Response Declaration and extended their appreciation for the prompt response in the delivery of relief items for the Northern Viet Nam flash flood and landslides victims, the displaced communities in Marawi City, the Philippines, as well as the affected communities in Northern Rakhine State, Myanmar. Against the backdrop of the changing humanitarian landscape in the region and in reference to the ASEAN Chairman's Statement on the Humanitarian Situation in Rakhine State, the Ministers endorsed the ACDM's decision to task the ASEAN Secretariat to develop a concept paper for the review of the humanitarian assistance under AADMER in light of emerging

human-induced disasters in the region and noted that, in the interim, the AHA Centre will continue providing humanitarian assistance as guided by the Governing Board.

7. With a view to realising the One ASEAN One Response Declaration by 2020, the Ministers endorsed the ACDM's decision to task the ASEAN Secretariat to convene a senior officials multi-sectoral workshop in early 2018 to strategise and develop plan of actions for its effective implementation.

8. With regard to innovative financing to enhance resilience in ASEAN, the Ministers noted that the ASEAN Secretariat has been tasked to develop the strategy to accelerate the establishment of risk transfer mechanisms at the national and regional levels as well as highlight the potential value of collaboration with different partners, particularly the private sectors on innovative risk financing mechanisms and sharing of country experiences or national pilot projects.

9. The Ministers noted that the ACDM has finalized the way forward in concluding the Memorandum of Understanding (MoU) between ASEAN and the Russian Federation on Disaster Management, the MoU with the International Federation on the Red Cross and Red Crescent Societies as well as the extension of the MoU with the People's Republic of China.

10. As an outward-looking organization, ASEAN not only seeks to address and manage disasters in our region, but also to reach out to contribute to world efforts in managing disasters, as aspired for in the ASEAN Vision 2025 on Disaster Management for ASEAN to position itself as a global leader in disaster management by 2025. In light of this, the Ministers endorsed ACDM's support for ASEAN to participate in the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) 2018 to be held in Ulaanbaatar, Mongolia and other relevant meetings including the Regional Organisations Humanitarian Action Network (ROHAN) as well as the Global Platform on Disaster Risk Reduction, particularly in articulating its position through ASEAN Joint Statements. The Ministers expressed support for the ASEAN Secretariat to play a central coordinating role in facilitating ASEAN's engagement with ROHAN, with the support of AHA Centre.

11. The Ministers noted that the 1st Inter-Ministerial Dialogue on Disaster Management will be convened in 2018 in Malaysia. The dialogue will be a significant cornerstone in charting how relevant ASEAN sectors converge in realising the One ASEAN One Response Declaration by 2020 and ensure that cross-sector and cross-pillar coordination in operationalizing the declaration is enhanced and coupled with policy cohesion. The Ministers encouraged such efforts and were of views that ASEAN

shall further strengthen its cooperation on disaster management and humanitarian assistance, and proactively contribute to international community's agenda as the world leader in disaster management.

12. The Ministers noted that the 7th Meeting of the Governing Board of the AHA Centre was held on 18 October 2017 in Luang Prabang, Lao PDR, and congratulated the progress of the AHA Centre's work in operationalising One ASEAN One Response. The Ministers welcomed the decisions of the Governing Board, which adopted, among others, the AHA Centre's Resource Mobilisation Strategy 2017-2025 and the schemes to improve the welfare of AHA Centre's staff. With regard to the scope and mandate of the AHA Centre in view of recent experiences in providing humanitarian assistance to displaced communities in Marawi, the Philippines, and the Rakhine State, Myanmar, the Ministers supported the Governing Board's direction to the AHA Centre to focus on responding to natural disasters. Provision of other types of humanitarian assistance to other types of emergencies will be done on a case-by-case basis, subject to availability of resources and as guided by the Governing Board. The Ministers further welcomed the Governing Board's decision that the AHA Centre will conduct an in-depth discussion on its involvement in providing humanitarian assistance to human-induced disasters, involving relevant ASEAN sectors. The Ministers welcomed and congratulated the appointment of Ms. Adelina Kamal as the new Executive Director of the AHA Centre

13. The Ministers expressed appreciation for the leadership of the Government of Lao PDR as Chair of the ACDM, the Governing Board of the AHA Centre, the COP to AADMER and the AMMDM in 2017. The Ministers expressed confidence for the leadership of Malaysia as the Chair of ACDM, the Governing Board of the AHA Centre, the COP to AADMER and the AMMDM in 2018, and looked forward to the 6th AMMDM and the 7th Meeting of the COP to AADMER, scheduled in Malaysia in 2018.

14. The Ministers expressed appreciation to the Government of Lao PDR for hosting the 6th Meeting of the Conference of the Parties to the AADMER and the 5th ASEAN Ministerial Meeting on Disaster Management (AMMDM), and for the excellent arrangements made and hospitality provided.

(END)

添付資料４：第 20 回日・ASEAN 首脳会議 議長声明

FINAL

添付資料4：第20回日・ASEAN首脳会議議長声明

CHAIRMAN'S STATEMENT OF THE 20TH ASEAN-JAPAN SUMMIT
13 November 2017, Manila, Philippines

"Partnering for Change, Engaging the World"

1. The 20th ASEAN-Japan Summit was held on 13 November 2017 in Manila, Philippines. The Summit was chaired by H.E. Rodrigo Roa Duterte, President of the Republic of the Philippines. The Summit was attended by all Heads of State/Government of ASEAN Member States and H.E. Shinzo Abe, Prime Minister of Japan. The Secretary-General of ASEAN was also in attendance.

2. ASEAN Leaders acknowledged Japan's unwavering support, especially in the first decade of ASEAN's formation, and valued the long-standing friendship and cooperation between ASEAN and Japan. We recognised that ASEAN-Japan relations have matured into a strategic partnership for peace, stability, prosperity, quality of life and mutual trust and understanding. We traced the beginnings of today's robust ASEAN-Japan relations to 1977 when the Fukuda Doctrine veered Japan's foreign policy approach towards a "heart-to-heart" relationship with the ASEAN region based on equal partnership.

3. We cited the role of the ASEAN-Japan Strategic Partnership in maintaining regional peace, stability and prosperity. We noted with satisfaction the steady progress in the implementation of the Vision Statement on ASEAN-Japan Friendship and Cooperation adopted in December 2013 on the occasion of the 40th Anniversary of ASEAN-Japan relations and its revised Implementation Plan adopted in August 2017.

4. ASEAN Leaders welcomed Japan's intention to contribute even more proactively to securing peace, stability and prosperity of the region and the international community, under its policy of "Proactive Contribution to Peace" based on the principle of international cooperation, including "Legislation for Peace and Security", which took effect on 29 March 2016.

5. We reiterated our grave concern over the escalation of tensions in the Korean Peninsula and condemned the nuclear test conducted by the Democratic People's Republic of Korea (DPRK) on 3 September in addition to its previous nuclear tests and ballistic missile launches. We strongly urged the DPRK to fully and immediately comply with its obligations under all relevant United Nations Security Council (UNSC) resolutions. Concrete actions on the part of the DPRK would be important steps for returning to serious denuclearization dialogue. Japan stated that we should not seek dialogue for the sake of dialogue but instead should maximize pressure against DPRK so that it commits itself to abandoning its nuclear and missile programs and then asks for dialogue. We reiterated our support for the complete, verifiable, and irreversible denuclearization of the Korean peninsula in a peaceful manner. ASEAN Leaders

reiterated ASEAN's readiness to play a constructive role in contributing to peace and stability in the Korean Peninsula. We emphasized the importance of addressing humanitarian concerns, including the immediate resolution of the abductions issue.

6. We underscored the importance of maritime security and safety by, inter alia, maintaining and promoting a free and open sea lines of communication in the region, in accordance with international law, including the United Nations Convention on the Law of the Sea (UNCLOS) 1982. ASEAN noted Japan's constructive contributions to development and regional cooperation, including through its "Free and Open Indo-Pacific strategy". We noted the importance of enhancing cooperation among maritime law enforcement agencies, such as capacity building assistance, joint exercises, information sharing including Maritime Domain Awareness.

7. We discussed concerns on some matters relating to the South China Sea and took note of the positive developments in ASEAN and China relations. We are encouraged by the adoption of the framework of the Code of Conduct on the South China Sea (COC), and urged the Parties to conclude a substantive and effective COC at the earliest opportunity. We welcomed the announcement of the start of substantive negotiations on the COC with China by Leaders of ASEAN and China at the 20th ASEAN-China Summit.

8. We reaffirmed the importance of maintaining and promoting peace, security, stability, maritime safety and security, rules-based order and freedom of navigation in and overflight above the South China Sea. In this regard, we further reaffirmed the need to enhance mutual trust and confidence, emphasized the importance of non-militarization and self-restraint in the conduct of all activities by claimants and all other states, including those mentioned in the DOC that could further complicate the situation and escalate tensions in the South China Sea, and stressed the need to adhere to the peaceful resolution of disputes, in accordance with universally recognised principles of international law and the 1982 United Nations Convention on the Law of the Sea (UNCLOS).

9. ASEAN Leaders noted the advancement of defence cooperation under the "Vientiane Vision: Japan's Defence Cooperation Initiative with ASEAN" between ASEAN and Japan, including discussions at the 3rd ASEAN-Japan Defence Ministers' Informal Meeting in October 2017.

10. ASEAN Leaders welcomed Japan's support for efforts against terrorism and violent extremism. Recognizing the growing threat of terrorism in Asia, we reaffirmed that we would continue to further deepen cooperation through the ASEAN-Japan Counter-Terrorism Dialogue to enhance counter-terrorism measures. We reiterated the urgency of countering violent extremism and renewed our commitment to promoting moderation in cooperation with civil society and communities to address terrorist and violent extremist propaganda. We looked forward to the development of the ASEAN Senior Officials Meeting on Transnational Crime (SOMTC)-Japan Work Plan for Cooperation to Combat Terrorism and Transnational Crime (2018-2022) to renew our commitment to countering terrorism and transnational crime together. We also discussed enhancing close cooperation in this field through the United Nations Convention against Transnational Organized Crime (UNTOC).

11. We noted the Trilateral Cooperative Arrangement (TCA) by Indonesia, Malaysia and the Philippines for initiatives such as the Trilateral Maritime Patrol and Trilateral Air Patrol. We highlighted the need to strengthen international and regional cooperation and constructive dialogue to address security challenges in the region, including piracy, armed robbery against ships, abduction of innocent civilians by armed groups, other transnational crimes, and terrorism through ASEAN-led mechanisms such as the ASEAN Regional Forum (ARF), Expanded ASEAN Maritime Forum (EAMF), ASEAN Defence Ministers Meeting (ADMM), ADMM-Plus, as well as other acknowledged regional mechanisms such as the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP). We also applauded the establishment of the ASEAN Regional Training Center for Vessel Traffic Services [Operators] (ARTV) in Malaysia, funded by Japan-ASEAN Integration Fund (JAIF), in order to improve the safety and efficiency of navigation in the region and highlighted the importance of the regional cooperation for ensuring the safety of maritime traffic.

12. We shared the view that we would continue working together for a Drug-Free ASEAN, particularly by supporting the implementation of the ASEAN Work Plan on Securing Communities Against Illicit Drugs 2016-2025 through meetings, trainings, seminars, and information exchanges while respecting the sovereign right of countries in deciding the most appropriate approaches to address their national drug situations.

13. We acknowledged the importance of security of and in the use of Information and Communication Technology (ICT) and the necessity of measures against various threats in cyberspace. We emphasised our common interest in strengthening cooperation in cybersecurity, which is referred to in “ASEAN 2025: Forging Ahead Together”, and the necessity of awareness raising and capacity building in order to promote safety and stability in cyberspace. In this regard, we welcomed the establishment of the ARF Inter-sessional Meeting on Security of and in the Use of Information and Communication Technologies (ARF ISM on ICT Security) at the 24th ARF Ministerial Meeting in August 2017.

14. We welcomed cooperation under the ASEAN-Japan Information Security Policy Meeting and the implementation of ASEAN-Japan cybersecurity cooperation hub (Step1) utilizing the JAIF in 2017. We attached importance to enhancing our cooperation in the field of ICT, including the promotion of Internet of Things (IoT) and the upgrade of ICT infrastructure in accordance with the “ASEAN ICT Masterplan 2020” and ASEAN Smart Network Initiative. We welcomed Japanese initiatives to enhance ASEAN cybersecurity cooperation including the feasibility study on the proposed ASEAN Cybersecurity Hub.

15. We highlighted the significance of ASEAN and Japan economic cooperation in achieving mutually beneficial economic growth. With total merchandise trade reaching USD 201.9 billion, and Foreign Direct Investment (FDI) inflows from Japan to ASEAN amounted to USD 11.5 billion, we noted that Japan ranked as ASEAN’s fourth largest trading partner and ASEAN’s second largest source of FDI in 2016.

16. As we seek to double our trade by 2022, we underscored the importance of ensuring that our work remains in tune with current business practices and industrial development. We therefore welcomed the progress made in the implementation of the ASEAN-Japan 10-year Strategic Economic Cooperation Roadmap in various

sectors, including activities promoting human resources development, micro small and medium enterprise (MSME) development, infrastructure, innovation and transfer of technology. We noted that the Roadmap would enhance the economic integration of ASEAN in various sectors, namely intellectual property, standards, customs and trade facilitation initiatives. We agreed on the usefulness of the Industrial Human Resource Development Cooperation Initiative in building greater capacity for our businesses. We recognised that initiatives such as the ASEAN-Japan Women Empowerment Fund encourages female entrepreneurs to contribute to the social advancement of women, poverty reduction, job creation and economic growth. We noted the importance of ASEAN-Japan cooperation to realise inclusive and innovation-oriented growth through the operation of ASEAN-Japan Innovation Network. We lauded the advances made in cooperation on intellectual property through the ASEAN-Japan Heads of Intellectual Property Offices Meeting.

17. We were pleased that the ASEAN Economic Ministers Roadshow to Japan was successfully held during the 50th Founding Anniversary of ASEAN under the chairmanship of the Philippines. This event generated significant outcomes, such as the signing of the Memorandum of Cooperation on the ASEAN-Japan Innovation Network (AJIN), and business matching for ASEAN start-ups and Japanese corporations, among other results. We commended AJIN, a private-sector led initiative, on its work to promote innovation across sectors and industries, including digital business platforms for MSMEs and emerging industries and appreciated the contribution of the Roadshow towards strengthening economic and industrial cooperation in line with the implementation of the renewed ASEAN-Japan 10-Year Strategic Economic Cooperation Roadmap. We were pleased with the successful implementation of the Roadmap, which continues to support the on-going economic integration initiatives of ASEAN, particularly in promoting inclusiveness and innovation by providing various technical and capacity building exercises geared towards capacitating our MSMEs; promoting the culture of innovation; facilitating trade and investment through e-commerce and institutionalizing enabling policies; developing new industries; and promoting human resources development. We also appreciated the supplementary budget of USD 18 million extended by the Government of Japan in 2016 for the AEM-METI Economic and Industrial Cooperation Committee (AMEICC) activities. We encouraged broader ASEAN-Japan engagements in innovation as well as initiatives to help ASEAN's MSMEs connect with the global value chain including through lasting business partnerships.

18. We reaffirmed the importance of the ASEAN-Japan Comprehensive Economic Partnership (AJCEP) Agreement, which contributes to enhancing regional economic integration and prosperity through the benefits of increased trade and investments. We welcomed the finalization of the Protocol to Amend the AJCEP Agreement to Incoporate the Chapters on Trade in Services, Movement of Natural Persons and Investment. We looked forward to its signing in early 2018.

19. We noted the progress made by our joint efforts in advancing the Regional Comprehensive Economic Partnership (RCEP) negotiations. In view of the large potential of the RCEP to promote global trade and growth, we reaffirmed our strong commitment to bring the RCEP negotiations to a conclusion.

20. We commended the ASEAN-Japan Centre for its significant role in promoting trade, investment, and tourism as well as cultural and ASEAN awareness. We

thanked the Economic Research Institute for ASEAN and East Asia (ERIA) for contributing to our close economic partnership and for Japan's contribution to the Institute, including the commitment to providing USD 100 million over 10 years in support of ASEAN integration and East Asia integration.

21. ASEAN Leaders appreciated Japan's contributions towards ASEAN Community-building, including its assistance for enhancing connectivity and narrowing development gaps through official development assistance and JAIF. In this regard, the ASEAN Leaders valued Japan's support for the Master Plan on ASEAN Connectivity (MPAC) 2025, including through public-private partnerships, and the Initiative for ASEAN Integration (IAI) Work Plan III. The ASEAN Leaders expressed appreciation for Japan's continued support towards the human resources development of CLMV officials through the attachment programmes at the ASEAN Secretariat. They also welcomed Japan's collaboration with institutions such as the Asian Development Bank, which has been implementing Japan's initiatives, including the "Partnership for Quality Infrastructure", "Expanded Partnership for Quality Infrastructure" and the G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment and reiterated the importance of developing "quality infrastructure".

22. We noted that Japan's "Free and Open Indo-Pacific Strategy" reinforces the ASEAN-centered regional architecture. It also complements the MPAC 2025 which calls for cooperation in establishing a rolling priority pipeline list of potential ASEAN infrastructure projects, enhancing trade routes and logistics as well as in digital data governance, among other areas. We encouraged Japan to explore synergies between these two frameworks to build a well-connected, competitive and resilient ASEAN and Indo-Pacific region.

23. We welcomed the sound progress in various cooperation projects and activities under the four policy pillars of transport facilitation, transport infrastructure, efficient and sustainable transport, and human resources development in the Pakse Action Plan, in pursuit of "Quality Transport" in ASEAN. We reaffirmed the importance of enhancing the ASEAN-Japan aviation relationship and noted the progress made at the 2nd ASEAN-Japan consultation on Regional Air Services Agreement in Manila, Philippines, in February 2017. We looked forward to the successful conclusion of a more liberal and mutually beneficial ASEAN-Japan Regional Air Services Agreement with a view to enhancing the air transport relationship between Japan and each ASEAN Member State.

24. ASEAN Leaders valued Japan's contribution to sub-regional cooperation. We appreciated the progress made in various projects after launching the "Japan-Mekong Connectivity Initiative" and the "Work Programme" under the Mekong Industrial Development Vision last year, including those related to "soft connectivity" such as customs clearance facilitation and human resources development. They also commended Japan's strong commitment to assist the Mekong region in realizing "quality growth", as well as "Green Mekong" through climate change mitigation and disaster risk reduction.

25. We welcomed the energy efficiency initiatives under ASEAN-Japan energy cooperation such as energy efficiency technology training and energy managers' accreditation, and called for more focused efforts on transfer of energy sustainability knowledge, good practices, and technology. We also underscored the importance of

continued investments in energy projects and the continued efforts to promote high quality energy infrastructure to ensure future energy security.

26. We reaffirmed the importance of strengthening regional cooperation in the area of disaster management and joint emergency response. Towards this end, we acknowledged the great importance of further encouraging the use of ICT in this area, and appreciated Japan's continued support for the project to establish an Integrated ICT system to strengthen the operation of ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre). In this regard, we appreciated Japan's valuable contribution through JAIF of over USD 26 million for supporting AHA Centre's projects and activities. In efforts to enhance the region's joint disaster emergency response capacities, the ASEAN Leaders commended Japan's continued support towards the ASEAN Emergency Response and Assessment Team (ERAT) Transformation Plan, the Disaster Emergency Logistic System for ASEAN (DELSA) Project as well as the AHA Centre Executive (ACE) Programme for disaster management officials in ASEAN. The ASEAN Leaders also encouraged strengthened cooperation with Japan in implementing the ASEAN Declaration on One ASEAN, One Response. Further to addressing the correlation between disaster risk reduction and climate change, the ASEAN Leaders appreciated Japan's assistance toward the development of the Work Plan for Strengthening Institutional and Policy Framework on Disaster Risk Reduction and Climate Change Adaptation and expressed their support for its implementation.

27. We noted the continued growth of cooperation on environmental issues, particularly in addressing issues relating to environmental protection and sustainable development. In this regard, the ASEAN Leaders welcomed the ASEAN-Japan Environmental Cooperation Initiative which aims to advance environmental cooperation in areas including climate change, waste management, biodiversity conservation, chemical pollution management, wastewater management, and quality environmental infrastructure development for sustainable cities, as well as cooperation in Sustainable Development Goals.

28. We acknowledged the progress in our cooperation on rural development and poverty eradication, particularly in promoting a community-driven development approach to delivering social protection, as well as conducting evidence-based policy research on food price spikes to inform the development of social protection measures. We appreciated the robust partnership on promoting active ageing and enhancing the welfare of older persons, and looked forward to the development of a regional plan of action to implement the Kuala Lumpur Declaration on Ageing: Empowering Older Persons in ASEAN.

29. We emphasised the importance of ASEAN and Japan's heart-to-heart partnership to strengthen the foundation of our future cooperation, including through the promotion of people-to-people contacts, especially youth participation in collaborative programs of sports and cultural exchanges. We noted with satisfaction the progress in various programs including Japan East-Asia Network of Exchange for Students and Youths (JENESYS)", "WA-Project," "Sport for Tomorrow", the Ship for Southeast Asian and Japanese Youth Program, "Inter-University Exchange Program" and the exchanges through ASEAN Council of Japan Alumni (ASCOJA).

30. We welcomed the 1st ASEAN-Japan Ministerial Meeting on Sports held on 11 October 2017 in Nay Pyi Taw and shared the view that we would deepen cooperation based on the "ASEAN Work Plan on Sports 2016-2020" with focus on increasing participation of women and girls in sports, advancing sports for persons with disabilities, anti-doping campaign, and development of physical education teachers and coaches.

31. We noted the holding of the 2nd ASEAN-Japan Television Festival in Manila as a commemorative event for the 50th Anniversary of ASEAN. We reaffirmed the importance of promoting the exchanges of content between ASEAN Member States and Japan. We also discussed cooperation in strengthening ASEAN's media industry, especially in the areas of broadcasting and in promoting media and information literacy among our peoples.

32. We were pleased with the ongoing work to implement the ASEAN-Japan Health Initiative, especially programmes aimed at human resources development, promoting healthy lifestyles, preventing diseases and raising healthcare standards. We also welcomed the Asia Health and Well-being Initiative initiated by Japan that would support Asian countries, including some ASEAN Member States, to create vibrant and healthy societies in the region and suggested that health officials discuss this further. In this regard, we welcomed the conduct of the ASEAN-Japan Health Ministers' Meeting on Universal Health Coverage and Population Ageing on 15 July 2017 in Tokyo, recognising the growing trend of ageing populations in the region and reaffirming the need to put in place evidence-based policies and strategies, including programmes that address the emerging needs of ageing populations by encouraging community-based integrated care and functional recovery care of elderly people including human resources development**.**

33. We appreciated the current progress in capacity strengthening and networking on Disaster Health Management as part of the ASEAN Post-2015 Health Development Agenda, through the Project on Strengthening ASEAN Regional Capacity on Disaster Health Management, which aims to enhance the health sector response to the immediate medical and health care needs of populations affected by disasters, through the development of mechanisms for the coordination and deployment of emergency medical teams, and trainings on disaster health management. We attached high importance to this cooperation, supported through the Japan International Cooperation Agency (JICA), which will substantially contribute to the realisation of the One ASEAN, One Response Declaration adopted during the 28th and 29th Summits, as well as the implementation of the ASEAN Leaders' Declaration on Disaster Health Management adopted during the 31st ASEAN Summit.

34. We also acknowledged the significant contribution of Japan in the realisation of the ASEAN Plus Three health cooperation which reinforces the achievement of the objectives of the ASEAN Post-2015 Health Development Agenda as reaffirmed during the 7th ASEAN Plus Three Health Ministers Meeting on 7 September 2017 in Bandar Seri Begawan, Brunei Darussalam, particularly on common issues of concern such as universal health coverage, ICT for healthcare, non-communicable diseases, traditional and complementary medicine, active ageing, human resources for health, responding to communicable and emerging health threats and food safety.

35. We appreciated Japan's generous contributions over the years, especially through JAIF which has supported over USD 650 million worth of projects and activities.

36. We welcomed the launching of the negotiations on the Agreement on Technical Cooperation between the Government of Japan and ASEAN to support our efforts towards further integration as agreed in August 2017, and expressed our hope for the conclusion of the Agreement at the earliest time.

37. We noted the Executive Report on the Progress of the Implementation Plan of the Vision Statement on ASEAN-Japan Friendship and Cooperation and the Revised Implementation Plan of the Vision Statement on ASEAN-Japan Friendship and Cooperation and agreed that the future of ASEAN-Japan relations remains bright.

38. We noted that the 45th Anniversary of ASEAN-Japan Dialogue Relations next year presents opportunities to hold celebratory activities to mark this important milestone.

39. ASEAN Leaders conveyed their deep appreciation to Prime Minister Abe for his personal efforts to strengthen ASEAN-Japan relations.

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添付資料 5：DRR と CCA の統合における制度・政策枠組みの強化のための高級官僚レベル会合 議事概要

添付資料 5: DRR と CCA の統合における制度・政策枠組みの強化のための高級官僚レベル会合議事概要

SENIOR OFFICIAL-LEVEL FORUM FOR STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION

Meeting Summary

16 November 2017, Jakarta, Indonesia

The Senior Official-Level Forum (SOLF) for Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration was held in Jakarta, Indonesia on 16 November 2017 with participation of over 50 participants including senior officials from eight ASEAN Member States, the ASEAN Secretariat, the Japan International Cooperation Agency (JICA) and the JICA Project Team. The SOLF was organised under the Concept Note No. 20 (CN20) Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration, which is one of the Flagship and Priority Projects of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015) being carried over in the Priority Programme 3 of the AADMER Work Programme 2016-2020.

Main objectives of the SOLF were to 1) share good practices of DRR and CCA integration; 2) explore linkages and entry points for collaborative engagement on DRR and CCA across relevant ministries and agencies; and 3) prioritise immediate collaborative activities of the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration (hereinafter, Work Plan) and commence its implementation. The SOLF was co-chaired by Mr. Vilayphong Sisomvang, Deputy Director General, Social Welfare Department, Ministry of Labour and Social Welfare, Lao PDR, and Mr. Saharat Wongsakulwiwat, Director, Research and International Cooperation Bureau, Department of Disaster Prevention and Mitigation, Ministry of Interior, Thailand, on behalf of the Co-Chairs of the ASEAN Committee on Disaster Management (ACDM) Working Group on Prevention and Mitigation.

The participants of the SOLF have discussed the five listed activities provided for their consideration and identified two activities as Priority Work Plan for 2020 (see the table included in the next page).

Priority Work Plan for 2020

Immediate collaborative activities	Target by 2020	Agreed activities		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level	Improve hazard and risk assessments by integrating climate change projections • Projecting climate change in terms of rainfall, temperature and sea level rise and downscaling from Global Climate Models (GCMs) • Evaluation of climate change impacts on key sectors of ASEAN countries • Implementation of pilot programs on integration of climate change projections into hazard and risk maps and planning including community based disaster risk management (CBDRM) plans • Developing guideline for hazard and risk mapping integrating climate change projections including for CBDRM • Implement training programs on hazard and risk maps integrating the climate change projections	• Identify institutional mechanism to coordinate activities • Set budget, prepare concept notes for fund raising • Develop platform for sharing the information among stakeholders • Stock taking of current capacities including training needs assessments for hazard and risk mapping and integration of climate change projections • Sharing of knowledge on hazard and risk assessments integrating climate change projections including for CBDRM	• Develop databases required for risk and hazard mapping and downscaling of climate change projections • Develop methodologies for hazard and risk mapping integrating climate change projections • Conduct case studies for developing hazard and risk maps with climate change impacts including application at the CBDRM level • Develop training module for training and advocacy on integrated hazard and risk assessments and mapping, including exposure visits	• Develop guidelines for integrating climate change projections into hazard and risk maps • Guidelines for use of hazard and risk maps in planning including for CBDRM • Pilot projects for demonstration of the methodology and share experiences and for refining the methodology • Organize training programs, including OJT and exposure visits
Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level	• Mainstreaming DRR and CCA in laws and regulations, and national socio-economic development plans and local development plans	• Stock taking of current capacities for integrating DRR and CCA into national development laws and regulations • Establish coordination mechanism for integrating DRR and CCA into laws and regulations at national and local level • Review regional examples of laws and regulations • Develop advocacy platform for sharing the information	• Set directions for integrating DRR and CCA into national and local laws and regulations • Training module development for integrating DRR and CCA into development laws and regulations • Prepare model laws and regulations	• Customize model law and regulations to each country contexts • Develop guidelines for integrating CCA and DRR into laws and regulations • Formulate national socioeconomic plans and local development plan, laws and regulations in the priority areas (pilot testing) • Conduct training programs and awareness generation workshops on integrating CCA and DRR into laws and regulations

- The WG P&M will take lead in coordinating the implementation of the agreed work plan for 2020 listed in the table, with support from ASEAN Secretariat. The role of Climate Change International Technical and Training Center (CITC), Thailand Greenhouse Gas Management Organization (TGO), Bangkok, Thailand will be explored in hosting the required capacity building activities proposed as a part of this Priority Work Plan for 2020.

- The Co-Chairs of the WG P&M request ACDM members to upload the Meeting Summary and the Priority Work Plan for 2020 to their appropriate websites in their national language, with the consent of the SOLF. The template of the webpage in English prepared by the JICA Project Team will be shared with the ACDM Members.

- The National Project Focal Point appointed in each ACDM member organisation (Attachment 01) will report the progress of the activities related to DRR and CCA integration in each country annually to the Working Group on Prevention and Mitigation until 2020 starting from March 2018.

- The Working Group on Prevention and Mitigation will monitor and review the progress in each country and submit a synthesised report to the ACDM Meeting annually starting from October 2018. These reports will be uploaded to the CN20 Project website managed by the Working Group on Prevention and Mitigation.

The above agreed Priority Work Plan for 2020 activities will be implemented immediately in line with the AADMER Work Programme 2016-2020 and available resources. The Priority Work Plan for 2020 will be reviewed annually and its continuation beyond 2020 will be discussed along with a new AADMER Work Programme.

Vilayphong Sisomvang
Deputy Director General, Social Welfare Department, Ministry of Labour and Social Welfare, Lao PDR

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Co-Chairs of the Senior Official-Level Forum, on behalf of the Co-Chairs of the ACDM Working Group on Prevention and Mitigation

Attachment 01 List of National Project Focal Points of the Work Plan

添付資料 6 : DRR と CCA の統合における制度・政策枠組みの強化のための作業計画のナショナル・プロジェクト・フォーカルポイントの指名

添付資料 6: DRR と CCA の統合おける制度･政策枠組みの強化のための作業計画のナショナル・プロジェクト・フォーカルポイントの指名

NOMINATION OF NATIONAL PROJECT FOCAL POINTS FOR THE WORK PLAN FOR STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION

COUNTRY	NOMINATION OF FOCAL POINTS
Brunei Darussalam	**Mohd Syazwan bin Nordin** Special Duties Officer Grade II National Disaster Management Centre
Cambodia	**Lorn Trob** Deputy Director of NCDM's Cabinet
Indonesia	*T.b.c .* BNPB
Lao PDR	**Vimala Khounthalangsy** Deputy Director, Disaster Management Division Social Welfare Department, Ministry of Labour and Social Welfare **Sombath Douangsavanh** Senior Officer, Disaster Management Division Social Welfare Department, Ministry of Labour and Social Welfare
Malaysia	**Adiratna Wira Bin Adnan** Senior Assistant Director, Technical and Infrastructure Division, Post Disaster Sector, NADMA **Che Siti Noor binti Koh Poh Lee @ Che Mamat** Principal Assistant Director, Mitigation Division Sector of Planning & Policy, NADMA
Myanmar	**Daw Phyu Lei Lei Tun** Director, Ministry of Social Welfare, Relief and Resettlement Naypyitaw **Daw Mi Mi Tun** Staff Officer, Ministry of Social Welfare, Relief and Resettlement Naypyitaw
Philippines	**Josefina T. Porcil** Office of Civil Defense **Myrabeth E. Alicias**

添付資料 6

	Office of Civil Defense
Singapore	**Nai Ying Chan** SSO International Projects Strategic Planning Department, SCDF **Adrian Chong** SSO International Relations Strategic Planning Department, SCDF
Thailand	**Chestha Mosikarat** Director of Disaster Prevention and Mitigation Policy Division, DDPM **Saharat Wongsakulwiwat** Director of Research and International Cooperation Bureau, DDPM **Kollawat Sakhakara** Environmental Official, Senior Professional Level Policy and Strategy Section, Climate Change Management Coordination Division Office of Natural Resources and Environmental Policy and Planning **Chompunut Songkhao** Environmental Official, Practitioner Level Policy and Strategy Section, Climate Change Management Coordination Division Office of Natural Resources and Environmental Policy and Planning
Viet Nam	**Dam Thi Hoa** Department of Natural Disaster Prevention and Control (DNDPC)

添付資料 7：各 ASEAN 加盟国における DRR と CCA 担当機関

添付資料 7: 各 ASEAN 加盟国における DRR と CCA 担当機関

Note: Agencies in **bold** and *italic* letters are from the same ministries indicating the roles and responsibilities in multiple DRR- and CCA-related sectors.

Country	Disaster risk management (ACDM Focal Point)	Meteorological data management	River management		River basin management			Slope management	Climate change adaptation
			Hydrological data management	Planning, designing and management of structures	Water resources management	Forestry, coastal and watershed management	Land-use management		
Brunei Darussalam	National Disaster Management Center (NDMC)	Brunei Darussalam Meteorological Department (BDMD), Ministry of Communications	*Public Works Department (PWD), Ministry of Development (MOD)*			Forestry Department, Ministry of Primary Resources and Tourism (MPRT); *PWD*	*PWD*	*PWD*	Department of Energy and Industry, Prime Minister's Office
Cambodia	National Committee for Disaster Management (NCDM)	*Department of Meteorology, Ministry of Water Resources and Meteorology (MOWRAM)*	*Department of Hydrology and River Works (DHRW), MOWRAM*	*DHRW & Department of Irrigation, MOWRAM;* Ministry of Agriculture, Forestry and Fisheries (MAFF)	*Department of Water Resources Management and Conservation (DWRMC), MOWRAM*	MAFF	Provincial Government	Ministry of Public Works and Transport (MPWT)	Ministry of Environment (MOE)
Indonesia	National Disaster Management Authority (BNPB)	Agency for Meteorology, Climatology and Geophysics (BMKG)	*Directorate of River, Lakes and Dams (DRLD) & Directorate of Irrigation (DI), Ministry of Public Works (PU)*			Ministry of Environment and Forestry (KLHK)	State Government	*PU;* Ministry of Energy and Mineral Resources (ESDM)	Directoral General of Climate Change, KLHK
Lao PDR	National Disaster Management Office (NDMO), Department of Social Welfare, Ministry of Labour and Social Welfare (MLSW)	*Department of Meteorology and Hydrology (DMH), Ministry of Natural Resources and Environment (MONRE)*		**Department of Waterways, Ministry of Public Works and Transport (MPWT)**	*Department of Water Resources (DWR), MONRE*	Department of Forestry, Ministry of Agriculture and Forestry (MOAF)	**Department of Housing and Urban Planning (DHUP), MPWT**	**Department of Roads and Bridges, MPWT**	*Department of Disaster Management and Climate Change (DDMCC), MONRE*

添付資料 7

Country	Disaster risk management (ACDM Focal Point)	Meteorological data management	River management		River basin management			Slope management	Climate change adaptation
			Hydrological data management	Planning, designing and management of structures	Water resources management	Forestry, coastal and watershed management	Land-use management		
Malaysia	National Disaster Management Agency (NADMA), Prime Minister's Department	Malaysian Meteorological Department (MET Malaysia), Ministry of Science, Technology and Innovation (MOSTI)	*Department of Irrigation and Drainage (DID), Ministry of Natural Resources and Environment (NRE)*	*DID;* Agricultural Drainage and Irrigation Division (ADID), Ministry of Agriculture and Agro-based Industry (MOA)	*DID;* ADID	*Forestry Department, NRE*	State Government; Federal Department of Town and Country Planning (JPBD), Ministry of Urban Wellbeing, Housing and Local Government (KPKT)	Department of Slopes & Public Works Department (JKR), Ministry of Works; *Department of Minerals and Geoscience (JMG), NRE*	*Environment Management and Climate Change Division (PASPI), NRE*
Myanmar	Relief And Resettlement Department (RRD), Ministry of Social Welfare, Relief and Resettlement	**Department of Meteorology and Hydrology (DMH), Ministry of Transport and Communication (MOTC)**	**DMH, MOTC;** *Irrigation and Water Utilization Management Department (IWUMD), Ministry of Agriculture, Livestock and Irrigation (MOALI)*	**Directorate of Water Resources and Improvement of River Systems (DWIR), MOTC;** *IWUMD, MOALI*	**DWIR, MOTC;** *IWUMD, MOALI*	Forestry Department, Ministry of Natural Resources and Environmental Conservation (MONREC)	State Government	Ministry of Construction (MOC)	Environment Conservation Department (ECD), MONREC
Philippines	National Disaster Risk Reduction and Management Council (NDRRMC), Office of Civil Defense (OCD)	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)	*Flood Control Management Cluster (FCMC), Department of Public Works and Highways (DPWH)*	*DCMC, DPWH;* National Irrigation Administration (NIA)	**National Water Resources Board (NWRB) & River Basin Control Office (RBCO), DENR;** NIA	Department of Agriculture (DOA); **Forest Management Bureau (FMB), DENR**	**Land Management Bureau (LMB), DENR;** Housing and Land Use Regulatory Board (HLURB); LGUs	DPWH; **Mines and Geoscience Bureau (MGB), DENR**	Climate Change Commission (CCC)

添付資料 7

Country	Disaster risk management (ACDM Focal Point)	Meteorological data management	River management		River basin management			Slope management	Climate change adaptation
			Hydrological data management	Planning, designing and management of structures	Water resources management	Forestry, coastal and watershed management	Land-use management		
Singapore	Singapore Civil Defence Force (SCDF)	Meteorological Service Singapore (MSS)	*Public Utilities Board (PUB), Ministry of the Environment and Water Resources (MEWR)*	*PUB;* **Building and Construction Authority (BCA), Ministry of National Development (MND)**	*PUB*	*PUB;* **BCA; National Parks Board (NParks), MND**	**BCA, Housing & Development Board (HDB), Urban Redevelopment Authority (URA), MND**	**BCA**	*Resilience Working Group, MEWR;* **MND**
Thailand	Department of Disaster Prevention and Mitigation (DDPM), Ministry of Interior	Thai Meteorological Department (TMD), Ministry of Information and Communication Technology	**Department of Water Resources (DWR), Ministry of Natural Resources and Environment (MONRE);** *Royal Irrigation Department (RID)*			Royal Forest Department (RFD); **Department of Marine Coastal Resources (DPCR), MONRE**	Provincial Government	**Department of Mineral Resources (DMR), MONRE**	**Office of Natural Resources and Environmental Policy and Planning (ONEP), MONRE**
Vietnam	*General Department of Natural Disaster Prevention And Control (GDNDPC), Ministry of Agriculture and Rural Development (MARD)*	**National Hydro-Meteorological Service (NHMS), Ministry of Natural Resources and Environment (MONRE)**		*Directorate of Water Resources (DWR), MARD;* Inland Waterways Administration (IWA), Ministry of Transport (MOT)	**Department of Water Resources Management (DWRM), MONRE;** DWR	*VN Forest Administration Office (VN Forest), MARD*	**Department of Land Administration (DLA), MONRE**	MOT	**Department of Meteorology, Hydrology and Climate Change (DMHCC)、MONRE**

添付資料８：災害リスク管理及び気候変動に関する戦略及び政策比較表

添付資料８： 災害リスク管理及び気候変動に関する戦略及び政策比較表

国	国家開発計画	災害リスク管理戦略及び政策	気候変動戦略及び政策
ブルネイ	ブルネイ国の長期ビジョン、すなわちワワサン（国家戦略）ブルネイ 2035 は、気候変動軽減及び適応を含むセクター横断的な環境課題を解決するための法的枠組みの必要性を強調している。さらに、同国の 2012-2017 第 10 次国家計画（RKN2012-2017）は、災害リスク削減及び気候変動適応の概念を含む高品質かつ持続可能なインフラ開発の必要性を強調している。しかしながら、第 10 次国家計画においては、災害リスク削減及び気候変動適応の統合についての記述はない。	ブルネイ国は災害リスク削減のための戦略的国家行動計画（SNAP）2012-2025を策定した。SNAPはブルネイ国の災害回復性のある国家及びコミュニティを構築するプロジェクト、プログラム及び活動を実施するためのすべてのステークホルダーによるコミットメント文書である。また、SNAPは災害リスクを確認し、災害に対する脆弱性を減少させるための能力の強化によって災害を減少させるロードマップである。同ロードマップは重要な現在進行中のイニシャティブを明確にするとともに、国民を保護するために現状とのギャップを確認する。	省庁を横断する総合的な気候変動適応戦略は存在しないものの、セクターごとの個別気候変動政策は策定されている。個別政策において、気候変動適応がある程度セクター別政策に反映されている一方、災害リスク削減及び気候変動適応の統合は達成されていない。 エネルギー・セクターはブルネイのGDPの60パーセント以上を占めるため、経済の主要な部門である。ブルネイ経済を持続的成長路線に乗せるため、ブルネイ政府は、エネルギー安全保障、エネルギー供給の多角化、エネルギー効率化及び保全などの関連の戦略の実施の必要性を認識した。
カンボジア	カンボジア国は近年、気候変動対応を実施するための政策を飛躍的に前進させた。カンボジアの総合的な開発計画である国家戦略開発計画（NSDP:2014-2018）はカンボジア気候変動戦略計画 （CCCSP:2014-2023）の実施の重要性を強調している。また、NSDP は気候変動対策アクションの結果をモニターするための指標を含んでいる。NSDP はそれぞれのセクターの戦略的及び運営上のプログラムを含んでおり、それにより、自然資源及び環境管理の戦略的方向、及び気候変動適応及び自然災害により引き起こされるリスクの軽減のための能力開発戦略を明確化している。	カンボジア政府は明確な政策優先順位を含む災害リスク削減の戦略国家行動計画（SNAP-DRR 2008-2013）を2009年3月に発表した。その後、災害リスク削減国家行動計画（NAP-DRR 2014-2018）が2015年1月6日に更新され、発布された。カンボジア政府はすべての関連機関の参加を得て、NAPDRR（2014-2018）を実施している。災害管理の戦略的目標を達成するために、災害管理国家計画（NCDM）は、以下のプログラムを実行している。 ● すべてのレベルで災害リスク削減を政策、計画及び持続的開発プログラムに主流化することを継続すること（災害防止、リスク削減、災害準備、及び特に女性・子供に配慮した災害・脆弱性軽減に主に焦点が当てられている） ● 法的枠組み、法的文書、標準業務手続き書、及び政策ガイドラインを強化すること、及び地方レベ	カンボジア気候変動戦略計画 （CCCSP:2014-2023）において、各関連省庁はセクターごとのそれぞれの気候変動戦略計画及び行動計画を策定した。これらの計画の内容はすべてCCCSPに準じており、気候変動関連のすべての主要セクターをカバーしている。カンボジア政府は、主にCCCSP 2014-2023の実施を通して「各国が自主的に決定する約束草案（INDC）の最初の伝達の支援を意図している。CCCSPの主要な戦略目標は以下のとおりである。 ● 食料・水・エネルギー安全保障の改善を通して気候変動回復力を推進すること ● 気候変動のインパクトに対するセクター別、地域別の脆弱性及び健康リスクを削減すること ● 重要な生態系システム、生物多様性、保護地域及び文化遺産サイトの気候変動回復力を確保すること

		ルを地域・地球レベルに連結することによって、実際の必要性に従ったメカニズムを強化すること ● 災害リスク削減、気候変動適応及び災害回復力に関する特にコミュニティ・レベルでの国家及び地方の政府職員の能力を強化すること ● 災害リスク削減を、災害対応の準備及び実施、緊急対応及び災害損失を極小化するための復旧計画に統合すること	● 持続的開発を支援するための低炭素計画及び技術を推進すること ● 気候変動対応のための能力、知識及び意識を向上すること ● 気候変動による損失及び損害を減少させるための適応的な社会保護及び参加型のアプローチを推進すること ● 国家気候変動対応のための制度及び調整的枠組みを強化すること ● 地域的及び地球的な気候変動プロセスへの協力及び積極的な参加を強化すること
インドネシア	インドネシア政府は長期国家戦略開発計画（RPJPN 2005-2025）を策定しており、それにより国家開発の4つの支柱（貧困撲滅、成長指向、終業機会創出及び環境保全）を打ち出している。同長期開発計画は、それぞれ5ヵ年のタイムフレームを持つ中期開発計画（RPJMN）の4つの段階に分かれている。 現在、第 3 の RPJMN（2015-2019）は、その他の国家優先目標の間で、グリーン経済を明確に組み込もうと実施されている。また、同第3RPJMN は、セクター別プログラム及び自然資源・環境を横断する持続的開発政策及び気候変動問題を主流化に取り組みつつ、経済競争力を協調したすべての分野のための総合的な開発の統合を目指している。	インドネシア政府は国家災害管理計画（RENAS PB：2015-2019）を発効している。現在のRENAS PBは、政策、戦略及びプログラムの優先順位を包括し、2015年から2019年の期間の災害管理及び災害リスク削減に焦点を当てている。RENAS PBのテーマは、災害リスク管理、統治及びリスク確認・評価を含んでいる。同計画の文書は以下を目的としている。 ● プログラム活動、優先順位及び資金手当てに焦点を当てつつ、国家にとっての災害リスクを確認すること ● 計画され、統合され、調整されかつ包括的な方式での災害管理を可能にする関連省庁、政府機関及びその他ステークホルダーのための参照情報を提供すること	気候変動における負のインパクトに対応する必要性を認識し、インドネシア政府は「気候変動国家行動計画（RAN-API）」を2014年に発表した。同行動計画は、短期（2013-2014）の優先セクター及びセクター間にまたがる適応策の行動計画、気候変動適応計画の国家中期開発計画（RPJMN：2015-2019）における主流化、及び長期気候変動適応計画の政策方向性から構成されている。 RAN-APIは、特に脆弱な人びとのために経済回復力を構築すること、気候変動回復力のある生計を開発すること、生態系サービスの持続性を維持すること、及びインフラを強化することを目指している。 また、RAN-APIは、気候変動適応を国家開発計画に主流化するための戦略をベースに策定されており、地方の専門家の委員会から得られる科学的知識によって構築されている。同計画は、気候変動適応をどのように開発政策に統合可能か、及びモニタリング・評価がどのように開始可能かについての記述を含んでいる。

			RAN-API事務局の主な責務は、各省の政策、行動計画及び地方政府の開発計画において気候変動適応を主流化するとともに、その進展をモニターすることにある。各省にとっては、BAPPENASはRAN-API事務局が属する調整機関であり、また各地方自治政府にとっては、RAN-API事務局は5ヵ年開発計画の内容に影響を与えるために内務省と密接に業務に従事している。
ラオス	気候変動関連の政策は、災害リスク削減、気候変動適応及び気候変動軽減に関する一連の活動を政策に統合するためのガイドラインを設定することによって、第8次国家社会経済開発5ヵ年計画（NESDP：2016-2020）において整理されている。 第8次国家社会経済開発計画は2025年までの社会経済開発国家戦略及び2030年までの長期ビジョンを実施するための手段である一方、第8次NESDPにおける気候変動戦略2025は自然資源及び環境の管理のための戦略的方向性、及び自然災害によって引き起こされる気候変動リスク適応及び軽減について明確化している。 気候変動及び自然災害は、第8次NESDPの成果3において言及されている。同成果3は、気候変動・災害リスク削減・温室効果ガスの軽減を統合する作業のためのガイドラインの策定、及び農業・森林・公共事業・運輸セクターの戦略的及び運営計画を含んでいる。	国家災害防止制御委員会（NDPCC）及び労働社会厚生省（MLSW）は、ラオス国災害リスク管理戦略計画2020及び付随する行動計画を採用し、災害管理における経験及び教訓を評価した。同戦略計画はそれぞれ2005年まで（短期）、2010年まで（中期）及び2020年まで（長期）の災害管理目標の概要を明確にしている。同戦略計画は、自然災害による被害の低減、災害後の救援及び対応から災害前の軽減及び防止への転換、及び自然災害に対応したコミュニティの能力開発を特に目標としており、さらに以下を支援することを目的としている。 ● 開発を保護し、コミュニティ、社会及び国家経済に対する自然及び人的災害による損害を削減すること ● 災害がコミュニティ、社会及び国家経済への影響を受けた後の復旧及び対応から、災害前の災害軽減及び準備に戦略を転換すること ● コミュニティの能力開発によって災害に対処するためにひとつの政府機関の責任から人びとを中心とした責任に転換すること	気候変動国家戦略（NCCS2010）は、気候変動軽減及び適応オプションのための主要な戦略的優先分野、並びに農業、食料安全保障、森林、土地利用、水資源、エネルギー、運輸、産業、都市開発及び公衆衛生といったセクター別気候変動軽減及び適応オプションを明確する中核となる政策文書である。NCCS2010において設定された包括的な戦略に加えて、気候変動行動計画2013-2020はNCCS2010と同様のセクターにおける気候変動軽減及び適応の行動を規定している。 NSCC2010のビジョン及び目標に向けて取り組み、すべてのセクターのための気候変動行動計画を実施するために、予想される気候変動の現在の理解の下、国家の気候変動適応優先順位が明確にされた。 国家社会経済開発計画の下の投資計画において災害リスク削減を主流化するために、「ラオス国の都市マスタープラン策定のための方法論における災害リスク削減の主流化」及び「ラオス国の公共投資計画における災害リスク削減の主流化イドライン」が2012年に策定された。これらの文書は、災害管理のための戦略計画の操作運用プロジェクト （OSPDM）の

		● 包括的な方式で災害リスク管理に取り組むために、環境保護及び森林・土地・水に関する自然資源管理を推進すること	「ラオス国の都市計画プロセスにおける災害リスク管理の主流化」のコンポーネントに基づいている。
マレーシア	第11次マレーシア計画（2016-2020）はマレーシアの将来構想を描く戦略計画であり、同計画は気候変動概念を政策、開発計画、評価及び実施に組み込むことにより、気候変動に対する回復力の開発に焦点を当てている。 気候変動インパクト及び自然災害に対する国家の回復力の強化とは別に、気候変動回復力開発は、経済成長を高レベルの資源消費及び環境悪化から切り離すことを必要としている。このことは、開発利益を保護し、水・食料・エネルギー安全保障を強化し、自然資源の持続性を確保し、生産性を向上し、技術革新を加速し、及び厚生・生活の質の改善を図る。 第11次マレーシア計画（2016-2020）における戦略 D3 は、気候変動適応の向上、国家気候変動適応計画の策定、気候変動に対する回復力のあるインフラの構築、自然緩衝力の強化、及び農業セクターの自然回復力の増進のコンポーネントを含んでいる。	2013年に、政府機関から民間部門にわたるまで多様なステークホルダーを含む災害リスク削減国家綱領（NPDRR 2013）が策定された。第11次マレーシア計画（2016-2020）は5つのフェーズ（防止、軽減、準備、対応及び復旧）を横断する災害リスク管理の強化に焦点を当てている。下記の戦略がこれらの目標を達成するために設定された。 ● 戦略D1: 災害リスク管理政策及び制度的枠組みを立案すること、災害防止及び対応能力を改善すること、開発計画の災害リスク管理を組み込むこと、及びコミュニティの意識を創出することにより災害リスク管理を強化する。 ● 戦略D2：洪水軽減プロジェクトへの新規投資を創出すること、長期計画を改善すること、洪水予警報システムを強化することにより洪水軽減を改善する。 ● 戦略D3：国家気候変動適応計画を策定すること、及びインフラ及び水セクター・農業セクター・健康被害への意識向上を含む回復力を強化することにより気候変動適応を向上する。	2010年に、マレーシア国は資源の効率的管理及び改善された環境保全を通して気候変動を主流化するための種々の活動の枠組みを提供するための「気候変動に関する国家政策」を発表した。同政策は、気候変動による負の影響を削減させるための機会を改善するための制度的及び実施能力の強化を目的としている。同政策はまた、持続的開発、調整された実施体制、効果的な参加、及び共通しているものの差別化された責任分担の原則に立脚している。
ミャンマー	ミャンマーは、気候変動を解決するために必要な政策及びプログラムを計画し実施することに活発に取り組んでいる。ミャンマー政府は 20 ヵ年国家総合開発計画（2010-2030）の 7 つの戦略的支柱を含む環境政策を策定した。同開発計画では、戦略的政策の枠組み及び行	2012年に、ミャンマー災害リスク削減行動計画（MAPDRR）が災害リスク問題の解決のために、ミャンマー政府により策定された。MAPDRRは、i） 政策及び制度整備、ii）危険性・脆弱性・リスク評価、iii）多角的危険早期警戒システム、iv）国家レベル及び地域レベルでの防災準備及び対応計画、v） 防災リスク	ミャンマー気候変動戦略及び行動計画（MCCSAP 2016-2030）は、2030年までの気候変動関連のリスクを解決するためのミャンマーの戦略的対応のための展望及びロードマップの概要を明確にしている。これにより、各コミュニティ及びセクターの気候変動適応能力の構築のための主要な開発セクターにおける優

	動計画を伴う国家環境政策の形成のためには、2030 年までの気候変動軽減及び気候変動適応政策を含むいくつかのセクター別の環境政策に取り組む必要性があると記載されている。これらのセクター別の環境政策には、生物多様性、水資源、地球資源、海洋資源、エネルギー・電力、気候変動・災害リスク削減、大気質、土地利用・空間計画、廃棄物管理、食料安全保障・消費者保護、及び動物保護を含む。同開発計画においては、回復力強化、リスク評価及び気候変動軽減戦略を含む気候変動対応力のある開発が、持続的開発を目指す環境保護及び自然資源管理に一致している。 同開発計画においては、後続の戦略的政策枠組み・行動計画、及びその他の社会経済開発計画における国家環境政策の採択が、これからの数十年にわたってミャンマーにおいて重要であり続けるセクターを横断するいくつかの政策課題の解決を必要としている。それらの課題には、気候変動及び災害リスク削減が含まれる。	削減の開発計画への主流化、vi）コミュニティ・ベースの災害準備及びリスク削減、及びvii） 公共意識、教育及びトレーニングの7つのコンポーネントから構成されている。 MAPDRRは頻発する災害に関連するリスクを削減するための同国の行動計画を規定している。ミャンマー気候変動戦略及び行動計画（MCCSAP）は、MAPDRRと密接に関係づけられるべきであり、気候変動面を強化することによりMAPDRRの実施に貢献する必要がある。 ミャンマー災害リスク削減行動計画（MAPDRR2017）は、2017年10月9日に発布された。MAPDRR2017は、2030年までに災害回復力を構築するための長期ビジョンを提示した。地域及びセクターの優先順位を確認することに関連した一連のコンサルテーションが実施されてきた結果、2016年から2020年までに実施されるべき32の優先行動計画が提示された。MAPDRR2017は自然災害だけではなく、災害管理よりも災害リスクに焦点を当てつつ、人的事故もカバーしている。	先行動計画が確認された。MCCSAPは気候変動に伴う課題及び機会に対応するための国及び地方レベルの意思決定において、主要なステークホルダーを支援することを目的としている。 MCCSAPの実施はミャンマーの総合開発計画及び持続的開発戦略を支援しており、国家計画・政策、国家気候変動適応行動プログラム（NAPA）、各国が自主的に決定する約束草案（INDC）、グリーン成長戦略、及び森林減少・劣化からの温室効果ガス排出削減+（REDD+）のロードマップに準拠している。
フィリピン	フィリピンの国家経済開発庁（NEDA）はフィリピン開発計画 2017-2022（PDP2017-2022）を策定した。PDP2017-2022 は長期ビジョンに連結した最初の中期開発計画である。同開発計画は 25 年の国家長期ビジョンである AmBisyon Natin2040 を達成するための 4 つの 6 ヵ年計画の最初の計画である。PDP2017-2022 は主要な横断的問題として災害リスク削減及び気候変動適応を位置付けた。この点は、個人及び世帯の脆弱性を削減することに関して主に第 11 章において記述されている。同開発計画は気	フィリピン災害リスク削減戦略的国家行動計画（SNAP：2009-2019）は、フィリピンの当該10年の期間の災害リスク削減のビジョン及び戦略目標を達成するためのロードマップである。一方、国家災害リスク削減管理計画（NDRRMP：2011-2028）は、特に環境、農業、水資源、エネルギー、保健衛生、教育、貧困削減、土地利用、都市計画、公共インフラ及び住宅の各分野における災害リスク削減及び気候変動適応の主流化の重要性を強調している。NDRRMP2011-	フィリピンは気候変動インパクトに取り組むための方策を発展させてきた。気候変動国家戦略的枠組み（NSFCC）及び国家気候変動行動計画（NCCAP）の策定はフィリピン国の気候変動のための行動計画及びイニシャティブに対するガイドラインとして機能している。 NCCAPは2011年から2038年の間に、気候変動及適応及び適応のための課題の概要を明らかにしている。

	候変動及び災害に対する脆弱性、並びに国全体のリスク評価の公開を予想する。 災害リスク削減及び気候変動適応は、災害リスクの削減に貢献し、気候変動脆弱性に取り組むための多様な戦略を活用する広範囲の異なるセクター及びサブ・セクターにおいて統合されてきた。PDP2017 のパート 6（すべてを含んだ持続的な開発の基盤）は、以下戦略とともに創出される包括的な成長及び高信頼社会に対する基盤の戦略的枠組みをカバーしている災害リスク削減及び気候変動適応に関連した章を含んでいる。 ● 災害回復力対策の実施 ● インフラ施設の安全 ● 生態系の調和の枠組みの設定 ● クリーンかつ健全な環境の確保 ● 地方レベルでの軽減及び準備の推進 ● 対応実施能力の強化 ● 復旧及び復興努力の実施能力の強化 ● 災害リスク削減及び気候変動適応行動のモニタリング及び評価能力の強化	2028はまた、中央政府の能力強化に加えて、すべてのレベルでコミュニティの災害回復力を構築すること及び災害リスク削減のための措置を制度化するために地方自治政府の能力開発の強化を目的とした活動の概要を明確にしている。 SNAP-DRR 2009-2019に基づく災害管理に関する法的枠組みは、フィリピン災害リスク削減管理（DRRM）法（共和国法番号10121）、その2010年実施ルール及び規則、ならびに災害リスク管理計画（NDRRMP：2011-2028）である。 NDRRMP 2011-2028は持続的開発の国家的指導文書として機能している。同文書はコミュニティの気候変動適応能力の構築、脆弱なセクターの回復力の強化、及び災害軽減機会の適正化を目標としている。NDRRMPは長期目標を有する4つの優先分野、14の目標、24の成果、56のアウトプット及び93の活動項目を含んでおり、フィリピン開発計画の目標、国家気候変動計画及び兵庫行動枠組みとの組織的な関連が維持されている。	気候変動適応枠組みと一致して、NCCAPの究極の目標は「コミュニティにおける女性と子供の適応能力の構築をすること、気候変動に脆弱なセクター及び自然生態系システムの回復力を増加すること、及びジェンダー反応的かつ権利に基づいた持続的開発に向けた気候変動軽減を適正化すること」である。 気候変動適応及び軽減の2つの長期目標の枠内で、NCCAPは以下の7つの戦略的優先事項を追求している。 ● 食料安全保障 ● 水利用効率化 ● 生態系システム及び環境安定化 ● 人源の安全保障 ● 気候変動対応型産業及びサービス ● 持続的エネルギー ● 知識及び能力開発
シンガポール	2013 に、シンガポール政府は成長する人口に対応するための新しい開発計画「シンガポール 2030」を発表した。シンガポール 2030 は気候変動及び災害リスク削減に関連した国家全体の土地利用計画の一部である。	シンガポール民間防衛隊（SCDF）は緊急準備プログラム及び災害管理活動を策定している。SCDFの平時における役割は、消防・救助及び救急サービスのような緊急サービスを提供することである。加えて、SCDFはその運営能力及び準備能力を構築し維持するとともに、民間防衛活動における公共意識及び参加を向上する努力をしている。また、SCDFは消防及び民間防衛シェルター問題に関する規則を策定し成功する責任を有している。	2012年に、シンガポール政府は、同国の気候変動問題解決のための行動計画の概要を示す国家気候変動戦略（NCCS2012）を策定した。「気候変動及びシンガポール：課題、機会、及びパートナーシップ」のタイトルの文書は、シンガポール国の気候変動の主要な要素を含んでいる。これらの文書は異なるセクターを横断する温室効果ガスの削減、気候変動適応の能力開発、グリーン成長戦略の活用、及び気候変動活動のパートナーシップの形成を含んでいる。 一方、持続的シンガポール・ブループリント（SSB：2009）は次の20年の経済成長及び良好な居住環境を

		災害リスク削減の主なプログラム及び活動は、コミュニティ安全保障プログラム（CSSP）及びコミュニティ緊急準備プログラム（CEPP）を含んでいる。	達成するためのシンガポールの戦略及びイニシャティブを表明している。同ブループリントはシンガポールの温室効果ガス排出、及びエネルギー効率化・公共交通機関の推進のような気候変動軽減・適応措置に関連したターゲットを含んでいる。同ブループリントの第2版「シンガポール・ブループリント（2015）が2014年に発行された。 2016年に、シンガポールは同国の温室効果ガス排出削減及び気候変動適応の戦略を詳細に記述した2つの補完文書から構成される「気候行動計画：持続的将来のために今日から行動する」を発表した。
タイ	2016年10月1日付けで、第12次国家経済社会開発計画（NESDP）2017-2021の実施が始まり、2021年9月30日で終了する。国家経済社会開発委員会事務局（NESDB）は2017-2036年の20ヵ年国家戦略にしたがって策定されたと報告した。 20ヵ年国家戦略計画及び第12次国家経済社会開発計画（NESDP）は、6つの分野、6つの主要戦略及び4つの下部戦略を含んでいる。6つの分野は、安全保障、競争力向上、人的資源開発、社会的公平性、グリーン成長戦略、環境保護の再調整及び公共セクター開発を含んでいる。 6つの主要戦略は潜在人的資源の向上及び開発、社会的公正の格差及び社会的格差の軽減、経済の強化及び持続可能な競争力向上、持続的開発のためのグリーン成長戦略の推進、経済的繁栄及び持続性確保のための国家開発及び安定、公共セクター管理の効率化改	国家災害防止軽減計画（NDPMP）2010-2014は災害リスク及び生命・財産の損失の極小化に焦点を当てた主要な国家災害管理計画である。関連ガイドラインが災害前、災害中及び災害後の災害管理活動のために策定されている。NDPMPは災害管理サイクルのすべてのフェーズに係わる関係機関を横断する災害管理のオペレーション及び対応プロセスを強化することを意図している。災害準備、防止、対応、軽減及びリハビリテーションに係わる関係機関の能力開発は主な目的のひとつである。国家災害リスク管理計画（2015）は国家災害防止軽減計画2010-2014の後継の計画である。	気候変動適応は、第12次NESDP、気候変動国家戦略（2008-2012）、気候変動国家マスタープラン（2010-2019）、農業セクターのための気候変動戦略計画（2016-2020）などの国家政策枠組み、及び国家・セクター別計画において強調されている。気候変動適応のためのこれらの政策及び戦略の包括的な目標は、気候変動の負のインパクトに対する脆弱性への対応及び削減のための適応能力を開発することである。 気候変動国家戦略（NSCC：2008-2012）は2008年に閣議承認された。同国家戦略は気候変動のための国家的対応の枠組みを提供し、以下の6つの戦略の概要を明確化した。 ● 気候変動インパクトに対する脆弱性に適応及び削減するための能力を開発すること ● 持続的開発に基づいた温室効果ガス軽減活動を推進すること ● 気候変動、そのインパクト及び気候変動適応・軽減オプションをよりよく理解するための研究及び開発を支援すること ● 意識向上及び公共の参加を促進すること ● 関連人的資源及び制度を強化し、調整及び統合の枠組みを構築すること

	善、並びに適正な統治の推進を目指している。 第12次国家経済社会開発計画（NESDP）においては、災害リスク削減同様、気候変動軽減及び適応は、「持続的開発のためのグリーン成長の推進」戦略において強調されている。しかしながら、災害リスク削減及び気候変動適応の統合に関する明確な言及はない。		● 気候変動軽減及び持続的開発の共通目標を達成するための国際協力を支援すること 気候変動マスタープラン（CCMP：2015-2050）は、タイにおける気候変動及び軽減に関連する政策及び行動の統合された最も新しい枠組みである。CCMPにおける3つの主要アプローチは以下のとおりである。 ● 気候変動の結果に対する適応策 ● 温室効果ガス軽減及び低炭素開発 ● 気候変動の低減及び適応策の計画及び実施のための能力開発 同マスタープランは短期（2016年）、中期（2020年）及び長期（2050年以降）の3つの段階に分かれている。
ベトナム	第 10 次社会経済開発計画（SEDP）2016-2020においては、災害リスク削減及び気候変動適応は重要な優先分野とみなされている。SEDP2016-2020 を通して、ベトナム国政府は、関連規制、気候変動、災害リスク削減、自然資源管理、環境保全及び土地利用のための関連規則、政策及び調整を意図している。さらに具体的には、災害リスク削減政策が SEDP2016-2020 の成果 3 の結果 2 に記述されている一方、気候変動政策は成果 3 の結果 1 に記述されている。しかしながら、SEDP2016-2020においては、災害リスク削減及び気候変動適応の統合に関しては特に明示はない。	2007年に首相によって認可された「自然災害防止・対応・軽減国家戦略2020」が、ベトナム国の災害防止・対応・軽減、及び伝統的経験・業績・自然災害における持続的開発のための災害制御における世界的教訓をベースとした持続的開発のマイルストーンである。	2008年においては、気候変動対応国家目標計画（NTP-RCC）が発布され、すべてのセクター及び分野における気候変動に対応する活動の主流化を要求している。NTP-RCCは、短期及び長期における気候変動に対応する行動計画を設定している。 2011年においては、首相は、1)食料安全保障、エネルギー安全保障、水資源、貧困削減、ジェンダー平等、社会安全保障、公衆衛生、生活水準向上、及び自然資源保全、2)低炭素経済の達成、3)気候変動対応の生活及び消費様式を含む公共認識の向上、4)国際協力の推進の4つの具体的目的を設定した気候変動国家戦略（NCCS 2008-2025）を承認した。 気候変動国家戦略を実施するために、気候変動国家行動計画（2012-2020）が2012年に制定された。同行動計画は目的及び65のプログラム、プロジェクト、提案、実施のためのタイムライン、及び実施責任機関を明確にした。 首相によって2017年5月10日に政府決定番号622/QD-TTgに関連して発出された「持続的開発アジェンダ

			2030」実施のための国家行動計画は、115の目標から構成される2030年までのベトナムの持続的開発目標を規定している。同行動計画は、2015年9月に国連総会によって採択された「我々の世界を転換する：持続的開発アジェンダ2030」文書において入念に練られた地球規模の持続的開発目標に対応している。

添付資料９：災害リスク管理及び気候変動に関する法的枠組み構造比較表

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国	災害リスク管理	気候変動	森林管理	河川流域管理及び水資源管理	土地利用管理
ブルネイ	ブルネイ国における災害関連法の枠組みは、歴史的に多くの法律文書が存在し、多岐にわたっている。自然災害の防止、対応及び軽減に関する横断的な法律文書は存在しない。異なる自然災害への防止及び対応は異なる法律文書によって対処されている。 災害対策命令2006が災害対策の法的根拠になっている。国家災害評議会（NDC）及び国家災害対策センター（NDMC）の設立は災害対策命令2006に準拠している。当該国会災害対策センターは効果的な災害対策を確保するために、中心的かつ戦略的な政策機関として国家災害評議会（NDC）を支援している。	環境保護及び保全命令 2010 が、ブルネイ国の環境保全に関する中心的な法律及び規則として制定されている。 当該命令は環境の保護、管理並びに環境問題の民間及び公共の意思決定への統合に関して規定している。 ブルネイ国における災害関連法の枠組みは、歴史的に多くの法律文書が存在し、多岐にわたっている。自然災害の防止、対応及び軽減に関する横断的な法律文書は存在しない。異なる自然災害への防止及び対応は、下記の異なる法律文書によって対処されている。 ● 鉱業法・第 42 章（1984 年） ● 石油採掘法・第 44 章（2002 年） ● 電気法・第 71 章（2011 年） ● 土地規則・第 40 章（1984 年） ● 土地取得法・第 41 章（1984 年） ● 森林法・第 46 条（2013 年） ● ブルネイ環境影響評価ガイドライン	河口及び海岸地域における上流の森林及びマングローブ地帯の森林管理は、主要資源・観光省の森林局により実施されている。 森林法の第41条及び第42条は気候変動適応のために活用される環境的課金について規定している。	以下の水資源管理分野の政策及び法的枠組みが存在するものの、総合的河川管理及び河川流域管理計画は策定されていない。それらの計画は気候変動対応に関連した法的枠組みには組み込まれていない。 ● 水資源流域を汚染から保護するための土地法、町・郡部計画法、水法及び環境法の実施 ● 2035年の先に潜在的水資源を確認するための水資源調査	土地の所有及び利用に関する規制は「土地規則」によって規定されている。しかしながら、土地の取得は土地取得法によって別に規制されている。国家土地利用マスタープラン（2006-2025）は土地活用に関する計画を含んでいる。 町・郡部計画法は、都市及び農村地域の開発について規制している。下記のどの法律及び計画においても、災害中、復旧、あるいは復興の時期における土地利用あるいは都市開発に関する項目はない。 ● 土地規則（第40章） ● 土地取得法（第41章） ● 町・郡部計画法（第142章） ● 国家土地利用マスタープラン2006-2025
カンボジア	カンボジアにおいては、災害管理に係わる管理メカニズム、管理枠組み・ガバナンス、権利・義務、及び資源・資金を内容とする災害管理法が2015年に法制化された。同法においては、災害リスク管理をセクター別政策	カンボジア政府は、国家開発政策及び戦略によって規定される強力な指導に基づいて、気候変動概念を現在の法的枠組みに主流化する首尾一貫した段階を踏んできた。このように、国家戦略開発計画（NSDP）2014-2018 は、環境省に	農林水産省（MAFF）は特にコミュニティ森林管理を通して森林管理を担当している。一方、保護林は環境省の管轄下である。	2007年の水資源管理法に基づいて、水資源気象省（MOWRAM）が河川流域、及び表流水・地下水資源について責任を有している機関である。河川流域管理については、MOWRAM大臣により議長が担われている国家河川流域管	土地利用計画・都市化・建設法は1994年5月24日に国会により採択された。 同法はカンボジア国内の都市及び農村地域の組織強化及び整備を推進するとともに、カ

	に組み込むことによる災害リスク管理の主流化の必要性が明確に記述されている。しかしながら、同法には災害リスク管理及び気候変動適応の統合に関する概念は記述されていない。 その他の関連法律文書は、災害管理国家委員会（NCDM）設立に関する準法令番号35（1995年3月37日付）及び災害管理国家委員会（NCDM）設立に関する国王令番号NS/RKT/0202/040（2002年2月16日付）などである。	対して、制度的配置の更新、資金の準備、及びセクター間を横断する気候変動の主流化を含む気候変動の法的枠組みの整備を委託した。 カンボジアの気候変動対応のための現在の法律及び規制の枠組みは、以下を含んでいる。 ● 環境保護及び自然資源法（1996年） ● 公害防止準法令（2005年）、固形廃棄物管理準法令（1999年）、水質汚濁防止準法令及びその他関連法規 ● 環境アセスメント手順に関する準法令（1999年） 現在の気候変動に関する法律及び規制の枠組みは、気候変動の包括的な概念を含んでおらず、気候変動対応のための法的環境を向上するための気候変動に関する広範囲な環境規則の制定が必要とされている。	森林法（2002）はカンボジアにおける森林の管理、植林、利用、開発及び保全の枠組みを規定している。 同法のもとでは、政府は地方コミュニティのための森林生産物及び副生産物の習慣的な利用者権限を確保している。 森林法の第52条は、恒久森林保護地域内の商業目的のための森林生産物及び森林副生産物を伐採する個人あるいは法人は、森林行政組織を通して国家予算に対するロイヤリティ及び保険料掛け金を支払うべきであると規定している。	理委員会（NRBMC）が設置された。 河川管理及び河川流域管理に関する個別の法律及び政策は存在するものの、それらはカンボジアにおける気候変動対応に関連した法的枠組みに組み込まれていない。 水資源管理法のドラフトは、必要に応じて、河川流域をベースに管理される水資源のための条項を含んでいる。 同ドラフトの第5条は、「MOWRAMは、流域・支流域・地下水・帯水層内に、水利用者間の係争、水質汚染問題、あるいは流域の悪化などが発生しそうな場合、該当する流域・支流域・帯水層を「水資源法実施地域」として宣言すること」を規定している。 カンボジアにおける水資源管理に係わるその他の法律及び政策は、流域管理に関する国王令（1999）及び農林水産省による流域管理に関する準法令（2000）などがある。	ンボジアの開発を確実にするための以下の具体的活動を実施する目的を有している。 ● 公共・個人の利益・私的権利を確保すること、並びに建設関連の法律・規則の適応及び監視をすること ● 地理的条件及び特性に立脚して、開発プロセスを通した都市・町・村落間の均衡を確保すること ● 経済及び環境セクターの開発及び環境の質の維持を確保しつつ、自然資源及び文化的財産を確保すること
インドネシア	災害管理に関する法律（法律番号24：2007）はインドネシアにおける災害管理の法的根拠として法制化された。同法は国家及び地方政府の責任範囲、コミュニティの権利及び責任、並びに災害管理の段階及び必要事項を規定する総合的な災害管理法として認識されている。同法にお	インドネシアにおける環境保護は、環境管理及び保護に関する法律（法律番号32番：環境法2009）により基本的に規定されている。温室効果削減のための国家活動計画に関する大統領規則が2011年に発布され、農業、エネルギー、運輸、森林、産業及び廃棄物管理などの各分野における温室効果の直	環境森林省（MOEF）の森林管理局は上流域の森林及び海岸地域におけるマングローブ林のための森林管理（保全及び再植林）を担当している。 インドネシアの森林法が2000年に発効され、インドネシア	公共事業省（PU）の水資源総局（DGWR）は国家レベルでの河川流域管理（RBM）に責任を負っている。 インドネシアの「統合的水資源管理（IWRM）」は、水法番号7	インドネシアにおける空間計画は、空間計画法（法律番号24番：1992年）の通過により、最初に法的根拠を得た。同法は、地方分権、都市化及びその他の要因（法律番号26番：2007年）と整合性がとれ

	いては、災害前、緊急対応及び災害後といった災害管理の段階が、それぞれの災害管理の段階における責任範囲とともに記述されている。 しかしながら、同法は現在見直しの最中である。災害管理に関する法律（法律番号24：2007）が一旦制定されると、同法は災害管理実施のガイドラインとしての政府規則及び大統領規則に落とし込まれる。同法はその他の現行法を参照して見直されることになっている。例えば、災害管理は地方政府により実施されるべき義務的な問題であると規定している地方自治に関する新しい法律（法律番号23：2014）をインドネシア政府は制定した。地方自治に関する法律は、中央政府及び地方政府の役割及び権限を規定している。	接的あるいは間接的な種々の活動を明確にした。 災害リスク削減及び気候変動適応のための現在の法的枠組みとは別に、災害リスク削減及び気候変動適応のための対策は、公共事業住宅省の「気候変動軽減・適応及び災害リスク削減のための国家行動計画 2017-2030 についての省規則のドラフト」、及び「20 ヵ年の統合的公共事業住宅省のためのマスタープランのドラフト」の内容がすでに準備されている。 国家気候変動適応行動計画（RAN-API）自体は正式な法的根拠はないものの、同計画は政府の年間開発計画及び国家中期開発計画への重要な投入項目である。温室効果ガス国家行動計画（RAN GRK）のための大統領令とは違い、RAN-API のための特別な法的根拠はない。しかしながら、RAN-API は国家中期開発計画（RPJMN）の実施を直接的に支援しており、実質的な法的根拠とみなされている。	における森林管理の法的根拠となった。 森林法番号41番（1999年）は、主に森林保全ではなく森林伐採管理に焦点を当てていた森林基本法番号5番の後継法である。 森林大臣規則（番号P.18/Menhut-II/2007）、森林資源供給のための伐採及び支払いの技術ガイドライン、再植林基金は、森林環境サービスのための支払い条項を規定している。	（2004）及びその後の関連規則に立脚している。 行政改革によって引き起こされたIWRMの原則及びプロセスを実施するための最も重要なマイルストーンは水法番号7（2004年）の法制化である。地方及び中央政府により発出された規則、ガイドライン及び短期・長期計画のように、水法によって記述されているIWRMの実施のために努力が試みられている。	るように、2007年に修正された。 法律番号32番は地区政府に対して、県政府及び中央政府とともに地区政府の土地利用計画を調整することを求めている。また、2008年の 政府規則番号26は、各地区によって定められた土地利用決定を覆す権限を県知事及び国家の大臣に与えている。
ラオス	1999年に、首相令第158番が発出され、同令はラオス国における災害リスク管理に関する政策推進のための基礎を提供している。これにより、災害リスク管理の政策形成に責任を持つ国家災害管理委員会（NDMC）の法的根拠が与えられた。続いて発布された国家災害管理局（NDMO）の設立に関する首相令第220番は首相令第158番に取って代わった。 これに加えて、2013年6月19日付の首相令第169番は、災害被	1999年に、持続的社会経済開発、生物多様性の維持、及び汚染対策に焦点を当てた一般的な環境法制である環境保護法が制定された。環境保護法とは別に、大気保全、エネルギー、農業・森林及び水資源などの気候変動関連の多角的な法律が存在する。 新しい気候変動法及び災害管理法がドラフトされ、これらはそれぞれ法制化の途中である。両方の法律は2019年までに正式に法制化されると予定されている。元々、気候変動法及び災害管理法は、ラオ	農業森林省（MAF）は森林管理を担当している。 森林環境サービスのような環境的課金は、気候変動対応に関連した法的枠組みに組み込まれている。 森林法の第37条は森林及び森林資源の効果的な保全及び開発を確保するための森林基金の財政資源について規定している。 国家は森林及び森林資源開発ファンドを設立した。同ファ	自然資源環境省（MONRE）の水資源局（DWR）が現在整備中の総合的な河川流域管理（RBM）の実施責任を負っている。 河川管理及び河川流域管理に関する下記の法的枠組みは、気候変動対応に関連している。 ● 水及び水資源法（1996）は水資源セクターにおける開発の法的枠組みを提供している。同法は、同法に係わる多くの問題、特に水資源分配及び水利用者のライセンス手続きのような具体的	すべての土地は全体として国に所有権が属しており、政府により管理されている。 土地権利は主に、2003年土地法により統治されている。同土地法の下では、すべての土地は究極的には国家共同体によって所有されているものの、法により国家が土地を保護し、用役権を行使し、譲渡し及び相続権を行使することによって、長期的使用を保護することを義務づけている。

	害者のための社会厚生に関する政策の実施についての原則、規則及び対策を規定している。	ス国における新しい「気候変動及び災害管理法」としての災害リスク削減及び気候変動の総合的法律的枠組みに統合することが意図された。しかしながら、これらの2つの法律案の統合は、最近の政府組織の再構築により断念された。	ンドは、国家予算配分、自然資源活用プロジェクト、並びに個人・団体・共同体・地方及び国際機関の社会的組織などから財政資源を得ている。 森林法の第38条（2007年）は森林基金の管理及び活用を規定する一方、森林及び森林資源開発の管理は、国家予算法に従っている。	な活動に従事している機関の役割及び責任に焦点を当てている。 ● 水資源調整委員会（WRCC）の1999年命令がWRCC活動の権限及び義務を定義している。 「水及び水資源法施行のための2001年準法令」は、国家及び流域レベルにおける水資源計画及び管理の構造を定義している。同準法令は、WRCCが水及び水資源の計画・管理・活用・保護のために必要な戦略・行動計画・プログラム・規制をドラフトする際に関連省庁の調整を図ることに責任を持っていると規定している。	国家は歴史的に習慣的な土地権利を認めていない一方、最近の法的変更、特に「土地法の実施に関する準法令（準法令番号88/PM）」及び「土地登録・及び権利のための土地利用及び占有に関する裁定の省令（省令番号564/NLMA 2007）は慣習的な土地権利を可能にした。
マレーシア	1997年に交付された国家安全保障評議会（NSC）訓令番号20（国家災害救援管理政策及びメカニズム）は、マレーシアにおける災害管理の主要なガイドラインを設定しつつ、統合緊急管理システムの下での関連機関の責任分担及び機能を含む災害管理に関するメカニズムを規定している。 同時に、訓令番号20は災害管理のための効果的な調整及び資源の動員を確保するための管理メカニズムを規定している。土地保全法、国家環境品質法（1974）、地方政府法（1976年）、及び道路・排水・建設法もまた、災害管理に言及している。	国家環境品質法 1974 はマレーシアにおける環境管理の法的根拠となっている一方、自然資源環境省の環境管理・気候変動局（PASPI）が国家環境政策及び国家気候変動政策のような環境及び気候変動に関する政策立案及び実施に責任を担っている。 マレーシアにおける気候変動に関連した法律及び規則は、再生エネルギー法（2011年）、持続的エネルギー開発庁法（2011年）、マレーシア・バイオ燃料産業法（2007年）及び電力供給法（1993年）などの多くの個別の法律文書に分散している。	自然資源環境省のマレー半島森林局（JPSM）、サバ州森林局及びサラワク州森林局は、海岸地域における上流域の森林及びマングローブ林のための植林及び再植林による保全を含む森林管理の責任を持つ組織である。 森林環境サービスに対する支払いなどの環境課金システムは、気候変動対応に関連する財政的枠組みに組み込まれている。 国家森林法（1984年）は気候変動適応に寄与する自然林の保護のための基金を創出する森林開発料金を規定している。	自然資源環境省（NRE）の灌漑排水局（DID）は、同国の河川流域管理（RBM）の推進を担っているとともに、河川及び緩衝地帯における河川関連の構造物を建設のための許可を与える観点から河川水路の全体管理についても責任を負っている。 しかしながら、河川管理及び河川流域管理は気候変動対応に関連した法的枠組みに十分に組み込まれていない。 連邦政府の憲法は、水管理は国家の管轄であり、水管理には河川、湖沼、水路及び地下水が含まれることを明確に規定している。しかしながら、このことは憲法の国家的リストだけに適用されるものではない。連邦政府は、水力発電、港湾・海洋漁業・坑道内の水路のような各州におけるいくつかの水ベースの	マレーシア半島部における土地行政は、土地保有・登録、所有権移転、リース、地代、地役権、及び土地の譲渡・開発などのその他の権利のすべての面において、包括的な法制化を提供するために策定された国家土地規則1965（法律番号56）によって規定されている。 サラワク州では、マレーシア政府の計画資源管理省の土地・測量局長によって長が努められている土地・測量局によって、土地行政が実施されている。サラワク州は土地登記制度を運営しており、同州の土地法は国家土地規則第81章によって統治されている。

				プロジェクトに対する権限を有する。 加えて、排水及び灌漑は同じリストにおいて規定されており、連邦及び州政府の管轄下に置かれている。 分散された法律及び制度、並びに適切に定義された法的管轄の欠如は持続的な資源開発及び管理の明らかな障害になっている。 河川流域内の活動の統合及び調整を可能にする河川流域機関（RBA）のような組織の明確な必要性が存在する。この必要性を達成するための努力が、河川管理のための統合的河川流域管理（IRBM）を適用する最新の水関連の法律が通過したことに伴い、セランゴール州によってすでに開始されている。	一方、サバ州では、土地行政の組織構造はサラワク州とほぼ同様であり、 すなわち、自然資源次官事務所を通した首相局の協力の下、土地・測量局により土地行政が実施されている。サバ州の土地政策の現在の枠組みは、サバ州土地布告第68章によって、その根拠が与えられている。
ミャンマー	ミャンマーにおいては、自然災害管理法が2013年に制定された。兵庫行動枠組み（2005年-2015年）に即して起草され、ASEAN防災緊急対応協定に対応している。 同法は気候変動適応の概念は含んでおらず、災害リスク情報、災害準備、認識向上、早期警戒及び早期警戒システムのためのデータ管理、並びに以下の目的に焦点を当てている。 ● 災害リスクを削減するために、体系的にかつ迅速に自然災害管理プログラムを実施すること	2012 年に環境保護法が制定されたが、同法の主な目的は、持続的な開発プロセスにおける環境保全の問題を総合的に統合するための基本的原則を明らかにし、ガイダンスを与えることである。さらに、同法は環境保全委員会の設置及び環境保全活動のための環境管理ファンドの設立を可能とした。同時に、同法は気候変動軽減及び適応に関するガイダンスを設定することがそのひとつである自然資源環境保護省（MONREC）のいくつかの義務及び権限を明確にした。環境保護法に対応して、気候変動インパクトを含む環境条件をモニターするための環境品質ガイドラインが 2015 年に策定された。	自然資源環境保護省（MONREC）の森林局は、上流域の植林及び再植林、並びに海岸地域におけるマングローブ林の保全に責任を持つ機関である。 1992年森林法は、森林保全イニシャティブ、森林保護、及び社会経済便益を支援するとともに、森林管理における民間及びコミュニティの参加を促進している。 しかしながら、ミャンマーにおいては、生態系サービスへの支払い（PES）のための明確な法的枠組みは存在しない。	河川流域管理（RBM）の方向性は打ち出されているものの、RBMの担当機関については明確に定められていない。運輸通信省（MOTC）の水資源河川システム改善省（DWIR）は主要河川に関する主な責任を有している。 河川管理及び河川流域管理は気候変動対応に関連する法律的枠組みに十分組み込まれていない。 水資源河川保全法は、以下の政策目標を目的としている、 ● 公共により受益者の活用のための水資源及び河川システムを保全及び保護すること	農地法は国家がすべての土地の究極的な所有者であり、農地の販売、交換、相続、寄付、リース及び担保権設定などを含む民間による利用権を認めている。同法は土地利用権に関する土地権利証の登録システムを構築している。 同法は1963年の借地農家法及び1963年小作人権利法に取って代わり、1953年土地国有化法、借地権廃棄法及び農業主権利保護法を廃止したものである。 同法は、農民が農地利用権を保持する条件、国家がそのような権利を無効にする権限、土地関連の争いを解決するプ

	● 自然災害リスク管理プログラムを体系的かつ迅速に実施するために、国家委員会及び地方組織を設置すること ● 自然災害管理活動を実行するに際して、国家政府機関、国際機関、社会的機関、その他の非政府組織あるいは国際組織、及び地域組織間の調整を図ること ● 自然災害により影響を受けた環境の保全及び復元を実施すること ● 災害犠牲者によりよい生活環境をもたらすために、健康・教育・社会・生活プログラムを提供すること 同法により、詳細な役割及び権限を伴う国家災害管理委員会（NDMC）の設置を可能とした。	環境保護法のより具体的な目的は以下のとおりである。 ● ミャンマー国家環境政策の実施を可能にすること ● 持続的開発プロセスにおける環境保全問題の系統的な統合のための基本原則及びガイダンスを提示すること ● 健康で清潔な環境の構築を可能にすること ● 現在と将来の世代の利益のために自然及び文化遺産の保全を可能にすること ● 自然資源の減少及び損失ため、及び有益に持続的活用を図るための管理及び実施を可能にすること ● 環境意識の普及のための教育計画における公共意識及び協力の推進の実施を可能にすること ● 環境保全問題における国際的、地域的及び 2 国間の協力の推進を可能にすること さらに、同法は環境保全委員会の設立及び環境保全活動の環境管理基金の設置を可能にしている。		● 河川及び水路の円滑かつ安全な水路航行を確保すること ● 水資源及び河川システムの改善を通して国家経済の発展に資すること 堤防法は堤防への損害及び侵入、あるいは事前の許可なく堤防を建設し維持することを禁じている。	ロセス、及び政府が公共目的のために土地を取得する場合の補償に対する基本条件などの種々の側面をカバーしている。
フィリピン	2009 年 7 月、フィリピン政府は共和国法（RA）番号 10121、すなわちフィリピン災害リスク削減管理法（2010 年）を法制化した。共和国法番号 10121 は、災害リスク削減の強化、国家災害リスク削減のための枠組みの提供、及び国家災害リスク削減及び災害管理計画の制度化をそれぞれ法的に規定しているものである。	2009年においては、気候変動法2009（共和国法番号9729）が法制化され、気候変動を解決するための行動計画を調整するとともに評価するための政府の政策策定機関としての責任を担う気候変動コミッション（CCC）の設立のための法的根拠を与えた。同法は政府のすべての部局による政策形成及び実施の種々のフェーズにおいて、気候変動を主流化することを目指してい	DENRの森林管理局は、上流域の森林及び海岸地域におけるマングローブ林のための森林管理（保全及び再植林）を担当している。 森林管理は修正された大統領令705番、すなわち「フィリピン修正森林規則」により統治されている。同森林規則は、以下の法的文書によって規定されている法的フィー及び料	環境天然資源局（DENR）には、現在同国内に支局を設立している河川流域室（RBCO）が設置されている。 公共事業高速道路省（DPWH）は河川の洪水調整及び堤防保護のためのインフラを建設し管理する役割を負っている。 1998年に、政府は資源管理のためのメカニズムとしての市場ベースの措置を導入する必要性を	住宅土地利用規制委員会（HLURB）の政府決定番号915の下、2つの重要な国家法である「2009年気候変動法」及び「2010年災害リスク削減管理法」に準拠した「追加ガイドライン」が策定された。同ガイドラインは。HLURBの問題解決への対応、並びに気候変動適応及び災害リスク削減を総合土地利用計画及びゾーニングに関する布告に主流化

	共和国法番号 10121 はまた、災害リスク管理対策を地方政府にために施行するための責任及び権限を権限委譲するための法的枠組みを提供するものである。同法は地方自治政府に対して、研修の実施、救援器具の購入及び緊急対応活動のための機器を含む災害対応準備プログラムなどの災害リスク管理活動を支援する地方災害リスク削減管理ファンド（LDRRMF）として、推定収入の 5 パーセントを分配する権限を地方自治政府に与えている。 この 5 パーセントの総配分額のうち、LDRRMF の 30 パーセントが復旧及び復興プログラムのための事前準備ファンドとして機能する緊急対応ファンド（QRF）が自動的に配分されている。残りの 70 パーセントは災害前対策に活用することが可能である。このように、自然災害に影響を受けた地域をすぐに支援するために、QRF は災害前あるいは事前準備資金を可能とする事前に組み込まれた予算配分といえる。	る。同法のセクション 14 は、地方自治政府はそれぞれの分野における地方気候変動行動計画（LCCAP）の計画及び実施における最前線の機関である。 国民生存ファンド（PSF）は、後に共和国法番号 10174 として修正された共和国法番号 9729（気候変動法 2009）のセクション 18 にしたがって設置された。同法は気候変動問題を効果的に解決するための長期資金スキームを提供する目的で国民生存ファンド（PSF）を設立した。 フィリピンにおいて災害リスク削減及び気候変動適応を開発プロジェクトの中で統合すること、及びそれに付随した環境影響評価に対するプロジェクト・レベルの努力に一致して、DENR の環境管理局（EMB）は 2011 年 11 月 11 日に、「フィリピン環境影響声明（EIS）における災害リスク削減及び気候変動適応要素の組み込み」及び「災害リスク削減及び気候変動適応を考慮するための環境影響評価（EIA）技術ガイドライン」に関する EMB の覚書回覧文書番号 2011-005 を発出した。 同 EIA 技術ガイドラインはプロジェクト・レベルにおける気候変動適応及び災害リスク削減を推進すること、及びフィリピン環境影響評価システムの下の EIA の必要条件を簡素化することを意図している。	金の支払いを含む森林及び森林資源管理における国家政策の概要を明確化している。 ● DAO 2000-21 （自然林のための森林課金の支払い） ● DAO 1999-53 （政府持ち分）(Government share) ● DAO-2000-63（行政フィーなど） ● 共和国法 7161 番（森林課金）	明確に言及している流域管理プログラムを策定した。 現在、流域管理の支払いシステムを組み込むための水料金の必要性を強調するフィリピン水資源庁の設立についての法案が、上院について承認を待っている状況である。	するための地方自治政府の支援を含んでいる。

シンガポール	シンガポールにおいては、災害管理を統括する総合的な法律文書は存在しない。シンガポールにおける緊急災害対応及び災害管理活動をサポートする主な法律は、民間防衛法（1986年）、火災安全法（1993年）及び市民防衛避難法（1997年）に記述されている。このうち、民間防衛法は緊急事態の宣言のための法的枠組みを提供している。同法はシンガポール民間防衛隊（SCDF）の機能を更新するために2011年に修正された。これにより、海外に派遣される人道支援及び災害救助隊のための法的枠組み、及びSCDFの管理に関する条項が更新された。	シンガポールにおける気候変動に関する法的及び制度的枠組みについても、多岐の法的文書にわたっている。気候変動に関する統一的法的文書は存在せず、気候変動の複雑な法律及び制度は、下記の多様な法律及び規則に横断的に記述されている。 ● 環境保護管理法（94-A 章：2000） ● 環境保護管理法の関連規則（待機不純物規制 2000、車両排ガス規制 1999、道路外ディーゼル・エンジン排ガス規制 2012） ● 省エネルギー法（92-C 章：2012） ● 国家環境庁法（195 章：2002） ● 電力法（89-A 章：2001） ● シンガポールエネルギー市場機構法（92-B 章：2001） ● ガス法（116 章：2001） ● 建設管理法（29 章：1989）	国家公園委員会が、管轄区域における森林地域を含む公園及び緑化地帯を計画、開発及び管理している。 シンガポールの自然保護地区における再植林及び森林のリハビリテーションのためのすべての財政資源は、政府の通常予算あるいは民間部門による寄付から構成されている。 シンガポールにおいては、生態系サービスに対する支払いシステムは現在存在しない。	河川管理についての明確な調整は実施されていない。環境水資源省の公共事業委員会（PUB：シンガポール国家水庁）が洪水制御のような河川管理を担当している。 シンガポールにおいては、河川管理及び河川流域管理は、気候変動対応に関連する法的枠組みに十分組み込まれていない。	2001年に、シンガポールの土地問題の責任を有する法で定められた政府機関として、シンガポール土地庁が設立された。同庁の広範囲な機能は、土地登録、国家の土地の強制取得及び行政執行の責任を含む。 土地利用、計画及び開発の管理は計画法の下、実施されており、同法は定期的に更新されているマスタープランと呼ばれる法で定められている土地利用計画の策定を可能にしている。 もともとは1960年の「計画布告」として法制化され、同法は英国の町・郡計画法（1947年）をベースとしている。マスタープランの最新版は2014年6月6日付で政府広報されたマスタープラン2014である。計画法は開発、保全あるいは細分化のような許可を必要とする土地に関する活動をカバーしており、それは広範囲にわたっている。
タイ	災害防止軽減法2007は、旧民間防衛法（1979年）及び火災防止鎮圧法（1999年）を取って代わる法律である。同法は災害防止軽減局（DDPM）を国家災害管理活動を主に司る政府部局として位置づけている。また、同法はタイ国における災害管理の基本的な法的枠組みであり、地方自治政府に対して、県レベルの計	環境保護及び環境質維持法（B.E.2535）は、タイにおける一般的環境保全のための必要事項を規定している。多くの気候変動関連の法律が存在するものの、気候変動軽減及び気候変動適応を規定する総合的な気候変動軽減・適応に関する法律は、現在までのところ制定されていない。現在の気候変動関連の法的枠組みは以下のとおりである。	MONREの王立森林局及び海洋海岸資源局が、それぞれ上流域の森林管理及び海岸地域のマングローブ林を担当している。 現在タイにおける生態系システム・サービスのための支払いシステム（PES）の法的枠組みは存在しない。自然林資源保護のためのインセンティブの手段としての環境サービス	自然資源環境（MONRE）の水資源局（DWR）は、河川流域管理（RBM）及び水資源管理（WRM）を調整する機関である 河川管理の責任分担は、地方自治政府（LGU）及び灌漑地域のための王立灌漑局（RID）に分かれている。	5つの文書が、タイの土地規制及び統治フレームワークの中心的法律文書となっている。 第1に、国家が、土地利用、土地分配、都市・郡部計画、並びに土地及びその他の自然資源の持続的保護に関連した政策を含む土地政策を採用すると規定している「憲法」である。

	画に合致した災害管理の責任及び権限を与えている。 同法は、以下の主要原則を含んでいる。 ● 事故を含むすべての災害の防止及び軽減、並びに災害後の復旧の責任を分担するDDPMを設立すること ● 災害管理活動のスコープをすべての災害種及び、災害及び安全への脅威の定義を包含するように拡張すること ● 国家災害防止軽減計画策定のための政策を実施するように、国家災害防止軽減委員会（NDPMC）の役割を明示すること ● タイの災害管理活動を実施するための国家フォーカル・ポイントとしての役割を明示すること ● 国家、県及びバンコク首都圏レベルでの3つの災害防止軽減計画を策定すること ● 政府のすべてのレベルでの災害管理業務を担当する権限のある職員及び業務分掌を明確化すること 同法は災害防止及び軽減の実施のための主要な側面を規定している6つの章から構成されている。	● 国家環境質の向上及び保全に関する法律（1992年） ● 温室効果ガス管理機構（TGO）設立に関する国王命令（2007年） このように、タイにおいては、気候変動適応及び災害リスク削減に関する法律及び規則は多岐にわたっている。	の支払いシステム概念を採用する他の国々に比べて、タイは幾分遅れている。	しかしながら、河川管理及び河川流域管理は気候変動対応に関連した法的枠組みに十分組み込まれてはいない。 タイにおいては国家水法がドラフトされているものの、同法は現在までのところ法制化されていない。効果的でない土地利用管理がタイにおける水資源管理の主な制限要因になっている。 上流域の森林伐採及び不法な土地利用は、鉄砲水のリスクを増大させる一方、洪水範囲の低地における産業及び都市開発は保水・排水能力の低下を招くとともに、洪水を悪化させている。 統合された洪水管理計画及び河川流域管理計画は、より効率的な土地管理に関する決定に導いている。 その他のタイにおける水管理関連の法律は以下のとおりである。 ● 灌漑に関する国王法（1942年） ● 民間灌漑法（1939年） ● 地下水法（1977年） ● 運河維持法（1903年） ● 運河維持工事法（1983年） ● タイ水路航行法（1913年）	第2に、修正された1954年土地規則（LC）、すなわちタイの主要な土地に関する法律である。土地規則は、主に譲渡不可の先権請求文書、及び譲渡可能かつ傍系として受け入れられる利用証明書及び利用権利書などの広範囲の土地関連文書を規定している。 第3に、同国の一定地域における高い比率の借地権、土地なし世帯の数の多さ、及び耕作のための公共の土地の不法侵入の問題を解決の努力のために修正された1975年農地改革法である。 第4に、同国の農地の活用及び生産性の向上を支援するための国家開発委員会を設立する「土地開発法（1983年）」である。 第5に、土地利用を促進するための土地の再割当及び開発のためのプロセスを統治する「土地再調整法（2004年）」である。
ベトナム	自然災害防御及び抑制法：番号33/2013/QH13L」が2014年5月に発効した。この47章から構成される法律は、国家、地方及びコ	ベトナムにおける気候変動に関しても、法的かつ制度的枠組みは多岐にわたっており、多くの法的文書に展開されている。ま	ベトナム森林管理事務所は上流域の森林及び海岸地域のマングローブ林のための植林及び再植林の保全を含む森林管	自然資源環境省（MONRE）の水資源管理局（DWRM）は水資源管理（WRM）及び河川流域管理	ベトナムの土地法の最新の内容は、2013年11月29日付けで、同国の国会で批准され、

	ミュニティ・レベルでの災害リスク削減、気候変動適応及び軽減対策を明示している。同法の第4条は、自然災害防止及び管理活動の内容は、国家及び地方社会経済開発マスタープラン及びセクター別開発マスタープランに統合されるべきであると規定している。 同法は、国際的なステークホルダーを含む災害を防止し対応する関連省庁及び主要な機関の間の役割及び責任を割り振っている。 ● 自然災害防止・対応・軽減のための国家戦略2020（政府決定番号172/2007/QD-TTg：2007年11月16日付） ● 災害管理防止法（法律番号33/2013/QH13：2013年） ● コミュニティ・ベースの災害リスク管理に関する国家計画（政府決定番号1002/2009/QD-TTg：2009年7月13日付） ● 首相によって承認された2020年までのビジョン付きの「捜索救助マスタープラン2015」（政府決定番号46/2006/QDTTg：2006年2月28日付）	た、ベトナムにおいては、制度的体制は異なる組織の多様な法律及び規則に広がっている。それにもかかわらず、以下の法律及び決定が、ベトナムにおける気候変動のための基本的な法的根拠である。 ● 環境保護法（番号55/2014/QH13）：同法は、環境保護は経済開発、社会的保護、生物多様性保護及び気候変動適応に調和すべきであると規定している。 ● 政府決定番号 60（2007/NQ-CP）：同決定は、その他の関連省庁及びセクターと協力して、政府が MONRE を地球環境変動に対処することにより気候変動対応国家目標計画（NTP-RCC）を策定するための担当機関として位置づけることを規定している。 ベトナム政府は気候変動法を法制化しようとしている。同気候変動法は MONRE 作成のドラフトをベースに 2020 年までに法制化されることが期待されている。 首相による 2017 年 5 月 10 日付けの決定番号 622/QD-TTg に関連して発出された「2030持続的開発アジェンダ実施のための国家行動計画」は、ベトナムの2030年までの持続的開発目標を規定しており、それらは 2015 年に国連総会で採択された文書「我々の世界を転換する：持続的開発の 2030 アジェンダ」において詳細に述べられている地	理を担当する組織としての責任を有している。 森林環境サービスに対する支払いのような環境的課金は、気候変動適応に関連した財政的枠組みに組み込まれている。 準法令番号99においては、森林環境サービスは以下のように定義されている。 ● 森林環境サービスから里受益している組織及び個人は、供給されたサービスを算出する森林の所有者に対して森林環境サービスに支払いをしなければならない。 ● 森林環境サービスの支払いは、直接的あるいは間接的方式を通した通貨による支払いでなければならない。 ● 森林保護及び森林開発基金を通した森林環境サービスに対する支払いは、森林環境サービスの受益者が、サービスを供給している森林の所有者に対する支払いをするために、同基金に拠出しなければならない。 一方、政府決定番号799においては、「森林の減少・劣化を防止することによる森林からの温室効果ガスの排出削減+（REDD+）」行動計画が、ベトナムの政策及び法律に準拠して策定され、同計画は気候変動枠組条約及び関連条約の条項に合致している。	（RBM）のための責任を持つ組織である。 河川管理及び河川流域管理は、気候変動対応関連の法的枠組みに組み込まれている。また、河川管理及び河川流域管理は、災害リスク削減及び気候変動適応の統合と密接に関連している。 準法令番号43は、水資源法（報番号17：2012）の第31条に定義されている水資源に関連した水資源保護回廊の設立及び管理を規定している。同準法令は、水資源保護回廊の設立及び管理に関連している国家機関、個人及び世帯に適用される。 加えて、河川流域組織のための準法令がドラフトされ、パブリック・コメントのために発出されている。	2014年7月1日に発効された（2014年土地法）。 同新法は2003年の旧土地法（2003年土地法）の後継法である。2014年土地法に基づいて、ベトナム政府は2014年土地法と同一の日付で、土地法の施行規則である準法令番号43、44及び47を発効した。

		球的開発目標に対応した 115 のターゲットから構成されている。			

添付資料 10：災害リスク管理及び気候変動に関する組織構造比較表

添付資料 10： 災害リスク管理及び気候変動に関する組織構造比較表

国	災害リスク管理		気候変動	
	フォーカル・ポイント	全体構造	フォーカル・ポイント	全体構造
ブルネイ	国家災害管理センター（NDMC）が、災害による損害及び損失を評価した後に災害リスク削減の側面を考慮し、災害軽減及び防止の計画及びプロジェクトの評価、計画及び提案を調整機関として実施している。 NDMCは災害発生の際のフォーカル・ポイント責任者としての関連省庁及び関連部局の代表者のリストを定めている。	最高レベルの意思決定機関は国家災害評議会（NDC）であり、首相府の上級大臣でもある皇太子殿下が議長に就任されている。国家災害評議会の設置とは別に、国家災害管理センターが国家災害管理の調整機関として設立されている。国家災害管理センターの設立により、災害が発生した場合に必要な必要不可欠な組織的専門性を兼ね備えることができた。	首相府エネルギー産業局（EIDPMO）は、ブルネイ国の気候変動枠組条約（UNFCCC）の国家の中心として任命されている。EIDPMO は UNFCCC に対するブルネイ国の責任及びコミットメントの策定及び実施を調整する機関である。 一方、気候変動適応のための責任分担は各関連省庁に分散している。特に、開発省の公共事業局は主要な気候変動適応プロジェクトの実施責任を有している。	気候変動ステークホルダー諮問委員会（SCCCC）はUNFCCCに対する国家としての責任及びコミットメントの技術的及び実施的側面を調整する機関である。SCCCCの担当業務には、ブルネイ国の「各国が自主的に決定する約束草案」及び初期国内コミュニケーション文書（INC）の準備を調整することが含まれる。SCCCCはいくつかの政府省庁及び部局及びブルネイ国立大学から構成される。
カンボジア	災害管理国家委員会（NCDM）の事務局は、緊急対応及び救援に責任を有している。緊急対応は、国会災害管理委員会のメンバー省庁の能力強化、並びに国家及び現場レベルでの自立支援を推進することと定義されている。 NCDMは災害対応及び災害救援に一般的に限定されている機能を調整している。災害の際には、NCDMは異なる関連省庁及びコミュニティの間の即時活動及び調整役割に責任を有している。	カンボジア国が地理的に自然災害への脆弱性を持つこと、及びそれらの自然災害リスクを管理するために必要な国家調整機関の必要性が認識されたために、災害管理国家委員会（NCDM）が1995年に設立された。2015年に法制化された災害管理法に準拠して、NCDMはカンボジア国の自然あるいは人的災害によって誘導されたすべての災害管理活動を指導し、管理し調整するための政府本部として位置づけられている。 NCDMは首相を議長とし、関係省庁及び関連機関からの37のメンバーにより構成される。NCDMの通常業務の運	環境省（MOE）の気候変動局（DCC）は、GSSD の事務総局における主要な役割を果たしている。加えて、NCSD はメンバー機関からの代表とともに気候変動技術チームにより技術的に支援を受けている。	カンボジアは1995年に気候変動枠組み条約を、2002年に京都議定書をそれぞれ批准した。2006年には、カンボジア政府は気候変動に関連した政策、戦略及びプログラムの実施を準備、調整及びモニターする権限を有するセクター間を横断する組織である国家気候変動委員会（NCCC）を設立した。2014年に制度変更があり、NCCCは設立以来カンボジアにおける気候変動対応の調整機関のための省庁間メカニズムとして機能してきた。 その後、NCCCは2015年に設立された国家持続的開発評議会（NCSD）にその機能を引き継がれた。NCSDは首相を名誉

		営は事務局長によって指揮されている。 首相によって議長が担われている災害管理国家委員会（NCDM）は1995年に設立され、異なる省庁、カンボジア国軍、民間航空局及びカンボジア赤十字などからの37のメンバーから構成されている。 災害管理問題を指導し調整するとともに、カンボジアの災害管理の中心機関であるNCDMを支援するために、NCDMの事務局長が任命されている。地方分権化の手続きの一部として、災害管理県委員会（PCDM）、災害管理地区委員会（DCDM）、及び災害管理コミューン委員会（CCDM）といった災害管理組織が、すべてのレベルで災害管理を指導するために設置された。災害管理村落委員会が災害管理の最も下のレベルの組織として設置されている。 災害管理の地方委員会は、下記のようにそれぞれの県、郡、コミューン、村落に設置されている。 ● 県レベル：県災害管理委員会（PCDM） ● 郡レベル：郡災害管理委員会（PCDM） ● コミューン・レベル：コミューン災害管理委員会（PCDM）		議長及び環境大臣を議長とし、議長関係省庁の上級レベルの代表（政務次官及び事務次官）から構成される。評議会のメンバーは、NCCC時代よりも増えており、県知事を含むより多くの政府省庁及び関連機関をカバーしている。 NCSDは環境省内に持続的開発事務総局（GSSD）を事務所として有している。GSSDはカンボジア国における気候変動活動の調整能力を改善する努力をするとともに、カンボジア気候変動戦略計画（CCCSP：2014-2023）及びセクター別気候変動行動計画の推進に十分な支援を提供してきた。 カンボジアにおける気候変動問題を解決するために、カンボジア気候変動連携（CCCA）は気候変動対応を可能にするための条件を設定する目的で設立された。CCCAはカンボジア国における気候変動に対応するための総合的アプローチであり、CCCAのプログラムは気候変動対応の調整のための国家的制度枠組みとして設計されている。

		● 村落レベル：村落災害管理委員会（PCDM）		
インドネシア	災害管理法2007（法律番号24）は、大統領に直接報告義務のある国家災害管理庁（BNPB）の設立を命令している。同法はBNPBに対して、災害が発生する前のフェーズにおけるすべての緊急対応、準備、被害軽減・防止、災害管理トレーニング及び災害リスク評価などを調整する機関としての活動を認めている。緊急対応フェーズにおいては、BNPBはすべての関係機関の調整された対応に関して命令及び管理をすることになっている。また、災害後のフェーズにおいては、同法は損害・損失評価、及び復旧・復興の実施の権限をBNPBに与えている。現在の組織構成においては、災害管理運営委員会が、緊急対応を指揮することでBNPBに従属しているとともに、災害前及び災害後のフェーズにおいて調整をする権限を与えられている。	BNPBの長官は大統領に直接報告することになっており、地方災害管理局の設立における準国家的な役割に関連して、内務省の行政事務所と密接な連携を有している。最新の組織では、運営委員会が緊急対応の指令、及び災害前・災害後の段階においての調整権限においてBNPBに従属している。	気候変動国家行動計画（RAN-API）事務局の主な責務は、各省の政策、行動計画及び地方政府の開発計画において気候変動適応を主流化するとともに、その進展をモニターすることにある。各省にとっては、BAPPENAS は RAN-API 事務局が属する調整機関であり、また各地方自治政府にとっては、RAN-API 事務局は 5 ヵ年開発計画の内容に影響を与えるために内務省と密接に業務に従事している。 RAN-API は 2014 年 2 月に発表され、それに従い、2015 年に RAN-API 事務局が業務を開始した。RAN-API 事務局の主要な業務は、ぞれぞれの省の政策・行動計画及び地方政府の開発計画における気候変動適応の主流化、並びに主流化の進展のモニタリングである。 それぞれの省にとって、国家開発計画庁（BAPPENAS）は RAN-API 事務局に属している調整機関である。また、それぞれの地方自治政府にとって、RAN-API 事務局は５ヵ年開発計画の内容に影響を与えるために、内務省と密接に機能している。 法律番号 23（2014）においては、地方政府年間予算（APBD）及び開発計画・空間計画は内務省によって承認されることとなっている。	気候変動に責任を有する主要な政府機関は国家開発計画庁（BAPPENAS）であり、その他の関係諸機関は、インドネシア気象・気候・地球物理庁（BMKG）、環境森林省（KLHK）、内務省（KDN）、中央統計局（BPS）、及びその他の関連省庁である。民間及び学術機関を含む関連省庁及びその他関連機関間の調整を改善するために、BAPPENASは気候変動国家調整チームを設立するための省令を発効した。

			環境森林省（KLHK）の気候変動総局は、インドネシアにおける気候変動軽減及び適応を直接担当している。	
ラオス	首相令番号158の発令により、国家災害管理委員会（NDMC）及び国家災害管理室（NDMO）が1999年に設立された。また、2011年には国家災害防止抑制委員会（NDPCC）は国家レベルの災害リスク管理の調整及び普及努力に責任を持つ主要組織としての旧NDMCを引き継いだ。 NDPCC事務局は当初労働社会厚生省（MLSW）に設置されていたが、同事務局は自然資源環境省（MONRE）の災害管理気候変動局（DDMCC）に移管され、災害管理の国家フォーカル・ポイントとして機能している。政府機構の再構築により、国家災害管理室（NDMO）及び関連機能は、2013年に国家災害防止抑制委員会（NDPCC）の事務局として、自然資源環境省（MONRE）の災害管理気候変動局（DDMCC）に移管された。 新たに設立された災害管理気候変動局（DDMCC）は、災害リスク管理に係わる関連省庁・準政府部局・室をまたがって調整する能力を改善する重要性に鑑みて、国家災害防止管理委員会（NDPCC）の事務局を局レベルに格上げされた組織である。	NDPCCはラオス国においては災害管理のための最も高レベルの省間組織であり、災害管理政策、災害の際の国内及び国際的支援の動員、情報管理及び公共意識の向上のための包括的な調整機関である。NDPCCは下記の組織の下、各県・地区・村落において災害管理委員会の設立もまた調整している。DDPCCは地区長によって議長が担われている。 地区レベルの委員会は、依然すべての地区で実際機能するように設立中である。 ● 県災害防止管理委員会（PSPCC） ● 地区災害防止管理委員会（DDPCC）	自然資源環境省（MONRE）はラオス国において気候変動を司る主要な省である。MONREの災害管理及び気候変動局（DDMCC）が気候変動軽減及び適応活動に関するすべての国内及び国際ネットワークのための中心的なフォーカル・ポイントとして機能している。	気候変動に関する国家運営委員会（NSCCC）及び付随する技術作業部会が2008年に設立された。NSCCCは副首相が議長であり、副議長は計画投資大臣（MPI）、水資源環境行政庁朝刊（WREA）、水資源環境大臣（MONRE）及び農業森林大臣（MAF）が担っている。7つの技術作業部会（TWG）及び事務局がNSCCCの業務を支援している。 同時に、DDMCCは(i)政府のスタッフ及び地方コミュニティのための災害管理研修の計画及び実施、(ii)災害中の災害犠牲者のための救援活動の調整、及び(iii)災害情報管理及び評価のためのセンターとしての活動などの役割を担っている。

	DDMCCは災害リスク管理の準備及び早期警戒段階に優先順位をおくことを求められている。			
マレーシア	マレーシア政府は、国家安全保障評議会（NSC）の災害管理部（NMD）、首相局の洪水後復旧ユニット、及び特別マレーシア災害支援救援チーム（SMART）を統合を通して、2015年に首相局の下、国家災害管理庁（NADMA）を設置した。これは、災害管理における現在の需要及び課題に対処する際のさらなる能力及び効率性を確保することにより、災害に対して強靭な国家及び住民を創造することを意図している。	国家災害管理庁（NADMA）は、国家災害管理政策の策定、災害リスク低減イニシャティブの調整・主流化、事後アクションのレビュー実施、首尾一貫した災害復旧訓練の実施、公共意識向上計画の実施、並びに、国家災害管理委員会事務局、災害復旧信託基金、人道的支援・災害復旧代表団の長、及び特別マレーシア災害支援救援チーム（SMART）の配備について、総合的な責任を有する災害管理のための国家災害フォーカル・ポイントである。 地方レベル災害管理救援委員会は、下記のようにそれぞれの地方自治政府に存在する。 ● 中央災害管理支援委員会（CDMRC） ● 州災害管理支援委員会（SDMRC） ● 地区災害管理支援委員会（DDMRC）	自然資源環境省（NRE）の環境管理気候変動局（PASPI）はマレーシア政府内の気候変動のための中心的フォーカル・ポイントである。	1994年に、気候変動適応及び軽減の実施を統合的かつバランスのよい方式で促進するとともに、気候変動の国家的対応を指導するために、気候変動国家運営委員会（NCCC）が設置された。このように、気候変動国家政策は政府機関、産業界、コミュニティ、及び気候変動の課題を解決するためのその他のステークホルダーを動員し指導する枠組みを提供している。
ミャンマー	社会厚生・救助・再定住省（MSWRR）は自然災害対応を担当する中央政府の省である。MSWRRの災害管理における主要業務分掌のひとつは、災害犠牲者の再定住及び復興である。MSWRRは救済・再定住局（RRD）及び社会福祉局（DSW）の２つの局から構成されている。各局はそれぞれの災害関連の任務を負っている。	ミャンマー政府は、国家災害対策中央政府委員会（NDPCC）が設立されたことにより、基本的組織としての災害管理センターが確立された。首相府の下の国家災害対策中央委員会（NDPCC）は、平和開発評議会次官を共同議長とし、各州及び各郡の議長などをメンバーとする災害管理のための37のメンバーから構成される。一方、国家災害対応管理作業委	自然資源環境保護省（MONREC）の環境保護局（ECD）は、気候変動枠組み条約における交渉及び報告を含む国際レベルでの気候変動問題を扱う気候変動のフォーカル・ポイントである。	2016年に、ミャンマー政府は、副大統領に議長を担われており、6つの作業委員会（気候変動軽減・適応作業部会はそのひとつである）を有するハイレベルの気候変動国家環境保護委員会を設置し、ECDが同委員会の事務局と機能している。 ミャンマー気候変動連合（MCCA）は地球気候変動連合（GCCA）の支援を受けて2013年に設立された。MCCAは、UN-

	RRDは敏速な救援を確保するために自然災害の被災者に対する緊急支援を提供すること、及び災害による生命及び財産の損失を提言するための予防的な手段を講ずることを目的として設立された。同局はミャンマーの災害管理におけるフォ ーカル・ポイントである。	員会は、NDPCCのガイドラインにしたがって災害管理活動の実施を監督するための平和開発評議会の次官の下で、36のメンバーで構成されている。NDPCCは災害の各段階において、各省庁、各部局及び各災害準備委員会の役割及び責任分担を定義する重要文書「災害管理準備命令2009」を策定した。 NDPCCの主な役割と責任は以下のとおりである。 ● 災害管理を実施し、並びに災害管理政策及びガイドラインを開発するためにいろいろなレベルで委員会を構成すること ● 緊急援助対策のための自然資源の活用に必要な政策及びガイドラインを策定すること ● 外国援助を受けるための基本原則を提供すること ● 国家予算及び国家資源を管理することにより災害救援を提供すること ● 効果的な災害管理活動を確保するための法律、法令、準法令、規則及び規制を制定すること ミャンマー政府は、NDPCCが設立された際に、基本的な組織として災害管理センターを設置した。 地方レベルの災害準備委員会は、以下のそれぞれの地方自治政府に存在する。		Habitat及びUNEPの支援の下、気候変動をミャンマーの政策立案及び改革課題に主流化するためのプラットフォームとして機能している。しかしながら、MCCAは気候変動の現在進行中の行動及び活動もまた支援している。この包括的な組織の下、主要な関連省庁のセクター別の気候変動適応が策定され、これによって気候変動適応を関連省庁の開発計画において主流化することができる。

		● 地域・州災害準備委員会 ● 地区災害準備委員会 ● 町災害準備委員会 ● 村落準備委員会		
フィリピン	民間防衛室（OCD）は国家災害リスク削減管理評議会の運営組織であり事務局である。OCD の主要な業務は、緊急事態の際の生命及び財産の保護及び保全のための種々の政府組織・代行機関、民間組織、市民組織の活動及び機能を調整することである。 地域及び地方レベルでは、災害リスク削減対策を地方総合開発計画（CDP）及び総合土地利用計画（CLUP）に統合することを促進するために、OCD は地方災害リスク削減管理計画（LDRRMPs）をレビューし評価している。	2011年に、国家災害リスク削減管理評議会（NDRRMC）は国家災害リスク削減管理枠組み（NDRRMF）を採用した。 NDRRMFは国家の災害リスク削減及び時速的開発を確保するための主要なコンポーネントである。OCDの下での国家綱領であるNDRRMCは、すべての災害管理のための主要な調整機関として機能するとともに、政府機関及び民間セクターにより実施される災害対応プログラム、災害オペレーション及びリハビリテーションの試みに関する大統領の諮問機関として役に立っている。NDRRMCは、国家災害リスク削減管理計画（NDRRMP）を承認する責任を有している。 NDRRMCはまた、多様な法律、ガイドライン、規則あるいは各機関によって利用されている技術スタンダードの策定及び施行に主要な責任を有するとともに、国家災害リスク削減管理ファンド（NDRRMF）を含む災害リスク削減基金の管理及び動員、並びに地方災害リスク削減管理ファンド（LDRRMF）の活用のモニタリングにも責任を担っている。	フィリピン気候変動委員会（CCC）は国家機関と同様の立場を持ち、大統領府に付属している独立した自主的な機関である。気候変動委員会は、DENR の下で機能している。	気候変動国家戦略枠組み（NSFCC）及び国家気候変動行動計画（NCCAP）は、気候変動に関する同国の行動及びイニシャティブのためのガイダンスとして機能している。このことは、これらの計画を十分に実施するための財政手段の配分を通してさらに強化されており、気候変動を生存するためにコミュニティ及び生態系システムを直接支援している。 国民生存ファンド（PSF）は、後に共和国法番号10174として修正された共和国法番号9729（気候変動法2009）のセクション18にしたがって設置された。同法は気候変動問題を効果的に解決するための長期資金スキームを提供する目的で国民生存ファンド（PSF）を設立した。PSFは気候変動適応プログラム及びプロジェクトの資金のための国家財政における特別ファンドである。国民生存ファンド（PSF）委員会は気候変動委員会（CCC）に委ねられている。

シンガポール	シンガポール民間防衛隊（SCDF）は、平時及び危機の際に国に対して緊急対応を提供する統一的な組織である。SCDFは消防組織としてだけでなく、救急及びレスキュー・サービスの機能も有し、火災時安全手順に関する教育者としての役割も果たす。	シンガポール民間防衛隊（SCDF）は、平時及び危機の際に国に対して緊急対応を提供する統一的な組織である。SCDFは消防組織としてだけでなく、救急及びレスキュー・サービスの機能も有し、火災時安全手順に関する教育者としての役割も果たす。1986年に法制化された民間防衛法にしたがって、SCDFは内務省傘下の独立組織として設立された。 加えて、SCDFは運営能力及び準備態勢を構築及び維持をし、民間防衛活動における公共意識及び参加の向上をしようと努力している。また、SCDFは消防及び民間防衛シェルター問題の規則を策定し施行する責任を有している。	国家気候変動事務局（NCCS）は、気候変動に関するシンガポールの国内・国際的政策、計画及び行動に関する効果的な調整を確保するために、首相府（PMO）の下2010年に専任組織として設立された。NCCSの配置はシンガポール国が優先順位を与える気候変動適応の重要性を強調している。	2007年に、気候変動省間委員会（IMCCC）がシンガポール国の気候変動に対するアプローチに関する調整を確保するために設置された。IMCCCは副首相により議長が担われており、メンバーは、環境水資源大臣、財務大臣、外務大臣、国家開発大臣、貿易産業（貿易担当）大臣、及び貿易産業（産業）大臣、及び運輸大臣を含んでいる。
タイ	災害軽減防止局（DDPM）は2002年に設立され、タイにおける災害管理活動を実施するための国家フォーカル・ポイントとしての責任を与えられている。 DDPMの主要な責任は、災害防止及び軽減計画の開発、及び危険あるいは安全な地域及び災害統計に関するデータベースの構築、災害管理運営の調整及び災害管理における政府機関・地方自治体・民間部門への支援を含んでいる。	災害防止軽減法（2007）がタイにおける災害の軽減、準備、対応及び復旧を確保するために必要な組織及び管理のための法的枠組みを提供している。同法は国家災害防止軽減委員会（NDPMC）及び災害防止軽減局（DDPM）の災害防止管理の制度的枠組み、並びに組織、機能、権限及び責任について規定している。 NDPMCにおいては、以下の組織が設置されている。 ● 自然災害指令本部 ● 中央災害管理センター	MONREの下では、自然資源及び環境政策計画室（ONEP）が気候変動計画、国家レベルでの戦略及び行動計画の立案、及び国際レベルでの協力及び交渉に責任を有する機関である。	タイは国家レベルでの気候変動対応を実施するための多くの制度を整備した。国家気候変動委員会（NCCC）が2007年に設立された。首相が議長に任命され、NCCCはバンコク首都圏庁及び国家経済社会開発委員会（NESDB）からの代表メンバーに加えて、関係省庁からの常任上級委員から構成される気候変動政策を策定するための重要な会議として機能している。

	DDPMは被災人口への災害復旧支援の実施、災害管理研修コース及び国家計画に基づいた組織のパフォーマンスのモニターなどを担っている。	● 県災害管理センター ● バンコク首都圏災害管理センター ● 郡災害管理センター ● パタヤ市災害管理センター ● 町村災害管理センター ● 準地区行政単位災害管理センター		
ベトナム	農業農村開発省（MARD）の国家災害防止管理局（DNDPC）が国家災害防止管理中央委員会（CCNDPC）の事務局に責任を持っている。MARD 大臣がCCNDPCの議長に就任しており、首相に対する報告の責任を負っている。CCNDPCの2人の副議長は国防大臣及び政府議長である。 災害管理センター（DMC）はMARDの水資源局の支援の下運営されており、DMCの主要な責任は、国家災害防止管理中央委員会（CCNDPC）の常任オフィスの運営を確保するために、堤防管理・洪水・暴風雨局と協力することにある。	国家レベルにおいては、国家災害防止管理中央委員会（CCNDPC）は、自然災害の防止及び管理、並びに自然災害後の復旧作業の業務を組織し指導する省庁間及び関連機関の調整をするために設立された。 農業農村開発省（MARD）の大臣がCCNDPCの議長に就任しており、首相に対する報告の責任を負っている。CCNDPCの2人の副議長は国防大臣及び政府議長である。MARDの国家災害防止管理局（DNDPC）は災害防止対応及び軽減の実施を調整し、CCNDPCの事務局として下記の業務を担当する。 ● 各省、各セクター及び各地方自治体の災害管理計画の実施をモニターし、チェックし、及び推進すること ● 国家災害防止、対応及び軽減のための資源を動員するために国際協力の国家フォーカル・ポイントとして機能すること	自然資源環境省（MONRE）は気候変動対応を管理することに主要な責任を有している。MONREの権限のうち、気象・水文・気候変動局（DMHCC）は気候変動関連活動を調整する責任を持っている一方、法規局（DLA）は気候変動の法的側面に関する助言をすることになっている。MONREのDMHCCは気候変動枠組条約及び京都議定書を実施するための国家フォーカル・ポイントの機能も果たしている。	ベトナム政府は気候変動政策の指導、調整、調和及びモニターするために気候変動国家委員会（NCCC）を2012年に設立した。すべての主要省庁の大臣の参加とともに、首相により議長が担われ、NCCCは関連省庁間にまたがる国家気候変動戦略及び他の関連プログラムの実施監督に責任を負っている。一方、自然資源環境省（MONRE）は、気象・水文・気候変動局（DMHCC）を通してNCCCを支援し、気候変動対応政策のための技術的フォーカル・ポイントとして機能している。 農業首相が長を努めるNCCCは、自然資源環境省（MONRE）、計画投資省（MPI）、財務省（MOF）、農業農村開発（MARD）、運輸省（MOT）などを委員会メンバーとして擁している。

		● セクター別及び地方自治体の計画実施を統合し評価するとともに、首相に報告すること ● MARDの責任の範囲内においてプログラム及びプロジェクトを直接運営すること 地方レベルにおけるCNDPCは、各県、各地区及び各コミューンは下記のとおり存在している。 ● 県レベル災害防止管理委員会（PCNDPC） ● 地区レベル災害防止委員会（DCNDPC） ● コミューンレベル災害防止委員会（CCNDPC）		

添付資料 11：インタビュー対象者リスト

目次

添付資料 11: インタビュー対象者リスト

Brunei

Organization	Position	Name
National Disaster Management Center	Director	Col. Dato Paduka Haji Rosli bin Chuchu
	Special Duties Officer	Abdul Rahim HS Ismail
	Special Duties Officer	Rina Nurhafizah Rezza Binti Abdul Rani
	Special Duties Officer	Mohd Adib Mataki
	Senior Superintendent, Fires & Rescue Division	PG Hj Sabli Pg Damit
	Senior Superintendent, Fires & Rescue Division	Sallehuddin HJ Ibrahim
	Senior Superintendent, Fires & Rescue Division	Haji Ahmad Haji Mohd Daud
	Assistant Superintendent, Fires & Rescue Division	PG HJ Shaharliddin Bin PG HJ Metali
Kemuncak Bersinar Company	Director	HJ Mohd Haslin B. HJ Abd Karim
	Assistant Technical Staff	Nushi Nakamura
Tuton District Office	Acting Tutong District Officer	Hj. Muhd Suffion Hj Bungsu
	Acting Assistant Tutong District Officer	Hj Haizul Rizal Hj Yahya
	CTA	Marjubi Hj Abd Salam
	STA	Rasu Helen bin Sikal
	Acting STA	Md Shahrul Nizam Bin Hj Metassim
Survey Department	Deputy Surveyor General	Ali Bakar Kasim
	Acting Surveyor General	Arefin Jaya
	Acting Surveyor General	Dr. Hjh. Mas Suriawati
	Senior Surveyor	Murni Abd Rohim
	Aq. Senior Surveyor	Abd. Aziz D.H. Abdullah
	Senior Surveyor (Cadastre)	Pg Hjh. Hasnaliati PHA Momin
	Senior Surveyor (Geodetic)	Mahadi Tahir
	Senior Surveyor (KT)	Dr. Hj. Norzamni Salleh
	Senior Surveyor	Zakaria Ama
Department of Civil Aviation	Meteorological Officer	Dr. Hj. Sidup
	SMO I	Pg Zakiah Pg. Hj. Yussof
	SMO I	Hjh. Timbang Zakaria
	Meteorological Supervisor	Hj. Rosli Hj. Buntar
	SMO I	Hjh. Saidah Hj. Mirasan

Cambodia

Organization	Position	Name
National Committee for Disaster Management (NCDM)	Secretary General	Ponn Narith
	Deputy Secretary General	Ma Norith
	Director, Division of information and International Relations with the rank of Under Secretary of State	Seak Vichet
	Director, Division of Emergency Coordination Center and ASEAN	Prak Kimhong
	Deputy Director	Lorn Trob
	Deputy Director, Emergence Division	Kun Virak
	Chief officer	Em Samnang
	Deputy Secretary General	Khov Sang
	Chief of Administration Office	Houn Sang
Ministry of Health (MoH)	Vice Chief of Bureau, PMD Division	Lak Muy Seang
	Officer, PMD Division	Chin At
National Council for Sustainable Development (NCSD), Ministry of Environment (MoE)	Deputy Secretary General, National Council for Sustainable Development	Paris Chuop
	Deputy Director, Department of Climate Change	Uy Kamal
	Trust Fund Administrator, Cambodia Climate Change Alliance (CCCA) / UNDP	Julien Chevillard
Road Infrastructure Department, Ministry of `Public Works and Transport (MPWT)	Deputy Director, Road Infrastructure Department	You Dara
	Chief, Environmental and Social Office, Department of Planning Division	Uk Raksmey
	Chief, Technical Planning of Road and Bridge Office	Kem Socheat
Cambodia National Mekong Committee	Deputy Secretary General	Long Saravuth
	Director, Information and Knowledge Management Department	Chheang Hong
	Deputy Director, IKMD Division	Thoun Sokchea
Ministry of Water Resources and Meteorology (MOWRAM)	Director General of Technical Affairs	Ponh Sachak
	Director, Water Resources Management and Conservation Division	Huong Sunthan
	Deputy Director, Department of Hydrology and River Works	Suy Sovann
	Director, Department of Hydrology and River Works	Yin Savuth
	Director, Meteorology Department	Oum Ryna
	Director	Chhea Bunrith
	Director	Ngoun Pich
	Officer	Ly Sokna
	Irrigation Department	Heng Heng

Provincial Department of Water Resources and Meteorology, Prey Veng Province	Director	Chum Sophy
Ministry of Agriculture, Forestry and Fisheries (MAFF)	Secretary of State	Ty Sokhun
	Deputy Director General, Fisheries Administration Division	Hav Viiseth
	Deputy Director, Agricultural Land Resource Management Division	Am Phirum
	Minister of Agriculture	Veng Sakhon
Asian Development Bank (ADB)		Hem Chanthou
		Bradford Philips
		Pinreak Suos
Mekong River Commission	FMMP Coordinator, Flood Management and Mitigation Programme (FMMP/TSD), Office of the Secretariat in Phnom Penh (OSP), Regional Flood Management and Mitigation Centre (RFMMC)	Oudomsack Philavong
	International Technical Advisor, FMMP/TSD	Nicolaas Bakker
	Operational Meteorologis / Flood Forecaster, FMMP	Nguyen Quoc Anh
	River Flood Forecasting Expert, FMMP/TSD	Pichaid Varoonchotikul
Ministry of Rural Development	Director	Chreay Pom
Department of Forest and Community Forestry (MAFF)	Deputy Director, Department of Forest and Community Forestry	Khorn Saret
Irrigated Agriculture Department (MoWRAM)	Deputy Director	Sorn Serey
Department of Meteorology (MoWRAM)	Director	Oum Ryna
Department of Water Resources Management and Conservation (MoWRAM)	Director	Huong Sunthan
		Seang Chanbosak
FAO	Program manager	Etienne Carmine

Indonesia

Organization	Position	Name
Balai Besar Wilayah Sungai (BBWS) Pemali Juana, Semarang	Kari Sungai & Pantai, BBWS Pemali Juana	Teguh
	Kari Sungai & Pantai, BBWS Pemali Juana	Dani Prasetyo
	Staff PPU, BBWS Pemali Juana	Nur Ikawati
	OP, BBWS Pemali Juana	Mcyari
Central Office of Public Works and Water Resources Spatial Planning Progo Bogowonto Luk Ulo, Semarang	Kabid Sungai Bendungan Pantai, DINAS PU SDA TARU PROV JATENG	Eko Yunianto
	Staff Operation, DINAS PU SDA TARU PROV JATENG	Suhantoai
	Kabid Irigasi Dan Airbaku, DINAS PU SDA TARU PROV JATENG	Ketut Arsai

PSDA, DWAS PU SDA TARU (OWAS PEKERJAAN UMUM SUMBER DAYA AIR DAN PENATAAN RUAN) PROUINSI JAWA TENQAH	Head of Division, Rehabilitation and Reconstruction	Arus Horizon
		Ady Prabouo
BPBD Banjarnegara		Yanu Harsono
		Herman Satmoko
		Khafid N.B
		Andri Sulistyo
Brantas River Office	Kabid Program, BBWS Brantas	Novia Rosalita
	OP, BBWS Brantas	Harri Pranowo
	Secretary of JICA Project, JICA Project Team	Aad
Ministry of Environment and Forestry	Deputy Director, Social Forestry Planning and mapping Division	Agus Nurhayat
	Head, Planning Watershed Management Division	Saparis
	Staff of Cooperation Subdivision, DG Watershed and Protected Forest Management	Zulfiyanti
National Disaster Management Authority (BNPB)	Deputy Director, Disaster Prevention Division	Raditya Jati S. Siy M. Si
	Analyst, International Cooperation Division	Prasetio W.
	Analyst, DRR-BNPB	Tri Utami H
	Risk Analyst, DRR-BNPB	Dunar Widhiyam SW
	Lecturer	Perdnan
	Coordinator, Perhimpunan,Sanggab, UNDP	Sofyan
Indonesia Climate Change Trust Fund (ICCTF)	Director of Program	Joseph Viandrito
	Consultant	Edy Brotoisworo
	Principal Advisor, Indonesia NAMAs Financing Support (INFIS)	Sonny Syahril
	Advisor, Support to the ICCTF (BMUB‐ICCTF)	Deni Gumilang
Secretariat of National Action Plan for Climate Change Adaptation (RAN‐API)	Advisor, Indonesia National Action Plan on Climate Change Adaptation (RAN‐API)	Budhi Setiawan
Regional Infrastructure Development Agency (BPIW), Ministry of Public Works and Housing (PUPR)	Director, Planning Infrastructure II Division, Center for Public Works & Housing Infrastructure Planning	Ir. Maulidya Indah Junica
		Amanda
Directorate General of Water Resources (DGWR)	Director, BPSDA	Aeus S. K.
	Head of Subdivision of Cooperation	Heru Sehiawan
	Staff, Pusat Bendungan	Pandhu Wiyono
	Head of Technical Guidance, Dit Iwwa	Murad
The Agency for Meteorology, Climatology and Geophysics (BMKG)	Deputy Director General, Climatology Division	R. Mulyono R. Prabowo
	Director, Center for Climate Change Information	Dodo Gunawan
	Director, Center for Applied Climate Information Services	Maman Sudarisman

Research Centre for Water Resources, Ministry of Public Works (PU)	Head of Technical Operation Section, Hydrology and Water Resources Management Office	Oky Subrata
	Head of Technical Operation Section, Hydrology and Water Resources Management Office	Irfan Sudono
	Statistical analysis on climate change	Lira Adiyani
	GCM Division	Wulan Seizarwati
Center for Volcanology and Geological Hazard Mitigation (PVMBG), Geological Agency, Ministry of Energy and Mineral Resources (ESDM)	Earthquake department	Mamay Surmayadi
	Landslide department	Mariono
Directorate of Agricultural Irrigation	Director, Agricultural Irrigation Division	Ir.Tunggul Iman Panudju
	Deputy Director, Climate, water and environmental conservation Division	Ir. Rahmanto
	Subsection Head, Climate mitigation Division	Foyya Yusufu Aquino
Directorate of Environment, Ministry of Development Planning (BAPPENAS)	Deputy Director, Weather and Climate, water and environmental conservation Division	Syamsidar Thamrin
Ministry of Environment and Forestry	Deputy Director, Social Forestry Planning and Mapping Division	Agus Nurhayat
	Head, Planning Watershed Management Division	Mr. Saparis
	Staff, Cooperation Subdivision, DG Watershed and Protected Forest Management Division	Ms. Zulfiyanti
BMKG, West Bali	Head of observation and analysis	Made Dwi Jendra
	Forecastor	Sudarti
	Forecastor	Nursaidah
	Forecastor	Made Dwi Wiratmaja
	Forecastor	I Wayan Andi Yuda
	Forecastor	Margaretha R. Simanjuntak
Farmer, West Bali	Farmer	Pak Madi Sugandi
Cooperative Sube Huter, Nangablo village, Maumere	members of the cooperative	Several male and female members of the cooperative
Veco Indonesia	Officer	Nikolaus Salo
Caritas	Officer	Leopoldus Maring
	Manager	Klaus Naumann
	Officer	Yoseph Nong Yance
	Officer	Getrudis Roo Sadipun
KSU Romeo	Officer	Evisius Ignasius
	Officer	Matheus Manu
Kopernik NGO	Program officer	Enrico Polla
SPARC, UNDP	Program officer	Ms Fransiska Sugi
BPTP	Professor	Prof Debora KanaHau
Farmers, Nusa Tengara	Farming	Darmi Utan
	Farming	Jon Lake
	Farming	Sam Uki

Lao PDR

Organization	Position	Name
Disaster Management Division (DMD), Social Welfare Department, Ministry of Labour and Social Welfare	Deputy Director General	Vilayphong Sisomvang
Department of Disaster Management and Climate Change (DDMCC), Ministry of Natural Resources and Environment	Deputy Director General	Syamphone Sengchandala
	Legislation and Coordination Division	Chanthy Intravong
	Information and Public Relation Division	Nouansy Thiphanay
	Disaster Preparedness and Response Division	Sonephet Phosalath
JICA Lao PDR Office	Senior Representative	Saeda Makimoto
	Representative, Agriculture and Rural Development	Shuhei Terada
Department of Meteorology and Hydrology (DMH), Ministry of Natural Resources and Environment	Director General	Khanmany Khounphonh
	Officer	Suvannakone Keoduangdeth
Department of Housing and Urban Planning (DHUP), Ministry of Public Works and Transport	Specialist, Urban Management Acting Division Head	Sengdara Douangmyxay
Ministry of Agriculture and Forestry (MOAF)	Director, Planning & Cooperation Division, Department of Irrigation	Pasonexay INSISIENGMAY
	Director, Department of Livestock and Fishery	Chanthaboun SIRIMANOTHAM
	Deputy Director, Department of Forestry	Phouthone SOPHATHIRATH
	Deputy Director, Department of Land Management	Khamphou PHOUTHAVONG
	Deputy Director, Department of Promotion	Sysamai PHANTHASONG
	Deputy Director, Agriculture Research Center for Climate Resilience (ACCR), NAFRI	Chanseng PHONGPACHITH
	Deputy Director, Center, DOPC, MAF	Savanh HANPHOM
	Deputy Director, Planning, DOPC (MAF) Division	Khamlience
	Technical staff, DOA	Lithsana Thongsengchan
	Technical staff, Department of Planning and Cooperation	Pangna PRANAKHONE
Mekong River Commission (MRC)	Director, Planning Division	Hatda P. An
	Programme Coordinator, Climate Change & Adaptation Initiative Environment Division (ENVD)	Nguyen Huong Thuy Phan
		Yuko Maeda
Department of Waterways (DW), Ministry of Public Works and Transport (MPWT)		KhamSeny Aly
		Khampheuy Leefhung

Department of Water Resources (DWR), Ministry of Natural Resources and Environment (MONRE)	Deputy Director, Planning Division	Phousavanh
	Ground water division	Palivath Boun Leuxay
	River basin division	Tha Khonemxay
	River basin division especially for drought management	Sakhone
	Water quality monitoring division	Keomanivone
	Data analysis division	Inthanongxay
Department of Roads and Bridges (DRB), Ministry of Public Works and Transport (MPWT)	Director, Department of Roads	Vongphachanh Boualaphanh
	Technical Division	Anousone Manisouk
	Prevention Division	Khan
Department of Forestry (DF), Ministry of Agriculture and Forestry (MOAF)	Deputy Director, Department of Forestry	Phouthone SOPHATHIRATH
UNDP	Environment Unit Manager	Margaret Jones Williams
ADB	Sr. Project Officer	Sisavanh Phanouvong
FAO	Senior sector Specialist	Singvilay, Olayvanh

Malaysia

Organization	Position	Name
National Disaster Management Agency (NADMA), Prime Minister's Department	Deputy Director General, Planning and Preparedness Sector	Mohd Ariff Bin Baharom
	Director, Mitigation Division	Ir Bibi Zarina Che Omar
	Senior Assistant Director, Mitigation Division	Nurul Fatien Rusly
Japan International Cooperation Agency (JICA) Malaysia Office	Senior Representative	Shinsaku FUKAZAWA
	Representative	Yuka SONOYAMA
Department of Environment (DOE)	Environmental Control Officer	Dasuki Loo bin Abdullah
	Environmental Control Officer	Amy Charlene Wong
Department of Irrigation and Drainage	Senior Assistant Director	Siti Azura Mat Daud
Federal Department of Town and Country Planning Peninsular Malaysia	Senior Assistant Director	Dzul Khaimi bin Khailani
Forest Research Institute Malaysia (FRIM)	Senior Research Officer	Raja Barizan Binti Raja Sulaiman
Forestry Department Peninsular Malaysia	Director, Forest Plantation & Protection Division	Dato’ Lim Kee Leng
Malaysian Meteorological Department (MET)	Meteorological Officer	Fariza binti Yunus
	Meteorological Officer	Nor Adawiah Binti Abdullah
Minerals and Geoscience Department Malaysia	Principal Geoscience Officer	Zamri bin Ramli
Ministry of Agriculture and Agro-Based Industry Malaysia	Principal Assistant Secretary	Shahrul Azuan bin Aziz
Ministry of Energy, Green Technology and Water (KeTTHA)	Principal Assistant Secretary, Green Technology Policy Division	Prakash A/L Nagalingam

Ministry of Natural Resources and Environment (NRE)	Principal Assistant Secretary, Environmental Management and Climate Change Division	Yusmazy Md Yusup
Ministry of Science, Technology and Innovation (MOSTI)	Senior Assistant Secretary	Sivaneswaran A/L Goval Krishnan
Ministry of Rural & Regional Development	Principal Assistant Secretary	Nazlinda Zamani
National Hydraulic Research Institute of Malaysia (NAHRIM)	Research Officer	Ahmad Hadi Mohamed Rashidi
Public Works Department	Director, Design Services	Ir. Muhammad Azman bin Jamrus
	Senior Principal Assistant Director	Mohammad Tajul Urus Bin Tajuddin
	Senior Principal Assistant Director	Ir. Mohd Azhari Mohd Salleh
Ministry of Agriculture and Agro-Based Industry Malaysia	Principal Assistant Secretary	Shahrul Azuan bin Aziz
	Epidemiology & Surveillance Section, Biosecurity and SPS Management Division	Rohaya Binti Mohd. Ali
	Agricultural Drainage and Irrigation Division	Norizam
Road Facilities Maintenance Branch Headquarters, JKR	Commander	Mejar Ir MohamMohammad Tajul Urus Bin Tajuddin
	Civil Engineer	Farah Izyar bt Mohd Saleh
	Civil Engineer	Norazimah bt Md Arifin
	Civil Engineer	Sarawanan Elumay
	Assistant Civil Engineer	Mohd Hafis B. Mohd Yunus
	Assistant Civil Engineer	Helmy Hajken B Abd Kaehr
	Assistant Civil Engineer	Hilman Matmuddm Bin Hamzah
	Assistant Civil Engineer	Haniza Bt Sanusi
Lembaga Pertubuhan Peladang Negeri Perlis	Director	Shaidan Bin HJ.Nordin
Muda Agricultural Development Authority	General Manager	Dato Fouzi Bin Ali
	Technician	Azmi Omar
	Deputy General Manager	Dato Ir. Hor Tek Lip
The Institution of Engineers Malaysia, Kedah	Committee Member	Mukhlis Bin Zainol Abidin
University Utara Malaysia	Professor, Risk management and insurance	Prof Arpah Abu Baker

Myanmar

Organization	Position	Name
Relief and Resettlement Department (RRD), Ministry of Social Welfare Relief and Resettlement (MSWRR)	Director General	Ko Ko Naing
	Deputy Director, Coordination and Research Division	Myat Moe Thwe
	Staff Officer, Emergency Operation Center	Su Nandar Myint
Irrigation and Water Utilization Management Department (IWUMD), Ministry of Agriculture,	Deputy Director General	Soe Myint Tun
	Director, Planning and Works Branch	Kyaw Zaw
	Director, Design Branch	Zaw Lwin Tun
	Director, Hydrology Branch	Khon Ra

Livestock and Irrigation (MOALI)	Assistant Director	Mu Mu Than
	Staff Officer, Planning and Works Branch	Tha Peng Cung
Ministry of Construction (MoC)	Permanent Secretary	U Kyaw Linn
	Deputy Director General, Planning Division	U Shwe Lay
	Deputy Director General, Road Maintenance Division	U Khin Maung Kyaw
	ASEAN DESK	Myat Thiri Aye
Department of Meteorology and Hydrology (DMH), Ministry of Transport and Communication (MOTC)	Director General	Hrin Nei Thiam
	Deputy Director General	Kyaw Moe Oo
	Director, Meteorology Division	Daw Khin Cho Cho Shein
	Director	Daw Tin Yi
	Hydrology Division	Htwe Htwe Win
	Deputy Director, Hydrology Division	Daw Nyein Nyein Naing
Directorate of Water Resources and Improvement of River Systems (DWIR), Ministry of Transport and Communication (MOTC)	Deputy Director General	Ko Ko Oo
	Director / Project Director	Win Hlaing
	Deputy Director	Aung Myo Khaing
Forestry Department (FD), Ministry of Resources and Environmental Conservation (MOREC)	Deputy Director General	Kyaw Kyaw Lwin
	Director, Training and Research Development Division	Tint Swe
	Director, Planning and Statistics Division	Kyaw Zaw
	Director, Forest Research Institute	Dr. Thaung Naing Oo
	Deputy Director, Watershed Management Division	Win Myint
	Deputy Director, Planning and Statistics Division	Kyaw Min Thein
	Assistant Director, Planning and Statistics Division	Ngwe Thee
	Assistant Director, Planning and Statistics Division	Dr. Myat Soe Mon
Ministry of Agriculture, Livestock and Irrigation (MOALI)	JICA Advisor for Irrigation Policy, Ministry of Agriculture, Livestock and Irrigation (MOALI)	Hiromichi KITADA
Irrigation and Water Utilization Management Department (IWUMD), Ministry of Agriculture, Livestock and Irrigation (MOALI)	Director General	Kyaw Myint Hlaing
Environmental Conservation Department (ECD), Ministry of Natural Resources and Environment Conservation (MONREC)	Acting Director General	Hla Maung Thein
	Director, Environmental Impact Assessment	Dr. San Oo
	Assistant Director, Policy, Planning and International Relation	Aung Thu Kyaw
Relief and Resettlement Department (RRD), Ministry of Social Welfare Relief and Resettlement (MSWRR)	Assistant Director	Aung Thu Han
	Director General	Ko Ko Naing
	Deputy Director, Coordination and Research Division	Myat Moe Thwe

	Director, Coordination and Research Division	Win Htein Kyaw
Irrigation and Water Utilization Management Department (IWUMD), Ministry of Agriculture, Livestock and Irrigation (MOALI)	Deputy Director General	Tin Maung Aye Htoo
	Director, Civil Section (Water Pumping)	U Khin Zaw
	Director	Moe Oo
	Deputy Director	U Han Thein Maung
LIFT Project, UNOPS	Program Officer, Livelihoods and Food Security Trust Fund	Harald Kreuscher
Plan International	BRACED Alliance Coordinator, RACED Project	Stone, Jeremy Kieron
UNDP	Senior Advisor, CCA and DRR, Disaster risk management	Mr Jai Ganesh Murugesan
World Bank AIRBM	International Advisor, AIRBM Project	Wade, Steven
JICA Myanmar Office	Senior Representative	Kotaro Nishigata

Philippines

Organization	Position	Name
JICA Philippines Office	JICA Expert, Policy Adviser on Disaster Risk Reduction and Management Office of Civil Defense	Osamu Itagaki
	Project Formulation Advisor, Human Security Group	Erika Inoue
	Senior Program Officer	Catherine M. Palanca
	Senior Program Officer, Poverty Reduction Section, Human Security Group	Kessy A. Reyes
Office of Civil Defense (OCD), National Disaster Risk Reduction and Management Council (NDRRMC)	Chief, PPPDMD	Allen M. Fortes
	Chief, FMD	Augusto C. Iglesia
	Project Officer, GK-PDPS	Edgardo J. Ollet
	Chief, HRMDD, Human Resource Management and Development Division	Maria Theresa R. Excolano
	JICA Expert, Policy Adviser on Disaster Risk Reduction and Management Office of Civil Defense	Osamu Itagaki
	Chief, OV, RRMS-PDEMD	Lenie D. A
	Representative, Information, Communication and Technology Division	Willson
	TS, Capacity Building and Training Service	Shereen Lucas Hombrebueno
	OCD, NCR	Marlon Obligado
	Project Officer, Policy Development and Planning Service, OCD	Martha Vergara
Flood Control Management Cluster (FCMC), Department of Public Works and Highways (DPWH)	UPMO, FCMC	Patui Le Gaton
	UPMO, FCMC	Jesee C. Felizard

Department of Environment and Natural Resources (DENR)	MATH Ⅱ, Land Management Bureau (LMB), GSD	Marlo Velasco
	PMEO, River Basin Control Office (RBCO), DENR	Rochelle Lucero
	SpFMS, Forest Management Bureau (FMB)	Nilda S. Patica
	Supervising Science Research Specialist, Mines and Geoscience Bureau (MGB), Lands Geological Survey Division	Salvio B. Laserna
	Geologist Ⅱ, Mines and Geoscience Bureau (MGB), Lands Geological Survey Division	Michelle Grace Angela Mendoza
	DMO, Land Management Bureau (LMB)	Lovella Villorres
	Engineer. Ⅳ, Land Management Bureau (LMB)	Shirley Fungo
	PO Ⅰ, Land Management Bureau (LMB), LPPD	Malanie B. Beler
	S.I Ⅲ, Land Management Bureau (LMB), OD/LMD	Erma Quirimif
Climate Change Commission (CCC)	Division Chief, Strategic Partnerships Division	Alexis Lapiz
	DMO Ⅲ, SPD	Haviet Tauli
	SDO Ⅲ, CCO, IOD	Maricar Palana
	Technical Assistant, Implementation Oversight Division	Francisco S. Dacumosiii
National Irrigation Administration (NIA)	Division Manager, System Management Division	Tores
	Snpg. Engineer. A, System Management Division	Gershrudes A. Viado
	Division Manager, Irrigation Engineering Center	Mariano R. Catan Jr.
	Sector Chief, System Management Division	Leslie C Dizon
	Snpg. Engineer. A, IEC	Jesus R. Espiritu
National Water Resource Board (NWRB), Department of Environment and Natural Resources (DENR)	Executive Director	Sevillo D. David
	Chief, Policy and Program Division	Isidra D. Penaranda
	Engineer. Ⅱ, Monitoring and Enforcement	Valen V. Juan
	Water Rights Division	Jane Domingnez
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Department of Science and Technology (DOST)	Administrator	Vicente B. Malano
	Acting Deputy Administrator	Catalino L. Davis
	Chief, Weather Division	Esperanza O. Cayanan
	Representative, Research and Development Division	Frabiano Miralda
	Chief, Research and Development and Training Division (RDTD)	Cynthia P. Celebre
	HTMIRDS	Analiza Tuddao
National Economic and Development Authority (NEDA)	Director, ANRES-ED	Remidios Indencia
	ANRES-ED	Ronald Ray, B. Taperla
	RDS	Ms. Kathleen C. Coballes

	RDS	Kathleen Abble Arcena
	RDS	William Searm
Department of Finance (DOF)	Chief, International Finance Group	Jhon Adrian Narag
RIZAL Provincial Disaster Risk Reduction and Management (PDRRM) Office	RIZAL Environment and Natural Resources Office, OIC, RENRO	Mario T. Caybtano
	RIZAL Provincial Disaster Risk Reduction and Management (PDRRM) Office	Loel Dong Malonzo
	UPMO, FCMC, DPWH	Jesee C. Felizard
Municipality of Rodriguez, Province of Rizal	Executive Officer, Municipal disaster risk reduction and management office	Rouel P. Santos
OCD Region Ⅲ	OIC regional director, OCD Region Ⅲ	Edgar Nigel B. Lonton
Saint Bernard Municipality, Southern Leyte Province	Chief of Operations, Assistant Regional Director, Saint Bernard Municipal Government	Rey M. Gozon
	Admin Officer, Saint Bernard Municipal Government	Michelle Crystal Beluso
	Finance Officer, Saint Bernard Municipal Government	Bhenlie Linda
	PDRRMO	Danilo L. Atienza
	Barangay Captain, Barangay Guiagusan	Hipolito P. Baylan
	Barangay Kagawad	Natividad O. Pia
	OCD-RegionVIII	Raymomd C. Lopega
		Jade Oliveros
San Francisco Municipality, Southern Leyte Province	San Francisco Municipal Government	Elvero A. M. Asperin Jr.
		Emma C Tapales
		Mercedita S. Dedigatoria
		Lito C. Pemedio
	Barangay Captain, Barangay Punta	Benny G. Deloso
	Planning Officer, PDRRMO	Melvin P. Gido
	OCD-RegionVIII	Raymumd C. Lupega
Municipal disaster risk reduction and management office, New Lucena (MDRRMO)	Municipal Disaster Risk Reduction and Management Officer	Kenneth Z. Sobremisana
Municipal agriculture department	Municipal agriculturist	Jacelyn P Espia
LGU office	MENRO Designate	Nevia Medina
Dumangas Climate Field School	City Mayor, Dumangas	Ronaldo B. Golez
	OCD-6	Jerry John Petalino

Singapore

Organization	Position	Name
Singapore Civil Defense Force (SCDF)	Assistant Director, International Affairs of Strategic Planning Department	MAJ Png Yan Da

	SSO International Projects, International & Corporate Affairs Branch, Planning & Corporate Department	Abdul Kalam

Thailand

Organization	Position	Name
Department of Disaster Prevention and Mitigation (DDPM), Ministry of Interior	Director, Research and International Cooperation Bureau	Chainarong Vasanasomsithi
	Director, International Cooperation Division	Arun Pinta
	Plan and Policy Analyst	Supreeya Phansungwom
		Chattraporn
		Pattaraporn
Department of Disaster Prevention and Mitigation (DDPM), Ministry of Interior	Scientist	Prasong Thammapala
	Plan and Policy Analyst, Natural Plan and Policy Division	Rattipat Panawatcharakorn
	Plan and Policy Analyst, Research and International Cooperation Bureau	Sophita Thanyalakmetha
	Director, Research and International Cooperation Bureau	Chainarong Vasanasomsithi
Thai Meteorological Department (TMD)	Deputy Director General	Songkran Agsorn
	Director, Marine Meteorological Center	Wattana Kanbua
Royal Irrigation Department (RID)	Director, Foreign Projects Management and International Affairs Division, Project Management Office	Kanchadin SRAPRATOOM
	Irrigation Engineer	Uckrawud Intarapanich
Royal Forest Department (RFD)	Director, International Convention and Commitment Division	Preecha Ongprasert
	New York Declaration on Forests Coordination Centre	Woranuch Emmanoch
PCBK International Company Limited (PCBK)	President	Chaisak Sripadungtham
Department of Mineral Resources (DMR)	Director, Geohazards Operation Center	Somsak Wathanaprida
	Senior Geologist, Geological Resources Conservation and Management Division	Kanit Prasittikarnkul
	Geologist, Geological Resources Conservation and Management Division	Sirirat Pulkasem
Department of Water Resources (DWR)	Director, Foreign Relations and International Cooperation Division, Bureau of International Cooperation	Orathai Ongrattana
Department of Marine and Coastal Resources, Ministry of Natural Resources and Environment		Ukkrit Satapoomin

Vietnam

Organization	Position	Name
Department of Natural Disaster Prevention and Control (DNDPC) and Directorate of Water Resources (DWR), Ministry of Agriculture and Rural Development (MARD)	Director, Head of the Office, Office of the Central Committee on Natural Disaster Prevention and Control	Van Phu Chinh
	Official	Lu Ngoc Lam
	Deputy Director, Finance and Planning Department, Directorate of Water Resources, MARD	PhamTien An
	Official, Department of Irrigation Works (and Dyke Safety), Directorate of Water Resources, MARD	Tran Minh Tuyen
	Deputy Director, Disaster Management Center, Directorate of Water Resources, MARD	Vu Kien Trung
	Head of Division, Science, Technology and International Cooperation Division, DNDPC	Le Quang Tuan
	Deputy Director, Dyke Management (and Flood, Storm Prevention) Department, Directorate of Water Resources, MARD	Nguyen Viet Tien
	Science, Technology and International Cooperation Department, Directorate of Water Resources, MARD	Nguyen Xuan Hong
Department of Planning, MARD	Officer, Water Resources Division	Mr Vu Thanh Liem
Vietnam Administration of Forestry, Ministry of Agriculture and Rural Development (MARD)	Director, Department of Planning and Finance	Pham Hong Luong
	Department of Forest Development	Nguyen Nam Son
	Department of Science Technology and International Cooperation	Luu Tien Dat
	Department of Planning and Finance	Trieu Van Khoi
	Department of Production Management	Duong Danh Cong
Department of Land Administration, Ministry of Natural Resources and Environment (MONRE)	Vice Director, Department of International Cooperation and Technological Science	Nguyen Thu Thuy
	Vice Director, Center of Land Resources Investigation and Assessment	Nguyen Duc Hung
	Department of Land Use Planning	Ms. Hang
	Official, Department of International Cooperation and Technological Science	Nguyen Trong Hieu
National Hydrological and Meteorological Service, MARD	Director, National Center for Hydrological and Meteorological Forecasting/ National	Hoang Duc Cuong

	Hydrological and Meteorological Service	
	Head of the Division, Planning division	Dinh Xuan Truong
	Head of the Division, Hydrological Forecasting for the Middle, Centre Highland and South of VN	Vu Duc Long
	Head of the Division, Hydrological Forecasting for the North of VN	Trinh Thu Phuong
	Head of the Division, Short Range Forecast	Vu Anh Tuan
	Official	Nguyen Thi Phuong Thao
Vietnam Institute of Meteorology, Hydrology and Climate Change (IMHEN), Ministry of Natural Resources and Environment (MONRE)	Director, Climate Change Research Center (CCRC)	Do Tien Anh
	Director, Department of Science, Training and International Cooperation	Tran Thanh Thuy
	Researcher, Climate Change Research Center (CCRC)	Nguyen Anh Tuan
Vietnam National Mekong Committee (VNMC)	Deputy Director General, VNMC	Tran Duc Cuong
Vietnam Inland Waterway Administration, Ministry of Transportation	Director, Department of Science, Technology, International Cooperation and Environment	Truong Trong Doanh
	Official, Department of Infrastructure Management	Vu Anh Dung
	Official, Department of Science, Technology, International Cooperation and Environment	Hoang Giang
	Official, Department of Science, Technology, International Cooperation and Environment	Nguyen Thi Hong
Institute of Transportation Science and Technology (ITST), Ministry of Transport (MOT)	Vice Director, Institute of Transportation Science and Technology	Nguyen Quang Tuan
	Vice Head of the Department, Research & Development - Standards- International Cooperation Department	Do Ngoc Ha
	Officer, Planning and Project Management Division	Nguyen Kim Thanh
	Vice Head of the Department, Geotechnical Department	Hoang Thanh Binh
	Head of the Center, Climate Change Research Center	Nguyen Van Chien
JICA Expert	Chief Advisor, Environmental Management Policy	Ichiro Adachi
Department of Water Resource Management, Ministry of Natural Resources and Environment (MONRE)		Thu

Department of Cooperatives and Rural Development, Ministry of Agriculture and Rural Development (MARD)	Deputy Director, Department of Cooperatives and Rural Development	Nguyen Van Du
	Deputy Director, Head of the Division, Population Planning Division	Le Van Son
	Deputy Director, Head of the Office	Nguyen Van Nghiem
	Deputy Director, Population Planning Division	Ta Nam Phong
Disaster Management Center (DMC), Directorate of Water Resources, Ministry of Agriculture and Rural Development (MARD)	Head, Community based disaster management division	Nguyen Huynh Quang
	Deputy Director	Vu Kien Trung
	Acting Head, GeoInformatics Division	An Quang Hung
	Planning Institute	Dung Dzung
Department of Meteorology, Hydrology and Climate Change (DHMCC), Ministry of Natural Resources and Environment (MONRE)	Head of the division, Climate change adaptation division	Le Minh Nhat
	Deputy Head of the division, Hydrology Information and disaster prevention division	Nguyen Thi Thu Loan
UNDP	International Technical Advisor, Strengthening Institutional Capacity for Disaster Risk Management in Viet Nam, including Climate Change Related Risks, phase 2 (SCDM 2)	Jenty Kirsch-Wood
Southern Institute for Water Resources Planning (SIWRP), Ministry of Agriculture and Rural Development (MARD)	Deputy Director	Luong Quang Xo
	Deputy Head, Division of Science, Technology and Environment	Tran Quang Tho
	Officer, Division of Science, Technology and Environment	Nguyen Thu Ha
	Officer, Division of Science, Technology and Environment	Nguyen Trung Nam
Implementation unit for capacity development and ODA water resources projects in Ninh Thuan province	Director	Do Khoa Danh
	Project development officer	Tran Thanh Truc
	Deputy Director	Pham Thi Minh Thu
	Deputy Director	Vo Ngoc Minh
Belgian Development Cooperation	Technical Advisor & Coordinator	Ian Wood
ISET	Senior Researcher	Huy Nguyen
FAO	Operations Coordinator	Tranquilli, Roberta
Farmer, Ninh Thuan	Farming	Mr Hung Ky

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Public Work Department

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Ministry of Development

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Ministry of Home Affairs

- Strategic National Action Plan for Disaster Risk Reduction 2012-2025

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JICA

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ASEAN

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Cambodia

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- Climate Change Action Plan for Disaster Management

Ministry of Agriculture, Forestry and Fishery

- Cambodia REDD+ Implementation
- Climate Change Priorities Action Plan for Agriculture, Forestry and Fisheries Sector 2014 - 2018
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Ministry of Environment (MOE)

- Cambodia Climate Change Action Plan (2016-2018)
- National Adaptation Programme of Action to Climate Change (NAPA)
- Cambodia National Climate Change Monitoring and Evaluation Framework Workshop
- Cambodia Intended Nationally Determined Contributions

Ministry of Water Resources and Meteorology (MOWRAM)

- Annual Maximum Water Level based on Mean Sea Level (MSL) and Probale Water Level
- Map of Existing Hydrological Station
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Ministry of Rural Development, Dept of Planning and Public Relation

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- National action plan rural water supply, sanitation and hygiene (2014-2018)
- Work direction 2016
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Ministry of Health

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Ministry of Economy and Finance

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- カンボジア国 洪水対策支援計画準備調査報告書
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- Mainstreaming Adaptation through the Experiences on Climate Change Strategic Plan in Cambodia
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Cambodia Climate Change Alliance

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Indonesia

BPBD

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Ministry of Environment

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- Indonesia's First Mitigation Fiscal Framework
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- Latest Presentation Material on RAN-API
- Latest RAN-API, English Version (Original in Bahasa)
- Latest RPJMN 2015-2019, English Version (Original in Bahasa)
- List of Training Courses on CCA (Original in Bahasa)
- Curriculum of 2-Week Course of Integrating CCA and DRR in Local Development Plan (Original in Bahasa)
- Curriculum of 2-Week Course on DRR management
- ICCTF list of projects --> translated and added summaries of each funded project 2016
- Press Release: Drought 2015, BMKG

Research Center of Water Resources Management of PU in Bandung

- Analyzing climate change impacts in Java
- Design Rainfall

Jasa Tilta I: Wonorejo Dam Office

- Welcome in Wonorejo Dam

Jasa Tilta II: Jatilhur Dam Office

- Integrated operation concept of the three dams in the Citarum River as well as operation data of these dams

Ministry of Agriculture and rural development

- Rice Crop Insurance (Hard copy)
- Technical guidelines for implementation of countermeasures to the impacts of climate change (PPDPI).

- Technical Guideline for Implementation of Climate Change Impact Management (PPDPI) (Hard copy in Bahasa)
- Handbook of Crop Insurance (Asuransi Usaha Tani Padi) (Hard copy in Bahasa)
- Handbook of Livestock Insurance (Pedoman Bantuan Premi)　(Hard copy in Bahasa and English)
- Sekolah Lapangan Iklim, Direktorat Jenderal Tanaman Pangan (Success Story, Director General of Crop Protection) (Original in Bahasa, translated a few parts)
- Forest Report (2015)

Ministry of Energy and Mineral Resources, Agency of Geology, Center of Volcanology and Geological Disaster Mitigation

- Landslide Hazard Mitigation in Indonesia

Ministry of Public Works and Public Housing (MOPWPH)

- Status of Discussion on National Action Plan on Climate Change Mitigation and Adaptation - Disaster Risk Reduction (RAN MAPI - DRR)
- Regional Infrastructure Development Agency (BPIW)

MOEF

- Adaptation programme (presentation in Bahasa)
- MOEF statistics (Forestry Planning and Environmental Management)
- Forest Rehabilitation Progress (2010-2014) & Achievement Strategies of National Midterm Development Planning (NMDP 2015-2019)
- MOF (Fiscal Policy Agency) (Original in Bahasa)
- Budget tagging system for climate change

JICA

- Summary report: Republic of Indonesia, pilot survey for disseminating SME's technology for disaster prevention and environmental regeneration in Indonesia
- Terminal evaluation report for the project for enhancement of the disaster management capacity of national disaster management authority (BNPB) and regional disaster management authority (BPBD) in Indonesia
- Country report Indonesia: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- Natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region: risk profile report: Bekasi and Karawang of Indonesia
- Preparatory survey report on the project for improvement of equipment for disaster risk management in Republic of Indonesia
- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Indonesia
- The preparatory study on disaster management program for Indonesia: final report
- The study on natural disaster management in Indonesia: final report
- The project for capacity development of Jakarta comprehensive flood management in Indonesia: project completion report
- The project for capacity development of Jakarta comprehensive flood management in Indonesia: technical cooperation report: comprehensive flood management plan
- River management in Indonesia
- The preparatory survey for upper Citarum basin tributaries flood management project in Indonesia final report
- Final report on the institutional revitalization project for flood management in JABODETABEK in Republic of Indonesia

- The study on capacity development for Jeneberang River basin management in the Republic of Indonesia: final report
- The study on comprehensive water management of Musi River basin in the Republic of Indonesia: final report
- Basic design study report on the project for urgent preventive irrigation restoration in the drought affected marginal areas in the Republic of Indonesia
- Final report on the project of capacity development for climate change strategies in Indonesia
- Joint ex-post evaluation of Indonesia "climate change programme loan (1)-(3)"
- The simulation study on climate change in Jakarta, Indonesia final report
- インドネシア国 防災・環境保全及び環境再生技術の普及・実証事業業務完了報告書
- インドネシア国 国家防災庁及び地方防災局の災害対応能力強化プロジェクト業務完了報告書
- インドネシア共和国 広域防災システム整備計画準備調査報告書
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 インドネシア
- インドネシア国 自然災害管理計画調査最終報告書
- インドネシア国 ジャカルタ首都圏総合治水能力強化プロジェクト プロジェクト業務完了報告書
- インドネシア国 ジャカルタ首都圏総合治水能力強化プロジェクト技術協力成果品:総合的な治水計画(案)
- インドネシア国 河川流域機関実践的水資源管理能力向上プロジェクト終了時評価調査報告書
- インドネシア国 チタルム川上流支川流域洪水対策セクターローン準備調査ファイナルレポート
- インドネシア共和国 ジャカルタ首都圏流域水害軽減組織強化プロジェクト基礎調査最終報告書
- インドネシア国 ブランタス・ムシ川における気候変動の影響評価及び水資源管理計画への統合プロジェクト詳細計画策定調査報告書
- インドネシア国 ムシ川流域総合水管理計画調査最終報告書
- インドネシア国 「気候変動対策プログラムローン(1)～(3)」合同事後評価
- インドネシア共和国 (科学技術)短期気候変動励起源地域における海陸観測網最適化と高精度降雨予測プロジェクト 終了時評価調査報告書
- インドネシア共和国 気候変動対策能力強化プロジェクト中間レビュー調査報告書
- 「国家森林計画実施支援プロジェクト」森林分野気候変動対策(REDD+)実施支援調査ファイナル・レポート

Central Java Provincial Government

- Water resources management policy in Central Java. (Hard copy in Bahasa)
- Introduction of BPBD Central Jawa activities (Rekam Jejak BPBD - Dalam Membangun Ketangguhan Jawa Tengah Menghadapi Denchana) (Booklet hard copy in Bahasa)
- Development of Small Storage Ponds in Central Java Province (Pembangunan Embung Das Kalong Desa Penimbun Kec. Karanggayam Kabupaten Kebumen Provinci Jawa Tengah)

Climate Policy Initiative

- The Landscape of Public Climate Finance in Indonesia

Indonesia Climate Change Trust Fund (ICCTF)

- The Effectiveness of Climate Finance: A Review of the Indonesia Climate Change Trust Fund (2014)

- Case Study: The Indonesia Climate Change Trust Fund (ICCTF)

Climate and Development Knowledge Network (CDKN)

- Status of Climate Finance in Indonesia (2013): Country Assessment Report

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of Indonesia

Grantham Research Institute on Climate Change and the Environment

- Climate Change Legislation in Indonesia: An Excerpt from the 2015 Global Climate Legislation Study

WMO

- Country drought report

ASEAN

- Integrated water resource management in Indonesia

CFE-DMHA

- Indonesia Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

ACAPS

- El Nino/La Nina Impact in Indonesia: Scenarios. Assessment Capacities Project (ACAPS)

WFP

- The Impact of Drought on Households in Four Provinces in Eastern Indonesia

Laos PDR

Ministry of Labour and Social Welfare, Disaster Management Division (DMD)

- Overview of DMD
- Disaster Risk Management and Climate Change Adaptation
- Environmental Protection Law 2013
- Laos Intended Nationally Determined Contribution
- Flood data
- Flood Haima and Nock-ten report
- Ketsana Storm
- Disaster 2015
- Disaster 2014
- Disaster 2016
- National Assessment Report: Disaster Risk Reduction (2012)

Ministry of Labour and Social Welfare

- Flood Disaster Data in 2015
- Lao PDR National Assessment Report on Disaster Risk Reduction (2012)

Ministry of Public Works and Transport, Housing and Urban Planning Department

- Housing Design and Construction or DRR & CCA Handbook
- Urban Planning of DRR & CCA
- Detail guidelines urban pl adjusted
- Hand book for Rural Houses Design and Construction in Lao PDR

- Handbook for Master Urban Planning and Urban Planning in detail mainstreaming with DRR and CCA

Ministry of Natural Resources and Environment (MONRE)

- National Rio+20 Report for Lao PDR
- Intended Nationally Determined Contributions of Lao PDR
- Strategy on Climate Change of Lao PDR
- Climate Change Action Plan of Lao PDR for 2013-2020

Ministry of Natural Resources and Environment (MONRE), Department of Meteorology and Hydrology (DMH)

- Disaster Management System in Lao PDR

Ministry of Natural Resources and Environment (MONRE), Department of Water Resources (DWR)

- Decision on Establishment and Activities of Department of Water Resources
- Draft National Water Resource Strategy from now until 2025 and Water Resource Action Plan for 2016-2020 For Lao PDR
- Integrated Water Resources Management In Lao PDR
- Role of Modelling/Flood maps and Climate Change Scenarios on National River Basins in Lao PDR

Ministry of Agriculture and Forestry

- Plan of action for disaster risk reduction and management in agriculture (2014-2016)
- Plan of action for disaster risk reduction and management in agriculture (2017-2020)
- Why plan of action for DRRM in Agriculture
- Consolidating capacities and institutionalizing disaster risk reduction and management in Lao PDR. Project achievements and way ahead
- Status Quo of Forestry Development in Lao PDR:　Maintaining Forestry Ecological Security and Improving National Green Welfares

Ministry of Planning and Investment

- Five Year National Socio-Economic Development Plan VIII (2016-2020)

Mekong River Commission (MRC)

- Project Fact Sheet

Asian Development Bank (ADB)

- NAM NGUM RIVER BASIN 5-Year ACTION PLAN 2016 - 2020

JICA

- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Lao PDR
- Country report Lao PDR: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 ラオス
- ラオス人民民主共和国 河岸浸食対策技術プロジェクト(フェーズ 2)プロジェクト事業完了報告書
- ラオス国 河岸侵食対策技術プロジェクト事業完了報告書
- ラオス国 ビエンチャン市周辺メコン河河岸浸食対策計画調査最終報告書 要約
- ラオス国 気象水文システム整備計画準備調査報告書

International Federation of Red Cross and Red Crescent Societies (IFRC)

- Legal Preparedness for Responding to Disasters and Communicable Disease Emergencies: Study Report

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of Lao PDR

Grantham Research Institute on Climate Change and the Environment

- Climate Change Legislation in Lao PDR: An Excerpt from the 2015 Global Climate Legislation Study

UNDP

- Developing National Risk Profile of Lao PDR. Part I: Hazard Assessment

WMO

- Country drought report

CFE-DMHA

- Lao PDR Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

ASEAN

- Integrated Water Resources Management in Lao PDR

Malaysia

Ministry of Natural Resources & Environment

- Intended Nationally Determined Contribution of the Government of Malaysia
- INFO KEMARU Drought information in Malaysia　http://infokemarau.water.gov.my/
- CLIMATE CHANGE IMPACT AND ADAPTATION MEASURES

Minerals and Geoscience Department

- LANDSLIDE RISK REDUCTION

Ministry of Science, Technology and Innovation

- Overview, monitoring network, and disaster in Malaysia

Malaysian Meteorological Department of the Ministry of Science, Technology and Innovation

- Overview of MetrMalaysis

Ministry of Agriculture

- Overview, flood, drought, and future initiatives
- Hanging Fertigation

Federal Department of Town and Country Planning

- Disaster Risks Information Through Development Plan

Public Works Department

- STRUCTURAL DESIGN INCORPORATING DISASTER RISKS
- National Slope Master Plan

Department of Irrigation and Drainage Malaysia (DID/ JPS) of NRE

- A Unique Flood Management Solution in the 21st Century for the city of Kuala Lumpur- SMART (Stormwater Management and Road Tunnel)

- Flood hazard maps
- Projek Lencongan Sungai Segamat - Sungai Genuang

Climate Change Division (PAPSI) of NRE

- PPT file of PAPSI (Climate Change Division) of NRE

National Hydraulic Research Institute of Malaysia (NAHRIM) of NRE

- Climate Change Impact Adaptation Measures
- RAINWATER HARVESTING SYSTEM
- BIG DATA: NAHRIM RECEIVED AN APPRECIATION FROM MAMPU FOR A COLLABORATIVE ANALYSIS OF NAHRIM'S 10 BILLION HYDROCLIMATE DATA PROJECTION

MADA

- Jadual penanaman padi dan bekalan air musim pertama 2016

ISKANDAR

- Sungai Segget Revitalisation

JICA

- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Malaysia
- Country report Malaysia: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 マレーシア
- マレーシア国 地すべり災害および水害による被災低減に関する研究プロジェクト中間レビュー調査報告書
- マレーシア国 (科学技術)マレーシアにおける地すべり災害および水害による被災低減に関する研究プロジェクト詳細計画策定調査報告書
- マレイシア国 河川流域情報システム計画調査 要約報告書
- マレイシア国 ムダ川洪水制御計画調査事前調査報告書
- マレイシア国 ペナン島洪水緩和・排水計画調査主報告書(要約)

Economic Planning Unit, Prime Minister's Department

- Eleventh Malaysia Plan 2016-2020

Center for Excellence in Disaster Management and Humanitarian Assistance

- Disaster Management Reference Handbook (2016)

Adaptation Knowledge Platform

- Scoping Assessment on Climate Change Adaptation in Malaysia

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of Malaysia

Grantham Research Institute on Climate Change and the Environment

- Climate Change Legislation in Malaysia: An Excerpt from the 2015 Global Climate Legislation Study

WMO

- Country Report-Malaysia. Capacity Development to Support National Drought Management Policy
- Country drought report

CFE-DMHA

- Malaysia Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

EM-DAT

- The International Disaster Database

University of Tokyo (UOT)

- Satellite-based drought monitoring and early warning system

International Congress on Irrigation and Drainage (ICID)

- Water and land productivity in paddy cultivation: Concepts, indices, targets and challenges,

World Resource Institute (WRI)

- Aquaduct Water Risk Atlas

ASEAN

- Integrated Water Resources Management in Malaysia

Myanmar

- Climate Change Laws in Myanmar
- National Disaster Risk Reduction and Management Plan (NDRRMP) 2011‐2028
- Myanmar's Intended Nationally Determined Contribution - INDC

Ministry of Information, information and public relations department

- GUIDANCE NOTE Establish and Manage Information Resource Center for Disaster Risk Reduction at Township Level

Ministry of Natural Resources and Environmental Conservation (MONREC) Forest Department

- Forest operations
- Organization
- Budget
- Responsibilities of Forest Department [according to Section (9) of Forest Law (1992)]
- Forest Management in Myanmar
- 1981 to 2016-2017 (Plantation)
- Institutional Strengthening in Integrated Sustainable Coastal Management in Myanmar
- Mangrove Lecture_1606_CFDTC
- Myanmar Climate Change Strategy and Action Plan (MCCSAP)2016-2030
- Forest & Climate Change Policies, Actions and Best Practices in Myanmar
- Myanmar REDD+ Readiness Roadmap
- Intended Nationally Determined Contributions (INDC)
- Myanmar’s National Adaptation Programme of Action (NAPA) to Climate Change (2012)
- National Forest Master Plan
- Private Forest Plantation
- National Reforestation and Rehabilitation Program in Myanmar (2017-2018 to 2026-2027)
- Seedling Distribution
- Myanmar National Communication Report
- Sustainability Roadmap for Myanmar (Environment Perspective)
- Forestry in Myanmar

Ministry of Natural Resources and Environmental Conservation (MONREC) ECD

- EIA Notification
- Annex A, B, C
- Flow chart
- 5th Draft National Environmental Policy
- IEE EIA Types
- Penalties for EIA
- EC Rules notification
- Environmental Conservation Law
- National Environmental Policy
- Myanmar's National Adaptation Programme of Action (NAPA) to Climate Change (2012)

Ministry of Resources and Environmental Conservation (MOREC)

- 5th Draft National Environmental Policy 17 March 2016
- Environmental Conservation Law
- Myanmar’s initiatives of Environmental Mainstreaming into Development towards SDGs

Ministry of Transport and Communication (MOTC), Department of Meteorology and Hydrology (DMH)

- Adaptation to Climate Change
- Current Status and Existing Capacity of Hydrological Division

Ministry of Transport and Communication (MOTC), Directorate of Water Resources and Improvement of River Systems (DWIR

- Ayeyarwady Integrated River Basin Management Project.

Ministry of Social Welfare, Relief and Resettlement, Relief and Resettlement Department (RRD)

- Myanmar Action Plan on Disaster Risk Reduction (2009-2015)
- Review on the Progress of Myanmar Action Plan on Disaster Risk Reduction- MAPDRR Implementation
- RRD Finance
- Multi Hazard Risk Assessment in the Rakhine State of Myanmar
- Flooded area maps
- Vision and responsibility of RRD
- Natural Disaster Management Law
- Disaster Management Rules
- Formation of National Disaster Management Committee (NDMC)
- National Disaster Management Committee’s Organogram

Ministry of Agriculture, Livestock and Irrigation (MOALI) Irrigation and Water Utilization Management Department

- Conditions during River Inundation, 2015
- Report Maubin District
- "Activities of Irrigation and Water Utilization Management Department, Pyapon District, Ayeyarwaddy Region"
- Outline of Irrigation and Water Utilization Management Department

National Land Resource Management Central Committee

- National Land Use Policy

JICA

- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Myanmar

- Country report Myanmar: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- Preparatory survey report on the project for establishment of disastrous weather monitoring system in the Republic of the Union of Myanmar
- The preparatory survey report on the project for improvement of machinery for rehabilitation of polder embankment in Ayeyawady delta in the Republic of the Union of Myanmar
- The integrated mangrove rehabilitation and management project through community participation in the Ayeyawady delta in Myanmar: project completion report
- The second preparatory survey on mangrove rehabilitation plan for enhancement of disaster prevention in the Ayeyawady Delta in the Republic of the Union of Myanmar: final report

- The project for preservation of farming area for urgent rehabilitation of agricultural production and rural life in areas affected by Cyclone Nargis in the Republic of the Union of Myanmar final report: summary report
- Outline design study report on the project for construction of primary school - cum - cyclone shelters in the area affected by cyclone "Nargis" in the Union of Myanmar: final report
- The project for improvement of road technology in disaster affected area in Myanmar: project completion report
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 ミャンマー
- ミャンマー国 自然災害早期警報システム構築プロジェクト プロジェクト業務完了報告書
- ミャンマー国 エーヤーワディ・デルタ輪中提復旧機材整備計画準備調査報告書
- ミャンマー国 エーヤーワディ・デルタ住民参加型マングローブ総合管理計画プロジェクト終了時評価調査報告書
- ミャンマー連邦共和国 沿岸部防災機能強化のためのマングローブ植林計画準備調査(その 2)報告書
- ミャンマー国 サイクロンナルギス被災地域における農業生産及び農村緊急復興のための農地保全プロジェクト最終報告書(和文要約)
- ミャンマー連邦 サイクロン・ナルギス被災地域における農業生産及び農村緊急復興のための農地保全プロジェクト協力準備調査現地調査報告書
- ミャンマー国 災害多発地域における道路技術改善プロジェクト プロジェクト業務完了報告書
- ミャンマー国 中央乾燥地における節水農業技術開発プロジェクト情報収集・確認調査ファイナル・レポート
- ミャンマー連邦共和国 中央乾燥地における節水農業技術開発プロジェクト 詳細計画策定調査報告書
- ミャンマー連邦 中央乾燥地村落給水計画準備調査報告書
- ミャンマー国 中央乾燥地村落給水技術プロジェクト終了時評価報告書

UNDP

- Myanmar AF Project Proposal

The World Bank

- Myanmar Public Expenditure Review 2015

Myanmar's Consortium for Community Resilience (MCCR)

- Inclusive Framework and Toolkit for Community-based Disaster Risk Reduction in Myanmar

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of Myanmar

Grantham Research Institute on Climate Change and the Environment

- Climate Change Legislation in Myanmar: An Excerpt from the 2015 Global Climate Legislation Study

CFE-DMHA

- Myanmar Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

WMO

- Country drought report

The Philippines

- Assessment of Disaster Risk Reduction and Management (DRRM) at the Local Level

National Economic and Development Authority

- Guidelines on mainstreaming disaster risk reduction in subnational development land use physical planning in the Philippines
- Philippine Development Plan 2017-2022

Office of the President of the Philippines, Climate Change Commission (CCC)

- Climate Change Expenditure Tagging for Local Government
- Climate Change a Primer for Local Government
- National Climate Change Action Plan (2011-2028)
- National Climate Budgeting - A reference guide to climate budgeting at the national level in the Philippines
- Intended Nationally Determined Contributions of the Philippines
- A Guide on How to Access the People's Survival Fund

Department of National Defense, Office of Civil Defense (OCD)

- The Philippine Disaster Risk Reduction and Management System (presentation)
- For Understanding and Monitoring Disaster Risk Reduction in Locality (presentation by JICA expert)
- DRRM in Eastern Visayas

Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

- Enhancing Risk Analysis Capacities for Flood, Tropical Cyclone Severe Wind and Earthquake for the Greater Metro Manila Area (Component 3 and 4)

Department of Agriculture

- Enhanced climate-smart farmers filed school Program manual for trainers
- Small water impounding project (SWIP)

Department of Environment and Natural Resources, Mines and Geosciences Bureau (MGB)

- Detailed Landslide and Flood Hazard Maps
- Rock Avalanche on Leyte Island
- Guinsaugon, Southern Leyte landslide
- Philippines Forests at a Glance 2014
- Southern Leyte-Surigo tragedy

Department of Public Works and Highways (DPWH), Bureau of Design

- Design Guidelines, Criteria & Standards Volume 3 Water Engineering Projects (2015)

Housing and Land Use Regulatory Board

- CLUP GUIDEBOOK - Supplemental Guidelines on Mainstreaming Climate Change and Disaster Risks in the Comprehensive Land Use Plan

Rizal Provincial Office

- Rizal Provincial Climate Change Action Plan 2016-2022
- The Provincial Disaster Risk Reduction and Management Plan (PDRRMP) of the Province of Rizal for the year 2017
- Rizal Province, Consequence and Vulnerability Analysis, Risk Estimation and Risk Evaluation (Final Draft)

Ormoc City CDRRMO

- Ormoc City Risk Profile

Saint Bernard Municipality in the Southern Leyte Province

- Saint Bernard Experience - Guisaugon Landslide disaster (2006)

San Francisco Municipality in Panaon Island in Southern Leyte Province

- Briefing sheet
- CP final - Manicipality of San Francisco Interim
- Directory of MDRRMC and MDRRMO
- Hazard maps
- LCCAP Plan San Francisco
- MDRRM Plan 2016-2020
- Municipal DRRM Council Structure
- Municipal DRRM Official Structure

JICA

- Data collection survey on disaster-resilient feeder ports and logistics network in the Republic of the Philippines final report
- Republic of the Philippines, data collection survey on the incentive mechanism for improving disaster resiliency of electric power distribution network: final report
- Country report Philippines: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- Terminal evaluation report on disaster risk reduction and management capacity enhancement project in the Philippines
- Preparatory survey report on the project for improvemental of equipment for disaster risk management in Republic of the Philippines
- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Philippines
- Small water impounding management project
- Preparatory study report on the project for evacuation shelter construction in disaster vulnerable areas in the Province of Albay in the Republic of the Philippines
- The preparatory study for sector loan on disaster risk management in the Republic of the Philippines final report
- The preparatory study for sector loan on disaster risk management in the Republic of the Philippines final report: needs assessment study on flood disasters caused Typhoons No. 16 (Ondoy) and No. 17 (Pepeng)
- The study on program formulation in disaster mitigation sector in the Philippines final report

- Republic of the Philippines, advisory services for flood management on project for improvement/restoration of telemetry equipment of effective flood control operation system (EFCOS): services completion report
- Republic of the Philippines, preparatory survey for flood risk management project for Cagayan de Oro river (FRIMP-CDOR): final report
- Data collection survey on situation of nationwide flood forecasting and warning system in the Republic of the Philippines: final report
- Basic design study on the project for flood disaster mitigation in Camiguin Island in the Republic of the Philippines
- The study on comprehensive flood mitigation for Cavite Lowland area in the Republic of the Philippine: final report
- The study on the nationwide flood risk assessment and the flood mitigation plan for the selected areas in the Republic of the Philippines: final report
- Basic design study report on the project for urgent improving/upgrading of flood control system in Metro Manila in Republic of the Philippines
- Basic design study report on the project for upgrading of flood forecasting and warning system in the Pampanga and Agno River and basins in Republic of the Philippines
- The study on flood control project implementation system for principal rivers in the Philippines under the project for enhancement of capabilities in flood control and sabo engineering of the Department of Public Works and Highways
- The study on sabo and flood control for western river basins of Mount Pinatubo in the Republic of the Philippines: final report
- The study on risk management for sediment-related disaster in selected national highways in the Republic of the Philippines: final report
- The Republic of the Philippines, the study of water security master plan for metro Manila and ITS adjoining areas: climate change impact assessment and hydro logical simulation: final report

- Preparatory survey on the programme grant aid for environment and climate change (water technology) in the Republic of the Philippines: final report
- フィリピン国 災害に強い地方港湾および物流計画にかかる情報収集・確認調査最終報告書
- フィリピン国 災害リスク削減・管理能力向上プロジェクト最終報告書
- フィリピン国 災害リスク軽減・管理能力向上プロジェクト終了時評価調査報告書
- アセアン地域における産業集積地の自然災害リスク評価と事業継続計画に関する情報収集・確認調査リスクプロファイルレポート ： カビテ、ラグナ、マニラ首都圏南部 (フィリピン)
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 フィリピン
- フィリピン国 災害に強いコミュニティ・国づくりプロジェクト準備調査報告書
- フィリピン国 パッシグ河予警報システム事業復旧支援プロジェクト洪水予警報アドバイザー業務(有償勘定技術支援)専門家業務完了報告書
- フィリピン国 洪水予警報の統合データ管理能力強化プロジェクト詳細計画策定調査報告書
- フィリピン国 台風ヨランダ災害緊急復旧復興支援プロジェクトファイナルレポート
- フィリピン共和国 洪水リスク管理事業(カガヤン・デ・オロ川)準備調査最終報告書要約
- フィリピン共和国 治水行政機能強化プロジェクト終了時評価調査報告書
- フィリピン国 全国洪水リスク評価及び特定地域洪水被害軽減計画調査最終報告書
- フィリピン共和国 パンパンガ・アグノ河洪水予警報システム改善計画基本設計調査報告書

- フィリピン共和国 洪水予警報業務強化指導プロジェクト終了時評価報告書
- フィリピン共和国 治水・砂防技術力強化プロジェクトステージ 2 終了時評価報告書
- フィリピン国 ピナツボ火山西部河川流域洪水及び泥流制御計画調査最終報告書 要約
- フィリピン国 道路土砂災害危険度の評価・管理計画調査最終報告書

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of the Philippines

Grantham Research Institute on Climate Change and the Environment

- Climate Change Legislation in the Philippines: An Excerpt from the 2015 Global Climate Legislation Study

FAO

- El Nino and La Nina in the Philippines

CFE-DMHA

- Philippines Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

WMO

- Country drought report

ASEAN

- Integrated water resource management in Philippines

Singapore

JICA

- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Singapore
- Country report Singapore: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 シンガポール

National Climate Change Secretariat, Prime Minister's Office

- Climate Change and Singapore: Challenges, Opportunities and Partnerships
- Singapore's National Climate Change Strategy

National Environmental Agency

- Singapore's Third National Communication and First Biennial Update Report (2014)

Inter-ministerial Committee on Climate Change (IMCCC)

- Singapore's Intended Nationally Determined Contribution

CFE-DMHA

- Singapore Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of Singapore

PUB

- Singapore Water Story

ADB

- Asian Water Development Outlook 2016

ASEAN

- Overview of IWRM in Singapore

Thailand

Ministry of Interior, Department of Disaster Prevention and Mitigation (DDPM)

- Thailand's National Disaster Prevention and Mitigation Plan 2015
- Draft of master plan about drought in Thailand
- National Disaster Management Plan (2015)
- The National Disaster Data Bank
- Ayuthaya Flood Hazard Map
- Krabi Landsliade Hazard Map
- Pang Nga Tsunami Hazard Map
- Kon Kaen Drought Hazard Map
- Disaster Management Center
- Personel Division
- Policy Division
- Promotion Division

Ministry of National Development Land Development Department (LDD)

- LDD Responsibilities and budget

Ministry of Industry, Department of Mineral Resources

- Risk Analysis of Landslide
- Landslide Mitigation
- Thailand drought monitoring system

Ministry of Natural Resources and Environment (MONRE), Department of Water Resources (DWR)

- Water Management 2016
- Drought in Thailand

Office of Natural Resources and Environmental Policy and Planning (ONEP)

- Thailand's Intended Nationally Determined Contributions

Ministry of Agriculture and Cooperatives, Royal Forest Department (RFD)

- Urban Biodiversity Rehabilitation in Bang Kachao Nature Protection Area

Mekong River Commission (MRC)

- Project Fact Sheet

JICA

- The project on capacity development in disaster management in Thailand (phase-2) final report
- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Thailand
- Country report Thailand: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- Kingdom of Thailand, project for the comprehensive flood management plan for the Chao Phraya river basin component 3: final report

- The project for flood countermeasures for Thailand agricultural sector in the Kingdom of Thailand: final report
- Preparatory survey report on the flood prevention project of east side of the Pasak river in Ayutthaya in the Kingdom of Thailand
- Project for capacity development on climate change mitigation adaptation in the southeast Asia region: project activity completion report
- Technical cooperation project on the Bangkok master plan on climate change 2013-2023 in the Kingdom of Thailand: final report
- タイ国 防災能力向上プロジェクト(フェーズ 2)ファイナルレポート
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 タイ
- タイ王国 チャオプラヤ川流域洪水対策プロジェクト : コンポーネント 3 : 洪水管理システム構築支援 : 最終報告書
- タイ王国 チャオプラヤ川流域洪水対策プロジェクト最終報告書
- タイ国 農業セクター洪水対策プロジェクト(緊急開発調査)(ファスト・トラック制度適用案件)ファイナル・レポート
- タイ国 チャオプラヤ川流域洪水対策プロジェクト(航空レーザ測量調査業務)(ファスト・トラック制度適用案件)ファイナル・レポート
- タイ王国 パサック川東部アユタヤ地区洪水対策計画 協力準備調査報告書(詳細設計)
- タイ王国における洪水に対する国際緊急援助隊専門家チーム活動報告書
- タイ国 東南アジア地域気候変動緩和・適応能力強化プロジェクト事業完了報告書
- タイ国 バンコク都気候変動マスタープラン(2013-2023 年)作成・実施能力向上プロジェクト プロジェクト事業完了報告書
- タイ国 気候変動に対する水分野の適応策立案・実施支援システム構築プロジェクト詳細計画策定調査報告書

The Policy Committee for Water Resources Management

- The Strategic Plan on Thailand's Water Resources Management 2015
- Water Resources Management Strategy 2015-2026

United Nations Development Programme

- Strengthening the Governance of Climate Change Finance in Thailand: Country Brief

Center for International Forestry Research (PES) in Thailand

- A Review of the Legal and Policy Framework for Payments for Ecosystem Services

ASEAN Disaster Preparedness Center

- Assessment of Disaster Management Planning, Policies and Responses in Thailand

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of Thailand

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- Climate Change Legislation in Thailand: An Excerpt from the 2015 Global Climate Legislation Study

ADB

- Sector Assessment (Summary): Water Resources Thailand

NEB

- The Water Sector in Thailand. Bangkok: Netherlands Embassy in Bangkok (NEB)

CFE-DMHA

- Thailand Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

Marpraneet, V.

- Drought conditions and management strategies in Thailand

National Statistical Office

- Environmental Statistics 2012, Thailand

WMO

- Country drought report

JIRCAS

- Introduction of SOMPO Japan Products - Weather Index Insurance for Agriculture (WIIA) in Thailand

ECO-CSR Japan

- Insurance in Climate Change: Sompo Japan – Weather Index Insurance against Drought Risk in Northeast Thailand

DGR

- Groundwater Management of Agriculture, Department of Groundwater Resources (DGR)

ASEAN

- ASEAN Cooperation on Water Resources Management
- Overview of IWRM in Thailand

Vietnam

Ministry of Agriculture and Rural Development (MARD), Forest Department

- PM decision coastline forests for responding to CC
- Coastal forest Decree
- model reforestation in coastal of Vietnam
- PM decision Approval of the Forestry dept strategy 2006-2020
- Decree on Org ad mgt of special use forest system
- PM decision Approving Scheme for strengthening mgt of exploitation of timber (2014-2020)
- Annual report 2013
- Decision on approving the Forestry sector reform proposal
- Decision approval of project of greenhouse gas emission mgt
- Decree on policy for payment for forest env services
- Decree on agriculture and forestry companies classification innovation
- Intended Nationally Determined Contribution (INDC) Vietnam
- Progress in payment for forest env services
- Visions for forest protection, development and REDD
- Decision on approval for forest protection and dev plan (2011-2020)
- Decision on regulating functions, tasks, authorities and org structure of administration of forest

- Proposal from Forestry Administration
- Intended Nationally Determined Contribution (INDC) in Vietnam
- Action Plan Framework for Adaptation and Mitigation of Climate Change of the Agriculture and Rural Development Sector Period 2008-2020

Ministry of Agriculture and Rural Development (MARD), Disaster Management Center (DMC)

- Introduction

Ministry of Agriculture and Rural Development (MARD), Southern Institute of Water Resources Planning (SIWRP)

- Presentation file (Vietnamese)
- Decision on the implementation of the pilot agriculture insurance program period 2011-2013
- Vietnam pilot agricultural insurance program
- Flood planning

Ministry of Natural Resources and Environment (MONRE)

- National Strategy on Climate Change
- National Target Program to Respond to Climate Change
- Ministry of Natural Resources and Environment (MONRE), Department of Water Resources Management
- Draft regulation for the River Basin Organizations published for public comment
- New regulation for dam operation for flood management
- Decree 43 (2015) MONRE for river management

Ministry of Transportation

- Policies and projects related to disaster risk management and climate change response
- Climate change and green growth action plan (2016- 2020)
- Plan of disaster risk prevention and control, and search and rescue of the Department of Inland waterway in 2016
- Disaster events and its impacts on the inland waterway sector, and DDR
- Presentation by NMHS
- Draft climate change action plan of HCM city (page 1,8,13 and annex 2)
- Decision 1622 on issuing the procedure for operating inter-reservoir on Red river basin
- Draft regulation for the River Basin Organisations
- Resolution 134 on adjusting land use planning to 2020
- Presentation on flood and drought control in Mekong delta 2016- 2020

Ministry of Planning and Investment

- Viet Nam Climate Finance Readiness
- Financing Vietnam's Response to Climate Change: Building a Sustainable Future

Vietnam Institute of Meteorology, Hydrology, and Climate Change (IMHEN)

- Viet Nam special report on managing the risks of extreme events and disasters to advance climate change adaptation

Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE)

- Policy on Climate Change in Vietnam

JICA

- Data collection survey on ASEAN regional collaboration in disaster management final report: country report: Vietnam
- Country report Vietnam: natural disaster risk assessment and area business continuity plan formulation for industrial agglomerated areas in the ASEAN region
- The project for building disaster resilient societies in central region in Vietnam: final report

- The project for climate change adaptation for sustainable agriculture and rural development in the coastal Mekong delta in Viet Nam final report: master plan
- The project for climate change adaptation for sustainable agriculture and rural development in the coastal Mekong delta in Viet Nam final report: priority project
- アセアン地域 防災協力に関する基礎情報収集・確認調査ファイナル・レポート国別調査報告書 ベトナム
- アセアン地域における産業集積地の自然災害リスク評価と事業継続計画に関する情報収集・確認調査リスクプロファイルレポート ：ハイフォン (ベトナム)
- ベトナム国 開発途上国の社会・経済開発のための民間技術普及促進事業 ICT 活用によるサスティナブルな防災・減災システム普及促進事業報告書
- ベトナム国 災害に強い社会づくりプロジェクトフェーズ 2 終了時評価調査報告書
- ベトナム 中部地域災害に強い社会づくりプロジェクト終了時評価調査報告書
- ベトナム社会主義共和国 幹線交通網沿いの斜面災害危険度評価技術の開発中間レビュー調査報告書
- ベトナム国 ベトナムにおける幹線交通網沿いの斜面災害危険度評価技術の開発プロジェクト詳細計画策定調査報告書
- ベトナム社会主義共和国 メコンデルタ沿岸地域における持続的農業農村開発のための気候変動適応対策プロジェクト詳細計画策定調査報告書
- ベトナム国 メコンデルタ沿岸地域における持続的農業農村開発のための気候変動適応対策プロジェクト最終報告書 要約版
- ベトナム国 メコンデルタ沿岸地域における持続的農業農村開発のための気候変動適応対策プロジェクト最終報告書 マスタープラン編
- ベトナム国 メコンデルタ沿岸地域における持続的農業農村開発のための気候変動適応対策プロジェクト最終報告書 優先事業編

Adaptation Knowledge Platform

- Scoping Assessment on Climate Change Adaptation in Viet Nam

UN HABITAT

- Cities and Climate Change, Abridged Report: Hoi An, Viet Nam, Climate Change Vulnerability Assessment

Australian AID

- Australia - Viet Nam Climate Change Delivery Strategy 2011-2016

Irish Aid

- Vietnam Climate Action Report for 2015

International Fund for Agricultural Development

- Climate Change Analysis and Adaptation Responses

Asian Development Bank

- Viet Nam Environment and Climate Change Assessment

International Federation of Red Cross and Red Crescent Societies (IFRC)

- Legal Preparedness for Responding to Disasters and Communicable Disease Emergencies: Study Report

Columbia Law School, Sabin Center for Climate Change Law

- Climate Change Laws of Vietnam

UNDP

- Vietnam Emergency Response Plan 2016-17

- Viet Nam: Drought and Saltwater Intrusion

Grantham Research Institute on Climate Change and the Environment

- Climate Change Legislation in Vietnam: An Excerpt from the 2015 Global Climate Legislation Study

MCDU

- Drought situation and measures for Ninh Thuan Province. (Implementation Unit for Capacity Development and ODA Water Resources Projects)

WMO

- Country drought report

FAO

- "El Niño" event in Viet Nam: Agriculture, food security and livelihood needs assessment in response to drought and salt water intrusion

ISET/Rockfeller Foundation

- Project Storm Resistant Housing Towards a Resilient Da Nang City

CFE-DMHA

- Vietnam Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

ASEAN

- Overview of IWRM in Vietnam

Overall

WMO

- Proceedings of the Regional Workshop on Capacity Development to Support National Drought Management Policies for Asia- Pacific Countries

ASEAN

- Drought code for fire rating system
- ASEAN Cooperation on Water Resources Management
- Integrated water resource management in ASEAN
- ASEAN Regional Guidelines for Promoting Climate Smart Agriculture (CSA) Practices
- ASEAN Disaster Monitoring and Response System

UNISDR

- Synthesis report on ten ASEAN countries disaster risk assessment

ADB

- Greater Mekong Sub-region Economic Cooperation Program: Overview

CFE-DMHA

- ASEAN Disaster Management Reference Handbook, Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA)

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添付資料 13：ミャンマー国別ワークショップ記録

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration [CN20]

Outline of the National Workshop in Myanmar

Background:

The Concept Note No. 20 [CN20] for **Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration** is one of the Flagship and Priority Projects under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015). The concept of **strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions** is succeeded in the Priority Programme No. 3. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020. The CN20 Project being implemented by a JICA Project Team in 2016-2017 aims to support the Working Group on Prevention and Mitigation under the ASEAN Committee on Disaster Management (ACDM) in setting the direction and designing a roadmap to realise these concepts. For that, the Project Team has completed baseline studies in each ASEAN Member State which result was compiled in a Progress Report and shared with ACDM members in April 2017. Based on the findings and analyses, three National Workshops in May-July followed by a Regional Forum and Senior Official-Level Forum in September and November respectively will be organised to consolidate and adopt common regional approaches for realising the concept.

Objectives:

- To discuss current conditions including constraints and barriers for implementing DRR and CCA and their integration against water-related disasters of flood, storm, landslide and drought
- To discuss directions and necessary actions for improving DRR and CCA and their integration
- To discuss possible common approaches for facilitating DRR and CCA integration in ASEAN which will feed into the discussion at the upcoming Regional Forum and Senior Official-Level Forum

Co-organisers:

- Relief and Resettlement Department (RRD), Ministry of Social Welfare, Relief and Resettlement (MoSWRR) [National Project Coordinator and ACDM focal point]
- JICA Project Team

Participants: A total of about 40 participants from agencies related to DRR of water-related disasters and CCA and co-organisers:

- Ministry of Transport and Communications (MoTC)
    - Directorate of Water Resources and Improvement of River Systems (DWIR)
    - Department of Meteorology and Hydrology (DMH)
- Ministry of Agriculture, Livestock and Irrigation (MoALI)
    - Irrigation and Water Utilization Management Department (IWUMD)
    - Department of Agriculture
    - Rural Development Department
- Ministry of Natural Resources and Environmental Conservation (MoNREC)

    - Environmental Conservation Division (ECD)
    - Forestry Department (FD)
    - Department of Mines
- Ministry of Construction (MoC)
    - Department of Road
    - Department of Bridge
    - Department of Buildings
- Ministry of Planning and Finance
    - Planning Department
    - Foreign Economic Relation Department
- Ministry of Education (MoE)
    - Department of Basic Education
- Ministry of Health and Sports (MoHS)
    - Public Health Department
- Ministry of Home Affairs (MoHA)
    - General Administration Department (GAD) *(did not show up)*
- Natural Resources and Environmental Conservation Committee, Myanmar Parliament
- Myanmar Red Cross Society
- Others

Date and time: 9:30-16:00, Wednesday, 31 May 2017
Venue: Grand Ball Room, Horizon Lake View Hotel, Nay Pyi Taw
Language: English (group discussions in Burmese)

Draft programme:

9:00-9:30	*Registration*
9:30-9:50	**Opening** • Opening remarks – *Deputy Director General of RRD* • Self-introduction of the participants • Objectives of the National Workshop – *JICA Project Team*
9:50-10:10	**Session 1: Understanding DRR and CCA integration** *Presentation by the JICA Project Team followed by inputs and comments by the participants* • Climate-related disasters in the region and the needs for DRR and CCA integration • International agreements on DRR and CCA: the Sendai Framework for Disaster Risk Reduction (SFDRR); the Sustainable Development Goals (SDGs) 2030; the Paris Agreement under the United Nations Framework on Climate Change (UNFCCC) • Commitments by the ASEAN: AADMER Work Programme 2016-2020; the

	Declaration on Institutionalising the Resilience of ASEAN and its Communities and Leaders (April 2015); the ASEAN Action Plan on Joint Response to Climate Change
10:10-10:40	**Session 2: Assessment of DRR and CCA integration in ASEAN and Myanmar** *Presentations by the JICA Project Team followed by inputs and comments by the participants* • Ideal status of DRR and CCA integration (examples of other countries) • Tentative country assessment of Myanmar – issues and challenges • Status in ASEAN and selected (potential) good practices
10:40-11:00	*Coffee break*
11:00-11:30	**Session 3: Approaches by the Government of Myanmar on DRR and CCA integration** *Presentations by the RRD followed by inputs and comments by the participants* • Revision of the Myanmar Action Plan on DRR (MAPDRR) • Linkage with the Myanmar Climate Change Strategy and Action Plan (MCCSAP) and other initiatives
11:30-12:30	**Session 4: Prioritisation of issues and necessary actions in Myanmar *[Group work]*** *Breakout in 3 groups;* *Each group 1) discusses the issues and challenges for DRR and CCA integration in Myanmar, necessary actions and roles of relevant agencies; and then 2) prioritise them using a discussion sheet*
12:30-13:30	*Lunch break*
13:30-14:50	**Session 5: Plenary discussion on the prioritised issues** *A representative of each group presents the main points discussed and then the participants rank the identified priorities and discuss necessary actions and roles of relevant agencies to improve them* • Presentation and Q&A: 40 min (= 10 min x 4 groups) • Plenary discussion: 40 min
14:50-15:10	*Coffee break*
15:10-15:50	**Session 6: Proposal for a new policy and institutional framework for DRR and CCA integration in ASEAN** *Participants discuss 1) possible common approaches for facilitating DRR and CCA integration in ASEAN, and 2) expected capacity building activities such as training programmes, peer-to-peer learning programmes and a cross-sectoral collaboration mechanism (in line with the Component 1 of the Priority Programme No. 3. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community, AADMER Work Programme 2016-2020)*
15:50-16:00	**Wrap up and closing** • Way forward – *JICA Project Team*

	• Closing remarks – *RRD*

Follow up activities:

- Co-organisers will compile the main outputs and share it with the participants within two weeks.
- JICA Project Team will report the workshop summary to subsequent National Workshops.
- RRD will report the workshop summary at the Regional Forum in September 2017 in Bangkok.

National Workshop in Myanmar, 31 May 2017
Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

No.	Mr./Ms.	Name	Position	Organization
1	Ms.	Khon Ra	Director, Hydrology Branch	Irrigation and Water Utilization Management Department (IWUMD), Ministry of Agriculture Livestock and Irrigation (MOALI)
2	Mr.	Moe Oo	Director	Irrigation and Water Utilization Management Department (IWUMD), MOALI
3	Dr.	Aung Than Oo	Assist. Director	Irrigation and Water Utilization Management Department (IWUMD), MOALI
4	Dr.	Thinn Thinn	Deputy Director, Watershed Management Division	Forestry Department (FD), Ministry of Natural Resources and Environmental Conservation (MONREC)
5	Mr.	Win Naing	Assist. Director	Forestry Department (FD), MONREC
6	Mr.	Kyaw Htin Lat	Staff Officer	Forestry Department (FD), MONREC
7	Mr.	Kyaw Thura	Assist. Director	Road Department, Ministry of Construction (MOC)
8	Mr.	Shin Thant Htut	Assist. Director	Department of Bridge, MOC
9	Mr.	Wunna	Deputy Director	Department of Buildings, MOC
10	Ms.	Ohn Mar Lin	Assist. Director	Foreign Economic Relation Department, Ministry of Planning and Finance (MOPF)
11	Mr.	Aung Ko Ko Lin	Staff Officer	General Administration Department (GAD), Ministry of Home Affairs (MOHA)
12	Dr	Nyan Win Paing	Deputy Director	Rural Development Department, MOALI
13	Mr.	Soe Min Htun	Assist. Director	Fire Department, MOHA
14	Mr.	Tin Myint	Deputy Director	Planning Department, MOPF
15	Dr.	Pyae Phyo Aung	Staff Officer	Public Health Department, Ministry of Health and Sports (MOHS)
16	Ms.	Myat Myintzu Theint	Assist. Engineer	Department of Mines, (MONREC)
17	Ms.	Khin Thuzar Aye	Deputy Director	Department of Basic Education, Ministry of Education (MOE)
18	Mr.	Htun Naing Win	Director	Directorate of Water Resources and Improvement of River Systems (DWIR), Ministry of Transport and Communications (MOTC)
19	Mr.	Aung Myo Khaing	Deputy Director	Directorate of Water Resources and Improvement of River Systems (DWIR), MOTC
20	Mr.	Win Maw	Assist. Director	Department of Meteorology and Hydrology (DMH), MOTC
21	Ms.	Han Swe	Staff Officer	Department of Meteorology and Hydrology (DMH), MOTC
22	Mr.	Htun Lin Kyaw	Staff Officer	Department of Meteorology and Hydrology (DMH), MOTC
23	Mr.	Thet Naung		Natural Resources and Environmental Conservation Committee
24	Mr.	Tin Zaw	Programme Coordinator	Myanmar Red Cross Society
25	Dr.	Yin Min Htnn	Deouty Staff Officer	Department of Agriculture, MOALI
26	Ms.	Su Su Lwin	Deputy Staff Officer	Environmental Conservation Department (ECD), MONREC
27	Ms.	Khin Myat Thwe	Staff Officer	Environmental Conservation Department (ECD), MONREC
28	Mr.	Win Htut Oo	Deputy Director General	Relief and Resettlement Department (RRD), MOSWRR
29	Mr.	Win Htein Kyaw	Director	Relief and Resettlement Department (RRD), MOSWRR

National Workshop in Myanmar, 31 May 2017
Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

No.	Mr./Ms.	Name	Position	Organization
30	Dr.	Min Thein	Director	Relief and Resettlement Department (RRD), MOSWRR
31	Ms.	Myat Moe Thwe	Deputy Director	Relief and Resettlement Department (RRD), MOSWRR
32	Ms.	Win Ohnmar	Deputy Direcotr	Relief and Resettlement Department (RRD), MOSWRR
33	Dr.	Aung Thurein	Deputy Director	Relief and Resettlement Department (RRD), MOSWRR
34	Mr.	Thein Zaw Htike	Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
35	Mr.	Aung Zaw Oo	Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
36	Ms.	Su Nandar Myint	Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
37	Ms.	Su Sandar Win	Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
38	Ms.	Thet Thet Aye	Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
39	Ms.	Nyo Mi Swe	Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
40	Mr.	Thura Tun	Deputy Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
41	Ms.	Hon Hle	Deputy Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
42	Ms.	Nyein Su Hlaing	Staff	Relief and Resettlement Department (RRD), MOSWRR
43	Ms.	Kethy Soe	Deputy Staff Officer	Relief and Resettlement Department (RRD), MOSWRR
44	Mr.	Hiroyuki Okazaki	Project Coordinator	Project for Development of a Comprehensive Disaster Resilience System and Collaboration Platform in Myanmar (SATREP)
45	Ms.	Hnin Wityi	Civil and Environmental Engineer	CTI Myanmar Co., Ltd.
46	Mr.	Toshizo Maeda	Team leader / Disaster risk reduction	JICAProject Team
47	Mr.	Takashi Furukawa	Wind and flood risk management/assessment (hydrology and civil engineering)	JICAProject Team
48	Mr.	Takehiko Ogawa	Climate change adaptation measure Organisations and legal institutions	JICAProject Team
49	Mr.	Binaya Raj SHIVAKOTI	Wind and flood risk management/assessment (non-structural measures)	JICAProject Team
50	Mr.	SVRK Prabhakar	Drought risk management/assessment (hydrology and agriculture)	JICAProject Team
51	Mr.	Makoto Tsukiji	Coordinator	JICAProject Team

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

*[Concept Note No. 20 of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015): **CN20 Project**]*

[Priority Programme No. 3 ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020]

National Workshop in Myanmar

31 May 2017, Naypyitaw

JICA Project Team

Objectives of the CN20 Project

The aims of the project are:

(i) Strengthen institutional and policy frameworks for DRR and CCA;
(ii) Enhance the integrated planning for DRR through the implementation of national development plans and action plans that integrate DRR and CCA at all level; and
(iii) Build partnership in linking DRR and CCA at all levels.

The specific objectives are:

(a) Promote the development of umbrella laws and regulations that govern the integration and synchronisation of DDR and CCA in Member States;
(b) Foster relationships between national ministries and agencies responsible for DRR and CCA;
(c) Facilitate the establishment of a clear institutional and policy framework on DRR and CCA integration in Member States;
(d) Strengthen participatory risk assessment, incorporating disaster and climate risks as a basis for decision-making;
(e) Promote the development of joint funding mechanisms for both DRR and CCA at the national level; and
(f) Support joint training, meetings, and other opportunities for increased interaction and cooperation.

2

Expected Outputs of the CN20 Project

Expected output	Activity
1. Documentation of good practices in institutional strengthening and policy development on linking DRR and CCA in ASEAN Member States	1.1. **National workshop** on *good practices in integrated plan and policy development, funding mechanisms; and risk assessments for DRR and CCA* in the Member States 1.2. ***Identification of common approaches*** to strengthen institutional and policy development for DRR and CCA 1.3. ***Synthesis, analysis and recommendations*** 1.4. Drafting and publication of One Against Disaster and Climate Risks
2. Assessment of the implementation of national action plans on DRR and CCA and the effectiveness of national platforms	2.1. **National workshop** *to review the progress of the implementation of the national action plan on DRR and CCA* 2.2. Organisation and conduct of **a regional forum** on the progress and lessons learned by the Member States 2.3. Documentation of the outcomes of national workshops and the regional forum
3. Senior official-level roundtable discussions on policy and programme interventions to strengthen the connection and coherence of DRR and CCA efforts at all level	3.1. Preparatory meetings for the senior official-level forum, including arrangement with media 3.2. Holding of **the** senior official-level forum with broadcast media coverage

3

Implementation Flow of the CN20 Project

2nd Project Steering Committee	**July 27, 2016, Bangkok**	**[Inception Report]**
1st Field Study	Aug 1-12, **Thailand**; Aug 15-26, **Lao PDR**	***Baseline study***
2nd Field Study	Sep 19-30, **Myanmar**; Oct 3-14, **Cambodia**	
3rd Field Study	Nov 14-25, **Viet Nam**; Nov 28-Dec 7, **Malaysia**; Dec 8-9, **Singapore**; Dec 12-14, **Brunei Darussalam**	
3rd PSC	**Dec 7, Vientiane**	
4th Field Study	Jan 9-20, 2017, **Indonesia**; Jan 23-Feb 3, **the Philippines**	
4th PSC	**March 1, Bangkok**	**[Draft Progress Report]**
ACDM Meeting	April 4, Vientiane	**[Progress Report]**
National Workshops	**May 31, Myanmar; July 6, Viet Nam; July 13, the Philippines**	*We are here!*
5th PSC	**Late July, Bangkok**	
6th PSC	**Early Sep, Bangkok**	
Regional Forum	**Early Sep, Bangkok**	Preparatory meeting of SOLF
Senior Official-Level Forum	**Nov, Jakarta *(t.b.c.)***	**[Publication of Good Practices]**
7th PSC	**Dec, Jakarta *(t.b.c.)***	**[Draft Final Report]**

4

Objectives of the National Workshop

- To discuss **current conditions** including constraints and barriers for implementing DRR and CCA and their integration against water-related disasters of flood, storm, landslide and drought ***[Session 1, 2 & 3]***
- To discuss **directions and necessary actions** for improving DRR and CCA and their integration ***[Session 4 & 5]***
- To discuss **possible common approaches** for facilitating DRR and CCA integration **in ASEAN** which will feed into the discussion of the upcoming Regional Forum and Senior Official-Level Forum ***[Session 6]***

Objectives of the Regional Forum and SOLF

- Consolidate **regional common approaches** for strengthening institutional and policy framework on DRR and CCA Integration under the leadership of the ACDM Working Group on Prevention and Mitigation and adopt it at the Senior Official-Level Forum with appropriate targets, a rough road map, and a regional institutional arrangement to monitor the progress

5

CN20 Project: National Workshop in Myanmar

9:30-9:50	**Opening**	
9:50-10:10	**Session 1: Understanding DRR and CCA integration**	Presentation by JICA Project Team
10:10-10:40	**Session 2: Assessment of DRR and CCA integration in ASEAN and Myanmar**	
10:40-11:00	*Coffee break*	Plenary discussion
11:00-11:30	**Session 3: Approaches by the Government of Myanmar on DRR and CCA integration**	Presentation by RRD
11:30-12:30	**Session 4: Prioritisation of issues and necessary actions in Myanmar**	Group work
12:30-13:30	*Lunch*	
13:30-14:50	**Session 5: Plenary discussion on the prioritised issues**	Presentation by each group
14:50-15:10	*Coffee break*	Plenary discussion
15:10-15:50	**Session 6: Proposal for a new policy and institutional framework for DRR and CCA integration in ASEAN**	
15:50-16:00	**Wrap up and closing**	

6

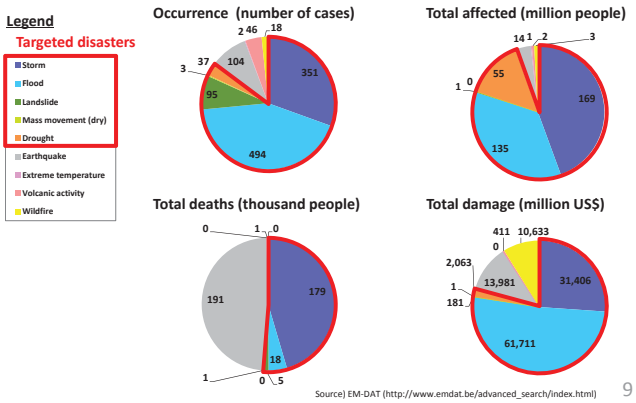
Expected Outputs of the National Workshop

Session 1	**Understanding of the effectiveness and necessities** of strengthening institutional and policy framework on DRR and CCA integration
Session 2 & 3	**Understanding of the issues and challenges** for strengthening institutional and policy framework on DRR and CCA integration **in Myanmar and ASEAN**
Session 4 & 5	**Identification of priorities, necessary actions and roles of relevant agencies** for strengthening institutional and policy framework on DRR and CCA integration **in Myanmar** • **Priority 1, necessary actions, roles of relevant agencies** • **Priority 2, ..** • **Priority 3, ..**
Session 6	**Recommendation of common approaches** for strengthening institutional and policy framework on DRR and CCA integration **in ASEAN** • **Recommendation 1** • **Recommendation 2 ..** → AADMER Work Programme 2016-2020

7

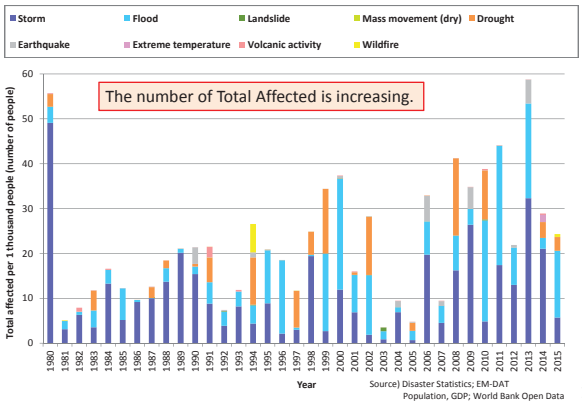
Session 1: Understanding of DRR and CCA

ASEAN Disaster Statistics Overview in the past 30 years (1987-2016)



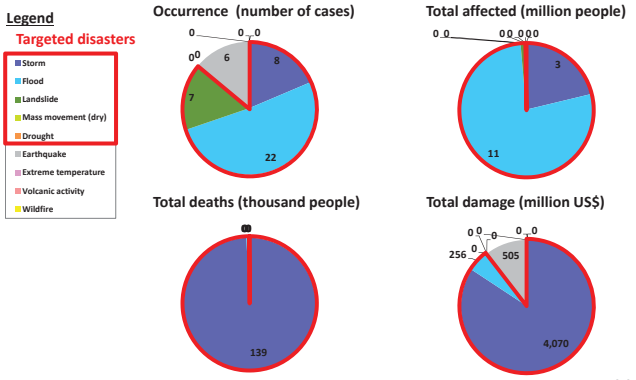
Source) EM-DAT (http://www.emdat.be/advanced_search/index.html)

Total Affected per 1,000 people in ASEAN countries



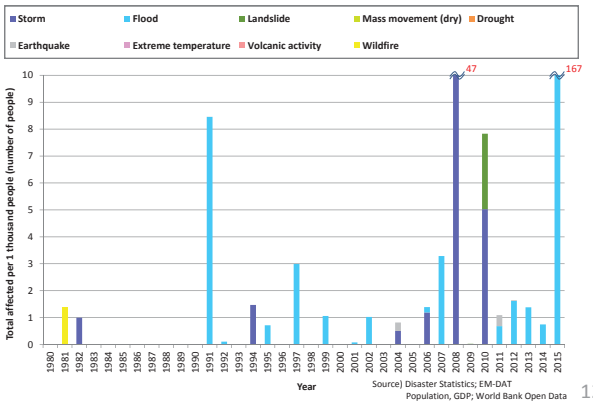
Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data

Myanmar Disaster Statistics Overview in the past 30 years (1987-2016)



Source) EM-DAT (http://www.emdat.be/advanced_search/index.html)

Total Affected per 1,000 people in Myanmar



Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data

Disaster and Climate Risk Indices

	Rank	ND-GAIN (2015)	WRI (2016)	GCRI (2015)
Top Ten High Risk	1	Vanuatu	Mozambique	Central African Republic
	2	Tonga	Dominica	Chad
	3	Philippines	Malawi	Eritrea
	4	Guatemala	India	Burundi
	5	Bangladesh	Myanmar	Sudan
	6	Solomon Islands	The Bahamas	Yemen
	7	Brunei Darussalam	Ghana	Afganistan
	8	Costa Rica	Chile	DRCongo
	9	Cambodia	Pakistan	Papa New Guinea
	10	Papua New Guinea	Micronesia	Mauritina
	11		Philippines	
Intermediate Risk	18	Viet Nam		Myanmar
	23			
	27		Viet Nam	
	35		Indonesia	
	36	Indonesia		
	42	Myanmar	Cambodia	
	47		Thailand	
	52			Cambodia
	60			Lao PDR
	84		Lao PDR	
	85			Philippines
	86	Malaysia		Indonesia
	89	Thailand		
	90			Viet Nam
	100	Lao PDR		
	120		Malaysia	
	121			Brunei Darussalam
	123		Brunei Darussalam (highest)	
	123		Singapore (highest)	
	125			Thailand
	142			Malaysia
Low Risk	159	Singapore		
	170	Malta		
	171	Qatar (highest)		
	178			Singapore
	179			New Zealand
	180			Norway
	181			Denmark (highest)

About the indices:

University of Notre Dame Global Adaptation Initiative (ND-GAIN) is an indicator of country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.

World Risk Index (WRI) highlights the risk of becoming a victim of disaster owing to five natural hazards: Earthquakes, cyclones, floods, droughts, and sea-level rise. WRI consists of four components: Exposure (to natural hazards), susceptibility, coping capacities and adaptive capacities.

Global Climate Risk Index (GCRI) indicates a level of exposure and vulnerability to extreme events, which countries should understand as warnings in order to be prepared for more frequent and/or more severe events in the future. Each country's index score has been derived from a country's average ranking in four indicating categories, according to the following weighting: death toll, 1/6; deaths per 100 000 inhabitants, 1/3; absolute losses in PPP, 1/6; losses per GDP unit, 1/3.

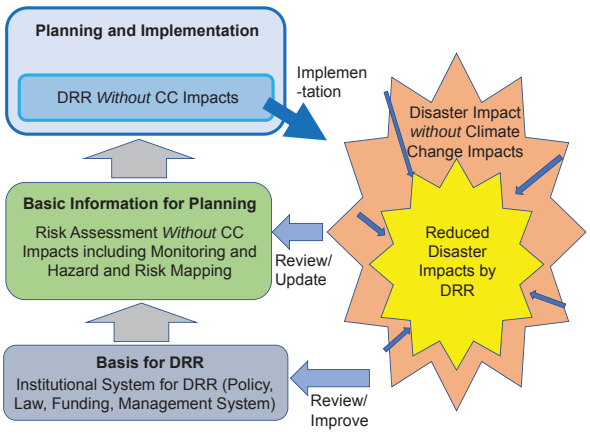


Image of DRR against Water Related Disasters

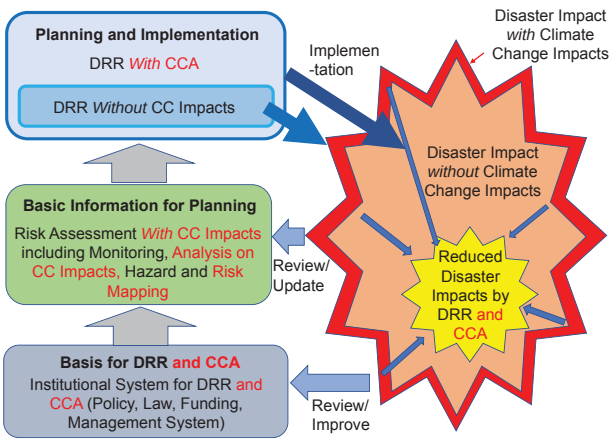


Image of DRR and CCA Integration against Water Related Disasters

Myanmar CC Strategy and Action Plan (MCCSAP) 2016-2030

Sectroal action plan	Lead	Activity
1. Climate-smart **agriculture, fisheries, livestock** for food security	MoALI	• Integrate CC in the new environment policy and law • Develop climate screening/proofing and planning guideline and tools to climate-proof investments • Identify and promote successful climate-resilient ecosystem-based adaptation practices • Develop an innovative climate fund mechanism – PES or carbon credits
2. Sustainable management of **natural resources** for healthy eco-systems	MoNREC	
3. Resilient and low-carbon energy **transport and industrial systems** for sustainable growth	MoEPE, MoTC and MoI	
4. Resilient, inclusive and sustainable **cities and towns** where people can live and thrive	MoC: DUHD	• Integrate CC into DRR for risk-informed policy development and planning • Integrate CC within national and sub-national DRR planning and budgeting • Implement DRR and CCA activities and scale these up in vulnerable townships in the delta, dry zone, coastal and mountain regions • Develop climate and weather information services – an agro-weather information management system
5. **Climate risk management** for people's health and wellbeing	MoSWRR, MOTC: DMH, MoHS: DPH	
6. **Education, science and technology** for a resilient society	Ministry of Education	

Myanmar Action Plan on DRR (MAPDRR) 2012

Component	Sub-component	Lead
1. Policy, institutional arrangements	• Enhancement of DRR mandates of ministries and departments	MDPA; MSWRR and RRD
2. Hazard, vulnerability and risk assessment	• Landslide hazard zonation map; Flood risk map; Drought prone area map; Cyclone and storm surge map	DMH; IWUMD; DWIR; Dept of Agric Planning
3. Multi-hazard early warning systems	• Improved metrological observation and forecasting; Enhanced flood monitoring and forecasting capacities at township level	DMH; GAD; IWUMD
4. Preparedness and response programs	• National land use and physical planning policy; Sustainable coastal development to protect against natural disasters; Landslide mitigation in risk prone areas; Sustainable development in Dry Zone area	*MDPA; MSWRR; GAD*
5. Mainstreaming of DRR into development		MOC; MOECAF; MOALI; GAD
6. Community based disaster preparedness and risk reduction	• National policy and program on development of community based DRR; Community based natural resource management programs	RRD, local government
7. Public awareness, education and training	• Establishment of disaster management training center; R&D in DRR; Regional networking and knowledge sharing on DRR	RRD, MSWRR

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Session 2: Assessment of DRR and CCA integration in ASEAN and Myanmar

Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
1. Laws, regulations and policies	1) National development plan 2) DRR laws 3) CCA laws 4) Relevant sectoral laws	• DRR and CCA concepts are incorporated • DRR, CCA and relevant sectoral laws, regulations and policies are enforced • DRR and CCA are mainstreamed in each ministry's policies
2. Institutional arrangement	1) National DRM system 2) National CCA system 3) Transboundary DRM	• National DRM and CCA committees have been set up for inter-ministerial coordination • A multi-stakeholder transboundary DRM system has been set up
3. Funding	1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services (PES)	• Funds are allocated for DRR and CCA activities with a monitoring and tracking system • PES is implemented based on the economic evaluation
4. Risk assessment	1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination	• Disaster database is recorded and used for science-based analysis • Climate risk is analysed based on hydro-meteorological data monitoring and downscaling from Global Climate Models • Hazard and risk maps are prepared by assessing the damages of past disasters and the capacity and vulnerability of local authorities

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Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
5. Planning and implementation	1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient Investment 4) Drought risk reduction	• Guidelines and standards incorporating disaster and climate risk are developed and used • Land-use and urban plans are prepared by incorporating disaster and climate risk and with evaluation of ecosystem services • Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner • Drought risk reduction measures including water resources management and agricultural measures are implemented
6. Capacity building	1) DRR and CCA training 2) Sector-wise training	• DRR and CCA trainings for national and local government officials and other stakeholders are provided • Special training programmes are implemented for specific purposes such as a climate school for farmers

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Tentative Country Assessment of Myanmar-1

Category	Evaluation *(and issues)*
1. Laws, regulations and policies **2. Institutional arrangement**	• Vertical and horizontal DRR systems and related legal framework have been developed based on the Natural Disaster Management Law and the Myanmar Action Plan on DRR (MAPDRR). However, as the CCA systems and related legal framework have been developed separately based on the Myanmar Climate Change Strategy and Action Plan (MCCSAP), *integrated approach is insufficient*. • There is *no clear integrated DRR and CCA management system for the whole river basin*. *The DWIR of MoTC is responsible for management of major rivers and water resources; while the IWUMD of MoALI is responsible for management of tributaries and irrigation systems and water supply.*
3. Funding	• *Funding system for DRR and CCA integration is lacking* except some community-based forestry management, fisheries and aquaculture, water resources management etc. funded by international organisations etc.
4. Risk assessment	• Development of disaster database is *still in the initial stage*. • Meteorological observation and weather forecast are conducted by the DMH, but *the observation stations are mainly located at townships and are insufficient in rural areas and upstream river basins* for integrated DRR planning and water resources management. • DMH is measuring water level along the major rivers etc. and conducting flood forecast based on that, but *the coverage in the tributaries and secondary rivers is insufficient* for effective planning.

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Tentative Country Assessment of Myanmar-2

Category	Evaluation *(and issues)*
4. Risk assessment *(cont.)*	• There is *no governmental agency conducting downscaling from GCMs* except some international research institutes or universities. There are *no standard values of CC impacts set for risk assessment and DRR planning* yet. • Flood hazard maps without incorporating climate risk are prepared for some disaster-prone areas, *but their resolution is insufficient* for DRR and preparedness planning. *Hazard maps or risk maps of storm surge, landslide and drought have not been prepared yet. There are no hazard maps or risk maps with climate change impacts.*
5. Planning and implementation	• *DRR planning and implementation without considering CC impacts are insufficient. DRR planning and implementation with CCA is lacking*, but there are some potential good practices such as flood control, irrigation and navigation systems in the Bago River Basin, cyclone shelters in Ayeyarwady Delta and reforestation in the upper catchment and reforestation of mangrove in delta and coastal areas.
6. Capacity building	• The RRD has been conducting disaster management training course at the Division and State levels, but *the implementation at Township and Village levels is insufficient.* • The DMH issues agro-meteorological weekly forecast and organises Agro-MET Basic/Intermediate Courses and Forecast Application for Risk Management in Agriculture (FARM) School for farmers. *However, they are mostly still at a pilot stage and not implemented nation-wide yet.*

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Session 4: Guidelines for Discussion What not to forget to discuss?

- Verify **assessment category** and **ideal status** and get an understanding of what they are
- Third column on **issues/challenges**:
  - Identify **issues** as specific as possible, avoid to be too general. Provide specific examples of how an issue hindered in realizing CCA-DRR integration if such examples are present (especially if they are related to funding, lack of institutional mandate)
  - Identify **specific agencies** including government ministries and R&D institutions that are responsible to address these issues and reasons why they couldn't (e.g. lack of mandate to an xxx institution)
  - Identify **specific knowledge gaps** to implement specific assessment framework component listed in columns 1 & 2 (e.g. lack of downscaling expertise in xxx agency mandated to carry it out)

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- Last column on **proposals**:
  - Identify **specific proposals** with specific names of institutions, technologies and approaches as much as possible.
  - Identify **existing strengths** within the country to implement such proposals.
  - identify **what part of the proposals is available** within the country, what is available within the ASEAN region and what needs to come from outside the region.
  - Identify if **existing institutional processes** are sufficient to bring them within reach or **new mechanisms** and facilitating environment is necessary.

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Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration [CN20 Project]

Good Practices (and potential ones) on DRR and CCA Integration

1. Laws, regulations and policies
2. Institutional arrangement
3. Funding
4. Risk assessment
5. Planning and implementation
6. Capacity building

1. Laws, regulations and policies

1) National development plan
   - DRR and CCA concepts are incorporated

2) DRR laws, regulations and policies
   - Enacted with consideration of CCA

3) CCA laws, regulations and policies
   - Enacted with consideration of DRR

4) Relevant sectoral laws, regulations and policies
   - DRR and CCA concepts are incorporated in land-use and urban plans, building codes, water resources and river basin management, forestry management, etc.

2

[GP-1.1]

The Philippine Development Plan 2017-2021

- The Philippine Development Plan (PDP) 2017-2022 has identified DRR and CCA as main cross-cutting concerns.

Chapter 11 Reducing Vulnerability of Individuals and Families
To deal with natural hazards:
Roll out climate and disaster vulnerability and risk assessment nationwide.
To mainstream disaster risk reduction and climate change adaptation (DRRCCA), the Climate Change Commission (CCC) will craft an enabling policy and provide assistance to local communities in conducting vulnerability and risk assessment. The results of the assessment will form the backbone of local strategies and measures to reduce vulnerabilities.

Develop facilities for adaptation including risk transfer mechanisms (RTM).
The People Survival Fund (PSF) Facility will provide technical and financial assistance to enable local communities implement adaptation measures. The CCC will explore partnerships with the National Disaster Risk Reduction and Management Council (NDRRMC) to maximize the PSF and NDRRM Fund for risk transfer schemes such as insurance. It will also provide a clear policy on how climate finance will enhance SP for vulnerable communities.

3

[GP-1.2a]

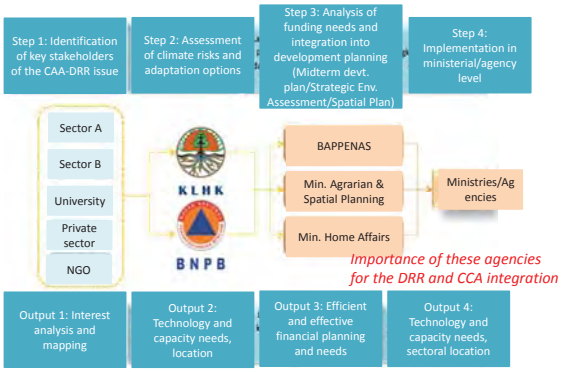
DRR and CCA laws being integrated in Lao PDR

- **The Climate Change and Disaster Law is currently in the process of enactment, and the Law can be regarded as a comprehensive legal framework for climate change and disaster risk management in Lao PDR.**
- **The Law has been already drafted and is expected to be approved in 2017. Apart from the Climate Change and Disaster Law, there are dozen of laws related to climate change such as environmental protection, air protection, energy, agriculture and forest, and water resources.**
- **In this way, although the current laws and regulations regarding CCA and DRR remain diverse in Lao PDR, there is a movement to establish a consolidated legal framework for the integration of DRR and CCA.**

4

[GP-1.2b]

CCA-DRR Convergence Steps for Development Planning in Indonesia



Source: Buku Konvergensi API-PRB (2016)

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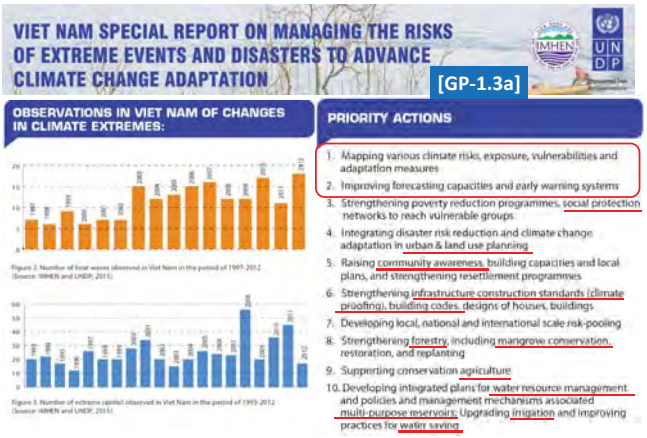
[GP-1.3a]



Source: http://www.vn.undp.org/content/vietnam/en/home/library/environment_climate/viet_nam_special_report_on_managing_the_risks_of_extreme_events_and_disasters.html

6

[GP-1.3b]

CC Action Plan of each Ministry in Cambodia

Source: http://www.camclimate.org.kh/en/documents-and-media/library/category/128-climate-change-action-plan.html

7

[GP-1.4]

Sectoral laws and regulations

- Although there are individual sectoral laws and regulations on river management, river basin management, forestry management and land use management in many member states, they are not incorporated into the legal frameworks related to DRR and CCA except for some cases.

- In Viet Nam, environmental charges such as the payment for forest environmental services are incorporated into the financial framework related to climate change response. Under Decree 99, the payment for forest environmental services is defined. Meanwhile, under Decision 799, the National REDD+ Action Program is designed in compliance with policies and laws of Viet Nam, and consistent to the provisions of UNFCCC and relevant treaties.

8

2. Institutional arrangement

1) National DRM system
   - A national DRM committee has been setup for inter-ministerial coordination and it also coordinates with the CCA committee
   - A national-subnational DRM system has been setup for integrated DRM

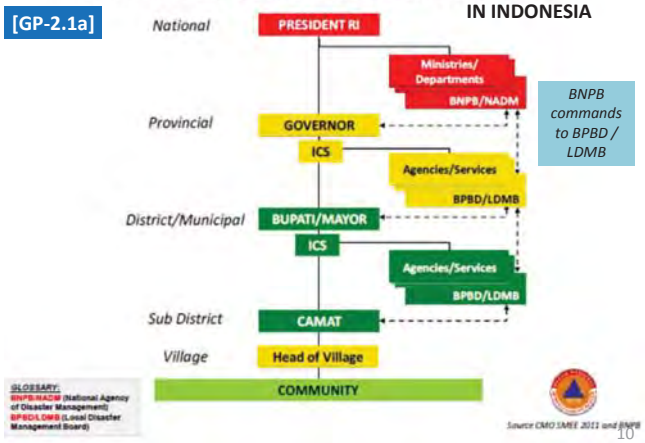
2) Horizontal CCA system
   - A national CCA committee has been setup for inter-ministerial coordination and it also coordinates with the DRM committee

3) Transboundary DRM
   - A multi-stakeholder transboundary DRM system has been setup for floods, storms and droughts

9

[GP-2.1a]

NATIONAL STRUCTURE OF DISASTER MANAGEMENT IN INDONESIA



10

[GP-2.1b]

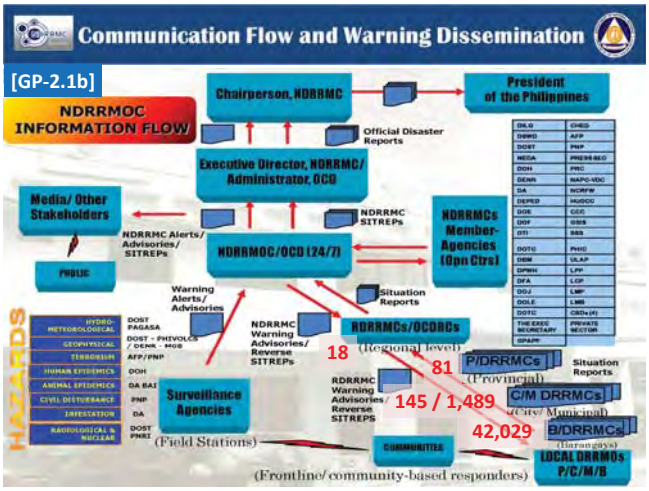
National DRM System in the Philippines

- In the Philippines, the National Disaster Risk Reduction and Management Council (NDRRMC), a national platform for DRM, acts as the main coordinator for disaster management activities. The Office of Civil Defense (OCD) is the operating arm and secretariat of the NDRRMC with the following institutional setup, which contributes to strengthening potential institutional integration of DRR and CCA.

  - DRRM Plans and DRRM Offices at all administrative levels of National–Regional–Provincial–Municipal–Barangay are strongly supported by the OCD's nation-wide vertical network.
  - The OCD reviews and evaluates the Local DRRM Plans to facilitate the integration of DRR and CCA measures into the local Comprehensive Development Plan (CDP) and Comprehensive Land Use Plan (CLUP).
  - Local DRRM Offices are under the office of the governor and city or municipal mayor, and assisted by staff responsible for administration and training, research and planning, and operations and warning.

11

[GP-2.1b]



[GP-2.1c]

Partnership between CCA and DRR Focal Points in the Philippines

- The National DRR and Management Council (NDRRMC) and the Philippine Climate Change Commission (CCC) have common members. They have signed an MOU to coordinate and cooperate and there is a move now to synergize these activities.
- Both NDRRMC and CCC require LGUs to prepare DRR and CCA plans. LGUs often have to prepare several different plans which overlap among them. For example, LCAP has a risk assessment component; OCD uses climate and disaster risk assessment; CLUP requires the use of vulnerability assessment map etc. Streamlining these operations are expected by the MOU.

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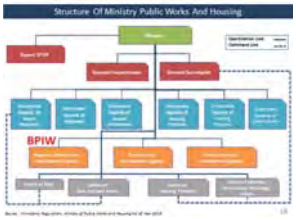
[GP-2.1d]

Integration of CCA and DRR in PU, Indonesia



- PU has established a Regional Infrastructure Development Agency (BPIW) in 2015 by integrating all planning divisions of Directoral Generals; it functions like Bappenas of PU; main function of BPIW is creation of technical policy, plan, strategy, standard operating procedure and guideline of regional development
- BPIW (450 staff) is now responsible for integrating CC mitigation and adaptation and DRR in PU's 20-year long-term plan, 5-year mid-term plan and annual plan.
- PU's Climate change mitigation and adaptation team (Tim MAPI) was formulated in 2010; DRR joined it in May 2016 (Tim MAPI & PRB); the team consists of representatives of all DGs and Agencies; 2012 Regulation (RAN-MAPI 2012-2020) covers only CC mitigation and adaptation, while 2016 Decision includes DRR
- There is a technical guideline for risk analysis of natural disasters covering flood, landslide, earthquake, tsunami and volcano (#6/P/BM/2014); CC risk is incorporated in the technical guideline

14

[GP-2.2]

National DRM and CCA Committees in Myanmar

In Myanmar, there are some institutional and organizational overlapping between the **National Natural Disaster Management Committee (NNDMC),** the focal point for DRR, and the **National Environmental Conservation and Climate Change Committee (NECCC)**, the focal point for CCA – potential future integration of DRR and CCA.

NNDMC

1. National Disaster Management WC (Minister for MoSWRR)
2. Rehabilitation and Reconstruction WC (Minister for MoC)
3. International Relations WC (Minister for MoFA)
4. Fund Raising and Management WC (Minister for MoSWRR)
5. Search and Rescue WC (MoI: Ministry of Interior)
6. Security WC (MoI: Ministry of Interior)
7. Transportation WC (MoTC)
8. News and Information WC (MoI: Ministry of Information)
9. Health Care/Management WC (MoHS)
10. Assessment of Requirements and Damage/Loss WC (MoPF)
11. Environmental Conservation WC (MoNREC)
12. Vocational Schools Restoration WC (MoALFI)

NECCC

1. Commission for Climate Smart Agriculture, Fisheries and Livestock for Food Security (MoALFI)
2. Commission for Sustainable Management of Natural Resources for Healthy Eco-System (MoNREC)
3. Commission for Resilient and Low Carbon Energy, Transport and Industrial Systems for Sustainable Growth (MoNREC, MoTC and MOI: Ministry of Industry)
4. Commission for Resilient and Sustainable Cities and Towns (MoNREC)
5. Climate Risk Management for People's Health and Well-being (MoHS, MoSWRR)
6. Education, Science and Technology for a Resilient Society (MoE)

15

[GP-2.3a]

River Basin Management Offices (*Balai*) in Indonesia

- River basin management and river management are conducted by Directorate General of Water Resources (DGWR), PU and River Basin Management Offices (*Balai*) to some extent.
- There are 34 to 36 *Balai* Offices in the country including *Balai Busal* for 14 major rivers

River Basin Management Organizations in Indonesia

Code	Number of WS	B(B)WS	BWS	P/T	Provincial Balai PSDA	Others
A1 (international)	5		a			
A2 (interprovincial)	29	8	22*	1*	9	
A3 (national strategic)	29	6	*	2	13	
B (interdistrict)	53				36	
C (within one district)	15					15
Total	131	14	22	3	58	
Of which in Java	24	9	0	2	25	

B(B)WS = Balai (Besar) Wilayah Sungai, PJT = Perum Jasa Tirta, PSDA = Pengelolaan Sumber Daya Air, WS = Wilayah Sungai.

Source: ADB, "River Basin Management, Planning in Indonesia", 2016

16

[GP-2.3b]


Reservoir and Spillway


Downstream from Dam

Jatilhur Dam

Dam	Jatilhur	Cirata	Saguling
Agency of Management	Jasa Tirta II Public Corporation	PT Pembangkitan Jawa Bali (PT PJB)	PT Indonesia Power
Purpose	Multipurpose : Domestic water supply Irrigation water supply Flood control Hydropower	Primary: Hydropower Others: Flood control, irrigation water supply	Primary:Hygropower Others: Domestic water supply
Gross Storage Volume	3 x 10^9m^3	2.165 x 10^9m^3	0.881 x 10^9m^3
Effective Storage Volume	2.1 x 10^9m^3	0.796 x 10^9m^3	0.609 x 10^9m^3

Integrated Operation of Jatilhur Dam in the Citarum River

Jatilhur Dam in the Citarum River supply about 80% of raw water for drinking water for Jakarta etc., and supply large amount of irrigation water. Integrated operation with upstream hydropower dams (Cirata and Saguling Dams) for stable water supply as well as flood control is conducted. Without CC impacts. This is one of potential good practices of CCA integration.

17

Regulation of dams and reservoirs for flood control and setting up of river basin organizations in Vietnam

Law on Water Resources (2012)

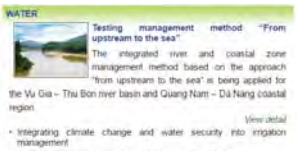
- 64 hydroelectric reservoirs are mandated to reduce the water level before storms come ← Department of Water Resource Management (DWRM), MONRE, monitors the inflow and outflow
- It will be applied to 7,000 large and small reservoirs gradually.

[GP-2.3c]

River Basin Organization (RBO)

- 6 new RBOs will be established in 2017 (currently 4 RBOs out of 11 major river basins)
- RBOs will manage the water quantity (minimum flow during dry season) and quality of rivers (by regulating wastewater discharge)
- River basin master plan is being developed for Red River Basin by MONRE as a pilot project

Source: http://www.monre.gov.vn/wps/portal/english



"… strengthening collaboration between Quang Nam and Da Nang, relevant sectors and stakeholders for integrated management of Vu Gia – Thu Bon river basin and Quang Nam – Da Nang coastal region can be a good model to scale up for other similar river basins in the country."

18

- Maintenance including dredging and cutting vegetation inside the improved river channels of the Anilao and Malbasag Rivers has been well conducted by Ormoc City.
- Maintenance of the easement zones along the rivers for not invading informal settlers in the easement zone has been well conducted by the communities (Barangays) along the Rivers.
- Flood Mitigationt Committee (FMC) are set with the Ormoc City and DPWH for well management of the flood control facilities including slit dams and improved channels as well as management of the easement zones.
- Above activities are fundamentally important even in case of with CCA.

[GP-2.3d]

19

3. Funding

1) Funding for DRR
   - Funds are allocated for DRR activities with a monitoring and tracking system

2) Funding for CCA
   - Funds are allocated for CCA activities with a monitoring and tracking system

3) Payment for ecosystems
   - Payment for ecosystem services is implemented based on the economic assessment

20

[GP-3.1a]

National and Local DRRM Funds in the Philippines

National DRRM Fund

- The National DRRM Council is responsible for the mobilization of resources for DRRM including the NDRRMF and monitoring of utilization of the LDRRMF
- National DRRM Fund in fiscal year 2017 is PHP15.7 billion while it was PHP38.9 billion in 2016.

Local DRRM Fund

- The Republic Act 10121 (2010) mandated local governments to set aside 5% of their estimated revenue from regular sources for their disaster councils.
  - 70% is for pre-disaster preparedness programs, post-disaster activities, and for the payment of premiums on calamity insurance;
  - 30% is for Quick Response Fund or stand-by fund for relief and recovery programs

21

[GP-3.1b]

Gawad KALASAG (Search for Excellence in DRRM and Humanitarian Assistance) Award

Since its **inception in 1998**, the Gawad KALASAG award has been bestowed to **127 Local DRRMCs**, 44 NGOs, 27 individuals and 135 groups/institutions. This year's awardees include seven (7) Best Local DRRMCs; one (1) Best Civil Society Organization; eleven (11) Private/Volunteer Organizations, Government Emergency Response Management, Schools and Hospitals; five (5) Heroic Act/Deed during Emergency Response and Rescue Operations; three (3) Special Recognitions; and six (6) Hall of Fame. *(← 3 consecutive years of awards)*

17th Gawad KALASAG AWARDEES (May 2016)

Best Local DRRM Councils
- Provincial DRRM Council: **PROVINCE OF ISABELA City DRRM Council**
- Component/Independent City : **LEGAZPI CITY, ALBAY**
- Highly Urbanized City : **PASIG CITY**
- Municipal DRRM Council
  - 1st to 3rd Class Municipality : **HINATUAN, SURIGAO DEL SUR**
  - 4th to 6th Class Municipality : **VILLAVERDE, NUEVA VIZCAYA**
- Barangay DRRM Committee
  - Urban Barangay : **BRGY ORO SITE, LEGAZPI CITY, ALBAY**
  - Rural Barangay : **BRGY SAN JUAN, HINATUAN, SURIGAO DEL SUR**

Cash award:
1st – P100,000
2nd – P75,000
3rd – P50,000

Source: OCD website at http://ocd.gov.ph/index.php/news/204-ndrrmc-holds-17th-annual-gawad-kalasag

22

[GP-3.2a]

ICCTF (Indonesia Climate Change Trust Fund)

- ICCTF is the only national trust fund for climate change in Indonesia.
- ICCTF was established to increase the effectiveness and efficiency of Indonesia's coordination in combating climate change in accordance with the National/Local Action Plan on Mitigation (RAN/RAD-GRK) and the National Action Plan on Adaptation (RAN-API).
- Small-grant funds for NGOs/CSOs; Max. IDR1b for adaptation & resilience projects; IDR3.5b for land-based mitigation projects (forestation and conservation)
- More than 100 proposals a year for CCA projects; selection is 6-7 a year
- The projected total amount of ICCTF from the financial year 2015 to 2018 is estimated at 203 Rp. Billion.

RAN-API Secretariat (BAPPENAS) is also involved in the selection; it recommends MoHA to incorporate the indicators in the guideline of local development plan for replicating similar projects

Projected ICCTF Budget

Year	USAID (Rp. Billion)	UK (Rp. Billion)	DANIDA (Rp. Billion)	APBN (Rp. Billion)	TOTAL (Rp. Billion)
2015	0.0	0.0	0.7	15.3	16.0
2016	18.5	22.2	2.3	15.3	58.3
2017	34.3	29.6	0.0	20.0	83.9
2018	17.4	4.7	0.0	23.0	45.1
Total	70.2	56.5	3.0	73.6	203.3

Source: ICCTF Credentials 2017

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[GP-3.2b]

Funding for CCA in the Philippines

MOU between NDRRMC and CC Council in 2012; to be revised in 2017

- **People's Survival Fund (PSF)**
  - R.A. 10174 Climate Change Act (2009)
  - PHP1 billion/year
  - 2 projects approved in Dec 2016; 60 project proposals
  - Risk and vulnerability assessment
  - **Enhanced-CLUP/CDP** and **Local CC Action Plan**
  - For water resources management, land management, infrastructure development, natural ecosystems; forecasting and early warning systems; institutional development (for droughts and floods); information networks; a guarantee for risk insurance needs for farmers

Too much requirement for LGUs; need technical assistance

24

[GP-3.2c]

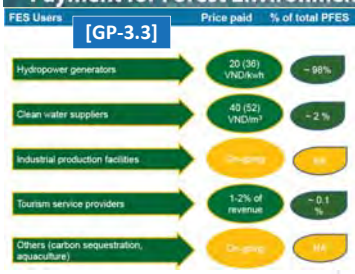
CCET (Climate Change Expenditure Tagging) in the Philippines

- The Department of Budget Management (DBM) and the Climate Change Commission (CCC) have jointly developed a framework for the Climate Change Expenditure Tagging (CCET).
- The Government has also started the piloting of the CCET at the Local Government Unit (LGU), enabling consistent and comprehensive assessments of climate spending at both national and sub-national levels.
- 42 Local Government Units have been trained to tag their 2015 Annual Investment Plans, preparing for scaling up CCET to all LGUs in the financial year 2016.

25

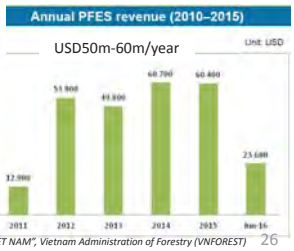
[GP-3.3]

Payment for Forest Environmental Services in Viet Nam



Impacts

- Legal framework for PFES created;
- Central fund and 41 provincial funds created; District & commune funds are being established
- Signed 464 contracts: 320 hydropower, 85 water suppliers & 59 tourism facilities



- Protection of 5 mil.ha/year (of the total 14.06 mil.ha forests);
- Forest cover: 39.5% (2010) ➔ 41.05% (2016)
- Participation of local communities & stakeholders in forest protection: 500,000 households; 650 forest organisational owners,199 FMBs, 84 forets companies, 15 National Parks, 40 Nature Reserves

Source: "PROGRESS IN PAYMENT FOR FOREST ENVIRONMENTAL SERVICES IN VIET NAM", Vietnam Administration of Forestry (VNFOREST)

26

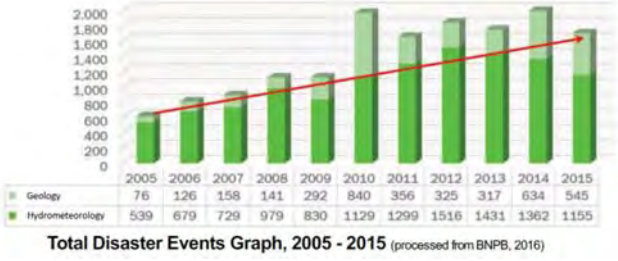
4. Risk assessment

1) Disaster database
   - Disaster data is recorded and used for science-based analysis
2) Hydro-meteorological data management and climate risk analysis
   - Climate risk is analysed based on hydro-meteorological monitoring and downscaling from Global Climate Models (GCMs)
3) Hazard and risk mapping
   - Hazard maps and risk maps for flood, storm surge, landslide and drought are prepared by assessing the damages of the past disasters, the capacity and vulnerability of local authorities and communities, and the climate risk and they are provided with high resolution for local land-use planning
4) Data sharing and dissemination
   - Disaster and climate risk data including hazard and risk maps are accessible
5) Early warning system and disaster risk communication
   - Early warning system is setup and disaster risks are communicated through traditional media, social media and mobile phone networks

27

[GP-4.1a]

Disaster Events in Indonesia



Total Disaster Events Graph, 2005 - 2015 (processed from BNPB, 2016)

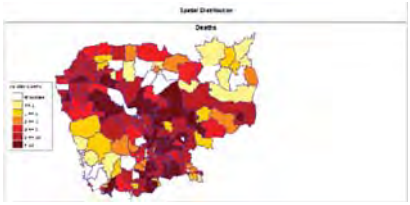
There were more than 1,800 disaster events within the period of 2005 to 2015; among them, more than 78% (11,648) are hydro-meteorological disasters and only about 22% (3,810) are geological disasters. Disaster events within the hydro-meteorological group are floods, extreme waves, land and forest fires, droughts and extreme weather.

Source: Risko Benchana Indonesia (RBI: Indonesia Disaster Risk), unofficial translation by JAC Business Center in December 2016

28

[GP-4.1b]

This DB is one of the good practices of disaster database.



Cambodia: Disaster Database of NCDM opened in the web-page (CAMDI Cambodia) based on the assistance of UNDP

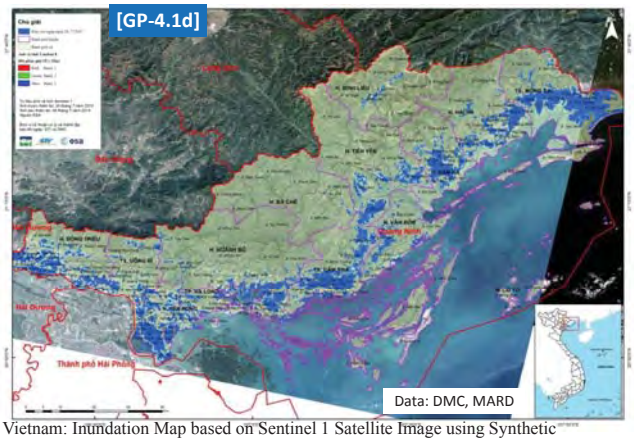
29

[GP-4.1c]

Thailand: Structure of Disaster Database of DDPM. This is one of the good practices of disaster database.

30

[GP-4.1d]



Vietnam: Inundation Map based on Sentinel 1 Satellite Image using Synthetic Aperture Radar (SAR) in the Disaster Database of DMC. This is one of good practices of disaster database.

31

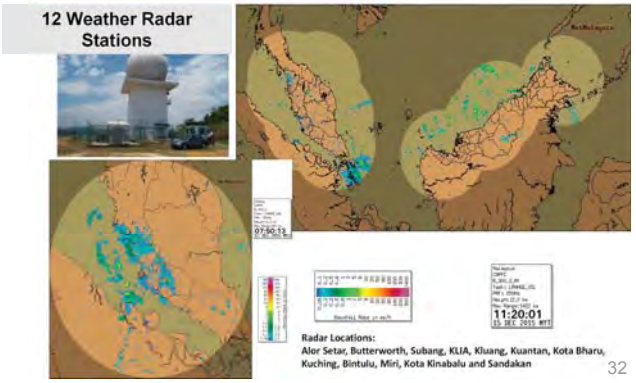
Weather and Marine Monitoring Network (cont…):

Source: MET Malaysia

Weather Monitoring Network

[GP-4.2]

12 Weather Radar Stations



Radar Locations:
Alor Setar, Butterworth, Subang, KLIA, Kluang, Kuantan, Kota Bharu, Kuching, Bintulu, Miri, Kota Kinabalu and Sandakan

32

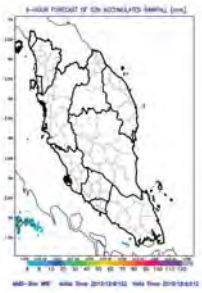
Weather Forecast – Numerical Weather Prediction Model

➢ **Graphical charts produced by computer to predict the weather condition such as rainfall, wind and air pressure for the next hours/days ahead**

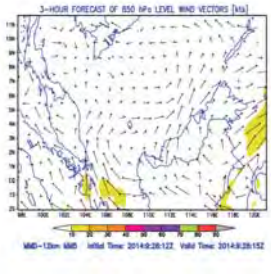
Source: MET Malaysia

[GP-4.2]

Rainfall Forecast



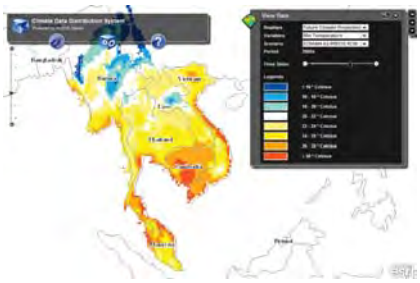
850hPa wind Forecast



[GP-4.2b]

Future Climate Display System by SEA START RC

This future climate display system shows future climate change in Southeast Asia region from future climate scenarios which are developed from future climate projection using PRECIS regional climate model. The simulation of future climate is based on initial data from ECHAM4 Global Circulation Model under SRES A2 and B2 GHG scenarios.



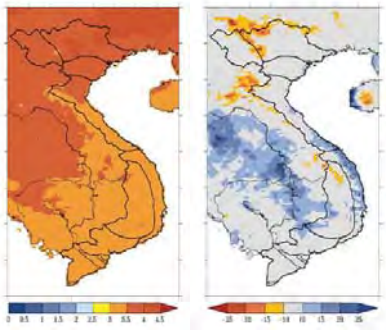
Source) SEA START RC Website (http://ccs.gms-eoc.org/climatechange/home/index.html#RegionalClimateChange)

[GP-4.2b]

High-Resolution Climate Projections for Vietnam

Figure : Projected changes in annual temperature (left) and rainfall (right) by 2080-2100 under RCP 8.5.

Temperature changes are in ℃ and rainfall changes are in mm /day. Values are multi-model means of the eight-member RCM ensemble.



In 2009, climate change and sea-level rise scenarios were developed for the whole of Vietnam by MONRE. This project updated them and provided more detailed climate change projections at 10 km resolution across Vietnam.

The project was funded by the Australian Government. Delivery partners were IMHEN and the Hanoi University of Science and CSIRO in Australia.

Source) Technical Report of High-Resolution Climate Projections for Vietnam

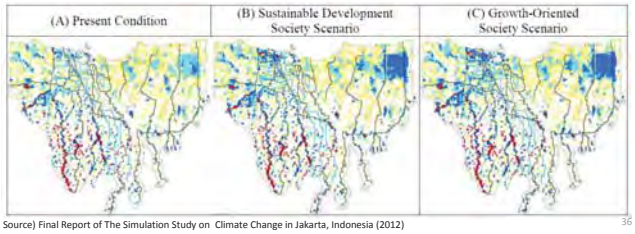
[GP-4.2b]

Flood Simulation with CC impact

Climate Change Impact analysis for flood was conducted based on the projected data by downscaling from GCMs. This project was implemented by Japan International Cooperation Agency (JICA), World Bank (WB) and Asian Development Bank (ADB) in 2010.

Impact of Climate Change

Case Name	(A) 2050_F_MP_P_v0_100	(B) 2050_F_MP_B1_v0_100	(C) 2050_F_MP_A1FI_v0_100
Flood Area	243.4 km² (100%)	264.0 km² (108%)	277.1 km² (114%)
Flood Volume	159.7×10⁶m³ (100%)	190.0×10⁶m³ (119%)	210.0×10⁶m³ (131%)
Flood Depth	0.66m (100%)	0.72m (110%)	0.76m **(115%)**

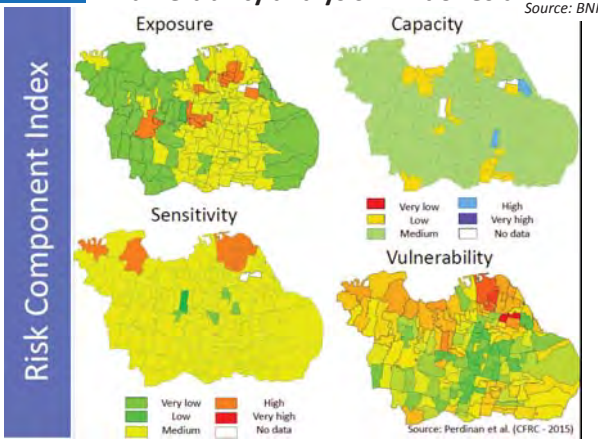


Source) Final Report of The Simulation Study on Climate Change in Jakarta, Indonesia (2012)

[GP-4.3a]

Vulnerability analysis in Indonesia

Source: BNPB



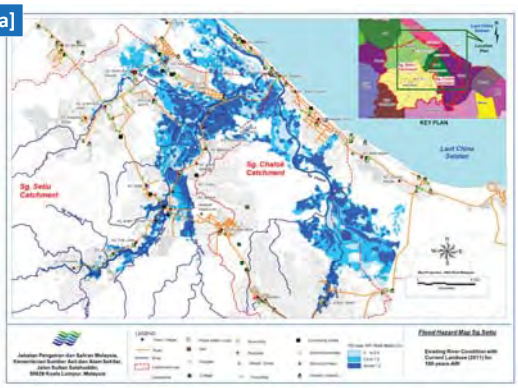
[GP-4.3a]

This country flood hazard map is without CC impacts, and can be said as a potential good practice of flood hazard map for incorporating CC impacts.
Thailand also have provincial flood hazard maps.

Data: DDPM, Thailand

Thailand: Flood Hazard Map of the Country

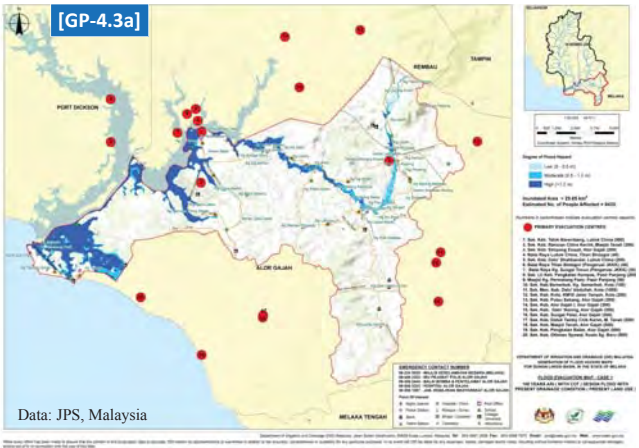
[GP-4.3a]



Malaysia: Good Practice of Flood Hazard Map of Probable Floods

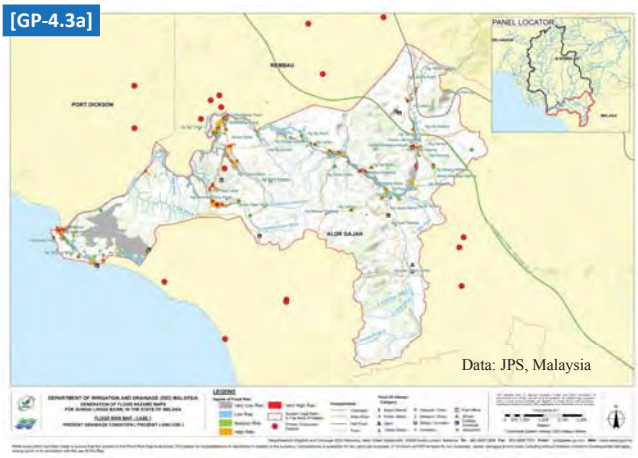
(This kind of hazard map is based on flood simulation of 100-year return period with present landuse or future landuse. Also, Malaysia is making flood hazard maps with CC impacts under probable floods.) Data: JPS, Malaysia

[GP-4.3a]



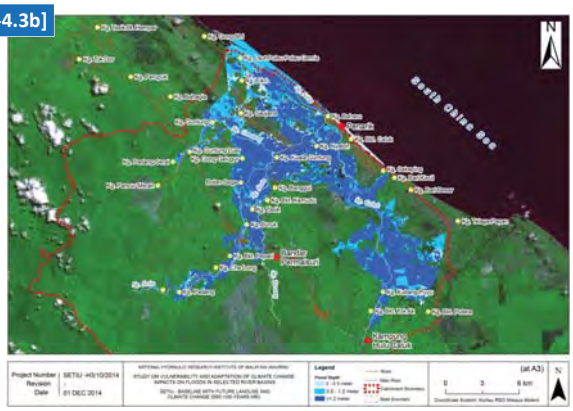
Malaysia: Good Practice of Flood Evacuation Map based on Hazard Map

[GP-4.3a]



Malaysia: Good Practice of Flood Risk Map based on Hazard Map 41

[GP-4.3b]

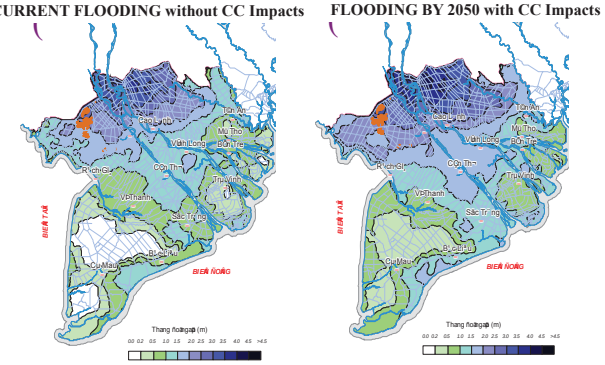


Malaysia: Flood Hazard Map in Setiu River of Simulated 100 year Return Period of Flood under Climate Change Condition and Future Landuse (2050)
(Data: NAHRIM, Malaysia)

[GP-4.3b]

MAP OF FLOODING IN THE MEKONG DELTA (Equiv. 2000 Flood with 100-year R.P.)

CURRENT FLOODING without CC Impacts | FLOODING BY 2050 with CC Impacts

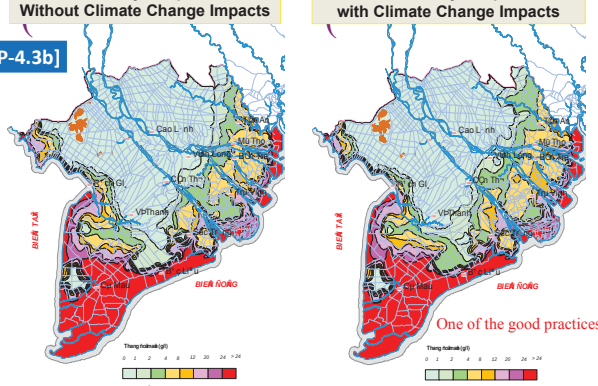


Data sources: SIWRP of MARD CC Impacts are included. One of the good practices. 43

MAP OF SALT INTRUSION IN MEKONG DELTA IN DRY SEASON

[GP-4.3b]

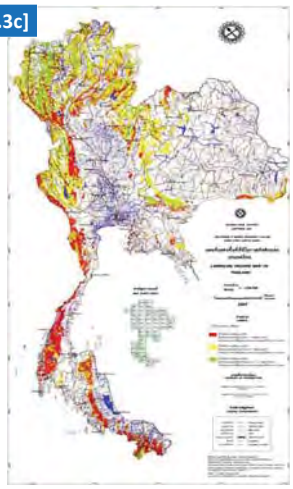
Saline boundary in April, Current Without Climate Change Impacts | Saline boundary in April, 2050 with Climate Change Impacts



One of the good practices.

Data sources: SIWRP of MARD 44

[GP-4.3c]

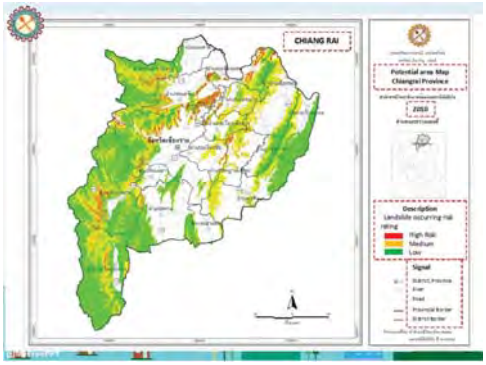


This hazard map is one of the good practices of showing landslide hazard areas in the whole country. If CC impacts is incorporated into the threshold values of landslide, it will be also good practice for the basic information for landslide risk management under the condition of CC impacts.

Data: DDPM and DMR, Thailand

Thailand: Landslide Hazard Map of the Country 45

[GP-4.3c]

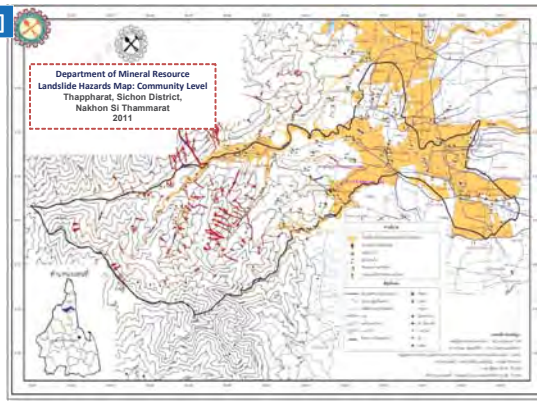


Data source: DMR of MONRE in Thailand

- Susceptibility (Potential hazard) maps exist in Thailand, Indonesia and Philippines.
- More detailed landslide hazard maps are necessary for evacuation and landuse.

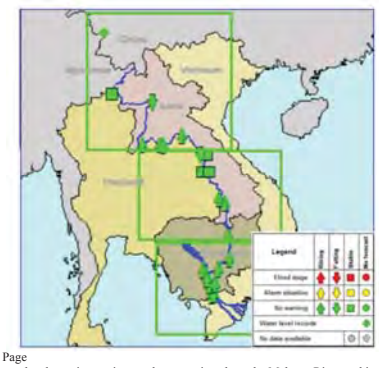
Example of Provincial Landslide Hazard (Potential) Map in Thailand 46

[GP-4.3c]



Thailand: Community Level Landslide Hazard Map. This is one of the good practices of landslide hazard maps. (Data: DMR, Thailand) 47

[GP-4.4]



Source: MRC Home Page
Note: There are 22 water level gauging stations under-operation along the Mekong River and its tributaries in the Lower Mekong Countries.

Hydrological data sharing by the Mekong River Commission (MRC) 48

[GP-4.5] Types of Disaster in Malaysia (cont…):

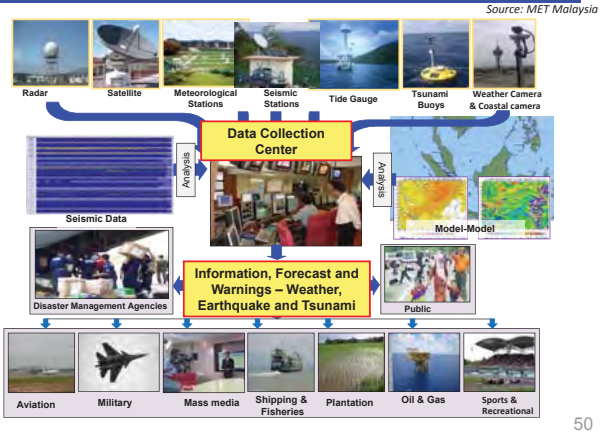
Source: MET Malaysia

Dissemination of Advisory and Warning

- Short Messaging System (SMS)
- TV Channel
- Coastal Tsunami Siren
- Fix Lined Alert System (FLAS)
- Local Radio (Light FM, Radio 24 etc.)
- Fax (National Disaster Management Agency)
- Mass Media (printed and electronic)
- Web: www.met.gov.my
- MyCuaca Mobile Application
- Social media
  - Facebook: www.facebook.com/pages/ Malaysian-Meteorological-Department/153854517997853
  - Twitter: twitter.com/#!/malaysianmet
  - Instagram: instagram.com/metmalaysia/

[GP-4.5] Conclusion:

Source: MET Malaysia



5. Planning and implementation

1) Design guideline
   - Guidelines and standards incorporating disaster and climate risk are developed and used

2) Land-use and urban planning
   - Land-use and urban plans are prepared by incorporating disaster and climate risk and with an assessment of ecosystem services

3) Disaster-resilient investment
   - Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner

4) Drought risk reduction
   - Drought risk reduction measures including water saving and agricultural measures are implemented

The Philippines: DPWH Design Guideline incorporating CC

[GP-5.1a]

SUBJECT : Upgrades on Flood Control and Road Drainage Standards

In line with the Department's continuing effort to upgrade the design standards for adaptation to climate change to minimize flooding, all concerned offices shall adopt the following guidelines in the design of flood control and road drainage facilities/structures:

1. The minimum flood return periods to be used for the design of flood control and road drainage facilities shall be as follows:

c. Esteros/creeks	15-year flood with sufficient freeboard to contain the 25-year flood
d. Rivers	For principal and major rivers: (40 sq. km drainage area and above) 50-year flood with sufficient freeboard to contain the 100-year flood For small rivers: (below 40 sq. km drainage area) 25-year flood with sufficient freeboard to contain the 50-year flood

4. The provision of underground detention tanks as part of storm water management system, particularly in flood prone urban areas to temporarily store flood water shall be a consideration in the design of the drainage system.

The Bureau of Design shall integrate the above-mentioned guidelines in the updating of the DPWH Design Guidelines, Criteria and Standards.

DPWH Office of the Secretary
June 21, 2011

MEMORANDUM

FOR

Undersecretaries
Assistant Secretaries
Bureau Directors
Regional Directors
Service Directors
Project Directors/Managers
District Engineers

[GP-5.1b] Brunei: DRR Implementation

Elevated Houses in Flood Prone Areas

- For building houses in flood prone areas, it is required to build elevated houses.
- Above requirement does not include additional height for the water level rise by climate change. However, as a elevated house is also effective in the cases of water level rise by climate change, this is one of the good practices against climate change impacts.

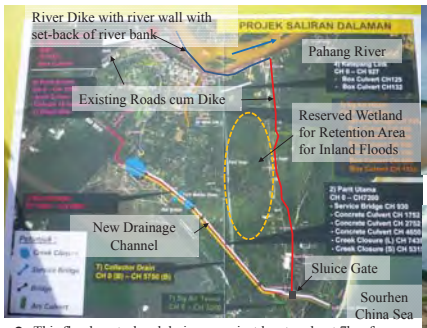
[GP-5.2a]

Vietnam; Proposed Flood Control Plan by the "Flood Control Planning in the Mekong Delta by 2020, Vision to 2030" (by SIWRP). This is one of the good practices of planning DRR and CCA integration.

Basic Direction of FRM

- Design flood is 2000 Flood with 100-year R.P. with sea water level rise by climate change.
- Not to increase flood water level in Cambodian boarder by flood control structures in Vietnam side.
- Introduce flood water through sluice gates to inland delta area for retention for not to raising flood water level along the Rivers (non-structural measures).

[GP-5.2b]



River Dike with River Wall

Drainage Channel Sluice Gate

- This flood control and drainage project locates about 7km from the river mouth of the Pahang River in Pekan City, where habitual flood has been occurred every year. The biggest flood was in 2007 making flood around Sultan Palace as well. Design flood WL is the Max. WL in 2007 (max. within these 50 years).
- The Project constructs river dike with river wall (L=4.5km) to make polder to protect the flood prone area as well as gravity drainage from the inland area of polder. Wetland in the polder is reserved for retention area as a non-structural measures.

Flood Control Project in Pahang RB in Malaysia. This is one of potential good practices for CCA integration by stage-wise improvement in the future.

[GP-5.2c]

Bago River Flood Control in Myanmar as a Potential Good Practice for CCA Integration by Possible Stage-wise Improvement against CC impacts in the Future

Mytkyo Lock Gate

Moe Yin Gyi Lake

Bago-Sittaung Canal

Bago River

Bago River flood control system is a complex system with Bago-Sittaung Canal for retention water and water transportation, Moe Yin Gyi Lake for retarding and water storage as well as Ramsal wetland site and several flood control dams and water use dams for irrigation etc. The Bago-Sittaung Canal and Moe Yin Gyi Lake were constructed about 140 years ago experiencing CC impacts during these 140 years.

[GP-5.2d]

Local CCA action plans formulated in Viet Nam

- In Viet Nam, the **Climate Change Bureau (CCB)** and the **Climate Change Coordination Office (CCCO)** were set up in major cities: CCCOs are established in 3 cities, **Can Tho, Da Nang and Quy Nhon**, and CCB in **Ho Chi Minh City**.
- The main responsibilities of CCCOs are improving climate change resilience and adaptation through local government planning, decision-making, and policy implementation.
  - ✓ **CCCO Danang City**, the coordination body of the city on climate change issues, also prepared 'Resilient Strategy for Danang City' under the 100 Resilient Cities initiatives.
  - ✓ **CCCO in Quy Nhon** has a target to achieve 100% flood free by 2025, conducts communication trainings to households on climate change and disaster preparedness, and has introduced multi-purpose flood prevention houses.
- **CCB Ho Chi Minh City** formulated the Climate Change Response Action Plan 2016-2020 targeting multiple sectors under climate change adaptation and mitigation such as agriculture, water, energy, transport.
- CCB advises and assists the Steering Committee for Implementation of the CCRAP and propose policy measures and coordination mechanisms for the effective implementation of the city's response to climate change.
- Likewise, a local climate change adaptation plan, which is customized based on the integrated local situation of disaster risks and climate change scenario, contributes to the potential integration of DRR and CCA in Viet Nam.

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[GP-5.2e]

Photo on December 17 – 18, 2014 from BPBD Banjarnegara Municipality

Banjarnegara Municipality (Kapbupaten) in Central Java Province is mountainous area. About 70% of the area of the Municipality belong to high risk area of landslide. On December 14, 2014, large deep landslide occurred at Sampang District by heavy rain causing more than 135 dead persons. Currently monitoring of rainfall and slope movement are conducted. Also, landuse management in the disaster areas is conducted for not building houses in the disaster area again. These measures are among the basic measures for DRR of LRM, and will be also effective in the case with climate change impacts.

Landslide Disaster Risk Management in Banjarnegara Municipality 58

[GP-5.2f]

Deep sliding with debris flow on Feb 17, 2006 in and around Barangay Guisaugon
Photo: San Bernard Municipality

Current Condition of the collapsed slope (Feb. 1, 2017)

- Large deep sliding of the mountain slope with debris flow occurred in Guisaugon in Saint Bernard Municipality in Southern Leyte Province on Feb. 17, 2006 by the prolonged heavy rainfall. This tragedy caused 1,100 dead persons including 250 school children in the school.
- People of Barangay Guisaugon and surrounding 6 Barangays were relocated.
- Land use management in the dangerous area including prohibition of building houses and only allowing farming such as rice cultivation has been conducted by the Municipality.

Landslide Disaster Area in Guisaugon in Southern Leyte Province 59

- In Nov. 1991, tremendous damages including 4,922 deaths and 3,000 missing people occurred in Ormoc City in Leyte by flash flood in Anilao River and Malbasag River caused by Typhoon Uring. This was caused by overflow from the rivers as well as clogging the bridge openings by huge amount of floating logs and debris.
- Three slit dams were constructed to capture floating logs and debris. Maintenance including removal of the logs and debris has been well conducted by Ormoc City.

[GP-5.3a]

Ormoc City Flood Control: Slit Dam in Anilao River Upstream Reach

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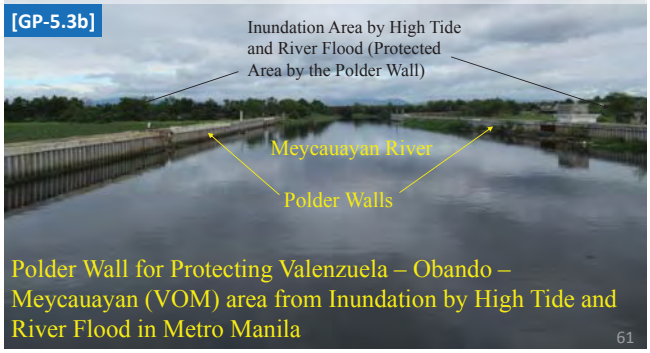
- VOM Area is coastal wetland area.
- However, many houses exist in the low-lying area and are affected by recurrence inundation during high tide and also by flood water from the Meycauayan River.
- Design HWL is set at the recorded maximum tide water level.
- The polder walls include additional 30cm of sea water level rise by climate change.
- Above these freeboard of 60cm is added to set the top of the polder walls.

[GP-5.3b]



Polder Wall for Protecting Valenzuela – Obando – Meycauayan (VOM) area from Inundation by High Tide and River Flood in Metro Manila

61

[GP-5.3c]

Phase I Tunnel (Right) and Intake of Power Station (Left)

Phase II Tunnel

Tulungagung Area was originally flood prone marsh land by the inflow of floodwater from the Brantas River and its tributaries. To solve the flooding problem, a tunnel floodway called "Neyama Tunnel" and was constructed with design discharge of 1,000m³/s to discharge floodwater to the Indian Sea. Then, flood problem in the marsh area was solved, and agricultural development was implemented. This project does not include CCA, but this project can be one of the potential good practice due to possibility of additional retention in case of CC impacts.

Floodway Tunnel (Neyama Tunnel) in the Brantas River Basin 62

[GP-5.3d]

SMART Tunnel and retention ponds in Kuala Lumpur, Malaysia 63

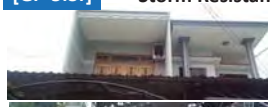
[GP-5.3e]

Tremendous disasters by storm surges occurred in the Ayeyarwady delta in Myanmar by Cyclone Nargis in 2008 causing about 140,000 dead persons. For evacuation, cyclone shelters have been constructed in the Delta Area. The cyclone shelters don't include CC impacts. But, these will be effective under CC impacts.

A Cyclone Shelter in Ayeyarwady Delta in Myanmar 64

[GP-5.3f]

Storm Resistant Houses in Da Nang, Vietnam

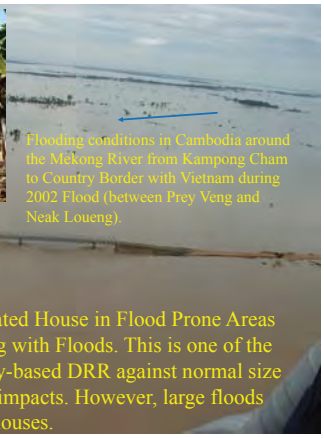



A house with reinforced roof and walls using a loan (left) and other ordinary houses

In 5 years, the Women's Union disbursed loans to 435 households – the total amount is VND10.3 billion (USD450,000). Loan limit is VND30 million (USD1,300)/household. No mortgage required. Dropout rate is almost zero. Loan period is maximum 60 months. Interest rate is 0.75%/month (9%/year).

[GP-5.3g]

Example of Traditional Elevated House near Kampong Cham



Flooding conditions in Cambodia around the Mekong River from Kampong Cham to Country Border with Vietnam during 2002 Flood (between Prey Veng and Neak Loueng).

Cambodia: Traditional Elevated House in Flood Prone Areas with slow velocity for Living with Floods. This is one of the good practices of community-based DRR against normal size of floods and even with CC impacts. However, large floods also make damage to these houses.

66

[GP-5.3h]

Ba Vi National Park, Vietnam (Source: Vietnam Administration of Forestry)

Myanmar: Private Teak Plantation (Sources: Forest Department, Myanmar)

Thailand: Community Forest Reforestation Activity (Source: Royal Forest Department)

Mangrove Forest Rehabilitation in Thailand to protect coastal erosion by wave and current.

Forest Management is actively conducted in general. This can be said as a good practice or potential G.P. for DRR and CCA integration as non-structural measures.

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[GP-5.3h]

Bamboo revetment operated area by DMCR on Northern Gulf of Thailand

Source: DMCR, Thailand

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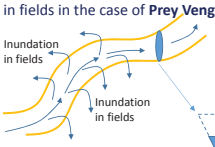
Cambodia: Use of flood water for dry season cropping

Farmers along the Mekong River floodplain rely on natural flood water inundation which is vital for growing crops in the dry season **as long as such inundation is not in excess or below the normal**. For instance, average 6m river water level is found ideal for inundation in fields in the case of **Prey Veng Province**



Above 6m flood could cause serious inundation and sufferings to the people, houses, livestock and infrastructure (such as roads)

[GP-5.4a]

While flood water level below 6m in the wet season could cause water scarcity for the crops to be grown in the next dry season

With increasing variability of flow in the Mekong River such natural function of river flood is being disrupted. Construction of **water storage check dams or small reservoirs** could be useful for both flood and drought mitigation

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CAMBODIA: WATER USER ASSOCIATIONS

[GP-5.4b]

- **Approach:** Water user associations manage the tertiary irrigation infrastructure and schedule irrigations among the farmers depending on the crop needs.
- **Impacts:** The water user associations, established with ADB support in 2011, have helped enhancing the water use efficiency in water scare regions. Increased the area under irrigation by 50%at Krouch Saeuch alone through saving water in the upstream areas (1,000 ha irrigated) and diverting it to the further deeper downstream areas (500 ha). Members pay 20000 riel per ha per crop to association. As a result, yields increased by 1-2 tons/ha, living standards of farmers increased and be able to cultivate three crops in a year.

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[GP-5.4c]

VIETNAM: SPRINKLER IRRIGATION IN DROUGHT PRONE AREAS

- **Approach:** The International Development Enterprises (iDE) provided sprinkler irrigation systems on 1.5 million VND subsidy to farmers in the Tuan-Tu village of Ninh Thuan province
- **Impact:** Saved >60% water in comparison to conventional methods, higher crop yields by 15%, reduced labour use by 70% for irrigation, reduced energy use and fertilizer use by 30%. Since 2014, farmers with sprinkler have grown from initial 25 to 95% of the farmers, most farmers (60% of all farmers in the Tuan-Tu village) who migrated to cities came back to village for farming and all of them got the sprinkler without subsidy. Grow carrots, asparagus, onions, and peanuts.

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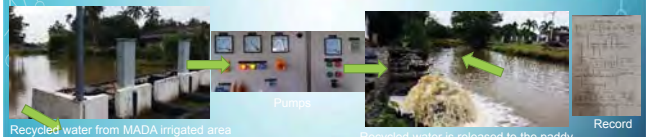
[GP-5.4d]

MALAYSIA: RECYCLED WATER FOR SUPPLEMENTARY IRRIGATION IN WATER-SCARCE AREAS OF PERLIS



- **Approach:** Reuse the drainage water from the irrigated paddy fields of MADA area for irrigating the paddy fields outside the MADA region, either mixing with the normal irrigation water from Timah-Tasoh or to use as such during the drought spells. The recycled water project has been in place since 2007.
- **Impact**: The recycled water provided three full days of irrigation to more than 6000 ha in the April month of 2016 during the 2015-16 drought. As a result, farmers in this area were saved from crop loss while others outside this irrigated area were severely impacted by drought and lost their crop.

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Community Groundwater Irrigation in Malang, Central Java

[GP-5.4e]

- Promoted by Ministry of Public Works (PU) to support farmers to irrigate fields during temporary water scarcity
- PU drilled the well and gave training to farmers on its operation and management. Well is 200 m deep, use diesel generator to run pump, yields 40 lit/sec and can irrigate 40-50 ha.
- 156 farmers formed community water user group to irrigate a total of 38 ha.
- The facility is not a main source of irrigation; used only when there is shortage of water for few days. Farmers collect Rp.25,000-50,000/2,500 m2 block to cover operation and maintenance cost.

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[GP-5.4f]

SALINITY INTRUSION MONITORING

Source: ISET, 2016

- Stronger sea tide and saline intrusion are worsening the water scarcity problems in many of the coastal areas in Vietnam. There is a limited or no data source for decision making and there is no understanding of key salinity level thresholds with DONREs recording salinity data only twice per year.
- ISET worked with city and local administrations in establishing a real-time salinity monitoring system that provides real-time data to different sectors in Can Tho city and send SMS alerts to water management authorities to operate the gates on rivers and canals arresting the saline water intrusion.
- 8 monitoring stations were established to monitor the salinity levels. The results persuaded the Cai Rang district to construct Dat Set dam for salinity control. The SMS alerts are helping water resource management authorities to operate the gates in time controlling the saline water intrusion. There is a need to scale up this system to the entire Mekong basin.

8 salinity monitoring stations along the Mekong River, tributaries and canals

Model for transferring salinity data to various users

Salinity surge in March 2016, Cai Rang District

[GP-5.4g]

Water Resources Management in Singapore

- Singapore has achieved a high level of water security by adopting a holistic approach of water resources management. Its National Water Agency (PUB) is a pioneer in diversifying water services through the philosophy of 'closing the water loop'.
- Singapore has adopted the "Source-Pathway-Receptor" approach for flood and storm water management. Flood management is carried out
  - along **Pathway ,** e.g., through widening and deepening of drains and canals
  - at the **Source,** e.g., through on-site detention
  - through **Receptor** at flood prone areas, e.g., through platform levels, crest protection and flood barriers.
- Transforming a large part (currently 2/3rd) of the country into water catchments for large scale harvesting of rainwater through a network of rivers, canals and drains and finally channelling to 17 reservoirs.

Philosophy of 'closing the water loop' in Singapore

Current catchment areas of Singapore

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Conservation Farming in Indonesia

[GP-5.4h]

- Conservation farming **provides needed buffer from short to medium dry spells in rainfall, improves and conserves the soil especially from the erosion in the undulated topographies** as seen in Indonesia and provides climate mitigation benefits due to soil carbon sequestration, **reduced fertilizer consumption and need to pump groundwater**.
- **FAO** and **the Ministry of Agriculture** are promoting conservation farming in **East and West Nusa Tenggara** that are highly **drought prone regions** in Indonesia. So far, the program is able to expand the conservation farming to **6,000 farmers in two years**.

Conservation farming being promoted in the East Nusa Tenggara island

- Conservation fields are reporting 36 times better yields than the traditional corn fields during the **drought of 2015** (conservation farms gave **18 kg corn per 100 sqm** while the traditional farms gave **0.5 kg per 100 sqm**; interview with farmers). All these benefits tantamount to improved economic resilience, better nutrition (two crops in a year) and better soil conservation.

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[GP-5.4i]

Microfinance

- Microfinance is helping rural communities to **diversify their livelihoods** and hence are less prone to weather vagaries.
- The microfinance program being implemented by Sube Huter in the Nangablo village of Sikka Regency, Flores Island in Indonesia showed several rural development and resilience benefits: **improved access to markets, better skills, women empowerment**, access to social services including **health and education for children** and additional income. Reduced fluctuation in income was also reported due to alternative income sources.
- Microfinance agencies need better resources to reach out to larger sections of the needy households, skills to train beneficiaries on **business management skills** and **income diversification skills**.

Meeting with Sube Huter microfinance community in Sikka Regency of Flores Island

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Weather Index Insurance, Dumangas, Iloilo

- PCIC in collaboration with **the World Bank, DA-PhilRice and PAGASA** are implementing a pilot **weather index insurance** with 75 farmers are enrolled for this purpose. The first phase of the program has finished in 2016 and the second phase is to start in 2018.
- Insurance premium is **891 peso per ha** (100% subsidized by the government for subsistence farmers) and farmers will receive seeds and fertilizers as incentives to join the program. The cost of implementing the insurance per farmer is 5,000 peso for PCIC.
- As a result of implementing the weather index insurance, the PCIC has been able to identify these issues: lack of **dense weather stations**, high basis risk in **undulated topography**, need for small size of **geographic insurance units (GIUs)** and need for developing **individual insurance products** rather than for the group. However, weather index insurance has shown better performance compared to the indemnity insurance in terms of long-term costs in implementation (initial costs are high for weather index for installation of weather stations).

[GP-5.4j]

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6. Capacity building

1) DRR and CCA training
   - DRR and CCA trainings for national and local government officials and other stakeholders are provided

2) Sector-wise training
   - Special training programs are implemented for specific purposes

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[GP-6.1a]

DRR and CCA Training in Indonesia

- BAPPENAS has developed a 2-week training course on integrating CCA and DRR in local development plan for government officials which was piloted and refined in cooperation with Bandung City.
- The training course is organized 2 times a year for around 40 participants each.

There is another 2-week training course on environmental planning including development of local CC action plan

CURRICULUM

1. Introduction to the Basic Disaster Management and Mainstreaming in the Development Planning
2. Planning for Disaster Management and Disaster Risk Reduction
   Risk Analysis Assessment; Preparation of Disaster Management Plan and the National/Regional Action Plan for Disaster Risk Reduction; Risk Reduction/Mitigation in regional/spatial and sectoral development planning; community based Disaster Risk Reduction/Mitigation;
3. Prevention and Preparedness Management
   Disaster Prevention; Disaster Preparedness; Early Warning System;
4. Basic Emergency Management
   Operational and Logistical Management; Operational Plan; Rapid Assessment; Emergency Patient Handling; Applicable humanitarian aid and standards; Discussion/Exercise/Case Study.
5. Early Recovery Management and Rehabilitation and Reconstruction Plan Formulation
   Damage and Loss Assessment (DALA); Early Recovery Need Assessment (ERNA); Post Disaster Need Assessment (PONA); Human Recovery Needs Assessment (HRNA); Basic concept of Rehabilitation and Reconstruction Planning: Build back better and post-disaster community resilience; Institutional and Partnership (the cases of Aceh and Yogyakarta); Community-based Rehabilitation and Reconstruction; Infrastructure and Housing Development; Community economic, social and psycho-trauma recovery; Formulation of Action Plan; Discussion/Exercise/Case study (by sector/by action plan for rehabilitation and reconstruction of Aceh, Yogyakarta, Wasior, Padang, Merapi and Mentawai)
6. Field work

80

[GP-6.1b]

Community-based DRM training

- Community-based DRM trainings are the most direct form of trainings that are mostly aimed at strengthening community participation in local level planning on DRR and/or CCA preparedness and mitigation.
- Government and non-governmental agencies are involved in such trainings, while in most of the cases projects or programmes are designed with primary objective of training and community participation. Common typologies are:
  - Preparation of community-based DRR plan, community hazard maps, establishment of evacuation centres
  - Piloting and up-scaling of climate field schools, formulation of water user groups, construction of local water storage ponds etc.
- Community-based DRM could also evolve during the recovery on DRR and/or CCA. Trainings are often tied along with the recovery activities to boost local DRR and CCA capacity.

Specific indicative examples of community based DRM trainings
Establishment of flood warning marks, evacuation centres, or cyclone proof housing in Viet Nam.
Strengthening preparedness including warning and evacuation of the high risk areas of landslide in the Banjarnegara municipality in Indonesia . Communities are involved in maintaining the telemetric rain gauges and extensometers installed at high risk areas of landslide.
Hanging fertigation techniques transferred to farmers as a mitigation option against inundation in Malaysia
Community involvement in watershed or forest conservation in Myanmar, Thailand and Viet Nam and replantation of mangrove forests in the coastal areas (Bang Khum Thian) in northern part of the Gulf of Thailand
In Indonesia and the Philippines, Climate Field Schools are implemented mainly to train farmers to understand climate variability and improve their farm level decision-making against increasing risk of damages to crops by floods, droughts and diseases/pests.

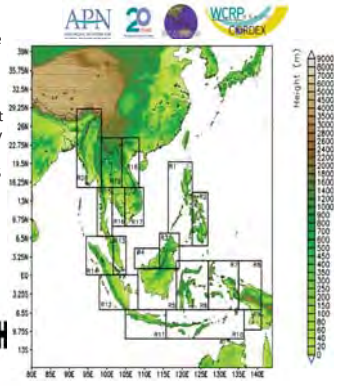
81

Regional Collaboration for GCM Downscaling

The Southeast Asia Regional Climate Downscaling (SEACLID)/ CORDEX Southeast Asia Project

[GP-6.2a]

- 13 Countries, 17 Institutions involved in the project: NAHRIM, MetMalaysia (Malaysia), BMKG (Indonesia), DMH (Lao PDR), MRI, Kyoto Univ. (Japan), among others
- Objective: On a task-sharing basis, carry out a joint regional climate downscaling activity over a common SEA domain with RegCM4 (and other RCMs) using a number of CMIP5 GCMs and RCP scenarios
- Resolution: 25 km × 25 km
- 2nd Phase *(plan):* 3 km x 3 km resolution over key vulnerable areas



Source: http://www.jamstec.go.jp/ymc/subfolder/bmkg-ws/Day2-05_Tangang.pdf

82

[GP-6.2b]

Climate Field Schools

- Indonesia is the first country to introduce **climate field schools** in Asia in collaboration with ADPC and the climate field school in Indramayu is the first climate field school in Asia.
- Since 2011, **25 provinces** have been implementing **three-month CFSs** where **BMKG staff train farmers every 10 days** on how to apply weather and climate information during the planting and growing seasons. More than **6,000 trainers** were trained.
- Farmers are able to obtain stable **crop yields despite the El Nino** weather aberrations. In 2014 corn crop, the production in CFS was **6.48 ton/ha** and the normal production in the district of Bali was **3-4 ton/ha** which shows the impact of the CFS. Out of this yield benefit, the BMKG attributes about 50% to the provision of climate information.
- There is a need for additional finances to scale up CFS to reach out to **more farmers**, **more types of crops**. There is also a need for improving the weather predictions through **improved weather forecast models** and integrating El Nino and La Nino signals at the local level.

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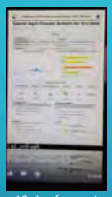
[GP-6.2b]

MYANMAR: LOCATION-SPECIFIC WEATHER ADVISORY SESAME (SPECIALIZED EXERT SYSTEM FOR AGRO-METEOROLOGICAL EARLY WARNING) AT NYANG OO

3-day forecast



10-day forecast

Farmers are trained on using the system through farmer field school

- **Approach:** Agri-weather advise to farmers with the location-specific agronomic practices and weather forecast in 2 townships by ADPC in 2013-14.
- **Impacts:** 30% of farmers in two townships successfully avoided losing crop by adjusting the crop practices compared to those who did not receive weather forecast during the two years of the project. World Bank and UNDP have picked it up as best cases.

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Prioritisation of challenges for DRR and CCA integration in Myanmar

Assessment category	Ideal status	Issues/challenges, necessary actions and the roles of relevant agencies	Priority	Ideas/proposals to take actions under ASEAN common framework
1. Laws, regulations and policies				
1) National development plan	DRR and CCA concepts are incorporated in the national socio-economic development plan			
2) DRR laws, regulations and policies	DRR laws, regulations and policies are enforced with consideration of CCA; DRR is mainstreamed in each ministry's policies			
3) CCA laws, regulations and policies	CCA laws, regulations and policies are enforced with consideration of DRR; CCA is mainstreamed in each ministry's policies			
4) Relevant sectoral laws, regulations and policies	DRR and CCA concepts are incorporated in relevant sectoral laws, regulations and policies including local land-use and urban plans, building codes, water resources and river basin management, forestry management, etc.			
2. Institutional arrangement				
1) National DRM system	A national DRM committee has been setup for inter-ministerial coordination and it also coordinates with CCA committee; A national-subnational DRM system has been setup for integrated DRM			
2) National CCA system	A national CCA committee has been setup for inter-ministerial coordination and it also coordinates with DRM committee			
3) Transboundary DRM	A multi-stakeholder transboundary DRM system has been setup for floods, storms and droughts			

Assessment category	Ideal status	Issues/challenges, necessary actions and the roles of relevant agencies	Priority	Ideas/proposals to take actions under ASEAN common framework
3. Funding				
1) Funding for DRR	Funds are allocated for DRR activities with a monitoring and tracking system			
2) Funding for CCA	Funds are allocated for CCA activities with a monitoring and tracking system			
3) Payment for ecosystem services	Payment for ecosystem services is implemented based on the economic evaluation			
4. Risk assessment				
1) Disaster database	Disaster data is recorded and used for science-based analysis			
2) Meteo-hydrological data management and climate risk analysis	Climate risk is analysed based on meteo-hydrological data monitoring and downscaling from Global Climate Models (GCMs)			
3) Hazard and risk mapping	Hazard maps and risk maps for flood, storm surge, landslide and drought are prepared by assessing the damages of the past disasters and the capacity and vulnerability of local authorities and communities and they are provided with high resolution for local land-use planning			
4) Data sharing and dissemination	Disaster and climate risk data including hazard and risk maps are accessible			
5) Early warning system and disaster risk communication	Early warning system is set up and disaster risks are communicated through traditional media, social media and mobile phone networks			

Assessment category	Ideal status	Issues/challenges, necessary actions and the roles of relevant agencies	Priority	Ideas/proposals to take actions under ASEAN common framework
5. Planning and implementation				
1) Guideline and standard	Guidelines and standards for DRR planning with incorporation of climate risk are developed and used			
2) Land-use and urban planning	Land-use and urban plans are prepared by incorporating disaster and climate risk and with evaluation of ecosystem services			
3) Disaster-resilient investment	Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner			
4) Drought risk reduction	Drought risk reduction measures including water resources management and agricultural measures are implemented			
6. Capacity building				
1) DRR and CCA training	DRR and CCA trainings for national and local government officials and other stakeholders are provided			
2) Sector-wise training	Special training programmes are implemented for specific purposes such as a climate school for farmers			

Prioritisation of challenges for DRR and CCA integration in Myanmar

Assessment category	Issues/challenges, necessary actions and the roles of relevant agencies	Priority	Ideas/proposals to take actions under ASEAN common framework
1. Laws, regulations and policies • National development plan • DRR laws, regulations and policies • CCA laws, regulations and policies • Relevant sectoral laws, regulations and policies	➢ National Policy for integration & Guidelines ➢ Need to review the existing laws and regulations for seeking opportunity to integrate DRR and CCA ➢ Need to develop Climate Change Adaptation rules and regulations 1) To combine and integrate DRR and CCA plans in National Development Plan for 5-year plan and annual plan 2) Weak Information sharing among line agencies (Disaster Management laws was published in 2013 and Regulations was published in 2015) - Weak in conveying information to the working level 1. The line ministries and departments do not know if the CCA and DRR concepts are incorporated into the national development plan or not. 2. Overlapping roles and responsibilities in laws and regulations within ministries due to weak coordination and cooperation in formulation and implementation 3. Weak implementation, monitoring and evaluation of CCA DRR elements incorporated into various plans and policies	1) Priority for annual plan 2) Relevant sectoral laws, regulations and policies should be prioritized.	- Effectiveness of integration between DRR and CCA - Compile the best practices of integration of DRR and CCA DM laws for Myanmar were drawn in line with SDGs, Sendai Framework, and Paris agreements MAPDRR draft can be submitted to the ASEAN for reviewing to improve. CCA laws from the ASEAN can be applied to Myanmar
2. Institutional arrangement • National DRM system • National CCA system • Transboundary DRM	➢ National Coordination mechanism ➢ National level Institution or Body ➢ Fixed responsibilities for staffs with TOR ➢ All inclusive coordination mechanism Cooperation and coordination among the institutions 1. Weak inter-ministerial collaboration (at working and field level) (e.g. no field commander and lack of clear terms of reference at the field level hence implementation was overlapped in emergency response) 2. There are no CC committees at the district and township levels. 3. Focal point person for CCA and DRR need to be delegated in each department of all ministries	Transboundary DRM should be prioritized	Good practices in coordination among the institutions from the ASEAN countries can be adopted for DM in Myanmar
3. Funding • Funding for DRR • Funding for CCA • Payment for ecosystem services	• Insufficient fund allocation for sectoral ministry to implement DRR activities (embankment raising, ---, structural measures) • Lack of budget for CCA • No payment system for environment conservation • To promote funding payment system should be formulated at all related laws & regulation Which institution will coordinate the fund allocation for DRR Not all ministries have budget for DRR and CCA (e.g. no union budget for ECD, ECD has international budget from UNFCCC, GEF etc. the same may be the case with other departments. They are trying to establish Environmental Management Fund and it may have CCA funds)	Funding for DRR should be prioritized	• Resource mobilization in ASEAN countries • Continuation of APTERR activities (rice) • Regional risk insurance program Some kind of funds for DM through the ASEAN wide projects from the donor countries

4. Risk assessment • Disaster database • Meteo-hydrological data management and climate risk analysis • Hazard and risk mapping • Data sharing and dissemination • Early warning system and disaster risk communication	• Lack of computerized data exchange systems • Disaster database should be integrated with all sectors • Limited facilities, capacities & technicians for GCM downscaling, Risk assessment • Drought monitoring has just been initiated to implement • Observation hydromet network should be more extended and upgraded to be real time monitoring • Extend the communications network • Groundwater pollution map • Groundwater pollution risk assessment • Flood risk assessment for dam safety • Data Sharing policy should be developed • Communications network (local level) • Early warning system for dam safety should be established • Early warning should be pointed to exact area, timing, strength/ power of impacts, --- etc, • Flood risk assessment for each basin • Landslide monitoring system should be developed • Methodology of applying the climate change projections • Need to build up capacity of climate analysis and projection Difficulties in collecting reliable data (data are not consistent in different data source) A small numbers of meteo-hydrological stations to cover the disaster prone areas as well as watershed areas VHF, very high frequency , system is necessary for early warning at township level 1. Disaster data is being measured but the data do not match from different department of same ministries and from different committees at the village level (lack of unified measurement procedures and responsibilities of who should measure what). It is also to do with lack of data management system 2. Streamlined data collection system is absent (some dept ask police for data while other dept ask from villagers etc)	Early warning system and disaster risk communication should be prioritized	• Groundwater monitoring systems in regional countries • Flood hazard mapping technology in the region • Flood risk assessment for dam safety • Technology on monitoring and analysis of salinity intrusion and sea level rise in the region Regional climate models for ASEAN can be directly applied in risk assessment in Myanmar Expanding Auto Weather Stations and Water Gauge Stations Data sharing among the ASEAN

	3. Data sharing system is OK between the ministries but there is a limitation of sharing past experiences, lessons learned and best practices sharing is limited 4. No comprehensive database as different departments and ministries collect data. 5. No downscaling but climate projections are available 6. Flood hazard map is not available for the entire country, only for the prioritized areas such as major flood-prone areas (Mandalay, Mowlamyaing ADB Project etc.), wherever the maps are available, they are of low resolution 7. No drought hazard map. 8. The available maps are not used for policy and decision making because these maps are finished recently 9. DMH is responsible for early warning but in the recent typhoon they couldn't tell if there is any possibility for landslides due to Lack of technical capacity, same for floods since there are not sufficient centres to monitor rivers and runoff etc. 10. Limited funds for dissemination of early warning through SMS, most have phones. 11. No early warning for landslides		
5. Planning and implementation • Guideline and standard • Land-use and urban planning • Disaster-resilient investment • Drought risk reduction	➢ Bio Engineer methodology is necessary for slope protection works (grass turfing) in Chin State ➢ Need to specify works related to DRR / CCA in the sectoral planning of Ministries ➢ Upgrade the sectoral existing planning to integrate DRR and CCA ➢ Budget allocation ➢ To implement water impoundment projects for water availability ➢ Drought mitigation measures ➢ Catchment management (drought) ➢ Establishment of groundwater monitoring stations including pollution ➢ Not consider DRR in land plotting to slum people (landless people) ➢ Need to upgrade the topographic maps of the country ➢ Need to conduct systematic research for climate change Impacts ➢ Scaling up the climate smart agriculture practices ➢ Promote crop varieties adapting to changing climate		• Flood risk assessments River Basin • Harmonize with the regional standard of climate smart agriculture • To develop tools for integrating DRR and CCA

	➢ Crop pattern change ➢ Strengthen the concept of climate and disaster resilience design of road and infrastructures Inadequate allocation of funds to meet technical specifications to design and construct the resilient infrastructures. As a result, high maintenance costs Low water storage in the tanks and reservoirs due to less rainfall, high evaporation and porous soil type in central dry zone Disaster-resilient investment should be prioritized Constructing lined canals or pipelines for water distribution systems to reduce conveying losses and to increase water use efficiency, need water saving technology Ground water recharge technology for dry zone 1. Do not have CC risks incorporated into construction guidelines, none for water resources-related infrastructure as well. However, they use the historical extreme events for designing the water resource-related infrastructure 2. Myanmar do not have land use plan. 3. Myanmar has urban plans for major cities but CCA and DRR are not integrated 4. No updated groundwater potential map (very old one 1960), no drought hazard map, no systematic groundwater assessments done		Technical transfer

6. Capacity building 1) DRR and CCA training 2) Sector-wise training	• DRR and CCA curriculums in the basic education and higher education, • Higher degree (post graduate) • Training modules for integration of DRR and CCA • the experts & Technicians for DRR & CCA requirements • Need to conduct research on effective water use for farming Some disaster information and practices are difficult to understand for local people Public awareness, public education, and public campaigns with easy to understand information sharing and sector wise training 1. Not everybody are trained a. Solution: More training programs, more funding. More importantly there is a need for a working committee for capacity building in Env. ministry and RRD that are responsible for CCA and DRR respectively. b. Responsible agency: Env. Min. and RRD 2. Not trained on all aspects of CCA and DRR a. Solution: Upgrade the existing guidelines for DRR in some ministries that have curriculum for DRR. Provide technical support for upgrading the curriculum. Also, introduce new curriculum based on needs assessment. b. Agency: All responsible line agencies 3. Staff need to be trained in using ICT equipment during emergencies a. Solution: Incorporate related training in the existing OJT programs b. Agency: All responsible agencies under the working committee for DRR and CCA		• Technical transfer for DRR and CCA • Training and capacity building • Exchange program with regional universities and departments Trainers from ASEAN for CCA

Discussion:

- Among ASEAN countries, there is AHA center for coordination of DRR issues. However, for CCA, there is no coordination mechanism in the ASEAN region. There is an ASEAN working committee on CC and this needs to take care of such coordination issues. AWGCC do not have a strong coordination mechanism and it mostly works as a voluntary group with a simple secretariat. So, one option is to strengthen the AHA center as they are currently overstretched and this could be a request from Myanmar or establish another organization for CCA-DRR coordination at the ASEAN level. The ASEAN committee for DM (ACDM) can facilitate a new body for CCA-DRR coordination.
- Village level data collection is done step by step, the town leader for collection of data is the chairman of the town. The most updated information is once in two weeks during 2015-16 floods, which is very large gap, and is not sufficient for addressing floods.
- Rough summary by the JICA Project Team: 1) Weak inter-ministerial coordination; 2) monitoring of disaster damage collection system, lack of landslide data, hazard data; 3) Planning, which is about how to use the data for planning purposes such as for drought, land use planning etc. 4) In terms of ASEAN framework could be in terms of institutional mechanism, coordination mechanism, data sharing and using them for decision-making can be helped by ASEAN region.
- The new MAP DRR considers the climate change aspects. Also, there is a National Communique for National Framework For Community Resilience approved on 31st March and there they indicated how to integrated CCA and DRR into community development plan. In this framework, the community forestry was integrated with risk reduction measures such as expanding the measures to protect from landslides, livelihood diversity and income diversification. The Ministry of Social Welfare, Relief and Resettlement (MSWRR) is the nodal agency but the line agencies such as agriculture, rural department, transportation etc. will implement the framework.
- Strategies may mention about the integration of CCA and DRR but the implementation of these strategies is the main issue.
- DRR is promoted in schools and education centres by ministry of education, education officer in the township has to take the responsibility on disaster; Ministry of education has started projects like disaster drilling in three areas.

Main Outputs of the Group Discussion of the National Workshop in Myanmar

Key issues and necessary actions in Myanmar	Expectations to ASEAN
Laws/ Regulations/ Policies ● Integration of DRR and CCA policies and plans ● Development of relevant sectoral laws and regulations	● Clarification of the effect of DRR and CCA integration in other ASEAN countries
Institutional Arrangement ● National coordination mechanism (weak coordination and cooperation among implementing activities, particularly for river basin management from upstream to downstream to manage flood, drought and landslide risks and sedimentation) ● Mainstreaming DRR and CCA in each ministry (by appointing a focal unit in each department and exchanging staff between the RRD and line ministries) ● Strengthening the functions of committees at district and township levels to deal with DRR and CCA issues	● Coordination mechanism for DRR and CCA integration
Funding ● Insufficient funds for DRR activities in line ministries (the National Disaster Management Fund is mostly for response, recovery and reconstruction; not for prevention and mitigation) ● Lack of funds for CCA ● Budget tagging of DRR and CCA expenditures ● No payment system for environmental conservation	● Resource mobilisation methods in other ASEAN counties ● Fund raising by an ASEAN-wide approach
Risk Assessment ● Integration of disaster database with all sectors ● Improved hydro-met monitoring system for flood and drought (incl. groundwater monitoring) ● Climate risk analysis capacity incl. downscaling from GCMs ● Monitoring system for landslide ● Insufficient hazard maps and risk maps ● Improved data accuracy and reliability ● Dam safety against floods; flood risk assessment for each basin ● Improved early warning and communication systems at local level ● Require cost-benefit analysis of DRR and CCA expenditures to justify the investment	● Data sharing among ASEAN countries with a unified standard (by establishing a regional responsible body) ● Regional climate models for ASEAN ● Hazard mapping and risk assessment technology ● Flood risk assessment for dam safety ● Salinity intrusion monitoring and analysis ● Cost-benefit analysis of DRR and CCA expenditures
Planning and Implementation ● Sectoral planning capacity of each ministry ● Climate and disaster resilient design of infrastructures	● To develop guiding tools for integrating DRR and CCA (and build capacity by

(for reducing the long-term maintenance cost) ● Urban and land-use plan with DRR and CCA ● Slope protection methodology ● Catchment (river basin) management against drought; water storage facilities ● Climate smart agriculture, crops diversification	implementing a pilot project using it) ● Slope protection pilot projects ● Climate smart agriculture
Capacity Building ● Education of DRR and CCA; development of curriculums for schools ● Public awareness with easy to understand materials ● Training of trainers and experts ● Usage of ICT equipment	● Training and capacity building ● Technical assistance ● Exchange program

Myanmar: Assessment of institutional and policy framework on DRR and CCA integration

Overall assessment

Disaster and climate risk:

- Myanmar is rated one of the most disaster and climate risk countries in ASEAN as well as in the world. Myanmar ranks the 5th high risk country by the World Risk Index (WRI) in 2016, 23rd of the Global Climate Risk Index (GCRI) in 2015, and the most vulnerable and less readiness country in ASEAN by the University of Notre Dame Global Adaptation Initiative (ND-GAIN) in 2015. Most of the disaster damages in Myanmar are caused by storms and floods in terms of the numbers of deaths and affected people and the costs.

DRR systems of flood, storm, landslide and drought:

- The **Relief and Resettlement Department (RRD)** under the Ministry of Social Welfare, Relief and Resettlement (MoSWRR) provides immediate relief and aids to disaster affected people, coordinates stakeholders for rehabilitation and reconstruction and conducts training and awareness programmes on DRM; *disaster prevention and mitigation are not the main focus.*
- The **General Administration Department (GAD)** of the Ministry of Home Affairs (MoHA) has branch offices in Township level which are responsible for transmitting warning messages and taking necessary response actions during disasters. *However, allocation of human resources at the Township GAD level is not sufficient to cover all Village Tracts and there is no specialised section for disaster management.*
- The **National Natural Disaster Management Committee (NNDMC)** established in 2016 is chaired by the Second Vice President and co-chaired by the Union Ministers of Home Affairs (MoHA) and Social Welfare, Relief and Resettlement (MoSWRR). The Committee has 26 members from line ministries and others and 12 Working Committees, *which implies an inter-ministerial coordination system is in place.*
- The **Myanmar Disaster Preparedness Agency (MDPA)** chaired by the Union Minister of Social Welfare, Relief and Resettlement established in 2011 takes systematic preparedness measures for disasters and undertakes quick and effective relief and support activities during disasters. The **Myanmar Disaster Preparedness Management (MDPM) Working Committee** chaired by the Deputy Minister for Social Welfare, Relief and Resettlement exists at the government levels of Region/State, District, Township and Village Tract/Village as a Disaster Preparedness Committee.
- *Responsible agencies for the river basin management are not clear.* The **Directorate of Water Resources and Improvement of River System (DWIR)** of the Ministry of Transportation and Communications (MoTC) is responsible for management of major rivers; while the **Irrigation and Water Utilization Management Department (IWUMD)** of the Ministry of Agriculture, Livestock and Irrigation (MoALI) is responsible for managing water use in the tributary river basins and manages the irrigation systems and the flood risk.
- The **Ministry of Construction (MoC)** is responsible for landslide management, *but the focus is on quick response and recovery and not on prevention and mitigation.*

CCA systems:

- The **Environment Conservation Department (ECD)** of the Ministry of Natural Resources and Environmental Conservation (MoNREC) is the national focal point for the climate change issues and plays a coordination role for CCA. The **National Environmental Conservation and Climate Change Committee (NECCC)** established in 2016 and the **Myanmar Climate Change Alliance (MCCA)** launched in 2013 are the main platforms for inter-ministerial coordination and mainstreaming CCA in each ministry's policies.

Integration of DRR and CCA:

- The **Myanmar Action Plan on DRR (MAPDRR, 2012)** lays the road map for DRR implementation with incorporation of CCA. Similarly, the **Myanmar Climate Change Strategy and Action Plan (MCCSAP, 2016-2030)** stresses the importance of resilient society development with active engagement of other ministries. *These cross-sectoral action plans indicate possibilities for effective implementation of DRR and CCA through multi-ministerial coordination.*

Funding:

- *Financial sources for prevention and mitigation of disasters are scattered among the line ministries.*
- *Domestic funding for CCA projects is limited.*
- *Payment for ecosystem services has not been implemented yet.*

Risk assessment:

- The RRD records the disaster data, *but it has not been publicised as a database yet*.
- The **Department of Meteorology and Hydrology (DMH)** of the Ministry of Transport and Communication

(MoTC) is responsible for weather and flood forecast based on the hydro-meteorological data management. *Meteorological stations are mainly located in townships and not enough in the upstream of river catchment areas. There is no governmental agencies conducting downscaling from Global Climate Models (GCMs).*

- The DMH is responsible for the preparation of flood hazard and risk maps, *but the coverage is still limited, resolution is not high enough for land-use planning, and the climate risk is not incorporated yet. Hazard and risk maps for storm surge, landslide and drought have not been prepared yet.*

Planning and implementation:

- *There is no concrete DRR guideline or standard incorporating climate risk yet.*
- *DRR planning and implementation (without incorporating climate risk) are insufficient yet. But there are potential good practices for DRR and CCA integration, for example, in Bago River Basin and Ayeyarwady Delta.*

Capacity Building

- *DRR training for the Division and State level has been implemented by the RRD, but its extension in the Township and Village levels is limited.*
- *Agro-meteorological service provided by the DMH is effective and the nation-wide extension is demanded.*

1. Laws, regulations and policies	
1) National development plan	• The **20-year National Comprehensive Development Plan (2011-2030)** covers both DRR and CCA aspects in line with the climate smart approaches, including resilience, risk management and climate change mitigation strategies aligned with environmental protection and natural resources management toward sustainable development. • *DRR and CCA concepts are stressed in the national development plan.*
2) DRR laws and regulations	• The **Natural Disaster Management Law (2013)** was developed to be in line with the Hyogo Framework for Action (2005-2015) and to comply with the ASEAN Agreement on Disaster Management and Emergency Response (AADMER). The law focuses on risk information, preparedness, awareness and early warning, and data management for early warning, *and does not include the concept of CCA.* • The **Myanmar Action Plan on DRR (MAPDRR, 2012)** consists of 7 components: 1) Policy and institutional arrangement; 2) Hazard, vulnerability and risk assessment; 3) Multi-hazard early warning systems; 4) Preparedness and response programmes at national and regional levels; 5) Mainstreaming of DRR into development; 6) Community-based disaster preparedness and risk reduction; and 7) Public awareness, education and training. Elements of CCA are incorporated, for example, in 3.3 Improved meteorological observation and forecasting; 3.4 Enhanced flood monitoring and forecasting capacities at township level; 5.2 National land use and physical planning policy; 5.3 Sustainable coastal development to protect against natural disasters; 6.7 Integration of community based DRR into community development projects; and 6.8 Development and implementation of community based natural resource management programs. • *The MAPDRR supported by the Natural Disaster Management Law lays the road map for DRR implementation with incorporation of CCA.*
3) CCA laws and regulations	• The **Environmental Conservation Law (2012)** aims to lay down the basic principles and give guidance for systematic integration of environmental conservation in the sustainable development process. The law enables the formation of an Environment Conservation Committee and the establishment of an Environmental Management Fund for environmental conservation works. The law also identifies duties and powers of the Ministry of Natural Resources and Environmental Conservation (MoNREC) in guiding climate change mitigation and adaptation policies. • The **Myanmar Climate Change Strategy and Action Plan (MCCSAP, 2017)** has identified 6 key sector entry points: Climate smart agriculture, fisheries and livestock for food security; Sustainable management of natural resources for health eco-system; Resilient and low carbon energy, transport and industrial systems for sustainable growth; Resilient, inclusive and sustainable cities and towns where people can live and thrive; Climate risk management for people's health and well-being; and Education, science and technology for a resilient society. • *The MCCSAP stresses the importance of resilient society development under the guiding principles of inclusive, resource-efficient, integrated and result-oriented development particularly with the active engagement of other ministries including the Ministry of Natural Resources and Environmental Conservation (MONREC), Ministry of Social Welfare, Relief and Resettlement (MoSWRR), Ministry of Agriculture, Livestock and Irrigation (MoALI), Ministry of Construction (MoC), and Ministry of Transport and Communication (MoTC), among others.*

	• *There are no drought-specific laws and regulations pertaining to CCA in the country.*
4) Relevant sectoral laws and regulations	• The **Forest Law (1992)** supports conservation initiatives, sustainable forestry practices and socio-economic benefits and encourages private sector and community participation in forest management. Relevant plans and policies include the **30-year National Forestry Master Plan (2001-30)**, the **Comprehensive Plan for Dry Zone Greening (2001-31)**, the **National Biodiversity Strategy and Action Plan (2011)**, among others. • The **National Water Resource Committee** was formed in 2014 and the **Water Policy (2014)** and associated water directives were adopted. The Forest Department under the MoNREC is focusing on the sustainability of watersheds and to prevent sedimentation inside dams and reservoirs by drafting a National Watershed Management Policy and formulating Action Plans for establishing watershed plantations in watershed areas of major dams, reservoirs and water sources. • The Ministry of Construction is working to develop Myanmar specific national building codes with international support. • To promote sustainable urbanisation, the Government of Myanmar is drafting a National Urban and Regional Development Planning Law, a National Housing Policy and a National Urban Policy. The **Law of Protection of Farmers' Rights and Enhancement of their Benefits (2013)** assures farmers to receive assistance from the Ministry of Agriculture, Livestock and Irrigation (MoALI) when affected by disasters. • *Relevant sectoral laws and regulations for forest management, water resources management and land-use management, among others, are in place but the degrees of enforcement are not clear.*
2. Institutional arrangement	
1) National DRM system	• The **National Natural Disaster Management Committee (NNDMC)** established in 2016 is chaired by the Second Vice President and co-chaired by the Union Ministers of Home Affairs (MoHA) and Social Welfare, Relief and Resettlement (MSWRR). The Committee has 26 members from line ministries and others and 12 Working Committees covering the themes of national disaster management (chaired by the MSWRR), rehabilitation and reconstruction (Minister of Construction), fund raising and management (MSWRR), assessment of requirements and damage/loss (Ministry of Planning and Finance), and Environment conservation (MoNREC), among others. • The **Myanmar Disaster Preparedness Agency (MDPA)** chaired by the Union Minister of Social Welfare, Relief and Resettlement was established in 2011 to take systematic preparedness measures for disasters and to undertake quick and effective relief and support activities during disasters. The MDPA consists of 13-member agency with the Union Ministers for Defense and Home Affairs as co-chairs and Deputy Ministers of designated ministries as members. The 11-member **Myanmar Disaster Preparedness Management (MDPM) Working Committee** chaired by the Deputy Minister for Social Welfare, Relief and Resettlement supervises the implementation of disaster management activities in accordance with MDPA guidelines and coordinates MDPA activities. The Director General of Relief and Resettlement Department (RRD) is the Secretary of the Working Committee. • The **Myanmar Disaster Preparedness Management (MDPM) Working Committee** exists at the government levels of Region/State, District, Township and Village Tract/Village as a Disaster Preparedness Committee. • The **Relief and Resettlement Department (RRD)**, MSWRR, was established to provide immediate relief and aids to disaster affected people; provide support to people who suffer from starvation; coordinate with stakeholders for rehabilitation and reconstruction; and conduct training and awareness programs on DRM; *disaster prevention and mitigation are not the main focus.* The RRD has branch offices in Region/State and District levels but not in Township level. • The **General Administration Department (GAD)** of the Ministry of Home Affairs (MoHA) has branch offices in Township level which are responsible for transmitting warning messages and taking necessary response actions during disasters. *However, allocation of human resources at the Township GAD level is not sufficient to cover all Village Tracts under the Township and there is no specialised staff or section for disaster management.* • *National DRM system including the inter-ministerial NNDMC and the national-subnational MDPM Working Committee has been setup.* • *All the national institutional systems have multi-hazard focus and hence no drought-specific institutional mechanisms are in place.*
2) National CCA system	• The **National Environmental Conservation and Climate Change Committee (NECCC)** was established in 2016 and chaired by the Vice President. The Committee has 6 sub-committees including the Climate Change Mitigation and Adaptation Sub-Committee served by the Environmental Conservation Department (ECD), MONREC, as a secretariat. • The **Myanmar Climate Change Alliance (MCCA)** launched in 2013 with the support of the EU-funded Global Climate Change Alliance provides a platform to mainstream climate change into

	Myanmar Government's policy development and reform agenda. • *An inter-ministerial national CCA system has been setup.*
3) Transboundary disaster risk management	River basin management • *Responsible agencies for the river basin management are not clear.* The **Directorate of Water Resources and Improvement of River System (DWIR)** of the Ministry of Transportation and Communications (MoTC) is responsible for management of major rivers; while the **Irrigation and Water Utilization Management Department (IWUMD)** of the Ministry of Agriculture, Livestock and Irrigation (MoALI) is responsible for managing water use in the tributary river basins. IWUMD manages the irrigation systems including irrigation canals, weirs, navigation locks, sluice gates, irrigation dams and multipurpose dams. IWUMD is also responsible for flood risk management in the tributary river basin including construction of dikes and improvements of the channels. Also, in case of flooding along major rivers, IWUMD constructs flood control structures such as dikes. River management • Based on the River Conservation Law in 2006, DWIR has the responsibility of water resources management of major rivers such as Ayeyarwady, Chindwin and Sittaung Rivers. *However, the main focuses are limited to the maintenance of navigation system along the major rivers* through dredging, cutting bending portions, bank protection against erosion, and monitoring of the water level (by the Department of Meteorology and Hydrology (DMH) of the MOTC), water quality and sedimentation. For construction of any river structures along the major rivers or tributaries, approval or agreement from the DWIR is required. Forest management • The **Forest Department** of the Ministry of Resources and Environmental Conservation (MoNREC) is the responsible agency for forest management including conservation of forest and reforestation of upland forest and mangrove forest in the coastal areas. Drought risk management • The Ministry of Agriculture, Livestock and Irrigation (MoALI) deals with drought impacts and related risk reduction activities in agriculture and related water resources management; while the Ministry of Social Welfare, Relief and Resettlement (MoSWRR) addresses the social aspects of the drought risk reduction as one of the targeted disasters. Drought risk management activities are listed in the Myanmar Action Plan on DRR (MAPDRR) 2012 as sub-components of 2.5 Drought prone area mapping; 3.6 Drought study and monitoring; and 5.8 Sustainable development in dry zone area to protect/mitigate against drought. • The **Dry Zone Greening Department** was established in 1997 under the Ministry of Environmental Conservation and Forestry (MoECAF then; now MoNREC) covering 21 million acres of dry land forests.
3. Funding	
1) Funding for DRR	• *The financial sources for the prevention and mitigation of disasters are scattered among line ministries.* • *The majority of the RRD's budget is used for the personnel and operation expenses and maintenance of existing facilities. Strategic investment in DRR activities is limited.* • *Some DRM activities are funded by development partners.* • The Myanmar Humanitarian Fund (MHF) is a funding mechanism managed by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) to provide an emergency response and timely assistance to urgent needs of people affected by natural disasters. Prior to 2015, the MHF was known as the Myanmar Emergency Response Fund (MERF). The MHF allocations are made to ensure a rapid response to sudden-onset emergencies or to rapidly deteriorating conditions in an existing emergency and to support humanitarian response activities within an underfunded emergency. • The local governments in collaboration with the international organisations and non-governmental organisations are implementing the Community Based Disaster Risk Reduction (CBDRR). The CBDRR in the Cyclone Nargis affected areas, which is a typical example, is a joint project of the UNDP and UN-HABITAT in line with the notion of "building back better". Through the financial and technical assistance, the overall objective of the programme was to enhance basic disaster preparedness of the cyclone-affected communities and integrate disaster risk reduction efforts. Towards this objective, the programme is designed to deliver outputs such as community-based disaster preparedness, capacity development for integrating disaster risk reduction in the rebuilding of human settlements, and awareness generation, knowledge networking and partnerships among relevant stakeholders.
2) Funding for CCA	• *Domestic funding for CCA projects is still limited.* • CCA projects targeting community-based forestry management, strengthening fisheries and aquaculture-dependent livelihoods, water resources management and food security in the Central Dry Zone, eco-system-based adaptation for urban resilience, mangrove rehabilitation and

	management, etc, are funded by international organisations including the Least Developed Countries Fund (LDCF), Global Environmental Facility (GEF), Adaptation Fund, JICA, among others.
3) Payment for ecosystem services	• *Payment for ecosystem services has not been implemented yet.*
4. Risk assessment	
1) Management of disaster records	• The **Relief and Resettlement Department (RRD)** of the Ministry of Social Welfare, Relief and Resettlement (MoSWRR) keeps disaster damage records including the damage data, *but disaster database has not been developed and publicised yet.*
2) Meteo-hydrological data management and climate risk analysis	• The **Department of Meteorology and Hydrology (DMH)** conducts weather forecast based on meteorological observation mainly at townships. DMH is measuring water level along major rivers such as Ayeyarwady, Chindwin, Sittaung, Thanlwin and Bago Rivers and forecasting flood water levels. DMH is now developing weather observation and forecasting systems using s-band radar rain gauges in Rakhine State, Yangon and Mandalay with support from the Government of Japan. There are other projects for upgrading meteorological gauging stations supported by the Government of India. Some of the meteorological stations may have data up to 50 years or so. • Future changes of temperature and precipitation have been estimated for Myanmar using a number of global and regional climate models. For the purpose of NAPA (National Adaptation Programme of Action), the predictions from the model 'Providing Regional Climates for Impacts Studies' (PRECIS) are reported. The model was conducted using 20 km x 20 km resolution, and operated by the South East Asia System Analysis Research and Training Regional Centre (SEA START RC) using A2 emissions scenario. The baseline information uses modelled data for the period 1971-2000. The model used data collected at seven stations, assumed to be representing seven physiographic regions in Myanmar. • Customized climate outlook for geographical areas (three states and regions) was developed by RIMES and DMH in developing agro-meteorological bulletin on a shorter timescale (3-5 days) as an AI system where the user gives input and the system provides an outlook (SESAME, Specialized Expert System for Agro-Meteorological Early Warning); developed by the RIMES and UNESCAP, DMH and MOA and piloted in two townships. • Monsoon forums being organized by the DMH is helping in developing the regional and sub-regional climate outlooks and improving the forecasts for specific users such as agriculture and water resources. • *Meteorological observation stations are mainly located in townships and not enough in upstream of river catchment areas.* • *There is no governmental agency conducting downscaling from Global Climate Models (GCMs).*
3) Preparation of hazard maps and risk maps	• The DMH is in charge of preparing hazard maps and risk maps for storm, flood and drought. *However, only some hazard maps for several areas along the Ayeyarwady River including the delta area and cities such as Mandalay were prepared by the support of the Governments of Canada and Switzerland and the European Union (EU) and by using the study results of the Asian Development Bank (ADB) etc.* • *There are no clear hazard maps and risk maps of storm, flood and drought covering the whole country. There are no hazard maps and risk maps of landslide either.*
4) Data sharing and dissemination	• *Hazard maps and risk maps are not widely disseminated yet* but only used for land-use and urban planning of major cities and specific areas.
5) Early warning system and disaster risk communication	• The DMH has a flood forecasting and warning system and uses the website, Facebook and Radio/TV/media for the information dissemination. Water level forecast is provided in a period of long range, seasonal, monthly, 10 days and daily. • *Access to the rain and flood forecasting and early warning provided by the DMH has been increasing as the service quality improves and the awareness of people raised after experiencing multiple rain-induced disasters in recent years.*
5. Planning and implementation	
1) Design guideline and standard	• Climate change impacts are considered in the plans such as the Myanmar's National Adaptation Programme of Action (NAPA) to Climate Change (2012) and the Myanmar Climate Change Strategy and Action Plan (MCCSAP) 2016-2030, *but no concrete guideline or standard incorporating CCA is formulated yet.*
2) Local land-use plan and urban plan	• The Myanmar Action Plan on DRR (MAPDRR) 2012 has following land-use related sub-components: 5.2 National land use and physical planning policy to formalise land use planning procedures in urban and rural planning activities; 6.7 Integration of community-based DRR into community development projects in selected 30 villages in Ayeyarwady and Mandalay Regions; and 6.8 Development and implementation of community-based natural resources management programs in 10 townships in Ayeyarwady and Shan. • *Land-use and urban plans incorporating disaster risk is promoted but the ones incorporating*

	climate risk is yet to seen.
3) Disaster-resilient public and private investment	• Cyclones usually cause damage in the western coastal areas in Rakhine State, but the Cyclone Nargis in May 2008 caused tremendous damage in Ayeyarwady Delta causing about 140,000 casualties. For the Ayeyarwady Delta, strengthening of preparedness by forecasting and warning cyclones is being conducted by the assistance of JICA. In addition, for evacuation, cyclone shelters have been constructed in the Delta by the Myanmar Government with the assistance of several international agencies including JICA. Furthermore, reforestation of mangroves is also being conducted in the Delta. *These measures are implemented in response to the disaster but they are also effective for the conditions with climate change.* • In the Bago River Basin, based on the integrated plans for navigation, irrigation and flood mitigation which were formulated about 140 years ago (in the middle of 1870s), various water use cum flood control facilities such as Bago-Sittaung Canal, navigation locks, irrigation and drainage canals with sluice gates, and Moe Yin Gyi storage cum retarding basin were constructed. *Although these structures were planned and designed without consideration of the impacts of climate change, they are still functioning well* with renovation including rehabilitation of the dikes and dredging. However, Bago City and surrounding low-lying areas still suffer from floods despite the newly constructed four flood control dams (Salu, Shwe Laung, Kodukwe and Zaung Tu Dams) in the upstream of Bago River. *In order to mitigate the damage, integrated flood management plan with the Sittaung River is required.* • The Ministry of Construction (MoC) is responsible for landslide management, *but the focus is on quick response and recovery and not on prevention and mitigation.* • *Development of DRR plans and the implementation without consideration of climate change impacts are insufficient yet. Some areas have a potential to develop DRR plans with CCA.*
4) Drought risk reduction and water resources management	• Water management is a crucial aspect in the drought risk reduction and *a very little progress has been made in this area.* The water management is done through regional level **Water Management Committees** comprising of Departments of Irrigation, Agriculture, Statistical and General Administration of Township and this Committee decides when and to what crops to release the water. *Though there are water user groups unofficially, these are not established under every pump.* There is a **Water Resources Committee** in Myanmar and related departments and ministries are part of the Committee. This is the apex body for water resources management in Myanmar and the DWIR is serving as focal agency and the Director General of the DWIR is the Secretary for the Committee. *However, the role of the Committee in drought risk reduction has not been very clear.* At the village level, the Village Irrigation Committees usually take care of the village level ponds. If the tanks have command more than 5,000 acres, then the national level IWUMD takes care of them. Below this size, the local governments such as Townships and Regional Governments take care of their maintenance. • In terms of government programs, some of the sector ministries are bringing new crop varieties such as legumes etc. to deal with the Dry Zone problems. Myanmar has lot of programs combining food security and Dry Zone concerns. Food security, nutrition, health care etc. are being looked into in a comprehensive and inter-linked manner. The Government of Myanmar has established a **Dry-Zone Greening Department** based in Mandalay which promotes several afforestation projects. • *Water resources management is being promoted and piloted along the main rivers including Ayeyarwady River.*
6. Capacity building	
1) DRR and CCA training	• The RRD has been conducting disaster management training courses at the Division and State levels since 1977. The program by the RRD incorporates a five-day training schedule which teaches the history of disasters and hazard information in Myanmar and preparation for fire, earthquake, cyclone, tsunami, landslide, etc. The training curriculum is continuously updated as the country responds to current disaster situations. • *DRR training for the Division and State level has been implemented by the RRD, but it needs to be extended to Township and Village levels too.*
2) Sector-wise training	• The DMH issues Agro-Meteorological Weekly Forecast and has broadcasted it in a TV Farmer Channel since 2013. The DMH also organises Agro-Met Basic/Intermediate Courses and the Forecast Application for Risk Management in Agriculture (FARM) School for farmers and local staff of the Department of Agriculture. A location-specific weather advisory project called SESAME (Specialized Expert System for Agro-Meteorological Early Warning) provides 3-day and 10-day forecast of wind speed, rainfall and temperature via Facebook and SMS to farmers in two pilot sites of Central Dry Zone which influence their decisions such as the timing of sowing and harvesting of crops. • *Agro-meteorological service is in high demand and the DMH needs to extend it nation-wide.*

添付資料 14：ベトナム
国別ワークショップ記録

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添付資料 14：ベトナム国別ワークショップ記録

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration [CN20]

Outline of the National Workshop in Viet Nam

Background:

The Concept Note No. 20 [CN20] for **Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration** is one of the Flagship and Priority Projects under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015). The concept of **strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions** is succeeded in the Priority Programme No. 3. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020. The CN20 Project being implemented by a JICA Project Team in 2016-2017 aims to support the Working Group on Prevention and Mitigation under the ASEAN Committee on Disaster Management (ACDM) in setting the direction and designing a roadmap to realise these concepts. For that, the Project Team has completed baseline studies in each ASEAN Member State which result was compiled in a Progress Report and shared with ACDM members in April 2017. Based on the findings and analyses, three National Workshops in May-July followed by a Regional Forum and Senior Official-Level Forum in September and November respectively will be organised to consolidate and adopt common regional approaches for realising the concept.

Objectives:

- To discuss current conditions including constraints and barriers for implementing DRR and CCA and their integration against water-related disasters of flood, storm, landslide and drought
- To discuss directions and necessary actions for improving DRR and CCA and their integration
- To discuss possible common approaches for facilitating DRR and CCA integration in ASEAN which will be fed into the discussion at the upcoming Regional Forum and Senior Official-Level Forum

Co-organisers:

- Department of Natural Disaster Prevention and Control (DNDPC) *[National Project Coordinator and ACDM focal point]*
- JICA Project Team

Participants: A total of about 40 participants from following agencies related to DRR of water-related disasters and CCA and co-organisers; few participants from each agency are expected:

- Ministry of Agriculture and Rural Development (MARD)
    - Directorate of Water Resources (DWR)
    - Disaster Management Centre (DMC)
    - Viet Nam Forest Administration Office
    - Department of Crop Production
    - Department of Cooperatives and Rural Development
- Ministry of Natural Resources and Environment (MONRE)

  - Department of Water Resource Management
  - Department of Geology and Minerals
  - Department of Land Administration
  - Department of Meteorology, Hydrology and Climate Change (DMHCC)
  - The National Hydro-Meteorological Service (NHMS)
  - Institute of Meteorology, Hydrology and Environment (IMHEN)
  - Vietnam National Mekong Committee (VNMC)
- Ministry of Planning and Investment (MPI)
  - Department of Science, Education, Natural Resources and Environment
  - Development Strategy Institute (DSI)
- Ministry of Transport (MOT)
  - Vietnam Road Administration
  - Vietnam Inland Waterways Administration
  - Institute of Transport Science and Technology (ITST)
- Ministry of Construction (MOC)
  - Planning – Architecture Department
  - Urban Development Agency
- Others

Date and time: 9:30-16:00, Thursday, 6 July 2017
Venue: Pullman Hanoi Hotel, Hanoi
Language: English and Vietnamese (simultaneous interpretation)

Draft programme:

9:00-9:30	*Registration*
9:30-9:50	**Opening** • Opening remarks – *DNDPC* • Self-introduction of the participants • Objectives of the National Workshop – *JICA Project Team*
9:50-10:10	**Session 1: Why integration of DRR and CCA is needed?** *Presentation by the JICA Project Team followed by inputs and comments by the participants* • Climate-related disasters in the region • International agreements on DRR and CCA: the Sendai Framework for Disaster Risk Reduction (SFDRR); the Sustainable Development Goals (SDGs) 2030; the Paris Agreement under the United Nations Framework on Climate Change (UNFCCC) • Commitments by the ASEAN: AADMER Work Programme 2016-2020; the Declaration on Institutionalising the Resilience of ASEAN and its Communities and Leaders (April 2015); the ASEAN Action Plan on Joint Response to Climate Change; roles of the ASEAN Coordinating Center for Humanitarian Assistance (AHA Center)

10:10-10:40	**Session 2: Assessment of DRR and CCA integration in Viet Nam and ASEAN** *Presentations by the JICA Project Team followed by inputs and comments by the participants* • Ideal status of DRR and CCA integration (examples of other countries) • Tentative country assessment of Viet Nam – issues and challenges • Status in ASEAN and selected (potential) good practices
10:40-11:00	*Coffee break*
11:00-12:40	**Session 3: Prioritisation of issues and identification of necessary actions in Viet Nam and ASEAN *[Group work]*** *The JICA Project Team briefly shares the output of the National Workshop in Myanmar as a reference (10 min). By breaking out into three groups, each group will:* *1) Share issues and challenges for DRR and CCA integration by each agency and select 1 or 2 priority areas in Viet Nam (with a focus on risk assessment);* *2) Discuss necessary actions and roles of relevant agencies to address them;* *3) Discuss desired common approaches in ASEAN which could contribute to improving the situation in Viet Nam as well as in the region by referring to available domestic and regional resources and institutions; and* *4) Required technical assistance from other countries/organisations.*
12:40-13:40	*Lunch break*
13:40-15:50	**Session 4: Plenary discussion on developing a proposal for a new policy and institutional framework for CCA and DRR integration** *Step 1: A moderator of each group presents the main points (50 min = 15 min x 3 groups + Q&A)* *Step 2: Participants confirm the key points discussed in each group and summarise the message of the workshop (80 min):* *1) Priority issues;* *2) Necessary national actions and roles of relevant agencies;* *3) Desired common approaches in ASEAN and available regional resources and institutions; and* *4) Required external technical assistances.*
	Coffee to be served in-between
15:50-16:00	**Wrap up and closing** • Way forward – *JICA Project Team* • Closing remarks – *DNDPC*

Follow up activities:

- Co-organisers will compile the main outputs and share it with the participants within three weeks.
- JICA Project Team will report the workshop summary to subsequent National Workshops.

- DNDPC will report the workshop summary at the Regional Forum in September 2017 in Bangkok.

WORKSHOP
STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DISASTER RISK REDUCTION (DRR) AND CLIMATE CHANGE ADAPTATION (CCA) INTEGRATION
Ha Noi, 6 July 2017

No	Name	Organization
1	Nguyen Xuan Hien	Center for Marine Hydro-Meteorology - Institute of Meteorology, Hydrology and Climate Change
2	Tran Ba Dat	Directorate for Roads, Ministry of Transport (MOT)
3	Nguyen Van Dung	General Department of Geology and Minerals, Ministry of Natural Resources and Environment (MONRE)
4	Nguyen Huu Thien	Forest Protection Department, Ministry of Agriculture and Rural Development (MARD)
5	Dinh Van Tuyen	Forest Protection Department, MARD
6	Nguyen Tien Huy	Development Strategy Institute, Ministry of Planning and Investment (MPI)
7	Tran Thi Lan Anh	Urban Development Agency, Ministry of Construction (MOC)
8	Tu Thi Kim Anh	Urban Development Agency, MOC
9	Dao Thi Ha Thanh	General Department of Land Management, MONRE
10	Van Phu Chinh	Department of Natural Disaster Prevention and Control (DNDPC)
11	Dam Thi Hoa	DNDPC
12	Pham Hong Quyen	DNDPC
13	Ta Ngoc Tan	DNDPC
14	Duong Duc My	DNDPC
15	Pham Doan Khanh	DNDPC
16	Tran Thi Dien	Department of Water Resources Management, MONRE
17	Nguyen Tung Lam	Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE)
18	Nguyen Van Cuong	ISPONRE
19	Dao Canh Tung	ISPONRE
20	Doan Thi Thanh Hang	ISPONRE
21	Vo Ngoc Minh	Implementation Unit for Capacity Development and ODA Water Resources Projects, Ninh Thuan Province
22	Bui Viet Hien	UNDP Vietnam
23	Akiko Urakami	JICA Vietnam
24	Nguyen Thi Thu Le	JICA Vietnam
25	Kenichiro Tachi	JICA Expert, MARD
26	Toshizo Maeda	JICA Project Team
27	Takashi Furukawa	JICA Project Team
28	Takehiko Ogawa	JICA Project Team
29	Prabhakar SVRK	JICA Project Team
30	Ngoc Bao Pham	JICA Project Team
31	Ridronachai Warungkarasami	JICA Project Team

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

*[Concept Note No. 20 of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015): **CN20 Project**]*

[Priority Programme No. 3 ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020]

National Workshop in Viet Nam

6 July 2017, Hanoi

JICA Project Team

Implementation Flow of the CN20 Project

2nd Project Steering Committee	July 27, 2016, Bangkok	[Inception Report]
1st Field Study	Aug 1-12, **Thailand**; Aug 15-26, **Lao PDR**	
2nd Field Study	Sep 19-30, **Myanmar**; Oct 3-14, **Cambodia**	
3rd Field Study	Nov 14-25, **Viet Nam**; Nov 28-Dec 7, **Malaysia**; Dec 8-9, **Singapore**; Dec 12-14, **Brunei Darussalam**	
3rd PSC Meeting	Dec 7, Vientiane	
4th Field Study	Jan 9-20, 2017, **Indonesia**; Jan 23-Feb 3, **the Philippines**	
4th PSC Meeting	March 1, Bangkok	[Draft Progress Report]
ACDM Meeting	April 4, Vientiane	[Progress Report]
National Workshops	May 31, Myanmar; July 6, Viet Nam; July 12, the Philippines	
5th PSC Meeting	July 6, Bangkok	
6th PSC Meeting	Sep 4, Bangkok	
Regional Forum	Sep 6, Bangkok	Preparatory meeting of SOLF
Senior Official-Level Forum	Nov 16, Jakarta	[Publication of Good Practices]
7th PSC Meeting	Dec, Jakarta *(t.b.c.)*	[Draft Final Report]

Baseline study

We are here!

2

Objectives of the National Workshop

- To discuss **current conditions** including constraints and barriers for implementing DRR and CCA and their integration against water-related disasters of flood, storm, landslide and drought ***[Session 1 &2]***
- To discuss **directions and necessary actions** for improving DRR and CCA and their integration ***[Session 3]***
- To discuss **desired common approaches** for DRR and CCA integration **in ASEAN** ***[Session 4]***

Objectives of the Regional Forum and SOLF

- Consolidate **common approaches in ASEAN** for strengthening institutional and policy framework on DRR and CCA Integration and endorse it at the Senior Official-Level Forum with appropriate targets, a rough road map, and a regional institutional arrangement to monitor the progress

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CN20 Project: National Workshop in Viet Nam

9:30-9:50	**Opening**
9:50-10:10	**Session 1: Why integration of DRR and CCA is needed?**
10:10-10:40	**Session 2: Assessment of DRR and CCA integration in ASEAN and Viet Nam**
10:40-11:00	*Coffee break*
11:00-12:40	**Session 3: Prioritisation of issues and identification of necessary actions in Viet Nam and ASEAN**
12:40-13:40	*Lunch break*
13:40-14:50	**Session 4: Plenary discussion on developing a proposal for a new policy and institutional framework for CCA and DRR integration** • Presentation by each group • Plenary discussion
In-between	*Coffee break*
15:50-16:00	**Wrap up and closing**

Presentation by JICA Project Team and Q&A

Group work

Plenary discussion

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Expected Outputs of the National Workshop

Session 1	**Understanding the effectiveness and necessities** of strengthening institutional and policy framework on DRR and CCA integration
Session 2	**Understanding the issues and challenges** for strengthening institutional and policy framework on DRR and CCA integration **in Viet Nam and ASEAN**
Session 3	**Identification of priorities, necessary actions and roles of relevant agencies** for strengthening institutional and policy framework on DRR and CCA integration **in Viet Nam and ASEAN** • Priority 1, necessary actions, roles of relevant agencies • Priority 2, ..
Session 4	**Recommendation of common approaches** for strengthening institutional and policy framework on DRR and CCA integration **in Viet Nam and ASEAN** • Recommended action 1 • Recommended action 2 ..

Group work

Plenary discussion

➔ AADMER Work Programme 2016-2020

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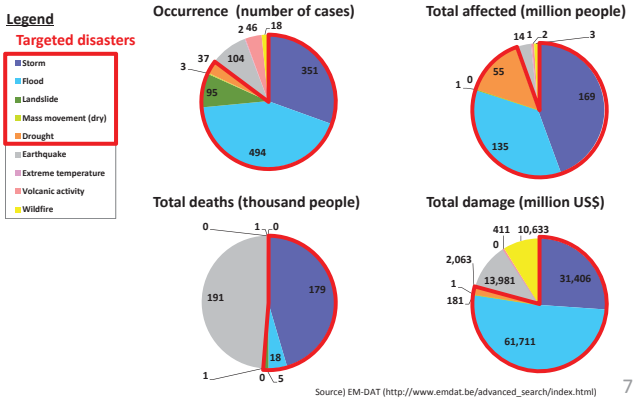
Session 1: Why integration of DRR and CCA is needed?

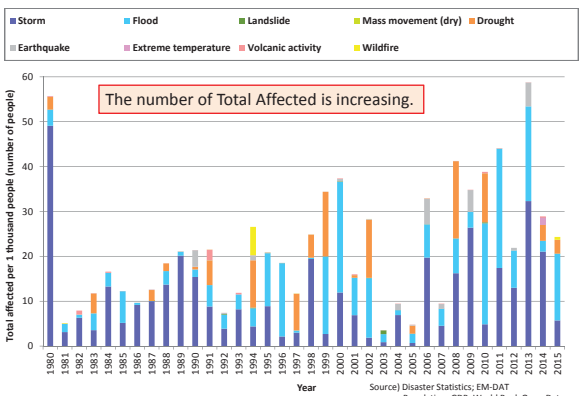
ASEAN Disaster Statistics Overview in the past 30 years (1987-2016)



Source) EM-DAT (http://www.emdat.be/advanced_search/index.html)

7

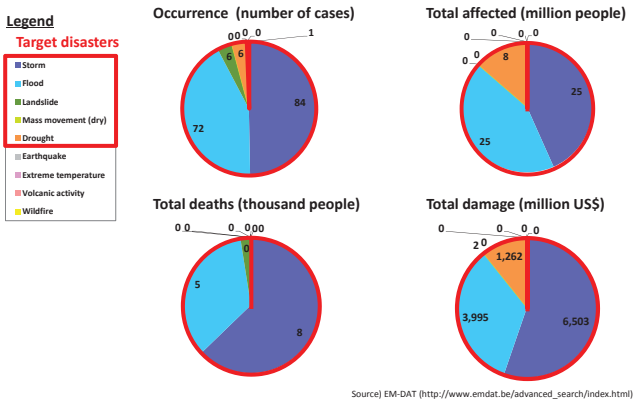
Total Affected per 1,000 people in ASEAN countries



Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data

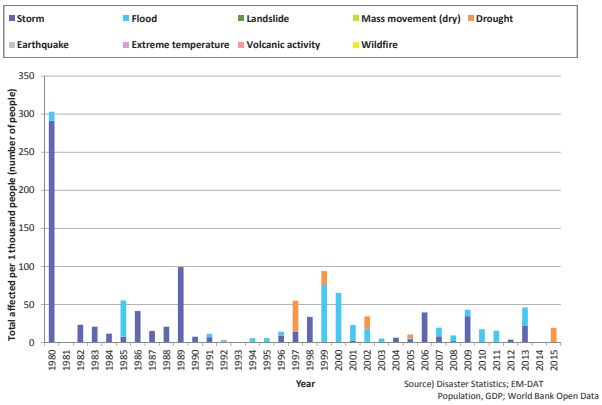
8

Vietnam Disaster Statistics Overview in the past 30 years (from 1987 to 2016)



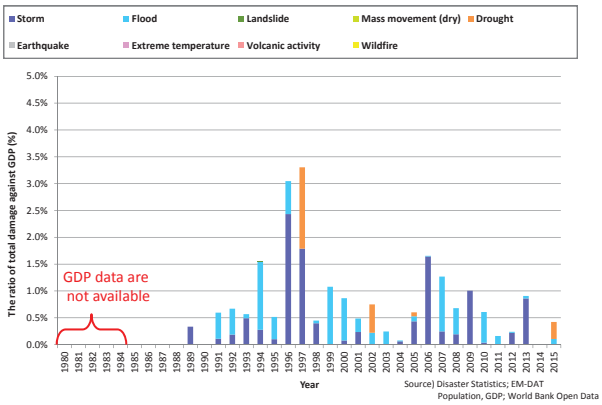
Source) EM-DAT (http://www.emdat.be/advanced_search/index.html)

Total Affected per 1 thousand people in Vietnam

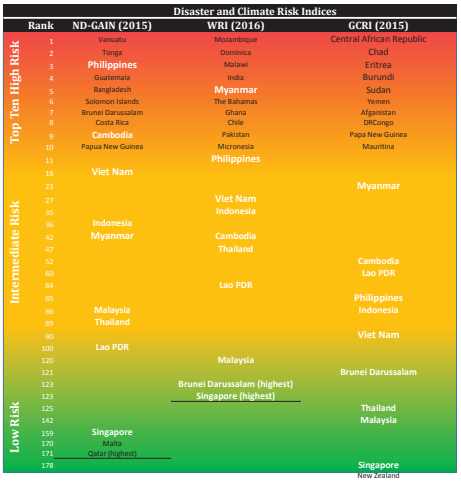


Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data

The Ratio of Total Damage against GDP in Vietnam



Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data



About the indices:

University of Notre Dame Global Adaptation Initiative (ND-GAIN) is an indicator of country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.

World Risk Index (WRI) highlights the risk of becoming a victim of disaster owing to five natural hazards: Earthquakes, cyclones, floods, droughts, and sea-level rise. WRI consists of four components: Exposure (to natural hazards), susceptibility, coping capacities and adaptive capacities.

Global Climate Risk Index (GCRI) indicates a level of exposure and vulnerability to extreme events, which countries should understand as warnings in order to be prepared for more frequent and/or more severe events in the future. Each country's index score has been derived from a country's average ranking in four indicating categories, according to the following weighting: death toll, 1/6; deaths per 100 000 inhabitants, 1/3; absolute losses in PPP, 1/6; losses per GDP unit, 1/3.

DRR and CCA Agreements

DRR	CCA

Global:

- Sendai Framework for Disaster Risk Reduction 2015-2030
- 2030 Agenda for Sustainable Development Goals (2015)
- The Paris Agreement under the UNFCCC (2015)

*Goal 9. Build **resilient infrastructure***
*Goal 11. Make cities and human settlements inclusive, safe, **resilient** and sustainable*
*Goal 13. Take urgent action to **combat climate change** and its impacts*

ASEAN:

- ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2016-2020
- ASEAN Action Plan on Joint Response to CC (2012)
- ASEAN Vision 2025 on Disaster Management

*"Accelerate **investments in disaster risk prevention and reduction and CCA**", "Continue sharing and dissemination of risk and climate information to further support **risk-informed policy development, decision-making and investment** programming"*

- The Declaration of Institutionalising the Resilience of ASEAN and its Communities and Leaders (26th ASEAN Summit, 2015)

*"The **ACDM** to be assigned as the focal point for **cross-sectoral cooperation**"*

Session 2: Assessment of DRR and CCA integration in ASEAN and Viet Nam

Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
1. Laws, regulations and policies	1) National development plan 2) DRR laws 3) CCA laws 4) Relevant sectoral laws	• DRR and CCA concepts are incorporated • DRR, CCA and relevant sectoral laws, regulations and policies are enforced • DRR and CCA are mainstreamed in each ministry's policies
2. Institutional arrangement	1) National DRM system 2) National CCA system 3) Transboundary DRM	• National DRM and CCA committees have been set up for inter-ministerial coordination • A multi-stakeholder transboundary DRM system has been set up
3. Funding	1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services (PES)	• Funds are allocated for DRR and CCA activities with a monitoring and tracking system • PES is implemented based on the economic evaluation
4. Risk assessment	1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination	• Disaster database is recorded and used for science-based analysis • Climate risk is analysed based on hydro-meteorological data monitoring and downscaling from Global Climate Models • Hazard and risk maps are prepared by assessing the damages of past disasters and the capacity and vulnerability of local authorities

Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
5. Planning and implementation	1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient Investment 4) Drought risk reduction	• Guidelines and standards incorporating disaster and climate risk are developed and used • Land-use and urban plans are prepared by incorporating disaster and climate risk and with evaluation of ecosystem services • Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner • Drought risk reduction measures including water resources management and agricultural measures are implemented
6. Capacity building	1) DRR and CCA training 2) Sector-wise training	• DRR and CCA trainings for national and local government officials and other stakeholders are provided • Special training programmes are implemented for specific purposes such as a climate school for farmers

➔ Japan's practices

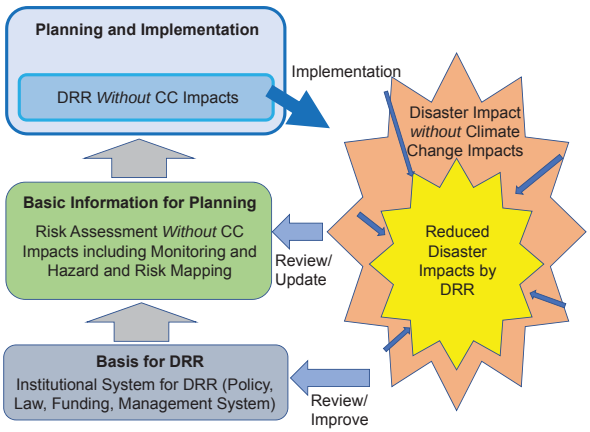


Image of DRR against Water Related Disasters

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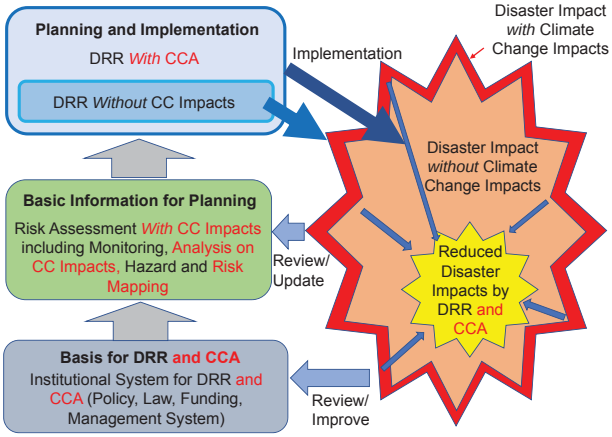

Image of DRR and CCA Integration against Water Related Disasters

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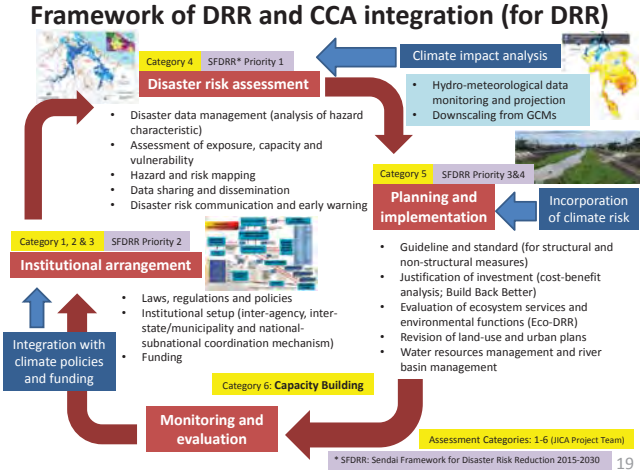
Framework of DRR and CCA integration (for DRR)



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Main Findings of the Field Study in ASEAN (1)

Category	Evaluation *(and issues)*
1. Laws, regulations and policies	• DRR and CCA concepts are incorporated individually in national development plans except in the Philippines and Lao PDR wherein both concepts are integrated • Legal framework for DRR and CCA is *composed of several legal documents but not integrated* in all Member States.
2. Institutional arrangement	• Vertical and horizontal DRM systems and CCA systems and related legal frameworks have been developed in all Member States. However, *integration of those systems and legal frameworks is lacking or insufficient.* Indonesia and Malaysia have better conditions in these aspects.
3. Funding	• *Funding for DRR and CCA activities is insufficient* in general. Better countries are Indonesia and the Philippines for DRR and CCA and Viet Nam for forest management.
4. Risk assessment	• Some countries have developed disaster database including Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. • All Member States have hydro-meteorological data management system. However, *some counties have a problem of insufficient coverage of the observation stations such as in upstream river basins and rural areas.* Countries of better condition are Malaysia, Singapore, Thailand and Viet Nam. *Hydro-meteorological data sharing of international rivers is insufficient* (except in the Lower Mekong River).

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Main Findings of the Field Study in ASEAN (2)

Category	Evaluation *(and issues)*
4. Risk assessment *(cont.)*	• Some countries have downscaled from GCMs including Indonesia, Malaysia, the Philippines, Singapore and Viet Nam. *There are no standard values of climate change impacts set in the Member States yet.* • Flood hazard maps or risk maps without incorporating climate risk are prepared in Brunei Darussalam, Malaysia, the Philippines, Thailand and Viet Nam, but *their resolution is insufficient for DRR and preparedness planning* in general. Malaysia and Viet Nam have prepared flood hazard maps with climate change impacts in some areas. *Hazard maps or risk maps of landslide are generally insufficient* (relatively better countries: Indonesia, the Philippines and Thailand). *Storm surge and drought hazard maps or risk maps are generally insufficient.*
5. Planning and implementation	• *DRR planning and implementation without considering CC impacts are insufficient* in general (better country: Malaysia). *DRR planning and implementation with CCA is lacking or insufficient* in general (countries with good practices or potential good ones: Brunei Darussalam, Indonesia, the Philippines, Singapore and Viet Nam). *Guiding tools for planning and implementation including the related risk assessment etc. is lacking.*
6. Capacity building	• *Integrated DRR and CCA training is rarely conducted* except in Indonesia. Community-based DRM are conducted in most Member States. Climate field schools which train farmers to use weather forecast for agriculture are successful in Indonesia, Myanmar and the Philippines.

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Tentative Country Assessment of Vietnam-1

Category	Evaluation *(and issues)*
1. Laws, regulations and policies	• The **Socio-economic Development Plan 2016-2020** firmly supports the concepts of DRR and CCA. • The **Law on Natural Disaster Prevention and Control 2013** provides DRR and CCA measures from national to local and community levels. • The **Law on Environmental Protection 2014** provides legal basis for CC. The **National Target Programme to Respond to CC (NTP-RCC)** assigns MONRE to promote CC in other line ministries.
2. Institutional arrangement	• The **Central Steering Committee for Natural Disaster Prevention and Control (CCNDPC)** chaired by the **Minister of MARD** coordinates relevant ministries for natural disaster prevention, control and recovery works. The **Department of National Disaster Prevention and Control (DNDPC)** is responsible for coordinating the implementation. • The **Department of Climate Change (DCC)**, MONRE, the national focal point of the UNFCCC, coordinates CC-related activities. The **National Committee on CC (NCCC)** chaired by the Prime Minister with all key ministries as members is responsible for inter-ministerial coordination. • The **Department of Water Resources Management (DWRM)** under MONRE is responsible for water resources management and river basin management. DWRM aims to strengthening mandates of River Basin Committees and River Basin Offices, *but the relevant law has not been enacted yet.*

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Tentative Country Assessment of Vietnam-2

Category	Evaluation *(and issues)*
3. Funding	• ***Financial allocation for DRR and CCA** are scattered in line ministries.* • The **Climate Public Expenditure and Investment Review (CPEIR)** conducted by the **Ministry of Planning and Investment (MPI)** provides an analysis of CC-related investments to promote more concerted efforts. • The **Payment for Forest Environmental Services** managed by **VN Forest Administration Office** levying hydropower, water supply and the eco-tourism sector provides funds for forest management and rehabilitation.
4. Risk assessment	• The **Disaster Management Center (DMC)** is improving the **disaster database** and the monitoring system by using GIS and satellite images. • **NHMS** conducts **flood forecast** based on observed hydro-meteorological data, radar rain gauge data and real-time flood simulation. • **IMHEN** conducts **downscaling from GCMs**, *but standard values of CC impacts have not been set yet.* **IMHEN** has developed a real-time **drought monitoring and forecasting system** for all provinces. • River water level **data is shared** by the **Mekong River Commission (MRC)**, *but similar practices in other international rivers is limited.* • ***Hazard maps and risk maps** for flood, storm and landslide covering the whole country have not been prepared yet. **Flood maps** prepared by **DMC** and forecasted flood maps prepared by **NHMS** do not include CC impacts. There are no **landslide hazard maps** except in some pilot areas along national roads.* Probable flood maps and seawater intrusion maps in the Mekong Delta prepared by **SIWRP** incorporates sea level rise risk.

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Tentative Country Assessment of Vietnam-3

Category	Evaluation *(and issues)*
5. Planning and implementation	• *There is no **guideline and standard** for DRR and CCA integration against flood, storm surge and landslide disasters.* • There are some good practices and potential ones incorporating CC impact against **flood**, such as 1) coastal dikes in Ben Tre Province which incorporate sea level rise in the design height; and 2) flood risk management master plan in the Mekong Delta developed by **SIWRP**, *but the number is limited.* • *Implementation of DRR measures against **storm surge and landslide** are insufficient in general.* • Major **drought risk reduction interventions** include construction of reservoirs for irrigation purposes and seawater intrusion prevention dikes. • Water user groups and irrigation companies are set up and high irrigation efficiency measures have been promoted. • *There is a heavy reliance on groundwater use with limited groundwater development efforts.*
6. Capacity building	• **Community-based DRM** has been promoted in nearly 1,700 communities which provide a quick entry point for addressing drought risk. • **IMHEN** has played an essential role to share information and knowledge on DRR and CCA with **local governments**. • **Sector-wise trainings** on CC are implemented on ad-hoc basis in accordance with the **National Target Programme to Respond to CC (NTP-RCC)**.

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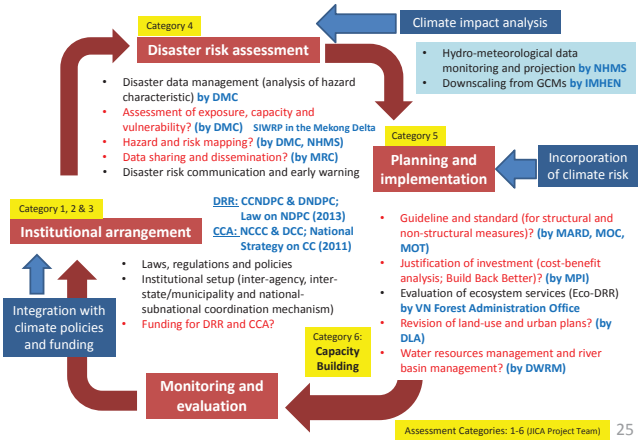
DRR and CCA integration status in Viet Nam



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Law on Natural Disaster Prevention and Control (No. 33/2013/QH13)

Article 4. Basic principles of natural disaster prevention and control
1. **Proactive prevention**, timely response to, and urgent and effective remediation of consequences of natural disasters.

Article 9. State budget funds for natural disaster prevention and control
1. State budget funds for natural disaster prevention and control include funds within annual expenditure estimates and state budget provisions.

Article 10. Natural disaster prevention and control funds
1. **Natural disaster prevention and control funds are set up at the provincial level** and managed by provincial-level People's Committees.

Article 14. National Strategy on Natural Disaster Prevention and Control
1. The National Strategy on Natural Disaster Prevention and Control is elaborated for every 10 years, with a 20-year vision and is updated and adjusted once every 5 years or upon great changes in the situation of natural disasters.
4. The **Ministry of Agriculture and Rural Development shall assume the prime responsibility** for, and **coordinate with ministries**, ministerial-level agencies, government-attached agencies and localities in, elaborating and submitting the national strategy on natural disaster prevention and control to the Prime Minister for approval.

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Law on Natural Disaster Prevention and Control (No. 33/2013/QH13)

Article 16. Integration of natural disaster prevention and control contents into sectoral development or socio-economic development master plans and plans
4. The **Ministry of Planning and Investment** shall assume the prime responsibility for, and coordinate with related ministries and ministerial-level agencies in, guiding the integration of natural disaster prevention and control contents into sectoral development or socio-economic development master plans and plans.

Article 17. Identification, assessment and zoning of natural disaster risks; monitoring and supervision of natural disasters
2. The **Ministry of Natural Resources and Environment** and **Vietnam Academy of Science and Technology** shall base themselves on their assigned functions and tasks to implement the provisions of Clause 1 of this Article.

Article 24. Forecast, warning, and transmission of information on natural disasters
a/ The **Ministry of Natural Resources and Environment** shall issue meteorological and hydrographical forecasts and warnings about natural disasters;

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Article 42. State management responsibility of the Government, ministries and ministerial-level agencies
2. The **Ministry of Agriculture and Rural Development** shall take responsibility before the Government for performing the state management of natural disaster prevention and control, and has the following responsibilities:
b/ To **elaborate national standards, national technical regulations** on assurance of safety during natural disasters for natural disaster prevention and control works under their management;
d/ To **manage the construction**, repair, consolidation and protection of natural disaster prevention and control works, including dikes, dams, reservoirs, anti-flood, anti-inundation and anti-erosion works, storm shelters for ships and boats, and other facilities serving natural disaster prevention and control, as assigned by the Government;
dd/ To **make statistics, process information and build databases** to serve the state management of natural disaster prevention and control;
3. The **Ministry of Natural Resources and Environment** has the following responsibilities:
c/ To organize the observation, collection and processing of information, identification, **assessment and zoning of natural disaster risks, monitoring and surveillance of natural disasters; to make meteorological, hydrographical and oceanographic forecasts and warnings…**

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Group Discussion Sheet (1/2): Necessary National and Regional Actions for DRR and CCA Integration

Assessment category	1) Priority issues	2) Necessary actions and roles of relevant agencies	3) Proposed common approaches in ASEAN and available resources/institutions	4) Required technical assistance
1. Laws, regulations and policies 1) National development plan 2) DRR laws, regulations and policies 3) CCA laws, regulations and policies 4) Relevant sectoral laws, regulations and policies	What are the priority issues for DRR and CCA integration in Viet Nam?	Who should do what to improve the situation?	What resources/institutions can be used to improve it? What kind of common activities in ASEAN would be beneficial for Viet Nam? What can Viet Nam contribute?	What kind of technical assistance will be helpful?
2. Institutional arrangement 1) National DRM system 2) National CCA system 3) Transboundary DRM	Select one or two priority subjects.			
3. Funding 1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services				

Ref) Activities of AHA Centre ➔

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4. Risk assessment 1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination 5) Early warning system and disaster risk communication				
5. Planning and implementation 1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient investment 4) Drought risk reduction				
6. Capacity building 1) DRR and CCA training 2) Sector-wise training				

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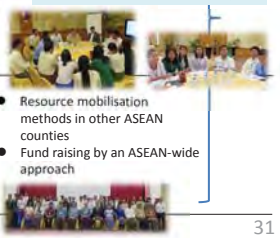
Main outputs of the National WS in Myanmar-1 (May 31, 2017)

Key issues and necessary actions in Myanmar	Expectations to ASEAN
Laws/ Regulations/ Policies ● Integration of DRR and CCA policies and plans ● Development of relevant sectoral laws and regulations	● Clarification of the effect of DRR and CCA integration in other ASEAN countries
Institutional Arrangement ● National coordination mechanism (weak coordination and cooperation among implementing activities, particularly for river basin management from upstream to downstream to manage flood, drought and landslide risks and sedimentation) ● Mainstreaming DRR and CCA in each ministry (by appointing a focal unit in each department and exchanging staff between the RRD and line ministries) ● Strengthening the functions of committees at district and township levels to deal with DRR and CCA issues	• Coordination mechanism for DRR and CCA integration **Knowledge sharing on good practices of policies, institutional arrangement and funding**
Funding ● Insufficient funds for DRR activities in line ministries (the National Disaster Management Fund is mostly for response, recovery and reconstruction; not for prevention and mitigation) ● Lack of funds for CCA ● Budget tagging of DRR and CCA expenditures ● No payment system for environmental conservation	● Resource mobilisation methods in other ASEAN counties ● Fund raising by an ASEAN-wide approach



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Risk Assessment ● Integration of disaster database with all sectors ● Improved hydro-met monitoring system for flood and drought (incl. groundwater monitoring) ● Climate risk analysis capacity incl. downscaling from GCMs ● Monitoring system for landslide ● Insufficient hazard maps and risk maps ● Improved data accuracy and reliability ● Dam safety against floods; flood risk assessment for each basin ● Improved early warning and communication systems at local level ● Require cost-benefit analysis of DRR and CCA expenditures to justify the investment	● Data sharing among ASEAN countries with a unified standard (by establishing a regional responsible body) Regional climate models for ASEAN ● Hazard mapping and risk assessment technology ● Flood risk assessment for dam safety ● Salinity intrusion monitoring and analysis ● Cost-benefit analysis of DRR and CCA expenditures **risk assessment methods and technology** **Justification of DRR and CCA investment**
Planning and Implementation ● Sectoral planning capacity of each ministry ● Climate and disaster resilient design of infrastructures (for reducing the long-term maintenance cost) ● Urban and land-use plan with DRR and CCA ● Slope protection methodology ● Catchment (river basin) management against drought; water storage facilities ● Climate smart agriculture, crops diversification	● To develop guiding tools for integrating DRR and CCA (and build capacity by implementing a pilot project using it) Slope protection pilot projects ● Climate smart agriculture **Guiding tools for climate and disaster resilient design**
Capacity Building ● Education of DRR and CCA; development of curriculums for schools ● Public awareness with easy to understand materials ● Training of trainers and experts ● Usage of ICT equipment	● Training and capacity building Technical assistance ● Exchange program **Training opportunities; education and public awareness** **Not enough discussion on roles of stakeholder and ASEAN approach**

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Group discussion summary of the National Workshop in Viet Nam

Assessment category	Priority issues	Necessary actions and roles of relevant agencies	Proposed common approaches in ASEAN and required technical assistance
Risk assessment			
Data management	• Fragmentation of information related to disaster among the different ministries due to lack of data sharing mechanism • Different layers of data need to be integrated; data sharing system needs to be established • Sectoral barriers; vertical information sharing is not an issue • Cross-sectoral data sharing needs to be promoted (e.g. forest data can be useful for hydro-mapping) • Hydro-meteorological data monitoring system needs to be upgraded and the coverage needs to be expanded	• Develop national disaster database by engaging relevant agencies; standardize type and contents of database[DNDPC] • Inter-ministerial data sharing[CCNDPC] • Install automatic hydro-meteorological monitoring system [DNDPC, DMC, NHMS] • Mobilize social capital (communities, LGUs) for hydro-meteorological data monitoring by providing training courses on knowledge and equipment use; engage private companies for developing smart phone apps and software for monitoring and data integration [DNDPC, NHMS]	• Information and data sharing (however, there are confidential data and limit of data sharing in Viet Nam) • Sharing software for monitoring to develop standardized database • Exchange experiences on database development and management
Climate risk analysis and hazard and risk mapping	• Hazard and risk maps need to be included in the database • Standardize and digitize base maps are required	• DNDPC needs to incorporate other information in disaster and risk maps / database including land-use change data, forest coverage data; • DNDPC also needs to specify necessary data, indicators and parameters and direct other agencies[MARD, MONRE, LGUs]	• Exchange experiences on DRR and CCA integration, techniques, including risk assessment • Multi- and bilateral cooperation
Data sharing and dissemination	• Insufficient facility for disseminating information	• Cooperation mechanism between network service providers, forecast agencies, receivers • Access to data by provincial government needs to be improved [DNDPC, NHMS, LGUs]	
Early warning system and disaster risk communication	• Multi-hazard early warning systems is needed • Insufficient communication with local people based on early warning system	• Develop an early warning system for multiple disasters and disseminate it to vulnerable communities[MARD, MONRE, MoCom, LGUs] • Capacity building of communities on early disaster warning using mobile SMS and smartphone apps [DNDPC, LGUs]	
	• Equip skills to response to disaster for communities; education of communities to respond to additional risks is required	• Early warning and preparatory training (to prevent forest fire; cannot do much once the fire starts) [DNDPC, VN Forest]	
Planning and implementation			
Guideline and standard; Land-use and urban planning; Disaster-resilient investment	• Each ministry has guidelines for specific areas and disseminated at local level • Generally local authorities are waiting for guidelines from the national government • Capacity building needs at local level; quality of training matters	• Develop guidelines incorporating climate risk and review of existing structures adapting to disasters and extreme weathers and disseminate it to LGUs [DNDPC, DCC, MOC] • Training program needs to be developed based on actual needs assessment using the 10-year experiences of community-based disaster risk management; it needs to be integrated in the socio-economic development plan[MPI, DNDPC, DCC]	• Share standards and guidelines • Share planning techniques
	• Water resources management requires coordination among relevant agencies to avoid overlaps between agricultural, urban and environmental sectors	• Coordination office is required for water resources management (a successful case in NinhThuan Province)[MONRE, MARD]	
	• CC is cross-cutting; different sectors have different laws; there are two different national strategies	• Two national committees on DRR and CCA need to coordinate (and to be integrated and covered by a single agency) [CCNDPC/DNDPC, NCCC/DCC]	
	• Developing disaster infrastructure work does not look into CC; only technical specification to be fully complied	• Technical standard for infrastructure design incorporating CC risk is required[DNDPC, DWR, MOC]	
	• Forest protection is not sufficient	• Forest protection and rehabilitation need to be further promoted [DNDPC, VN Forest, DCC]	
	• Risk levels need to be determined to prioritize development areas	• Determine risk levels to prioritize development projects [DNDPC, DCC]	

DNDPC: Department of National Disaster Prevention and Control (to be upgraded to a Directorate in July or August 2017)
CCNDPC: Central Steering Committee for Natural Disaster Prevention and Control
DWR: Directorate of Water Resources; DMC: Disaster Management Center
MONRE: Ministry of Natural Resources and Environment; DCC: Department of Climate Change; NHMS: National Hydro-Meteorological Service
MoCom: Ministry of Communication; MOC: Ministry of Construction; MPI: Ministry of Planning and Investment

Viet Nam: Assessment of institutional and policy framework on DRR and CCA integration

Overall assessment

DRR systems of flood, storm, landslide and drought:

- At the national level, **the Central Committee for Natural Disaster Prevention and Control (CCNDPC)** was established with an aim of coordinating inter-ministries, agencies in organizing and directing the works of natural disaster prevention and control as well as the recovery works after natural disasters. The Minister of the MARD is the chairman of the CCNDPC and is responsible for reporting to the Prime Minister.
- The **Department of National Disaster Prevention and Control (DNDPC)** of the MARD is responsible for coordinating the implementation of the disaster prevention response and mitigation plan as a secretariat of the CCNDPC. The **Disaster Management Centre (DMC)** operates under the auspices of the **Directorate of Water Resources** of the MARD, and the main responsibilities of the DMC are to cooperate with the **Department of Dyke Management, Flood and Storm Control** ensuring the operation of the Standing Office for the CCNDPC.
- River Basin management and River Management are under the responsibility of the **Department of Water Resources Management (DWRM)** of MONRE. However, as the law of RBM including WRM has not been enacted yet, *RBM and RM are not well conducted*. DWRM is proposing improvement of the RBM system.
- Forest management is under the responsibility of the **VN Forest Administration Office** of MARD. *There is a forest fund levying hydropower, water supply and eco-tourism sectors for conservation of the forests with communities' involvement. The forest management system as well as the forest fund is being reviewed for further improvement.*
- The **National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020** approved by the Prime Minister in 2007, among others, aims to enhance the capacities of forecasting flood, storm, drought, seawater intrusion, of informing earthquake, of warning tsunami and extreme hydro-meteorology phenomena, of which the focus is given to increase the early warning of storm and tropical depression to 72 hours in advance

CCA systems:

- The Ministry of Natural Resources and Environment (MONRE) has the principle responsibility for climate change-related matters. Within the mandates of MONRE, the **Department of Meteorology, Hydrology and Climate Change (DMHCC)** is assigned to coordinate climate change related activities.
- The Government of Vietnam also established the **National Committee on Climate Change (NCCC)** in 2012 to lead, coordinate, harmonize, and monitor climate change. Chaired by the Prime Minister with ministers of all key ministries as members, the NCCC is responsible for coordinating relevant ministries and overseeing the implementation of the NCCS and other related programmes.

Integration of DRR and CCA:

- The **National Target Programme to Respond to Climate Change** promulgated in 2008 requires mainstreaming of activities in response to climate change in major sectors and fields. In this way, incorporating CCA into sector-wise policies and strategies has significantly progressed in Vietnam. *For example, the **Action Plan Framework for Adaptation to Climate Change in the Agriculture and Rural Development Sector Period 2008 - 2020** approved by MARD has an objective of enhancing the government's capabilities of adaptation and mitigation to climate change.* However, *the integration of DRR and CCA remains unachieved*.
- Integration of climate change considerations into drought risk reduction is still at beginning stages in Vietnam and *most of the agencies are currently trying to understand what implications climate change could have on the drought*.
- The **Climate Change Bureau (CCB)** and the **Climate Change Coordination Office (CCCO)**, local focal points of climate change, were set up in Ho Chi Minh City, Da Nang City and Can Tho City, respectively. *Local climate change adaptation plans were prepared by those local focal points, which are customized based on the integrated local situation of disaster risks and climate change scenario.*

Funding:

- A large portion of the climate change response is currently funded with regular development funds that do not have climate change as one of their primary objectives. *The financial mobilization is scattered in line ministries, and it is not well mobilized as the priority areas of DRR and CCA.* However, in order to enhance effective mobilization of financial resources for climate change response, the **Ministry of Planning and Investment**, with support from the World Bank and the United Nations Development

Program (UNDP), has conducted a **Climate Public Expenditure and Investment Review (CPEIR)**. *CPEIR, completed in 2015, provided a thorough analysis of the organizational, institutional, investment, and financial structure for action on climate change in order to finance further climate actions.*

Risk assessment:

- **Disaster Management Center (DMC)** of MARD is responsible for disaster data management including monitoring of disasters. *DMC is improving the disaster data management by utilizing GIS and space-based technology such as satellite images to monitor and identify flooding areas.*
- The **National Hydro-Meteorological Service (NHMS)** of MONRE is the responsible agency for meteo-hydrological observation including flood forecast.
- *There are some international river basins in Viet Nam. In the Mekong River, water level data is shared by the **Mekong River Commission (MRC)** among the Lower Mekong Countries. However, data sharing of the other international rivers is not so progressing.*
- **Institute of Meteorology, Hydrology and Environment (IMHEN)** of MONRE conducts downscaling of GCMs. However, *IMHEN has not set standard values of climate change impacts for the regions or areas in the country yet.*
- Flood inundation maps (like hazard maps) are prepared by **DMC** for some river basins. **Southern Institute for Water Resources Planning (SIWRP)** of MARD prepares flood hazard maps of probable floods without and with climate change impacts in Mekong Delta, *which needs to be prepared for many other rivers in Viet Nam. Hazard maps and risk maps for storm surge, landslide is insufficient. Preparation or expanding hazard maps and risk maps of projected water related disasters without and with climate change impacts is one of the issues of DRR and CCA.*
- There are high quality drought maps *but it does not address who is in most need. Usability aspect of produced maps could be emphasized more.*

Planning and implementation:

- DRR planning and implementation without CCA against floods, storm surge and landslides are insufficient. Also, planning and implementation of DRR with CCA are insufficient. However, *there are some good practices of DRR with CCA such as the coastal dikes in Ben Tre Province*. The height of these dikes includes sea water level rise height by climate change. *There is also good practice of flood risk management plan in Mekong Delta with CCA formulated by the SIWRP. Increasing planning and implementation of DRR without CCA is basically necessary, and also that of DRR with CCA.*

Capacity Building

- Although they are on ad-hoc basis under the assistance of donor-funded projects, there are some training programmes for DRR and CCA in Vietnam. In several cases, the standard terms of references for a training programme have been developed by donor agencies.
- ***IMHEN** leads a number of studies, ranging from development of climate change scenarios to climate change adaptation in related fields such as water resources, agriculture and forestry, coastal management and biodiversity.*

1. Laws, regulations and policies	
1) National development plan	• In the **Socio-economic Development Plan (SEDP) 2016-2020**, DRR and CCA are considered in the priority areas. *Through the SEDP 2016-2020, the Government of Vietnam plans to improve regulations, policy and coordination for climate change, DRR, natural resource management, environmental protection and land use. More concretely, the DRR policies are stated in Output 2 of Outcome 3, while the CCA policies are stated in Output 1 of Outcome 3.* However, *there are no clear-cut indication of the integration of DRR and CCA in the SEDP 2016-2020*.
2) DRR laws and regulations	• The *legislative and institutional framework regarding DRR in Vietnam is diverse*. Since a stand-alone legal instrument on disaster management does not exist, prevention and response to different kinds of natural disasters is being dealt with in different legal documents. For instance, floods are covered under the Ordinance on Prevention and Control of Floods and Storms (1993). • *In order to solve this constraint, the Law on Natural Disaster Prevention and Control No. 33/2013/QH13L took effect in May 2014. The 47-article Law provides for DRR, CCA and mitigation measures, from national to local and community levels.* • The Law outlines natural disaster prevention and control activities, including a national strategy and plans, and the Law assigns roles and responsibilities of ministries and other key stakeholders in preventing and responding to disasters.
3) CCA laws and	• The *legislative and institutional framework regarding climate change in Viet Nam is also diverse*,

regulations	extending over a number of legal documents, and a complex legal and institutional regime is spread over various laws and regulations of different agencies. • Nevertheless, the following law and resolution are the basic legal basis for climate change in Vietnam. ➢ **Law on Environmental Protection** (No. 55/2014/QH13): The Law specifies that environmental protection should be in harmony with economic development, social protection, biodiversity protection and adapting to climate change. ➢ Resolution (No. 60/2007/NQ-CP): The Law stipulates that the Government has assigned MONRE to be in charge in collaboration with other related ministries and sectors to develop a **National Target Programme to Respond to Climate Change (NTP-RCC)** for coping with global climate change.
4) Relevant sectoral laws and regulations	• *Under the Decree 99, environmental charges such as the payment for forest environmental services are incorporated into the financial framework related to climate change response.* • Meanwhile, under Decision 799, the National REDD+ Action Program is designed in compliance with policies and laws of Vietnam, and consistent to the provisions of UNFCCC and relevant treaties. • *The river management and river basin management are incorporated into the legal framework related to climate change response.* River management and river basin management are closely related to the integration of DRR and CCA. Decree 43 stipulates the establishment and management of water source protection corridors with regard to the water sources defined in Article 31 of Law No. 17 (2012) on Water Resources. *This Decree applies to state agencies, organizations, individuals and households that are involved in the establishment and management of water source protection corridors.* • The latest incarnation of Vietnam's Land Law was ratified by the country's National Assembly on November 29, 2013, and came into force on July 1, 2014 (the 2014 Land Law). This new law replaced the previous Land Law of 2003 (the 2003 Land Law). Following the 2014 Land Law, the Vietnam Government issued Decrees Nos. 43, 44, and 47, all of which came into force on the same date as the 2014 Land Law.
2. Institutional arrangement	
1) National DRM system	• At the national level, the **Central Committee for Natural Disaster Prevention and Control (CCNDPC)** was established with an aim of coordinating inter-ministries, agencies in organizing and directing the works of natural disaster prevention and control as well as the recovery works after natural disasters. The Minister of the MARD is the chairman of the CCNDPC and is responsible for reporting to the Prime Minister. Two Vice-Chairmen are the Minister of National Defence and the Chairman of the Government Office. • On the other hand, the **Department of National Disaster Prevention and Control (DNDPC)** of the MARD is responsible for coordinating the implementation of the disaster prevention response and mitigation plan as a secretariat of the CCNDPC. • The **Disaster Management Centre (DMC)** operates under the auspices of the **Directorate of Water Resources** of the MARD, and the main responsibilities of the DMC are to cooperate with the **Department of Dyke Management, Flood and Storm Control** ensuring the operation of the Standing Office for the CCNDPC.
2) National CCA system	• The **Ministry of Natural Resources and Environment (MONRE**) has the principle responsibility for managing response to climate change. Within the mandates of MONRE, the **Department of Meteorology, Hydrology and Climate Change (DMHCC)** is assigned to coordinate climate change related activities while the **Department of Legal Affairs (DLA)** advises on the legal aspects of climate change. The DMHCC is also the national focal point to implement the UNFCCC and the Kyoto Protocol. • The Government of Vietnam also established the **National Committee on Climate Change (NCCC)** in 2012 to lead, coordinate, harmonize, and monitor climate change. Chaired by the Prime Minister with ministers of all key ministries as members, the NCCC is responsible for coordination among ministries and oversight of the implementation of the NCCS and other related programmes. The MONRE supports the NCCC through the DMHCC and is the technical focal point for the climate change response policies.
3) Transboundary disaster risk management	<u>River basin management</u> • **Department of Water Resources Management (DWRM)** of MONRE is the responsible agency for Water Resources Management (WRM) and River Basin Management (RBM). *However, the law for RBM including WRM has not been enacted yet, and WRM and RBM have not been functioned well.* DWRM is going to propose improvement of RBM systems including strengthening mandates of the River Basin Committee and River Basin Offices. *It is necessary to improve the WRM and RBM systems as the supporting system for water related DRR and CCA.* <u>River management</u>

	• DWRM has the responsibility for River Management (RM). However, as the *law for RBM and WRM has not been enacted yet, RM is also not conducted well.* Forest management • **VN Forest Administration Office** of MARD is the responsible agencies of forest management including conservation of forest and reforestation for upland forest and mangrove forest in the coastal areas. There is a fund for forest management from hydropower, water supply and eco-tourism sectors, which is used for supporting communities for reforestation. Therefore, *forest management is well conducted and being progressed. Furthermore, further improvement of forest management is being considered.* Drought risk management • Integrated with the overall risk reduction initiatives, **Disaster Management Center (DMC)** was created under the **Directorate of Water Resources (DWR)** in 2010. DMC cooperates with the **Department of Dyke Management, Flood and Storm Control** as a result of which the focus has largely been on the sudden onset disasters such as storms and floods. • The task of drought risk reduction is spread across the line ministries such as **Ministry of Agriculture and Rural Development, Ministry of Health, Ministry of Labour and Social Affair, Ministry of Finance**, who handles the drought risk related emergencies and contingency plans for the constituents falling under their domain. • *The roles and responsibilities for drought risk reduction are significantly response-oriented.*
3. Funding	
1) Funding for DRR	• The total budgets of the **Department of Natural Disaster Prevention and Control (DNDPC)** and the **Disaster Management Centre (DMC)** are USD 2.42 million and USD 264,000 in the financial year 2015-2016, respectively. These budgets are allocated for the regular operational expenses.
2) Funding for CCA	• Climate change related spending is mainly directed towards large-scale infrastructure projects that build resilience. *According to the **Comprehensive Public Expenditure and Institutional Review (CPEIR)** of Vietnam, during the financial year from 2010 to 2013, the Government of Vietnam allocated about 88% of climate change response financing for projects that offered a significant amount of CCA.*
3) Payment for ecosystem services and insurance	• *In Vietnam, environmental charges such as the payment for forest environmental services are incorporated into the financial framework related to climate change response.* • Under the Decree 99, organizations and individuals benefiting from forest environmental services must pay for forest environmental services to forest owners that create the supplied services. • The payment for forest environmental services through a **Forest Protection and Development Fund** is the money that users of forest environmental services entrust the Fund to pay to owners of forests that supply forest environmental services. • Vietnam made initial efforts for promoting agricultural insurance *with limited success due to high cost of insurance and less demand.* There is a need to develop a viable and cost-effective insurance products for farmers.
4. Risk assessment	
1) Management of disaster records	• **Disaster Management Centre (DMC)** of MARD is the responsible agency for disaster data management including monitoring the disasters. DMC with **Spatial Technology Institution (STI)** of Viet Nam are developing inundation maps based on satellite images. *Like this, DMC is improving disaster data and monitoring system by utilizing GIS and space-based technology based on satellite images,* which is also assisted by Japan Aerospace Exploration Agency (JAXA), The Asian Institute of Technology (AIT), United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) and Tokyo University of Japan.
2) Hydro-meteorological data management and climate risk analysis	• The **National Hydro-Meteorological Service (NHMS)** of MONRE is the responsible agency for meteo-hydrological observation. NHMS also conduct flood forecast based on the observed meteo-hydrological data, data of radar rain gauges and real-time flood simulation. • *UNDP has supported **IMHEN** in developing a near real time drought monitoring and forecasting system for all provinces/national level using the Keetch– Byram drought index (KBDI) and other hydromet data for rainfall, temperature, precipitation etc. The system provides spatial information and time of drought.* • There are some international river basins in Viet Nam. In the Mekong River, water level data is shared by the **Mekong River Commission (MRC)** among the Lower Mekong Countries. *However, data sharing of the other international rivers is not so much progressed.* • **Institute of Meteorology, Hydrology and Environment (IMHEN)** of MONRE conducts downscaling of GCMs. *However, IMHEN has not set standard values of climate change impacts for the regions or areas in the country yet.*
3) Preparation of hazard maps and risk maps	• *Hazard maps and risk maps covering the whole country for storm, floods and landslides have not been prepared yet.* Flood maps based on satellite images by **DMC** and forecasted flood maps by NHMS are one of the kinds of hazard maps. These flood hazard maps do not include climate

	change impacts. • *Probable flood maps (2000 Flood with 100-year return period) as well as saline water intrusion maps due to drought are prepared by Southern Institute for Water Resources Planning (SIWRP) in the Mekong Delta for without and with sea water level rise by climate change.* • *There are no landslide hazard maps except in some pilot areas along the National Roads.* • *At community level, DRM plans also consists of community based risk maps, including drought, which help in understanding the data gaps and understanding community knowledge on risks.* • *However, hazard maps and risk maps for storm surge, landslide and drought (there are some drought hazard maps) for without and with climate change impacts are insufficient in general.*
4) Data sharing and dissemination	• *Flood hazard maps are utilized for Preparedness (warning and evacuation) together with flood forecast. Also, flood hazard maps are utilized for planning DRR and also with CCA (example: Flood Management Master Plan in Mekong Delta by **SIWRP**).*
5) Early warning system and disaster risk communication	• **DMC** supports the **Central Committee for Nature Disaster Prevention and Control (CCNDPC)** for disseminating early warning and conducting response activities. • ***NHMS** also disseminates flood forecast based on observed meteo-hydrological data, simulation results of GCMs and flood simulation.*
5. Planning and implementation	
1) Design guideline and standard	• There is no guideline and standard for DRR and CCA integration against storm and storm surge, floods and landslide disasters yet. *A Guiding tool (or Guideline) for planning and implementation of DRR with CCA is necessary to be prepared.*
2) Local land-use plan and urban plan	• Not enough information to judge the status
3) Disaster-resilient public and private investment	• In general, *structural measures and non-structural measures even without CCA are insufficient.* • *There are several examples of good practices or potential good practices for DRR with CCA against floods* such as 1) Coastal dikes in Ben Tre Province against flood, which include sea water level rise for setting height of the dikes, and 2) Flood Risk Management Master Plan under without and with climate change impacts in the Mekong Delta in Viet Nam. *Similar kinds of DRR with CCA planning and implementation against floods are necessary to be increased.* • *DRR against storm surge and landslide are insufficient, DRR with CCA against storm surge and landslide are necessary to be planned and implemented.*
4) Drought risk reduction and water resources management	• *Community-based disaster risk management plans (CBDRM) have been well promoted in Vietnam with nearly 1,700 communes* and these provide a quick entry point for addressing drought risks. • Salinity and drought risk reduction is closely linked as flow of water from the upstream is substantially reduced during drought and the high tide in the downstream leads to salt water intrusion. *Major interventions to alleviate drought and seawater intrusion in Vietnam are focused on constructing reservoirs for irrigation purposes and constructing sea water intrusion prevention dikes in the river, such as along the Mekong Delta, to prevent contamination in the upstream water intake points.* ISET-Vietnam has developed *a salt water intrusion early warning system* that provides an early warning to canal and reservoir gate operators *to operate gates in such a way to mitigate the salt water intrusion*. • *Water user groups and irrigation companies are collaborating in exchanging the water needs, availability information for efficient management of irrigation water including promotion of crop diversification.* • *High irrigation efficiency measures have been promoted including sprinkler and drip irrigation in the drought prone areas that is bringing back the migrated farmers back to farming.* • *There is a heavy reliance on groundwater use with limited groundwater development efforts*. There is a need to address this in conjunction with connecting the reservoirs among areas with variable water needs.
6. Capacity building	
1) DRR and CCA training	• In Vietnam, *the **Institute of Meteorology, Hydrology and Climate Change (IMHEN)** under MONRE has played an essential role to share information and knowledge with local governments.* IMHEN has disseminated knowledge and information such as climate projections and impact assessments datasets on a regional basis.
2) Sector-wise training	• In accordance with the **National Target Programme to Respond to Climate Change (NTP-RCC)**, the *sector-wise training programmes are being implemented on ad-hoc basis in response to climate change response requirements in major sectors and fields.*

添付資料 15：フィリピン
国別ワークショップ記録

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添付資料 15：フィリピン国別ワークショップ記録

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration [CN20]

Outline of the National Workshop in the Philippines

Background:

The Concept Note No. 20 [CN20] for **Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration** is one of the Flagship and Priority Projects under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015). The concept of **strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions** is succeeded in the Priority Programme No. 3. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020. The CN20 Project being implemented by a JICA Project Team in 2016-2017 aims to support the Working Group on Prevention and Mitigation under the ASEAN Committee on Disaster Management (ACDM) in setting the direction and designing a roadmap to realise these concepts. For that, the Project Team has completed baseline studies in each ASEAN Member State which result was compiled in a Progress Report and shared with ACDM members in April 2017. Based on the findings and analyses, three National Workshops in May-July followed by a Regional Forum and Senior Official-Level Forum in September and November respectively will be organised to consolidate and adopt common regional approaches for realising the concept.

Objectives:

- To discuss current conditions including constraints and barriers for implementing DRR and CCA and their integration against water-related disasters of flood, storm, landslide and drought
- To discuss directions and necessary actions for improving DRR and CCA and their integration
- To discuss possible common approaches for facilitating DRR and CCA integration in ASEAN which will be fed into the discussion at the upcoming Regional Forum and Senior Official-Level Forum

Co-organisers:

- National Disaster Risk Reduction and Management Council (NDRRMC), Office of Civil Defense (OCD) *[National Project Coordinator and ACDM focal point]*
- JICA Project Team

Participants: A total of about 40 participants from agencies related to DRR of water-related disasters and CCA and co-organisers:

- Department of Public Works and Highways (DPWH)
    - Flood Control Management Cluster (FCMC)
    - Water Resources Division, Bureau of Design
- Department of Environment and Natural Resources (DENR)
    - Mines and Geoscience Bureau (MGB)
    - Forest Management Bureau (FMB)
    - Land Management Bureau (LMB)
    - National Water Resources Board (NWRB)

  - River Basin Control Office (RBCO)
- Climate Change Commission (CCC)
- Department of Science and Technology (DOST)
  - Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)
  - National Irrigation Administration (NIA)
- Department of Agriculture (DA)
  - Bureau of Agricultural and Fisheries Engineering
- Metropolitan Waterworks and Sewerage System (MWSS)
- National Economic and Development Agency (NEDA)
  - Development Planning Department
- Department of Finance (DOF)
  - Section related to Climate Adaptation Fund and Other Climate Change Related Funds
  - Division of International Finance Group
- Others

Date and time: 9:30-16:00, Wednesday, 12 July 2017
Venue: Seda Vertis North Hotel, Quezon City
Language: English

Draft programme:

9:00-9:30	*Registration*
9:30-9:50	**Opening** • Opening remarks – *NDRRMC* • Self-introduction of the participants • Objectives of the National Workshop – *JICA Project Team*
9:50-10:10	**Session 1: Why integration of DRR and CCA is needed?** *Presentation by the JICA Project Team followed by inputs and comments by the participants* • Climate-related disasters in the region and the needs for DRR and CCA integration • International agreements on DRR and CCA: the Sendai Framework for Disaster Risk Reduction (SFDRR); the Sustainable Development Goals (SDGs) 2030; the Paris Agreement under the United Nations Framework on Climate Change (UNFCCC) • Commitments by the ASEAN: AADMER Work Programme 2016-2020; the Declaration on Institutionalising the Resilience of ASEAN and its Communities and Leaders (April 2015); the ASEAN Action Plan on Joint Response to Climate Change; roles of the ASEAN Coordinating Center for Humanitarian Assistance (AHA Center)

10:10-10:40	**Session 2: Assessment of DRR and CCA integration in ASEAN and the Philippines** *Presentations by the JICA Project Team followed by inputs and comments by the participants* • Ideal status of DRR and CCA integration (examples of other countries) • Tentative country assessment of the Philippines – issues and challenges • Status in ASEAN and selected (potential) good practices
10:40-11:00	*Coffee break*
11:00-12:40	**Session 3: Prioritisation of issues and identification of necessary actions in the Philippines and ASEAN *[Group work]*** *The JICA Project Team briefly shares the output of the National Workshops in Myanmar and Viet Nam as a reference (10 min). By breaking out into three groups, each group will:* *1) Share issues and challenges for DRR and CCA integration by each agency and select 1 or 2 priority areas in the Philippines (with a focus on risk assessment);* *2) Discuss necessary actions and roles of relevant agencies to address them;* *3) Discuss desired common approaches in ASEAN which could contribute to improving the situation in the Philippines as well as in the region by referring to available domestic and regional resources and institutions; and* *4) Required technical assistance from other countries/organisations.*
12:30-13:30	*Lunch break*
13:40-15:50	**Session 4: Plenary discussion on developing a proposal for a new policy and institutional framework for CCA and DRR integration** *Step 1: A moderator of each group presents the main points (50 min = 15 min x 3 groups + Q&A)* *Step 2: Participants confirm the key points discussed in each group and summarise the message of the workshop (80 min):* *1) Priority issues;* *2) Necessary national actions and roles of relevant agencies;* *3) Desired common approaches in ASEAN and available regional resources and institutions; and* *4) Required external technical assistances.*
	Coffee to be served in-between
15:50-16:00	**Wrap up and closing** • Way forward – *JICA Project Team* • Closing remarks – *NDRRMC*

Follow up activities:

- Co-organisers will compile the main outputs and share it with the participants within three weeks.

- JICA Project Team will report the workshop summary to the ACDM Working Group Meeting on Prevention and Mitigation.
- NDRRMC will report the workshop summary at the Regional Forum in September 2017 in Bangkok.

National Workshop in the Philippines, 12 July 2017
Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

No.	Mr./Ms.	Name	Position	Organization
1	Mr.	Ricardo B. Jalad	Executive Director, National Disaster Risk Reduction & Management Council (NDRRMC) and Administrator	Office of Civil Defense (OCD)
2	Mr.	Mr. Manuel Nivera Jr.	Chief, DRRM Development and Standards Division, Policy Development and Planning Service	OCD
3	Ms.	Myrabeth Alicias	Civil Defense Officer I	OCD
4	Ms.	Noemi Carpio	Engineer IV	Bureau of Agriculture and Fishery Engineering, Department of Agriculture (DA)
5	Ms.	Perla L. Gines	DMO	Field Program Operational Planning Division (FPOPD), DA
6	Mr.	Arron E. Halbon	Science Research Specialaist	Field Program Operational Planning Division (FPOPD), DA
7	Mr.	Isagani Amatorio	Senior Four Management Specialist	Forest Management Bureau (FMB), Department of Environment and Natural Resources (DENR)
8	Ms.	Ednonwin Dela Cruz	EO II	Forest Management Bureau (FMB), Department of Environment and Natural Resources (DENR)
9	Ms.	Erma Quirimit	Special Investigator III	Land Management Bureau (LMB), DENR
10	Ms.	Grace Sope	Statistician II	Land Management Bureau (LMB), DENR
11	Ms.	Michelle Grace E. Mendoza	Geologist	Mines and Geoscience Bureau (GMB), DENR
12	Mr.	Alfredo Faustino	Sr. Science Research Specialist	Mines and Geoscience Bureau (GMB), DENR
13	Mr.	Marcius Isip	Senior Geologist	Mines and Geoscience Bureau (GMB) Central Office, DENR
14	Mr.	Reynaldo Villeza	Supervizing Geologist	Mines and Geoscience Bureau (GMB) Central Office, DENR
15	Ms.	Ashley Caitlien Arguelles	GIS Specialist	River Basin Control Office (RBCO), DENR
16	Ms.	Rochelle Lucero	PMEO	River Basin Control Office (RBCO), DENR
17	Ms.	Megan Barte	Economist	Department of Finance (DOF)
18	Mr.	Matthew S. Velasco	Engineer II	Bureau of Design (BOD), Department of Public Works and Highways (DPWH)
19	Mr.	Jesse Felizardo	Engineer V	Flood Control and Sabo Engineering Center (FCSEC), DPWH
20	Mr.	Ryan Ayson	Principal Engineer	Metropolitan Waterworks and Sewerage System (MWSS)
21	Mr.	Rosauro De Leon	Supervisor/EDS	National Economic and Department Authority (NEDA)
22	Mr.	Jesus R.Espiritu	Supervizing Engineer A	National Irrigation Administration (NIA)
23	Mr.	Eusibio R. Villamanto	Principal Engineer A	National Irrigation Administration (NIA)
24	Ms.	Josephine Billones	Engr. III	National Water Resource Board (NWRB)
25	Ms.	Thelma Cinco	AWSC/CAD	Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA), Department of Science and Technology (DOST)
26	Ms.	Ma. Cecilia Monteverde	AWSC/CAD	PAGASA, DOST
27	Ms.	Erika Inoue	Project Formulator Advisor	JICA Philippines
28	Mr.	Kessy Reyes	Sr. Program Officer	JICA Philippines
29	Mr.	Toshizo Maeda	Team Leader, JICA Project Team	IGES
30	Mr.	Takahashi Furukawa	JICA Project Team	CTII
31	Mr.	Takehiko Ogawa	JICA Project Team	CTII
32	Mr.	SVRK Prabhakar	JICA Project Team	IGES
33	Ms.	Riza S. Nanas	JICA Project Team	CTII
34	Mr.	Makoto Tsukiji	JICA Project Team	IGES

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

*[Concept Note No. 20 of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015): **CN20 Project**]*

[Priority Programme No. 3 ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020]

National Workshop in the Philippines

12 July 2017, Quezon City

JICA Project Team

Implementation Flow of the CN20 Project

2nd Project Steering Committee	July 27, 2016, Bangkok	[Inception Report]
1st Field Study	Aug 1-12, **Thailand**; Aug 15-26, **Lao PDR**	
2nd Field Study	Sep 19-30, **Myanmar**; Oct 3-14, **Cambodia**	
3rd Field Study	Nov 14-25, **Viet Nam**; Nov 28-Dec 7, **Malaysia**; Dec 8-9, **Singapore**; Dec 12-14, **Brunei Darussalam**	
3rd PSC Meeting	Dec 7, Vientiane	
4th Field Study	Jan 9-20, 2017, **Indonesia**; Jan 23-Feb 3, **the Philippines**	
4th PSC Meeting	March 1, Bangkok	[Draft Progress Report]
ACDM Meeting	April 4, Vientiane	[Progress Report]
National Workshops	May 31, Myanmar; July 6, Viet Nam; July 12, the Philippines	
5th PSC Meeting	July 6, Bangkok	
6th PSC Meeting	Sep 4, Bangkok	
Regional Forum	Sep 5-6, Bangkok	Preparatory meeting of SOLF
Senior Official-Level Forum	Nov 16, Jakarta	[Publication of Good Practices]
7th PSC Meeting	Dec, Jakarta *(t.b.c.)*	[Draft Final Report]

Baseline study

We are here!

Objectives of the National Workshop

- To discuss **current conditions** including constraints and barriers for implementing DRR and CCA and their integration against water-related disasters of flood, storm, landslide and drought ***[Session 1 &2]***
- To discuss **directions and necessary actions** for improving DRR and CCA and their integration ***[Session 3]***
- To discuss **desired common approaches** for DRR and CCA integration **in ASEAN** ***[Session 4]***

Objectives of the Regional Forum and SOLF

- Consolidate **common approaches in ASEAN** for strengthening institutional and policy framework on DRR and CCA Integration and endorse it at the Senior Official-Level Forum with appropriate targets, a rough road map, and a regional institutional arrangement to monitor the progress

CN20 Project: National Workshop in the Philippines

9:30-9:50	**Opening**
9:50-10:10	**Session 1: Why integration of DRR and CCA is needed?**
10:10-10:40	**Session 2: Assessment of DRR and CCA integration in ASEAN and the Philippines**
10:40-11:00	*Coffee break*
11:00-12:40	**Session 3: Prioritisation of issues and identification of necessary actions in the Philippines and ASEAN**
12:40-13:40	*Lunch break*
13:40-14:50	**Session 4: Plenary discussion on developing a proposal for a new policy and institutional framework for CCA and DRR integration** • Presentation by each group • Plenary discussion
In-between	*Coffee break*
15:50-16:00	**Wrap up and closing**

Presentation by JICA Project Team and Q&A

Group work

Plenary discussion

Expected Outputs of the National Workshop

Session 1	**Understanding the effectiveness and necessities** of strengthening institutional and policy framework on DRR and CCA integration
Session 2	**Understanding the issues and challenges** for strengthening institutional and policy framework on DRR and CCA integration **in the Philippines and ASEAN**
Session 3	**Identification of priorities, necessary actions and roles of relevant agencies** for strengthening institutional and policy framework on DRR and CCA integration **in the Philippines and ASEAN** • Priority 1, necessary actions, roles of relevant agencies • Priority 2, ..
Session 4	**Recommendation of common approaches** for strengthening institutional and policy framework on DRR and CCA integration **in the Philippines and ASEAN** • Recommended action 1 • Recommended action 2 ..

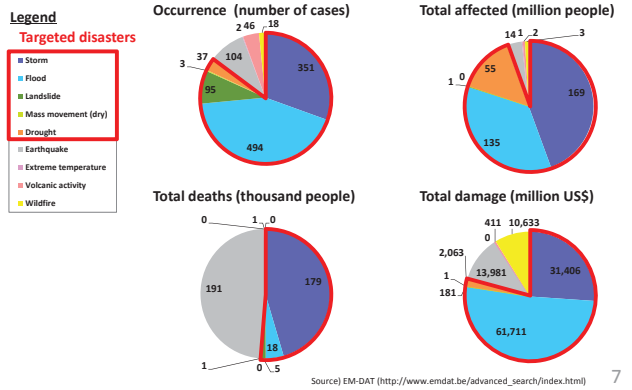
Group work

Plenary discussion

→ AADMER Work Programme 2016-2020

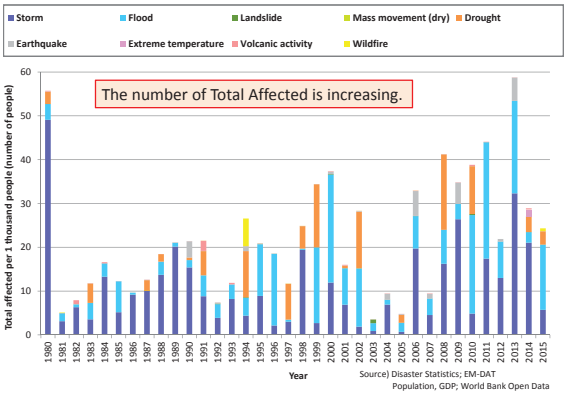
Session 1: Why integration of DRR and CCA is needed?

ASEAN Disaster Statistics Overview in the past 30 years (1987-2016)



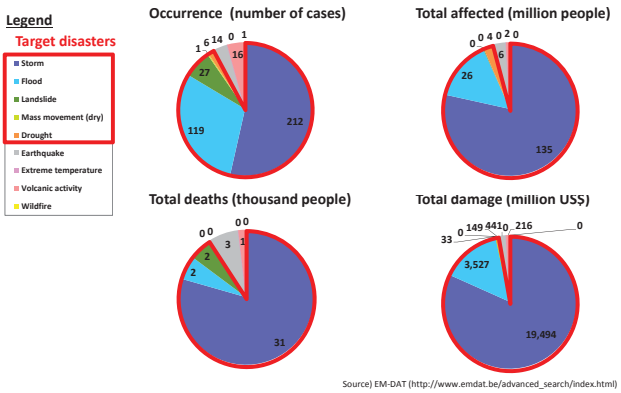
Source) EM-DAT (http://www.emdat.be/advanced_search/index.html)

Total Affected per 1,000 people in ASEAN countries



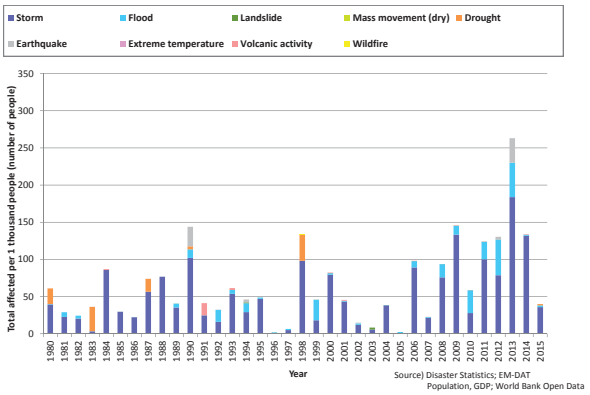
Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data

The Philippines Disaster Statistics Overview in the past 30 years (from 1987 to 2016)



Source) EM-DAT (http://www.emdat.be/advanced_search/index.html)

Total Affected per 1 thousand people in the Philippines



Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data

Disaster and Climate Risk Indices

	Rank	ND-GAIN (2015)	WRI (2016)	GCRI (2015)
Top Ten High Risk	1	Vanuatu	Mozambique	Central African Republic
	2	Tonga	Dominica	Chad
	3	Philippines	Malawi	Eritrea
	4	Guatemala	India	Burundi
	5	Bangladesh	Myanmar	Sudan
	6	Solomon Islands	The Bahamas	Yemen
	7	Brunei Darussalam	Ghana	Afganistan
	8	Costa Rica	Chile	DRCongo
	9	Cambodia	Pakistan	Papua New Guinea
	10	Papua New Guinea	Micronesia	Mauritina
Intermediate Risk	11		Philippines	
	18	Viet Nam		
	23			Myanmar
	27		Viet Nam	
	35		Indonesia	
	36	Indonesia		
	42	Myanmar	Cambodia	
	47		Thailand	
	52			Cambodia
	60			Lao PDR
	84		Lao PDR	
	85			Philippines
	86	Malaysia		Indonesia
	89	Thailand		
	90			Viet Nam
	100	Lao PDR		
	120		Malaysia	
	121			Brunei Darussalam
	123		Brunei Darussalam (highest)	
	123		Singapore (highest)	
	125			Thailand
	142			Malaysia
Low Risk	159	Singapore		
	170	Malta		
	171	Qatar (highest)		
	178			Singapore
				New Zealand

About the indices:

University of Notre Dame Global Adaptation Initiative (ND-GAIN) is an indicator of country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.

World Risk Index (WRI) highlights the risk of becoming a victim of disaster owing to five natural hazards: Earthquakes, cyclones, floods, droughts, and sea-level rise. WRI consists of four components: Exposure (to natural hazards), susceptibility, coping capacities and adaptive capacities.

Global Climate Risk Index (GCRI) indicates a level of exposure and vulnerability to extreme events, which countries should understand as warnings in order to be prepared for more frequent and/or more severe events in the future. Each country's index score has been derived from a country's average ranking in four indicating categories, according to the following weighting: death toll, 1/6; deaths per 100 000 inhabitants, 1/3; absolute losses in PPP, 1/6; losses per GDP unit, 1/3.

DRR and CCA Agreements

DRR

Global:

Sendai Framework for Disaster Risk Reduction 2015-2030

2030 Agenda for Sustainable Development Goals (2015)

ASEAN:

ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2016-2020

ASEAN Vision 2025 on Disaster Management

The Declaration of Institutionalising the Resilience of ASEAN and its Communities and Leaders (26th ASEAN Summit, 2015)

*"Accelerate **investments in disaster risk prevention and reduction and CCA**", "Continue sharing and dissemination of risk and climate information to further support **risk-informed policy development, decision-making and investment** programmina"*

CCA

The Paris Agreement under the UNFCCC (2015)

Goal 9.** Build **resilient infrastructure
***Goal 11.** Make cities and human settlements inclusive, safe, **resilient** and sustainable*
***Goal 13.** Take urgent action to **combat climate change** and its impacts*

ASEAN Action Plan on Joint Response to CC (2012)

*"The **ACDM** to be assigned as the focal point for **cross-sectoral cooperation**"*

Session 2: Assessment of DRR and CCA integration in ASEAN and Viet Nam

Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
1. Laws, regulations and policies	1) National development plan 2) DRR laws 3) CCA laws 4) Relevant sectoral laws	• DRR and CCA concepts are incorporated • DRR, CCA and relevant sectoral laws, regulations and policies are enforced • DRR and CCA are mainstreamed in each ministry's policies
2. Institutional arrangement	1) National DRM system 2) National CCA system 3) Transboundary DRM	• National DRM and CCA committees have been set up for inter-ministerial coordination • A multi-stakeholder transboundary DRM system has been set up
3. Funding	1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services (PES)	• Funds are allocated for DRR and CCA activities with a monitoring and tracking system • PES is implemented based on the economic evaluation
4. Risk assessment	1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination	• Disaster database is recorded and used for science-based analysis • Climate risk is analysed based on hydro-meteorological data monitoring and downscaling from Global Climate Models • Hazard and risk maps are prepared by assessing the damages of past disasters and the capacity and vulnerability of local authorities

Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
5. Planning and implementation	1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient Investment 4) Drought risk reduction	• Guidelines and standards incorporating disaster and climate risk are developed and used • Land-use and urban plans are prepared by incorporating disaster and climate risk and with evaluation of ecosystem services • Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner • Drought risk reduction measures including water resources management and agricultural measures are implemented
6. Capacity building	1) DRR and CCA training 2) Sector-wise training	• DRR and CCA trainings for national and local government officials and other stakeholders are provided • Special training programmes are implemented for specific purposes such as a climate school for farmers

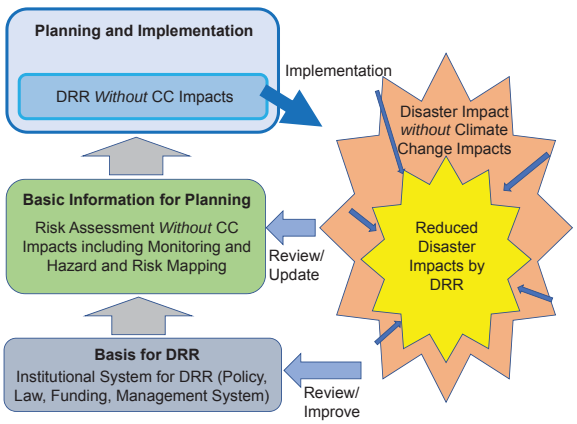


Image of DRR against Water Related Disasters

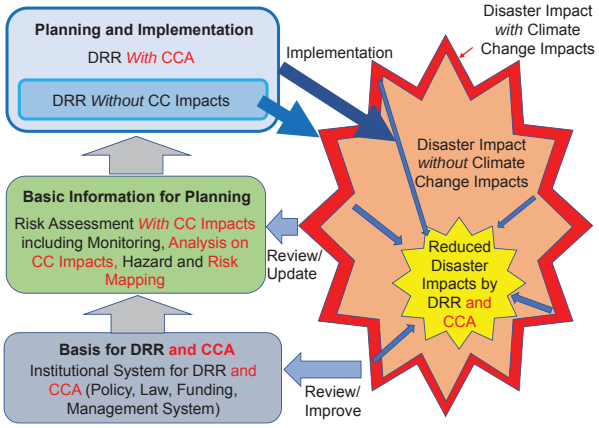
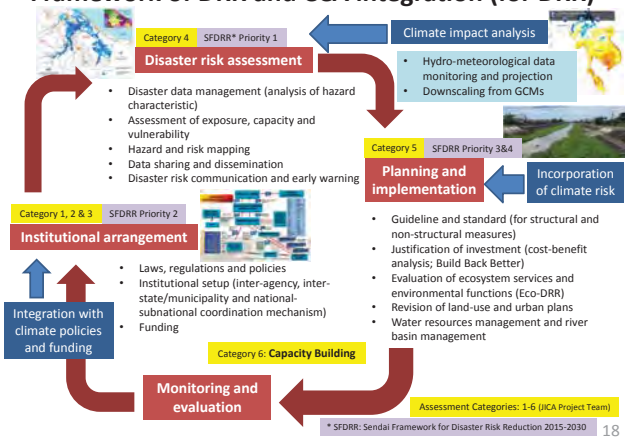


Image of DRR and CCA Integration against Water Related Disasters 17

Framework of DRR and CCA integration (for DRR)



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Main Findings of the Field Study in ASEAN (1)

Category	Evaluation *(and issues)*
1. Laws, regulations and policies	• DRR and CCA concepts are incorporated individually in national development plans except in the Philippines and Lao PDR wherein both concepts are integrated • Legal framework for DRR and CCA is *composed of several legal documents but not integrated* in all Member States.
2. Institutional arrangement	• Vertical and horizontal DRM systems and CCA systems and related legal frameworks have been developed in all Member States. However, *integration of those systems and legal frameworks is lacking or insufficient.* Indonesia and Malaysia have better conditions in these aspects.
3. Funding	• *Funding for DRR and CCA activities is insufficient* in general. Better countries are Indonesia and the Philippines for DRR and CCA and Viet Nam for forest management.
4. Risk assessment	• Some countries have developed disaster database including Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. • All Member States have hydro-meteorological data management system. However, *some counties have a problem of insufficient coverage of the observation stations such as in upstream river basins and rural areas.* Countries of better condition are Malaysia, Singapore, Thailand and Viet Nam. *Hydro-meteorological data sharing of international rivers is insufficient* (except in the Lower Mekong River).

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Main Findings of the Field Study in ASEAN (2)

Category	Evaluation *(and issues)*
4. Risk assessment *(cont.)*	• Some countries have downscaled from GCMs including Indonesia, Malaysia, the Philippines, Singapore and Viet Nam. *There are no standard values of climate change impacts set in the Member States yet.* • Flood hazard maps or risk maps without incorporating climate risk are prepared in Brunei Darussalam, Malaysia, the Philippines, Thailand and Viet Nam, but *their resolution is insufficient for DRR and preparedness planning* in general. Malaysia and Viet Nam have prepared flood hazard maps with climate change impacts in some areas. *Hazard maps or risk maps of landslide are generally insufficient* (relatively better countries: Indonesia, the Philippines and Thailand). *Storm surge and drought hazard maps or risk maps are generally insufficient.*
5. Planning and implementation	• *DRR planning and implementation without considering CC impacts are insufficient* in general (better country: Malaysia). *DRR planning and implementation with CCA is lacking or insufficient* in general (countries with good practices or potential good ones: Brunei Darussalam, Indonesia, the Philippines, Singapore and Viet Nam). *Guiding tools for planning and implementation including the related risk assessment etc. is lacking.*
6. Capacity building	• *Integrated DRR and CCA training is rarely conducted* except in Indonesia. Community-based DRM are conducted in most Member States. Climate field schools which train farmers to use weather forecast for agriculture are successful in Indonesia, Myanmar and the Philippines.

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Tentative Country Assessment of the Philippines

Category	Evaluation *(and issues)*
1. Laws, regulations and policies	• The **Philippine Development Plan (PDP) 2017-2022** stresses the importance of mainstreaming CC and DRRM in national and local development plans, policies and education system. • The **Republic Act (RA) No.10121**, titled the **Philippine DRR and Management Act of 2010**, is designed to strengthen the DRR and management system, to provide the national DRR and management framework, and to institutionalise the national DRR and management plan. • **The Climate Change Act of 2009 (Republic Act 9729)** was enacted in 2009 and mandated mainstreaming of CC into government policies.
2. Institutional arrangement	• The **National DRR and Management Council (NDRRMC)** is responsible for mobilizing resources for national risk reduction management, including for the National DRRM Fund (NDRRMF) as well as for the monitoring of utilization of the Local DRRM Fund (LDRRMF). The Office of Civil Defense (OCD) is the operating arm and secretariat of the NDRRMC. • The **Department of Environment and Natural Resources (DENR)** is responsible for governing and supervising the exploration, development, utilization, and conservation of the country's natural resources. The **National Mapping Resource and Information Authority (NAMRIA)** is the central mapping agency under the DENR who provides natural resources data, while the **Mines and Geosciences Bureau (MGB)** is the primary agency under the DENR responsible for the conservation, management, development and proper use of the country's mineral resources.

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Tentative Country Assessment of the Philippines

Category	Evaluation *(and issues)*
3. Funding	• There are following special funds to cushion impacts of disasters: **National DRR and Management Fund (NDRRMF); Local DRR and Management Fund (LDRRMF); People's Survival Fund (PSF)**; and **Special Provisions in General Appropriations Act**.
4. Risk assessment	• **OCD** has a database of historical disasters including record of response activities. • **Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA)** observes meteorological condition and conducts forecast of climate, typhoon, wind and rainfall. PAGASA also manages meteorological database. PAGASA has conducted downscaling of the effect on rainfall by CC based on various models of GCMs for all over the country. *However, standard downscaled values by areas have not been set yet.* • **PAGASA** prepares **flood hazard maps** with scales of 1/10,000, 1/15,000 and 1/50,000 depending on the provinces/areas. PAGASA has also prepared risk maps for the Pasig-Marikina River Basin including northern part of the Laguna Lake. *These maps do not include CC impacts.* • **MGB** has prepared rain-induced **landslide and flood hazard maps** (susceptibility maps) with a scale of 1/50,000 all over the country and some urban areas with a scale of 1/10,000. • *Hazard maps of **storm surge** are very rough.* • **PAGASA** has developed **drought hazard maps**, El Nino vulnerability maps for corn and paddy and SPI-based drought monitoring system.

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Tentative Country Assessment of the Philippines

Category	Evaluation *(and issues)*
5. Planning and implementation	• In the Design Guidelines, Criteria and Standards of **DPWH**, CC impacts on rainfall (based on some JICA Study) and sea level rise (based on IPCC's AR5 report) for planning and designing flood control structures is considered. • LGUs develop a **Local DRRM Plan** and a **Comprehensive Land-Use Plan (CLUP)** by incorporating hazard and risk maps provided by **MGB** and **OCD**. The **National Economic and Development Authority (NEDA)** and the **Housing and Land Use Regulatory Board (HLURB)** review CLUP. • **DPWH** is responsible for planning and implementing flood risk management and landslide risk management mainly for constructing structural measures. *Flood risk reduction measures even without CC impacts are insufficient.* • Existing DRR measures against landslide are mainly land-use management including relocation and land-use restriction. *Structural measures need to be increased in combination with non-structural measures.* • The **River Basin Control Office (RBCO)** formulates master plans of flood risk management for the 18 major rivers basins and 3 principal river basins. Land-use is under the responsibility of **LGUs**. *Coordination mechanism for river basin management has not been developed yet.*
6. Capacity building	• Climate Change Consciousness Week organized by the **Climate Change Commission** and related awards are providing an important learning opportunity to various government agencies. • **Climate-field schools** and enhanced farmer field schools are playing a major role in capacity building of farmers.

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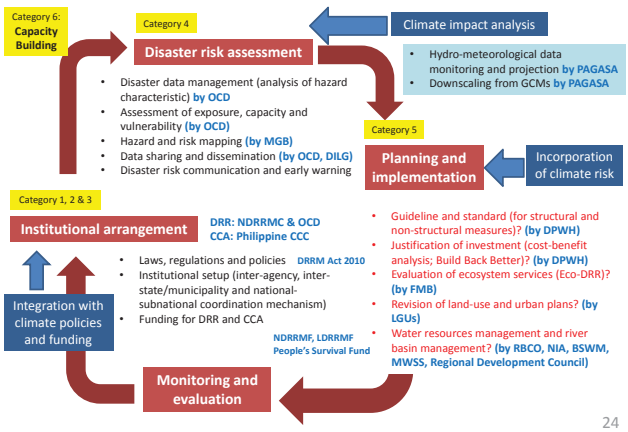
DRR and CCA integration status in the Philippines



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Group Discussion Sheet (1/2): Necessary National and Regional Actions for DRR and CCA Integration

Assessment category	1) Priority issues	2) Necessary actions and roles of relevant agencies	3) Proposed common approaches in ASEAN and available resources/institutions	4) Required technical assistance
1. Laws, regulations and policies 1) National development plan 2) DRR laws, regulations and policies 3) CCA laws, regulations and policies 4) Relevant sectoral laws, regulations and policies	What are the priority issues for DRR and CCA integration in Viet Nam? Select one or two priority subjects.	Who should do what to improve the situation?	What resources/institutions can be used to improve it? What kind of common activities in ASEAN would be beneficial for Viet Nam? What can Viet Nam contribute?	
2. Institutional arrangement 1) National DRM system 2) National CCA system 3) Transboundary DRM			What kind of technical assistance will be helpful?	
3. Funding 1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services		Ref) Activities of AHA Centre ➔		

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4. Risk assessment 1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination 5) Early warning system and disaster risk communication				
5. Planning and implementation 1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient investment 4) Drought risk reduction				
6. Capacity building 1) DRR and CCA training 2) Sector-wise training				

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Main outputs of the National WS in Myanmar-1 (May 31, 2017)

Key issues and necessary actions in Myanmar	Expectations to ASEAN
Laws/ Regulations/ Policies ● Integration of DRR and CCA policies and plans ● Development of relevant sectoral laws and regulations	● Clarification of the effect of DRR and CCA integration in other ASEAN countries
Institutional Arrangement ● National coordination mechanism (weak coordination and cooperation among implementing activities, particularly for river basin management from upstream to downstream to manage flood, drought and landslide risks and sedimentation) ● Mainstreaming DRR and CCA in each ministry (by appointing a focal unit in each department and exchanging staff between the RRD and line ministries) ● Strengthening the functions of committees at district and township levels to deal with DRR and CCA issues	• Coordination mechanism for DRR and CCA integration Knowledge sharing on good practices of policies, institutional arrangement and funding 
Funding ● Insufficient funds for DRR activities in line ministries (the National Disaster Management Fund is mostly for response, recovery and reconstruction; not for prevention and mitigation) ● Lack of funds for CCA ● Budget tagging of DRR and CCA expenditures ● No payment system for environmental conservation	● Resource mobilisation methods in other ASEAN counties ● Fund raising by an ASEAN-wide approach 

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Risk Assessment ● Integration of disaster database with all sectors ● Improved hydro-met monitoring system for flood and drought (incl. groundwater monitoring) ● Climate risk analysis capacity incl. downscaling from GCMs ● Monitoring system for landslide ● Insufficient hazard maps and risk maps ● Improved data accuracy and reliability ● Dam safety against floods; flood risk assessment for each basin ● Improved early warning and communication systems at local level ● Require cost-benefit analysis of DRR and CCA expenditures to justify the investment	● Data sharing among ASEAN countries with a unified standard (by establishing a regional responsible body) Regional climate models for ASEAN ● Hazard mapping and risk assessment technology ● Flood risk assessment for dam safety ● Salinity intrusion monitoring and analysis ● Cost-benefit analysis of DRR and CCA expenditures risk assessment methods and technology Justification of DRR and CCA investment
Planning and Implementation ● Sectoral planning capacity of each ministry ● Climate and disaster resilient design of infrastructures (for reducing the long-term maintenance cost) ● Urban and land-use plan with DRR and CCA ● Slope protection methodology ● Catchment (river basin) management against drought; water storage facilities ● Climate smart agriculture, crops diversification	● To develop guiding tools for integrating DRR and CCA (and build capacity by implementing a pilot project using it) Slope protection pilot projects ● Climate smart agriculture Guiding tools for climate and disaster resilient design
Capacity Building ● Education of DRR and CCA; development of curriculums for schools ● Public awareness with easy to understand materials ● Training of trainers and experts ● Usage of ICT equipment Not enough discussion on roles of stakeholder and ASEAN approach	● Training and capacity building Technical assistance ● Exchange program Training opportunities; education and public awareness

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Philippine Development Plan 2017-2022

Chapter 11 Reducing Vulnerability of Individuals and Families

To deal with natural hazards:

Roll out climate and disaster vulnerability and risk assessment nationwide. To **mainstream disaster risk reduction and climate change adaptation (DRR-CCA)**, the **Climate Change Commission (CCC)** will craft an enabling policy and provide assistance to local communities in conducting vulnerability and risk assessment. The results of the assessment will form the backbone of local strategies and measures to reduce vulnerabilities.

Develop facilities for adaptation including risk transfer mechanisms (RTM). The **People Survival Fund (PSF)** Facility will provide technical and financial assistance to enable local communities implement adaptation measures. The CCC will explore partnerships with the **National Disaster Risk Reduction and Management Council (NDRRMC)** to maximize the PSF and **NDRRM Fund** for risk transfer schemes such as insurance. It will also provide a clear policy on how climate finance will enhance SP for vulnerable communities.

Provide adequate transition houses and livelihood opportunities to disaster victims during the early rehabilitation and recovery period. National and local government units will collaborate in identifying safe areas for the construction of transition houses prior to relocation of victims to permanent resettlement areas. Identification of these areas can be based on the available risk assessments and hazard maps. Structural design will be improved and establishment of women and children-friendly spaces will be undertaken to protect and promote the welfare of women, children, and indigenous peoples. Protocols for emergency cash transfers, calamity loans, and

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Philippine Development Plan 2017-2022

Chapter 19 Accelerating Infrastructure Development

Water Resources

Despite the abundance of water resources and the many efforts to utilize and manage these, service remain inadequate.

- The primary strategy for the water resources sector is to address its fragmented structure through the **creation of an apex body** and the **formulation of masterplans** that will foster coordinated efforts across the country. Such apex body will institutionalize **a science-based river basin approach** that integrates the principles of **integrated water resource management.**
- While more flood-prone areas have been protected, **flood management** has become more challenging **due to climate change impact and institutional issues.**
- The major challenge in the sector is the increasing frequency and intensity of flood occurrences due to climate change. Another concern is the **unclear delineation of responsibilities of LGUs and NG on the implementation and O&M of flood management** and drainage structures.
- **Flood management initiatives** will continue to be undertaken. These include: (a) upgrading of engineering standards for the design and O&M of flood control works; (b) establishment of a database on river information and updating of baseline data on delineation of flood-prone areas; (c) completion and updating of flood control and drainage master plans and development plans for the 18 major river basins and other critical principal river basins, and (d) strengthening of the flood management capabilities of and coordination among concerned agencies (e.g., DPWH, LGUs).

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Philippine Development Plan 2017-2022

Chapter 20 Ensuring Ecological Integrity, Clean and Healthy Environment

Efforts on DRR and CCA remain inadequate.

- There is **a lack of sustainable financing** and **limited access to available funding facilities**. Funding for ENR management including CC and disaster risk reduction and management (DRRM) initiatives **largely depends on public finance**. Especially in local government units, funding for ENR, CC, and DRRM competes with other development priorities. This has limited the initiatives for environmental management, CCA and DRRM. Moreover, stakeholders have difficulty accessing available funds, such as the People's Survival Fund, debt-for-nature swap, and risk transfer mechanisms
- **Private sector engagement is limited** in ENR management, including investment in CC and DRRM actions. The potential of private sector investing in ENR management, including risk transfer mechanisms, remains largely untapped due to the lack of a clear mechanism to guide the private sector in complementing government efforts.
- **Strengthen existing inter-agency bodies that serve as venues for improving policy making and implementation of CC and DRRM**. Horizontal and vertical integration of climate resilient planning, programming and budgeting on CC and DRRM will be ensured. The **MOU between the CCC and NDRRMC** will be operationalized to provide an enabling environment for mainstreaming DRR and CCA with regard to: (a) setting standards and requirements to integrate local DRRM and CC action plans; (b) ensuring the interoperability of databases to develop a decision support system; (c) implementing appropriate DRRM and CC actions; and (d) establishing coordinated monitoring, reporting and evaluation system.

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Philippine Development Plan 2017-2022

Chapter 20 Ensuring Ecological Integrity, Clean and Healthy Environment

- Develop, maintain, and ensure the accessibility of **climate and geospatial information and services**. This includes the following activities: (a) completing the coverage and ensuring access to **large scale (1:10,000) probabilistic hazard maps**; (b) conducting a nationwide geo-referenced mapping of exposed elements; (c) developing **risk estimation models** to determine the value of potential loss and damage for different scenarios; (d) improving the loss and damage database to generate disaggregated information about vulnerable and affected groups; (e) identifying and **mapping natural ecosystems** that contribute to resilience; and (f) **standardizing definition and methodologies to measure DRRM and CC variables**.
- Continue to mainstream CCAM and DRRM in **national and local development plans** and policies.
- Identify technological and research priorities and capacity needs on CCAM and DRRM. This strategy includes but is not limited to: (a) development of methodologies/tools for **national-level risk informed planning and programming**; (b) scenario development and modelling of sectoral climate impact; (c) **cost-benefit analysis of implementing CCAM and DRRM alternatives**; (d) low carbon innovations to address CCA and DRR; (e) approaches and tools to address impact of slow onset events such as sea level rise and ocean acidification; and (f) **improved weather detection, forecasting and monitoring**.

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Group 1: Necessary National and Regional Actions for DRR and CCA Integration

Assessment category	1) Priority issues	2) Necessary actions and roles of relevant agencies	3) Proposed common approaches in ASEAN and available resources/ institutions	4) Required technical assistance	Remarks / ongoing initiatives
1. Laws, regulations and policies 1) National development plan 2) DRR laws, regulations and policies 3) CCA laws, regulations and policies 4) Relevant sectoral laws, regulations and policies	-weak monitoring/ implementation of laws -who is the focal unit for CCA at local levels	-strong local support for implementation of laws	-Sharing of experiences on DRR& CCA laws	-IEC/advocacy for LGUs for mainstreaming DRR&CCA	-NGP -Water Code Revision -operationalization and monitoring of DRR/CCA strategies in the PDP 2017-2022 -RA 10121 Sunset review -updating of Bldg Code
2. Institutional arrangement 1) National DRM system 2) National CCA system 3) Transboundary DRM	-slow processing & approval of DRRM fund	-bring back the DRRM fund to concerned implementing agencies			- DENR, DA, DAR convergence
3. Funding 1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services	-limited number of LGUs accessing PSF	-revisit guidelines while building capacity of LGUs (?)			Good practices available
4. Risk assessment 1) Disaster database 2) Hydro-meteorological data management and climate risk analysis	-lack of central database system for DRR&CCA -translating climate projections methodologies to return periods for flood	-strategies for building thrusts for data sharing among agencies -capacitate LGUs on building exposure database	-sharing of good /best practices, lessons learned -Sharing methodologies (risk	-Pilot study in risk assessment with CC -CC sectoral Impact modelling	**structural design/ standard

3) Hazard and risk mapping 4) Data sharing and dissemination 5) Early warning system and disaster risk communication	-varied methodology and parameters in coming up with hazard maps and risk assessment -accessibility of shape files -online accessibility -high resolution base maps does not cover the entire country -ground truthing/validation of existing high-resolution maps (NOAH) -need for >1:10k scale hazard maps Limited capacity for sectoral CC impact modelling -need for impact based forecast/warning system	-establish harmonized standards/ simplified guidelines for hazard mapping and risk assessment -Socio-economic impact analysis of disaster & CC damages -Build institutional capacity on CC Sectoral Impact modelling (diff sectors) -NAMRIA to cover the rest of the country not covered by PhiLIDAR -funds for mandated agencies to do ground validation of NOAH maps -research and gather datasets from relevant stakeholders	assessment incorporating CC) -CC sectoral Impact modelling (diff sectors)	to integrate CC in plans and program of diff. sectors -CBA of DRR&CCA for justifying investments	
5. Planning and implementation 1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient investment 4) Drought risk reduction measures	-weak monitoring of local plans and programs -plans are not translated to concrete interventions -limited insurance for disasters	-strengthen monitoring of local plans and programs -promote insurance	-benchmarking and sharing of good and best practices, guidelines and standards	Experts exchange program in the region Cross-visits to other countries for learning/ actual observation	**structural design/ standard **
6. Capacity building 1) DRR and CCA training 2) Sector-wise training	Limited capacity for sectoral CC impact modellin	-Build institutional capacity on CC Sectoral Impact modelling (diff sectors)		Experts exchange program in the region	(EU for River basin Mgt.)

Group 2: Necessary National and Regional Actions for DRR and CCA Integration

Assessment category	1) Priority issues	2) Necessary actions and roles of relevant agencies	3) Proposed common approaches in ASEAN and available resources/institutions	4) Required technical assistance
4. Risk assessment 1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination 5) Early warning system and disaster risk communication	1.a. No repository of data 1.b. No standard database structure 1.c. Limited exposure to information database and tools 2. Extreme weather resilient hydro-met device 2.-3. Overlapping of projects 3. No integration of climate change in hazard and risk mapping 4.a. Lack of coordination among agencies involved in generating disaster and risk data 4.b. reliability issue of data 5. a. Sustainability on the implementation of an effective community-based early warning system 5.b. No localized (dialect-based) early warning	1. Agreements should be put into writing 2. Harmonization of data 3. Identification of repository agency 4. Improve reliability of data thru ground validation 5. Implementation on impact-based warning system 6. Strong political will of LGUs 7. Enhancement of Linkage between DRR and CCA	1. Data sharing among ASEAN countries 2. Advanced Hazard and risk mapping and assessment technology 3. Establishment of standard database for ASEAN	1. Capacity building on standardization of CCAM-DRR database management 2. Knowledge sharing of best practices/ technology among ASEAN countries 3. Capacity enhancement on risk assessment integrating climate change

5. Planning and implementation 1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient investment 4) Drought risk reduction	1. Limited basis for climate change information for spatial analysis 2. Limited available multi-hazards and climate risk maps (Only Greater Metro Manila Area-PAGASA) - 3. Outdated drainage systems and inefficient solid waste management	1. Updating of the sectoral design, guidelines and standards to consider the CC impacts 1.a. Strict issuance of Building Permits, ECC, and any requirements (EGGAR, Geohazard Certification, Safe Zones, Build and No Build Zones, No Irrigation etc) 2. Strict monitoring and compliance on the implementation of CLUP, Zoning Ordinance and National Building Code 3. To integrate PAGASA's climate projections to MGBs Geohazard maps	1. To develop planning and design safety DRR-CCA standards 2. Adoption of available Monitoring and Evaluation mechanism on the implementation of CLUP, Zoning Ordinance and National Building Code from other ASEAN countries	1. Adoption of applicable standards from other ASEAN countries 2. Capacity Building at the local level on Monitoring on the Implementation and compliance of Building Code 3. Strategies, approaches and measures to reduce the impacts of hazards and disasters

Group 3: Necessary National and Regional Actions for DRR and CCA Integration

Assessment category	1) Priority issues	2) Necessary actions and roles of relevant agencies	3) Proposed common approaches in ASEAN and available resources/ institutions	4) Required technical assistance
4. Risk assessment 1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination 5) Early warning system and disaster risk communication	* data sharing and access (redundancy in sharing to public - how we can communicate and harmonize DRR and CCA *overlapping of functions & interventions and duplication of data by different agencies (example: MMDA and DPWH on drainage; maintenance by MMDA and construction by DPWH) *sparse distribution of water-level gauges; manually-operated water level measurements *data for government agencies are charged	MGB - consistent updating of flood hazard maps, IECs DENR - One Control Map DPWH - IWRM-ready guidelines DA - DRRM Operations Manual DPWH modernization of water level measurements (e.g. automation) Free data for government agencies	*standardization of methodologies for vulnerability and risk assessment mapping	*development of standardized methodologies for vulnerability and risk assessment mapping *technical assistance for geotechnical measures for flood-prone, landslide-prone and high elevation areas *updated hydrology and dam protocols (Mobilization of expertise from Japan, Korea, and AIT) *sharing of ideas in coastal management and other technologies on DRR and CCA
5. Planning and implementation 1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient investment 4) Drought risk reduction	*coastal roads easily wash away *takes years before approval of a project, bureaucracy in getting development councils' approval (from barangay to regional level; before regional go to provincial, provincial go to municipal, and so on…) *overlapping of laws (ex. Philippine water code and local government code) * impending water crisis by 2020 so there	DPWH, World Bank, agencies concerned, other LGUs - IWRM guidelines mainstreaming AGENCIES CONCERNED - proposed sector-specific guidelines specifying roles and responsibilities of divisions of different agencies		*Philippine experience: very good planning

	is a need to implement * different local government units are asking funds for implementation of overlapping projects (disagreement among LGU-recipients of funding) *inhibition of implementation by NGOs (against environmentally-critical projects even it is already issued an ECC) *project proposals submitted to NEDA are not compliant with PDP and RDP *agricultural to residential land conversion - some structures are designed for agricultural areas, some residential areas are tapping the agricultural areas (tapping drainage for sewers) *projects are sometimes not based on river basin master plans, initiated by higher officials *quick implementation, master plans are implemented late because of lack of budget and conflict of interest between politicians and stakeholders (e.g. NEDA should approve when they cannot approve ones because they are of lesser priorities)	DENR and related agencies - national and regional land use plan DENR - mandatory compliance of the proposed projects to follow master plans Mandatory compliance of Project proposals to PDP and RDP DENR, DPWH and water-related agencies, LGUs to implement IWRM guidelines		*training for geotechnical measures for flood-prone, landslide-prone and high elevation areas *capacity-building in coastal zone management (example: partnership between PEMSEA and DENR-BMB)
6. Capacity building 1) DRR and CCA training 2) Sector-wise training	* some district/regional officers are not well-knowledgeable with designs of all water-related structures *lack of capacity local LGUs to develop investment proposals for river basin plans	DPWH - trainings, workshops (particularly, Central offices by foreign institutions for latest trends on designs of all water-related structures		*training on standardized methodologies for vulnerability and risk assessment mapping

Group discussion summary of the National Workshop in the Philippines

Assessment category	Priority issues	Necessary actions and roles of relevant agencies	Proposed common approaches in ASEAN and required technical assistance
Risk assessment			
Data management	• Lack of central database system; Lack of coordination among agencies involved • Data usage by government agencies is charged	• Set up a central database / data sharing system through coordination among relevant agencies [NDRRMC/OCD, PAGASA, MGB/DENR, NAMRIA, DPWH, CCC]	• Establishment of standardized database and data sharing
	• Hydro-meteorological monitoring system needs to be upgraded • Data reliability needs to be improved	• Upgrade manually-operated monitoring system to automated ones; install extreme weather resilient devices; increase the coverage; validate the data on the ground [NDRRMC/OCD, PAGASA, DPWH]	
Climate risk analysis	• Limited basis of CC information for spatial analysis and impact modeling; limited capacity for sectoral climate risk analysis	• Build institutional capacity on sectoral climate impact modeling (socio-economic impact analysis); translate climate projection methodologies to flood return periods [NDRRMC/OCD, PAGASA, DPWH]	• Sharing of climate risk assessment / modeling methodologies; standardization of the methodologies; implementation of pilot projects
Hazard and risk mapping	• Varied methodologies and parameters for hazard maps and risk assessment; climate risk is not integrated in hazard and risk maps • Limited availability of multi-hazard and climate risk maps (only in Greater Metro Manila); high resolution base maps do not cover the entire country	• Simplified guidelines and standards for hazard mapping and risk assessment [NDRRMC/OCD, PAGASA, MGB/DENR, DPWH, CCC] • Integration of climate projections to geohazard maps; provision of high resolution base maps covering the entire country [PAGASA, MGB/DENR, NAMRIA]	
Data sharing and dissemination	• Online accessibility; limited exposure to information database and tools; redundancy in sharing the data to the public	• Capacitate LGUs's access and usage of database and tools [NDRRMC/OCD, PAGASA, MGB, DILG]	
Early warning system and disaster risk communication	• Need an impact-based forecast / warning system; no localized (dialect-based) early warning	• Implement an impact-based warning system in local languages [NDRRMC/OCD, PAGASA, DILG]	
Planning and implementation			
Guideline and standard	• Lack of sectoral design, guideline and standard incorporating climate risk	• Update sectoral design, guideline and standard incorporating climate risk; train	• Benchmarking and sharing of guidelines, standards

	• Coastal roads are easily washed away; some LGU officers are not knowledgeable with designs of water-relates structures	national and local government officers to capacitate designs of water-related structures [DPWH]	and good practices • Experts exchange program; cross-visit to other countries for learning / actual observation • Training for geotechnical measures for flood-prone, landslide-prone and high elevation areas • Capacity building in coastal zone management • Updated dam protocols based on hydrology
	• Some project proposals are not compliant with national and regional development plans and river basin master plans • Slow implementation of approved and ECC (Environment Compliance Certificate) issued projects due to budget constraint and conflict of interests between stakeholders (e.g. politicians, national government and LGUs)	• Build capacity of LGU officers in designing project proposals in compliance with the master plans [DPWH, HLURB, DILG, DENR] • Strict issuance of ECCs, building permits, no build zones, safe zones, among others [HLURB, DILG, DENR]	
	• Weak water resources management among relevant agencies	• Provision of guidelines and strict implementation of integrated water resources management (IWRM) [DPWH, DENR, DA, NIA, MWSS]; strict implementation of the National Greening Program (NGP); revision of the Water Code [DENR]	
Land-use and urban planning	• Weak monitoring and evaluation (M&E) of local development plans • Conversion of land-use from agriculture to residential areas	• Strengthen M&E of local development plans in accordance with the comprehensive land-use plan, zoning ordinance and national building code [LGUs, DENR]	• M&E mechanism on the implementation of land-use plan, zoning ordinance and building code
Disaster-resilient investment	• Outdated drainage systems and inefficient solid waste management	• Improve drainage and solid waste management systems [LDRRMC/OCD, DPWH, DILG, LGUs]	• Sharing of cost-benefit analysis of DRR & CCA measures for justifying the investment
	• Slow processing and approval of DRRM Fund • Limited number of LGUs accessing the People's Survival Fund (PSF)	• Revision of the Philippine DRRM Act (RA 10121); active engagement of concerned implementing agencies [NDRRMC/OCD] • Revisit guidelines of the PSF and build capacity of LGUs [DILG, CCC]	
	• Limited insurance for disasters	• Promote insurance [NDRRMC/OCD, DA]	

NDRRMC: National Disaster Risk Reduction and Management Council; LDRRMC: Local DRRM Council; OCD: Office of Civil Defense;
PAGASA: Philippines Atmospheric, Geophysical and Astronomical Services Administration; DPWH: Department of Public Works and Highways;
DENR: Department of Environment and Natural Resources; MGB: Mines and Geoscience Bureau; NAMRIA: National Mapping and Resource Information Authority;
CCC: Climate Change Commission; NEDA: National Economic and Development Agency; NIA: National Irrigation Administration;
MWSS: Metropolitan Waterworks and Sewerage System; DA: Department of Agriculture; HLURB: Housing and Land Use Regulatory Board;
DILG: Department of Interior and Local Government; LGUs: Local Government Units

The Philippines: Assessment of institutional and policy framework on DRR and CCA integration

Overall assessment

DRR systems of flood, storm, landslide and drought:

- In July 2009, the Government of the Philippines enacted the Republic Act (RA) No.10121, titled the Philippine DRR and Management Act of 2010. The RA 10121 is legally designed to strengthen the DRR and management system, to provide the national DRR and management framework, and to institutionalise the national DRR and management plan.
- There is a River Basin Control Office (RBCO) under DENR, *but its responsibility for river basin management is not so clear.* Various agencies are related to the river basins *but the coordination system has not been established well.*
- Department of Public Works and Highways (DPWH) manages structural measures for flood control etc. of rivers. However, DPWH has not taken responsibility for managing the rivers including easement zones along the rivers in general and LGUs manage the lands around the rivers including easement zones. *Therefore, responsibility of managing the rivers including easement zones and the coordination system has not been established yet in general, and this is one of the issues for DRR and CCA except some good practices such as the river management by the Flood Mitigation Committee (FMC) of the Anilao and Malbasag Rivers in Ormoc City in Leyte Province.*
- Forest Management Bureau of DENR is in charge of forest management (conservation and reforestation) for upland forest and mangrove forest in coastal areas. However, *degradation of forest such as small coverage of forest (28.3% in 2014 of country area) is one of the severe problems and issues related to DRR and CCA.*

CCA systems:

- The Philippine Climate Change Commission (CCC), an independent and autonomous body that has the same status as a national agency attached to the Office of the President, manages CC issues in the Philippines.

Integration of DRR and CCA:

- The PDP 2017-2022 expressed that it is necessary to continue to mainstream CC and DRRM in national and local development plans and policies and education system. *In this connection, the PDP stressed the necessities to mainstream updated climate projection and risk and vulnerability analysis and-or assessment in the development processes to carefully identify interventions that will be implemented and avoid implementation of maladaptive practices and activities.* In particular, priority will be given to revisiting relevant policies and plans such as RA 10121, NCCP and NDRRMP.
- *NDRRMC and CCC have common members, they have an MOU to coordinate and cooperate and there is a move now to synergize these activities. The MOU is to be revised in a systematic manner leading to greater collaboration. Both commissions need CCA and DRR plans to be prepared by LGUs and the LGUs have to prepare many different plans which overlap among them.*

Funding:

- *The Government of the Philippines has the following special funds to reduce impacts of disasters:*
  - *National DRR and Management Fund (NDRRMF)*
  - *Local DRR and Management Fund (LDRRMF)*
  - *People's Survival Fund (PSF)*
  - *Special Provisions in General Appropriations Act*

Risk assessment:

- Office of Civil Defense (OCD) has a database of historical disasters including record of response activities.
- Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA) observes meteorological condition and conducts forecast in terms of climate, typhoon, wind and rainfall. PAGASA is also managing meteorological database. *In general, hydro-meteorological stations in rural areas are not so many and necessary to be increased.*
- PAGASA has conducted downscaling of the effect on rainfall by climate change all over the country. *However, standard downscaled values by areas in the country have not been set yet.*
- PAGASA and Mines and Geosciences Bureau (MGB) prepare flood hazard maps without climate change impacts. *Flood hazard maps in some areas are prepared for probable floods without climate change, but many of them are not for probable floods. Hence, flood hazard maps are necessary to be improved and*

prepared based on probable floods without and with climate change, and also flood risk maps are necessary to be prepared.

- MGB prepares landslide hazard maps, *but their resolution is insufficient for detailed land-use management in landslide disaster areas as well as for warning and evacuation. Storm surge hazard maps are very rough yet.*
- *PAGASA has developed drought hazard map at the national level. El Nino vulnerability maps were prepared for major crops and agro-climatic conditions to help target crop production plans.*

Planning and implementation:

- *There is a planning and design standard of DPWH which incorporates the increasing rate of rainfall and the height of sea water level rise by climate change for planning flood control structures*. *These values of climate change impacts are necessary to be reviewed and confirmed from technical and economic viewpoints to make practical application.*
- *The Housing and Land Use Regulatory Board (HLURB) has developed a supplemental guideline for formulating CLUP with mainstreaming climate change and disaster risks.*
- DPWH is the responsible agency for planning flood risk management and implementing mainly structural measures of DRR. In general, DRR measures for flood risk management even without climate change impacts are insufficient. *As there are few DRR measures for flood risk management with CCA, DRRs with CCAs for flood risk reduction are necessary to be planned and implemented more.*
- DPWH is also responsible for planning landslide risk management and implementing mainly structural measures of DRR, but the number of the existing structural measures against rain induced landslide is small. Land-use management in the landslide risk areas is the major measures applied by LGUs. *Combination of land-use management and structural measures will be more effective against landslide.*
- DRR without or with CCA for flood risk management and landslide will be more effective in combination with conservation and recovery of forest areas in the river basins. Hence, *in order to reduce physical impacts of floods and landslide, river basin point of view is also important*.
- Although there are some DRR measures against storm surge such as reforestation of mangrove, non-structural and structural measures without or with CCA are insufficient in general.
- *Major drought risk reduction interventions include livelihood credit assistance program which is a microfinance assistance for small farmers, small scale irrigation schemes, enhanced farmer field schools, climate resilient agriculture, an El Nino and La Nina task force formulated in the DA to interpret the hazard and El Nino maps and help farmers accordingly, established water user associations under specific canal systems and small water impounding projects for impounding flood waters for use during dry seasons.*

Capacity Building

- Although they are on ad-hoc basis under the assistance of donor-funded projects, there are some training programmes for DRR and CCA.

1. Laws, regulations and policies	
1) National development plan	• The Philippine Development Plan (PDP) 2011-2016 is the development roadmap of the Philippines. The Plan translates the country's development agenda into priority actions and projects. • The PDP has identified DRR and CCA as main cross-cutting issues. DRR and CCA have been integrated into a wide range of different sectors and sub-sectors using various strategies in order to address climate change vulnerabilities and contribute to the reduction of disaster risks. • *The PDP expressed that it is necessary to continue to mainstream CCA and DRR in national and local development plans and policies and the education system. In this connection, the PDP stressed the necessities to mainstream updated climate projection and risk and vulnerability assessment in the development processes to carefully identify interventions that will be implemented and avoid implementation of maladaptive practices and activities.*
2) DRR laws and regulations	• In July 2009, the Government of the Philippines enacted the Republic Act (RA) No.10121, titled the Philippine DRR and Management Act of 2010. The RA 10121 is legally designed to strengthen the DRR and management system, to provide the national DRR and management framework, and to institutionalise the national DRR and management plan. • *The RA 10121 also provides the legal framework to decentralize the responsibilities and authority for implementing DRR measures to the local governments. It mandates LUGs to set aside 5 percent of the estimated revenue as the Local DRR and Management Fund (LDRRMF) to support disaster risk management activities such as preparedness programmes including training and purchase of rescue equipment, but also for response activities.* • Of the 5 percent lump sum allocation, 30 percent of the LDRRMF is automatically allocated as Quick Response Fund (QRF) which serves as a stand-by fund for relief and recovery programmes.

	The rest of the 70 percent can be used for pre-disaster measures. In this way, *the QRF is the built-in budgetary allocations that represent pre-disaster or stand-by funds for LGUs in order to immediately assist areas affected by natural disasters.* • According to the Republic Act No. 8185, the amendment to the Local Government Code, the Local DRR and Management Fund (LDRRMF) can only be used in areas affected by disasters. The implementing rules of RA No. 8185 also stipulate that the fund may be used to provide financial assistance to other LGUs.
3) CCA laws and regulations	• Climate Change Act of 2009 (Republic Act 9729) was enacted into law in October 2009 and created the Philippine Climate Change Commission. The Climate Change Act of 2009 provided for the creation of the CCC, which serves as the sole policy-making body of the government tasked to coordinate and evaluate programs and action plans addressing climate change. • *The Climate Change Act of 2009 also mandated the mainstreaming of climate change into government policy formulations. The Philippines CPEIR launched in 2013 makes a suite of recommendations to mainstream climate change in the budget process, strengthen the planning and financing framework for climate change, enhancing accountability and build capacity.* • The Congress of the Philippines enacted the Republic Act (RA) No. 10121, titled the Philippine Disaster Risk Reduction and Management Act of 2010, on July 27, 2009. RA 10121 is written to strengthen the disaster risk reduction and management system, provide for the national disaster risk reduction and management framework, and institutionalize the national disaster risk reduction and management plan and appropriate funds. The Act also provides the legal framework to decentralize the responsibilities and authority for implementing disaster risk reduction measures to the local governments.
4) Relevant sectoral laws and regulations	• *Forest management in the country is governed by Presidential Decree No. 705, as amended, otherwise known as the "Revised Forestry Code of the Philippines". This forestry code outlines the policies of the State in the management of the forest and its resources.* • The Philippine National REDD+ Strategy, published in 2010, presents a broad range of strategies and corresponding activities covering 2010 to 2020. It seeks to prepare forestlands managers throughout the country to assume responsibility in implementing REDD+ programmes, research projects and activities with the support of the international, national and local agencies, NGO's and other support groups. • *In 1998 the government formulated a Watershed Management Programme that includes explicit mention of the need to introduce market-based instruments as a mechanism for resource management*. • Currently there is a bill awaiting senate approval for the creation of a Water Resources Authority of the Philippines that emphasises the need for water charges to incorporate a payment for watershed management. This project being undertaken in the reserve is seen as a pilot for exploring alternative Management Buy-In (MBI) services. • Under the Resolution No. 915 of the Housing and Land Use Regulatory Board (HLURB), the Supplemental Guideline was developed in compliance with two landmark national laws, the Climate Change Act of 2009 and the Disaster Risk Reduction and Management Act of 2010. This is also HLURB's response to address and support for our local government units to mainstream Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) into the Comprehensive Land Use Plans and Zoning Ordinances.
2. Institutional arrangement	
1) National DRM system	• In 2011, the National DRR and Management Council (NDRRMC) adopted the National DRR and Management Framework (NDRRMF). The NDRRF is a key component to ensure the country's DRR as well as sustainable development. The framework reinforces the paradigm shift in approach from disaster response to DRR and disaster risk management principles. • The NDRRMC which is the national platform under the OCD, acts as the main coordinator for all disaster management and serves as the President's adviser on disaster preparedness programmes, disaster operations and rehabilitation efforts undertaken by the government and the private sector. It has the overall responsibility for approving the NDRRMP. • *The National DRR and Management Council (NDRRMC) is responsible for the mobilizing of resources for national risk reduction management, including for the National DRRM Fund (NDRRMF) as well as for the monitoring of utilization of the Local DRRM Fund (LDRRMF).* • The OCD is the operating arm and secretariat of the National DRR and Management Council. It has the primary task of coordinating the activities and functions of the various government agencies and instrumentalities, private institutions and civic Organisations for the protection and preservation of life and property during emergencies.
2) National CCA system	• The Department of Environment and Natural Resources (DENR) is responsible for governing and supervising the exploration, development, utilization, and conservation of the country's natural resources. The National Mapping Resource and Information Authority (NAMRIA) is the central

	mapping agency under the DENR who provides natural resources data, while the Mines and Geosciences Bureau (MGB) is the primary government agency under the DENR responsible for the conservation, management, development and proper use of the country's mineral resources. • *The Philippine Climate Change Commission (CCC) is an independent and autonomous body that has the same status as a national agency and is attached to the Office of the President.*
3) Transboundary disaster risk management	River basin management • There is a River Basin Control Office (RBCO) in the Department of Environment and Natural Resources (DENR). However, their activities have recently started and lack of staff. RBCO is currently formulating master plans of FRM etc. for the major 18 rivers basins one by one. Landuse in the river basins is under the responsibility of Local Government Units (LGUs). In case a river basin covers several LGUs, management of the river basin is divided into those LGUs and the related agencies such as DENR. *Like this, coordination mechanism for RBM has not been developed yet and the establishment of RBM system is one of the issues.* River management • Department of Public Works and Highways (DPWH) is constructing and managing infrastructures for flood control or bank protection along the rivers. Management of the landuse including rivers is under responsibility of LGUs. Water Code states that DPWH can take responsibility of managing easement zones along the rivers, but DPWH has not taken this responsibility yet. Hence, currently, management of easement zone is also under the responsibility of LGUs. *Like this, coordination mechanism of RM has not been established yet and the establishment of RM system is one of the issues.* Forest management • Forest Management Bureau of DENR is in charge of forest management (conservation and reforestation) for upland forest and mangrove forest in coastal areas. However, *degradation of forest such as the small coverage of forest (28.3% in 2014 of country area) is one of the severe problems and issues.* Drought risk management • *El Nino taskforce is helping the DA in interpreting the El Nino information and advising the farmers accordingly. Water user associations are helping in efficient use of water resources at the farmer level.* • The DA is drafting a *DRR manual to inform the agriculture sector on DRR measures with focus on drought where it is relevant*. • *El Nino and La Nina Action Plan is being developed by the Ministry of Agriculture*
3. Funding	
1) Funding for DRR	• *The Government of the Philippines has the following special funds to cushion impacts of disasters.* ➢ *National DRR and Management Fund (NDRRMF)* ➢ *Local DRR and Management Fund (LDRRMF)* ➢ *People's Survival Fund (PSF)* ➢ *Special Provisions in General Appropriations Act* • *In the national budget for the financial year 2016, PHP 1.0 billion (approximately USD 19.9 million) was allocated under the PSF*. The Government of Philippines raised its 2016 budget for DRR following the devastating impacts of Typhoon Yolanda in late 2013. The budget for the NDRRM Fund for the financial year 2016 has been increased by almost three times to PHP 38.9 billion (approximately USD 774.1 million) from PHP 14 billion (approximately USD 278.6 million) of the previous financial year 2015. • However, the current administration allocated only PHP 15.7 billion for the NDRRM Fund for the financial year 2017. This is a PHP 23.2 billion (approximately USD 461.7) decrease from PHP 38.9 billion (approximately USD 774.1 million) in the financial year 2016 under the previous administration. • *Gawad Kalasag program implemented by the NDRRMC recognizes good DRR practices by local governments.*
2) Funding for CCA	• *The People's Survival Fund (PSF) was created pursuant to Section 18 of Republic Act No. 9729 (Climate Change Act of 2009), as amended by Republic Act No. 10174. The Act established the PSF to provide a long-term finance scheme for effectively addressing climate change.* • Following the CPEIR recommendation, for budget submissions of the fiscal year 2015, the Department of Budget Management (DBM) and the Climate Change Commission (CCC) have jointly developed a framework for the Climate Change Expenditure Tagging (CCET). • The CCET framework provides definitions of climate change based on NCCAP priorities and a common method for tagging, linking budget allocations and national climate policy priorities. For 2015 budget, 53 National Government Agencies have prioritized and tagged their budget proposals for climate change spending using this common framework. About 5 percent of the 2015 budget proposals targets climate change, with about 98 percent directed towards

	adaptation in line with NCCAP priorities. • *Climate-Adaptive Disaster Resilient Awards by CCC are promoting the climate change adaptation at the local level.*
3) Payment for ecosystem services and insurance	• Forest management in the Philippines is governed by Presidential Decree No. 705, as amended, otherwise known as the "Revised Forestry Code of the Philippines". This forestry code outlines the policies of the State in the management of the forest and its resources. • *Payment of statutory fees and charges include: DAO 2000-21 (Payment of forest charges for natural grown trees); DAO 1999-53 (Government share); DAO-2000-63 (administrative fees; etc); and RA 7161 (Forest charges).* • *Weather index insurance has been piloted and the Philippines has well established insurance programs for supporting farmers covering multiple perils*.
4. Risk assessment	
1) Management of disaster records	• Office of Civil Defense (OCD) has a database of historical disasters including record of response activities.
2) Hydro-meteorological data management and climate risk analysis	• Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA) of the Department of Science and Technology (DOST) observes meteorological condition and conducts forecast in terms of climate, typhoon, wind and rainfall. PAGASA is also managing meteorological database. In addition, PAGASA owns flood forecasting systems in the four river basins. PAGASA also monitors hydrological operation of the 9 dams in Luzon Island and conducts flood forecast for these dam river basins. *In general, hydro-meteorological stations in rural areas are not so many and necessary to be increased.* • PAGASA has conducted downscaling of the effect on rainfall by climate change based on various models of GCMs for all over the country. *However, standard downscaled values by areas in the country have not been set yet, and this is one of the issues.*
3) Preparation of hazard maps and risk maps	• PAGASA prepares flood hazard maps with scale of 1 to 10,000, 1 to 15,000 and 1 to 50,000 depending on the provinces/ areas. Mines and Geosciences Bureau (MGB) of DENR has also prepared flood hazard maps together with landslide hazard maps. PAGASA has also prepared risk maps for the Pasig-Marikina River Basin including northern part of the Laguna Lake. The above flood hazard maps of PAGASA and MGB and the flood risk map by PAGASA do not include climate change impacts. Therefore, *incorporating climate change impacts into the flood hazard maps and risk maps is one of the issues.* • MGB has prepared rain-induced landslide and flood hazard maps (susceptibility maps) with a scale of 1 to 10,000 all over the country and some urban areas with a scale of 1 to 50,000. However, it is expected that *more detailed landslide hazard maps such as a scale 1 to 1,000 are also necessary for the communities to find out safer place for living, and this is one of the issues.* • *Hazard maps of storm surge are very rough and they do not incorporate climate change impacts (sea water level rise). Hence, it is necessary to prepare more detailed hazard maps and risk maps of storm surge.* • *PAGASA has developed drought hazard maps, El Nino vulnerability maps for corn and paddy and SPI-based drought monitoring system*. It is currently developing a MODIS-NDVI based drought monitoring system. • *National color-coded agriculture guide-map is being prepared to help integrated decision making considering the soils, water and crops and nutrient status.* • *Climate risk and vulnerability assessment as a part of climate smart/resilient agriculture/good practices being developed by the agriculture ministry* • *The DA has developed a multi-hazard map which is being converted into an interactive map for use by all the local governments for targeting interventions.*
4) Data sharing and dissemination	• *Flood hazard maps are utilized for Preparedness (warning and evacuation) together with flood forecast. Also, flood hazard maps are utilized for planning of DRR. Landslide hazard maps are mainly utilized for preparedness as well as landuse management (including relocation of people from the landslide disaster experienced areas and managing landuse).*
5) Early warning system and disaster risk communication	• *Early warning systems have been developed through the DRRM system from country – Region – Province – City/ Municipality – Barangay (Community). Typhoon forecast and flood forecast (several river basins in Luzon Island) are conducted by PAGASA.*
5. Planning and implementation	
1) Design guideline and standard	• In the Design Guidelines, Criteria and Standards of DPWH, climate change impacts on rainfall (based on some JICA Study) and sea water level rise (based on IPCC's AR5 report) for planning and designing flood control structures is considered. *These values of climate change impacts are necessary to be reviewed and confirmed from technical and economic view points to make practical application.*
2) Local land-use	• *Local authorities develop a Local DRRM Plan and a Comprehensive Land-Use Plan (CLUP) by*

	plan and urban plan	*incorporating hazard and risk maps provided by the MGB and the OCD*. The National Economic and Development Authority (NEDA) and the Housing and Land Use Regulatory Board (HLURB) review CLUP. *HLURB has developed a supplemental guideline for formulating CLUP with mainstreaming climate change and disaster risks*.
3)	Disaster-resilient public and private investment	• DPWH is the responsible agency for planning and implementing flood risk management and landslide risk management mainly for constructing structural measures. DPWH and LGUs are conducting operating and maintaining major structures and other structures for flood and landslide risk management. There are several good or potential good practices of flood risk reduction measures mainly by structural measures such as river improvement. There are some examples of polder walls in coastal areas by setting the height considering sea water level rise. *However, flood risk reduction measures even without climate change impacts are insufficient in general and necessary to be planned and implemented more. Furthermore, it is necessary to increase planning and implementing DRR with CCA for flood risk management.* • The existing DRRs against landslide are mainly landuse management in the disaster areas including relocation of people from the landslide disaster damaged areas and restricting landuse. *Structural measures for landslide risk reduction are small, and necessary to be increased in combination with the non-structural measures such as landuse management.* • DRR without or with CCA for flood risk management and landslide risk management will be effective in combination with conservation and recovery of forest areas in the river basins. *Hence, in order to reduce physical impacts of floods and landslide, river basin point of view is also important.* • There are some reforestation areas of mangrove forest in some areas experienced severe storm surge, *but non-structural and structural measures against storm surge are very much insufficient in general.*
4)	Drought risk reduction and water resources management	• *Livelihood credit assistance program which is a microfinance assistance* for small farmers, small scale irrigation schemes, enhanced farmer field schools, climate resilient agriculture, *formed an El Nino and La Nina task force in the DA to interpret the hazard and El Nino maps and help farmers accordingly, established water user associations under specific canal systems and small water impounding projects for impounding flood waters for use during dry seasons.* • The NWRB is conducting water scarcity assessment studies for major cities, conducting the water resources assessment and has water pricing plans in place for commercial and household uses.
6.	**Capacity building**	
1)	DRR and CCA training	• Although they are on ad-hoc basis under the assistance of donor-funded projects, there are some training programmes for DRR and CCA. • *Climate Change Consciousness Week organized by the Climate Change Commission and related awards are providing an important learning opportunity to various government agencies involved in these programs.*
2)	Sector-wise training	• In accordance with the concepts of the PDP, the sector-wise training programmes are being implemented on ad-hoc basis in response to climate change response requirements in major sectors and fields. • *Climate-field schools and enhanced farmer field schools are playing a major role in capacity building of farmers* in best management techniques using the weather and climate information.

添付資料 16：ASEAN 地域における DRR と CCA の統合に関する制度・政策枠組み強化のための地域フォーラム記録

目次

添付資料 16：ASEAN地域におけるDRRとCCAの統合に関する制度・政策枠組み強化のための地域フォーラム

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration [CN20]

Regional Forum for Strengthening Institutional and Policy Framework on DRR and CCA Integration in ASEAN
(& Preparatory Meeting of the Senior Official-Level Forum)

Background:

The Concept Note No. 20 [CN20] for **Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration** is one of the Flagship and Priority Projects under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015). The concept of **strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions** is succeeded in the Priority Programme No. 3. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020. The CN20 Project being implemented by a JICA Project Team in 2016-2017 aims to support the Working Group on Prevention and Mitigation under the ASEAN Committee on Disaster Management (ACDM) in setting the direction and designing a work plan to realise these concepts. The Project Team has completed a baseline study to assess the status of DRR and CCA integration in each ASEAN Member State (AMS) and reported the findings to the ACDM members in April 2017 in a progress report. Subsequently, three National Workshops were held in Myanmar, Viet Nam and the Philippines in May-July 2017 to discuss necessary actions for improving DRR and CCA integration and desired regional activities to push it forward. Based on these findings and workshop outputs, a Regional Forum is organised to discuss the **Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration**.

Objectives:

- To develop and verify the draft Work Plan with relevant government agencies, that will be presented to the ACDM Meeting by the Co-chairs of the Working Group on Prevention and Mitigation (WG on P&M), through sharing the outputs of the National Workshops and discussing immediate collaborative activities and roles of each stakeholder

Organisers:

- The Steering Committee of the CN20 Project consisting of the Co-chairs of the ACDM Working Group on Prevention and Mitigation (WG on P&M), ASEAN Secretariat, ASEAN Co-ordinating Centre for Assistance on disaster management (AHA Centre) and JICA

Secretariat:

- JICA Project Team

Participants: A total of about 50 participants from agencies related to DRR and CCA

- 4 persons per ASEAN Member State, including 1-2 persons from a national disaster management office, 1 person from a climate change agency, and 1-2 person from a line ministry of DRR (e.g. hydro-meteorological agency, water resources management agency, public works agency for flood risk reduction, etc.); the ACDM National Focal Point decides the participants in each Member State

Date and time: 9:30-17:00, Tuesday, 5 September; 9:30-12:00, Wednesday, 6 September 2017
Venue: Pullman Bangkok Grande Sukhumvit, Bangkok, Thailand

Draft agenda:
Chairperson: Co-chairs of the Working Group on Prevention and Mitigation

Day-1 Tuesday, 5 September 2017

9:00-9:30	*Registration*
9:30-9:50	**Opening** • Opening remarks – *Co-chairs of the ACDM WG on Prevention and Mitigation* • Greetings - *JICA* • Self-introduction of the participants
9:50-10:40	**Session 1: Why integration of DRR and CCA is needed?** *Plenary discussion* • Assessment of DRR and CCA integration status including good practices and issues in ASEAN Member States – *JICA Project Team (15 min)* • Main outputs of the National Workshops – *ACDM National Focal Points of Myanmar, Viet Nam and the Philippines (5 min x 3)* • Outline of the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration – *Co-chairs (10 min)* • Q&A *(10 min)*
10:40-11:00	*Photo session and coffee break*
11:00-12:00	**Session 2: Necessary actions for DRR and CCA integration in ASEAN** *Plenary discussion* • Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration *(40 min)* o Objectives, implementation structure and expected outputs o Roles of the WG on P&M and each ACDM National Focal Point o Available resources in ASEAN o Potential synergies with other regional activities (e.g. ACDM WG on Knowledge and Innovation Management, ASEAN WG on Climate Change, etc.) • Reference: Available technological options for DRR and CCA integration *(20 min)* – *presentation by JICA*
12:00-13:00	*Lunch break*

13:00-14:50	**Session 3: Necessary actions for DRR and CCA integration in ASEAN *[Group work]*** 1) Comments by each ACDM National Focal Point *(5 min x 10)* *Each ACDM National Focal Point comments on the draft Work Plan:* • Feasibility, concerns and expectations • Good practices of DRR and CCA integration (additional, recommendable) • Available resources and possible inputs for regional cooperation 2) Group discussion by each ASEAN Member State *(60 min)* *Participants grouped by each Member State discuss followings points on the draft Work Plan:* • Objectives and implementation structure • Reporting items, review points and the reporting format • Required technical assistances to improve integration of DRR and CCA (bilateral and multilateral) • Desired regional activities to improve integration of DRR and CCA and expectation to the WG on P&M • Immediate collaborative activities and further challenges
14:50-15:10	*Coffee break*
15:10-16:50	3) Presentation by each ASEAN Member State *(10 min x 10)* *Each Member State share the points discussed in the group discussion.*
16:50-17:00	**Wrap-up of Day-1** *Co-chairs wrap-up the discussion of Day-1.*

Day-2 Wednesday, 6 September 2017

9:30-10:00	*Registration (coffee will be served)*
9:30-11:50	**Session 4: Finalisation of the Work Plan** *Participants confirm the following points of the draft Work Plan:* • Revised points of the Work Plan o Objectives o Roles of the WG on P&M o Roles of each Member State and ACDM National Focal Point o Immediate collaborative activities • Work Plan to be presented to the ACDM Meeting • Expectations and requests to the WG on P&M • Agenda of the Senior Official-Level Forum and actions required toward that
11:50-12:00	**Closing**

	• Closing remarks – *JICA* – *Co-chairs of the WG on Prevention and Mitigation*
12:00-13:00	*Lunch*

Preparatory Meeting of the Senior Official-Level Forum

Objectives:

- To prepare for the Senior Official-Level Forum on 16 November 2017 in Jakarta, Indonesia

Participants: A total of about 25 participants

- 2 persons per ASEAN Member State
- 5 persons of the PSC members

Wednesday, 6 September 2017; Pullman Asoke Hotel, Bangkok, Thailand
Chairperson: Co-chairs of the ACDM Working Group on Prevention and Mitigation

13:00-13:30	*Registration*
13:30-13:40	**Opening** • Opening remarks – *Co-chairs of the ACDM WG on Prevention and Mitigation*
13:40-14:40	**Session 1: Agenda of the Senior Official-Level Forum** *Participants confirm the following points:* • Objectives: o Confirmation of a draft work plan in each AMS, reporting and management system, and the roles of the WG on P&M to implement the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration • Participants: o A total of about 60 persons (5 persons from each AMS including DG-class of the national disaster management organisation and other officials from NDMO, CC agency and DRR-related line agency; 10 persons from the Steering Committee of the CN20 Project) • Agenda of the SOLF o Opening o Outputs of the CN20 Project ▪ Country assessment, publication of good practices, National Workshops and Regional Forum o Presentation on DRR and CCA integration in other countries by JICA o Discussion on the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration ▪ Results of the ACDM Meeting on October 17-19 ▪ Roles of the WG on P&M ▪ Roles of each ASEAN Member State and ACDM National Focal

	Point ▪ Possible synergies with other regional activities (e.g. ACDM WG on KIM, ASEAN WG on CC, etc.) o Sharing of good practices ▪ 3 sessions; 2-3 resource persons (presentations) per session ▪ Discussion on an effective knowledge sharing system under the Work Plan o Expression of a draft work plan (commitment) by each ACDM NFP o Closing
14:40-15:00	*Coffee break*
15:00-15:50	**Session 2: Other matters** • Media relations o Press release, usage of social media • Follow up activities • Any other matters
15:50-16:00	**Closing** • Closing remarks – *Co-chairs of the ACDM WG on Prevention and Mitigation*

Follow up activities:

- Co-chairs of the WG on P&M will report the **Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration** to the ACDM Meeting for endorsement in October 2017 and it will be further discussed in the Senior Official-Level Forum in November 2017 to decide immediate collaborative activities.

Regional Forum for Strengthening Institutional and Policy Framework on DRR and CCA Integration
Participants' List

No.	Country	Name	Affiliation
1	Cambodia	Mr Ly Chandara	Executive Assistance to Senior Minister National Committee for Disaster Management (NCDM)
2		Mr Mao Saohorn	Chief of Bureau Department of Search and Rescue Coordination, NCDM
3		Mr H.E Mr. Yin Khun Phoy	Director of Cabinet and Deputy Secretary General, NCDM
4		Mr Nhauo Savann	Technical Officer, Department of Information and Relation, NCDM
5	Indonesia	Ms Gita Yulianti	Supervisor for Risk Management, National Agency for Disater Management (BNPB)
6		Mr Rizky Tri Septian	Disaster Analyst of BNPB
7		Mr Sigit Padmono Dewo	Assistent Director for Role of Social Community Organizations of BNPB
8	Lao PDR	Mr Vilayphong Sisomvang	Deputy Director General, Disaster Management Division, Social Welfare Department, Ministry of Labour and Social Welfare (MLSW)
9		Ms Vilmala Khounthalangsy	Deputy Director of Division, Disaster Management Division, Social Welfare Department, MLSW
10		Mr Souphasay Komany	Director of Division for National Disaster Prevention Control Commettee Secretariat, Department of Climate Change Management, Ministry of Natural Resources and Envrionment (MONRE)
11		Ms Sinthaly Chanthana	Deputy Head of Weather Forecasting division, Department of Meteorology and Hydrology (DMH), MONRE
12	Malaysia	Mr Mohd Fazrie Bin Rakmat	Assistant Director, National Disaster Management Agency (NADMA) Malaysia, Prime Minister's Department
13		Ms Vishalini Arumugam	Principal Assistant Director, Environment & Natural Resources Section, Economic Planning Unit, Prime Minister's Department
14		Ms Raja Nurul Alifah Binti Raja Mohd Nordin	Assistant Secretary, Development Division, Prime Minister's Department
15	Thailand	Mr Kobchai Boonyaorana	Deputy Director General, Department of Disaster Prevention and Mitigation (DDPM)
16		Mr Chainarong Vasanasomsithi	Director of research and International Cooperation Bureau, DDPM
17		Mr Saharat Wongsakulwiwat	Senior Policy and Plan Analyst, International Cooperation Division, DDPM
18		Ms Pranom Churnpratum	Foreign Relations Officer, Professional level, Intenational Cooperation Division, DDPM
19		Ms Suttapak Suksabai	Policy and Plan Analyst, Intenational Cooperation Division,DDPM
20		Ms Phanphen Wongwattana	Disaster prevention and mitigation office, Intenational Cooperation Division, DDPM
21		Mr Kosit Lorsirirat	Senior Expert on Hydrology, Royal Irrigation Department (RID), Ministry of Agriculture and Cooperatives
22		Ms Napawan Panya	Policy and Plan Analyst, Disaster Prevention and Mitigation Policy Division
23		Mr Banyat Yaingoolueam	Civil engineer, Professional level, Disaster Prevention Criteria Division
24		Ms Sujinphorn Parnukan	Policy and Plan Analyst, Professional level, Disaster Management Center
25		Mr Pisuth Wannachatrasiri	Policy and Plan Analyst, Professional level, Information Technology and Communication Center
26	Viet Nam	Ms Doan Thi Tuyet Nga	Director, Department of Science, Technology and International Cooperation, Vietnam Disaster Management Authority, Ministry of Agriculture and Rural Development (MARD)
27		Ms Dam Thi Hoa	Officer, Department of Science, Technology and International Cooperation Department- Vietnam Disaster Management Authority, MARD
28		Ms Nguyễn Thị Thu Loan	Officer, Division of Hydrometeorological Information and Disaster Prevention, Department of Climate change, Ministry of Natural Resources and Environment (MONRE)
29		Ms Dang Thanh Mai	Deputy director, National Center for Hydrometeorlogical Forecast, Hydrometeorlogical Service of Vietnam, MONRE
30	ASEAN Secretariat	Ms Pimvadee Keaokiriya (Bern)	Senior Officer, Disaster Management and Humanitarian Assistance Division, Sustainable Development Directorate, ASEAN Socio-Cultural Community Department
31		Ms Intani Kusuma	Technical Officer, Disaster Management and Humanitarian Assistance Division, Sustainable Development Directorate
32		Mr Irwin Gabriel Lopez	Disaster Risk Management Specialist (Consultant), Asian Development Bank (ADB)
33		Ms Atty. Pauline Caspellan-Arce	International Federation of Red Cross and Red Crescent Societies (IFRC)
34	AHA Center	Ms Agustina Tnunay	Preparedness and Response Officer (Logistics)
35	JICA	Mr Hitoshi Baba, Ph.D	Senior Advisor
36		Mr Atsushi Soma	Deputy Director, DRR Team1, DRR Group, Global Environment Dept.
37		Mr Shuichi Hirayama	JICA Indonesia

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STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION

Dr. Hitoshi BABA
Ph.D. Environment and Resource Engineering
Senior Advisor, Japan International Cooperation Agency
email: Baba.Hitoshi@jica.go.jp

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Integrated process of CCA and DRR

Basic Concept of CCA	Institutional and Policy Framework	DRR Planning and Implementation
Vision of society, **Basic Strategy,** **Adaptive Approach;** • Observing climate change, • Assessing CC impacts, • Monitoring CCA measures	**Unified authority,** **Continuous reviewing,** **Guide, adaptation criteria;** • Technical standard, • Target level of safety, • Adaptation in region	**Mainstreaming Risk factors;** • Climate change, • Urbanization, etc. **Latest technology,** **International cooperation**

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Basic Concept of CCA in Japan

National Plan for Adaptation to the Impacts of Climate Change, Cabinet Decision on 27 November 2015

◆ **Vision of society**

By promoting adaptation measures to climate change impacts, to build a secure, safe and sustainable society that is able to minimizing and avoiding damage for life of citizens, properties, economics, and natural environment due to its impacts, and to be resilient against damage.

◆ **Period**

Considered with long-term perspective till the end of 21st century, showing the basic direction in about coming 10 years.

◆ **Basic strategy**

1.Mainstreaming adaptation into government policy
2.Enhancement of scientific findings
3.Promotion of understanding and cooperation through sharing and providing information about climate-related risks
4.Promotion of adaptation in region
5.Promotion of international cooperation and contribution

◆ **Basic approach**

Adaptation will be promoted by using an adaptive approach that involves a repeated cycle of conducting ongoing observation, monitoring, and projection of climate change and its impacts, implementing regular assessments of impacts, considering and implementing adaptation measures, monitoring the state of progress, and making revisions as required.

An assessment of climate change impacts is to be implemented and formulated approximately every five years, and the Plan is to be revised as required.

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Priority Actions

National Plan for Adaptation to the Impacts of Climate Change, Cabinet Decision on 27 November 2015

◆ **Observation and Monitoring, Research and Studies**

Enhancement of observation systems (e.g. ground observation, ships, aviation, and satellites)

Advancement of modeling technologies and simulation technologies

◆ **Sharing and providing information related to climate risk**

e.g. Climate change adaptation information platform

◆ **Promotion of adaptation in region**

e.g. Implementation of model projects that assist the formulation of adaptation plans in local governments; Development of obtained results to other local governments

◆ **International measures**

Support for developing countries (e.g. assistance of climate change impact assessments and formulation of adaptation plans)

e.g. Contribution to human resource development through international networks such as the Asia Pacific Adaptation Network (APAN), Project for Assessing and Integrating Climate Change Impacts into the Water Resources Management Plan in Indonesia, etc.

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Sector Measures to be taken (1)

National Plan for Adaptation to the Impacts of Climate Change, Cabinet Decision on 27 November 2015

◆ **Agriculture, Forests/Forestry, Fisheries**

Impacts: e.g. Declining ratio of first- class rice due to high temperature ; Poor coloring of apples and other fruits

Adaptation: e.g. Development and diffusion of high-temperature-resistant varieties of rice; Switch to superior colored varieties of fruit

◆ **Water Environment / Water Resources**

Impacts: e.g. Changes in water temperatures, water quality; Increases in drought due to increases in the number of rainless days and decrease in the total amount of snowfall

Adaptation： e.g. To promote measures to reduce the loads flowing into lakes and marshes ; To promote efforts to formulate drought response timelines

◆ **Natural Ecosystems**

Impacts ： e.g. Changes in vegetation distribution and expansion of wildlife distribution due to increase in temperature and shift in days of snow-melting earlier

Adaptation： e.g. To ascertain the changes in ecosystems and species by using monitoring ; To conserve and restore healthy ecosystems with high climate change resilience

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Sector Measures to be taken (2)

National Plan for Adaptation to the Impacts of Climate Change, Cabinet Decision on 27 November 2015

◆ **Natural Disasters / Coastal Areas**

Impacts: e.g. Increasing frequency and intensity of water disasters, sediment-related disasters, and storm surge disasters due to increasing heavy rainfall and typhoons

Adaptation: e.g. Steady facility improvements and maintenance; Promotion of urban development with consideration of disaster risks; Formulation of hazard maps and evacuation plans

◆ **Human Health**

Impacts: e.g. Increases in heat stroke; Expansion of the suitable habitat for vectors of infectious diseases

Adaptation: e.g. Awareness raising regarding prevention and treatment

◆ **Industrial / Economic Activity**

Impacts: e.g. Impacts on business production activities and leisure; Increasing insured losses

Adaptation: e.g. To promote efforts by businesses in collaboration between public and private sectors ; Development of adaptation technologies

◆ **Life of Citizenry and Urban Life**

Impacts: e.g. Damage to infrastructure and critical services

Adaptation: e.g. To enhance disaster prevention functions of distribution/logistics, ports and harbors, railways, airports, roads, water supply infrastructure, waste treatment facilities, and traffic safety facilities

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Integrated process of CCA and DRR

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Basic Concept of CCA	Institutional and Policy Framework	DRR Planning and Implementation
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Adaptation Criteria specific for Flood Risk Management

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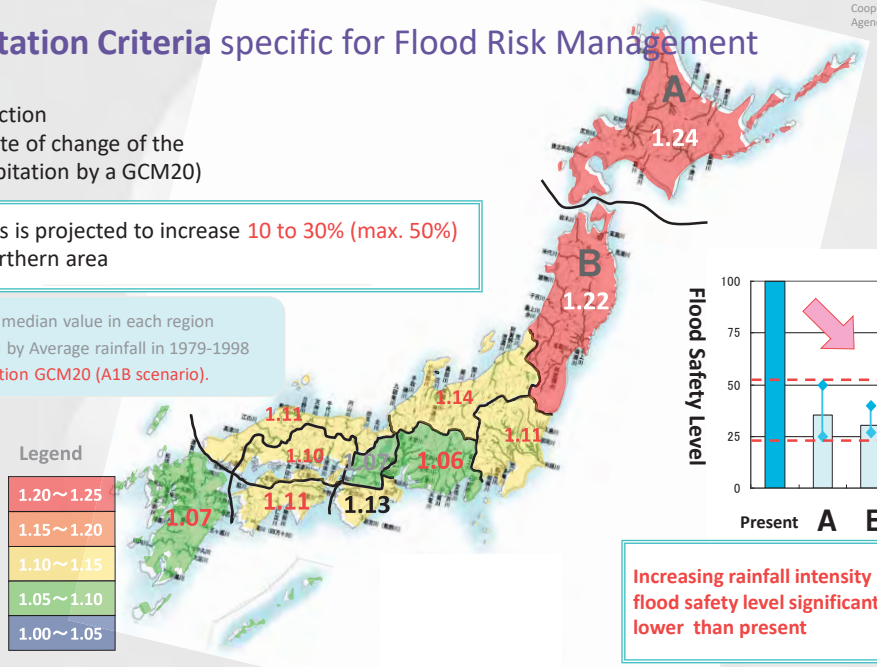
Climate change projection
(mean value of the rate of change of the maximum daily precipitation by a GCM20)

- Rainfall after 100years is projected to increase 10 to 30% (max. 50%)
- Severe increase in northern area

Future rainfall projected as a median value in each region
Average rainfall in 2080-2099 by Average rainfall in 1979-1998
The maximum daily precipitation GCM20 (A1B scenario).



Increasing rainfall intensity makes flood safety level significantly lower than present

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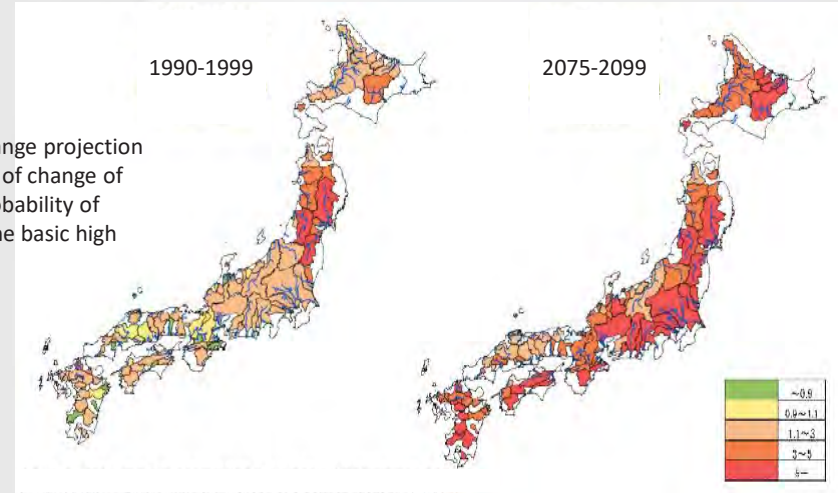
Adaptation Criteria specific for Flood Risk Management

Examples of climate change projection (mean value of the rate of change of the occurrence year probability of flooding that exceeds the basic high water peak flow)



http://www.nilim.go.jp/lab/bcg/siryou/tnn/tnn0749pdf/

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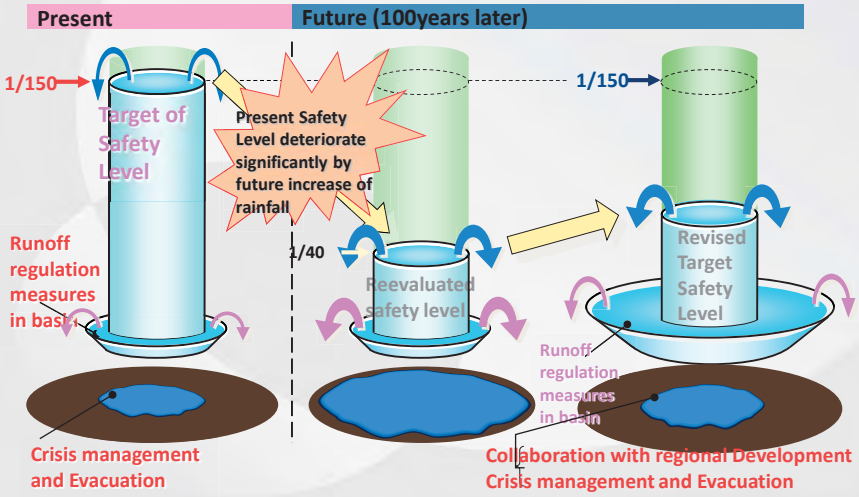
Adaptation Criteria specific for Flood Risk Management

The changing Safety Level regarding flood risks is the important factor that we need to assess and reflect to the concept of adaptation measures.



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Integrated process of CCA and DRR

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An example of international cooperation, Indonesia

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"The Project for Assessing and Integrating Climate Change Impacts into the Water Resources Management Plan for Brantas and Musi River Basins" in Indonesia.

Since the process requires latest technologies and global datasets which are not acquainted nor standardized in most of the developing countries, JICA, in coordination with Tokyo University, takes a role to mobilize the resource of "State-of-the-art techniques" of Japan.

The following information in pages are provided by Prof. Toshio Koike, Daikichi Ogawada and Akiko Matsumura, in cooperation with JICA Study Team of the Project, in May. 2014

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Case study of climate change impact assessment and hydrological simulation in **Brantas River Basin**

C.A. 11,800km^2
Length 320km

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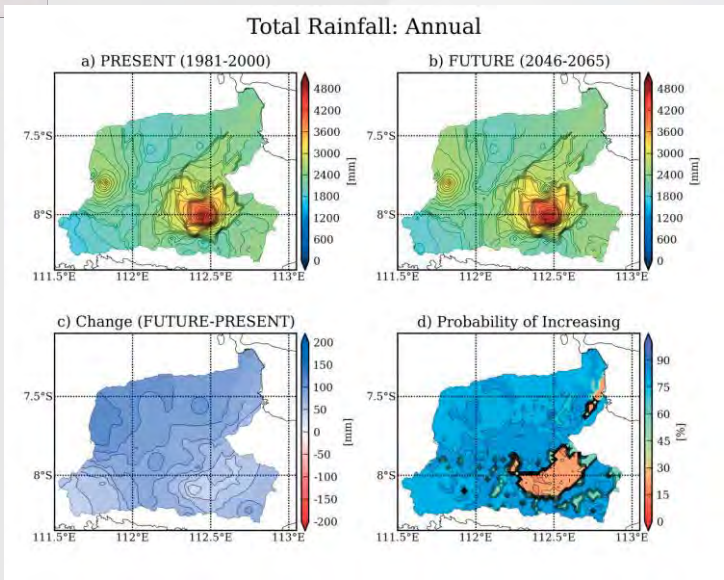
Projection of changes in Annual Rainfall



Annual rainfall will be slightly increased in the whole area.

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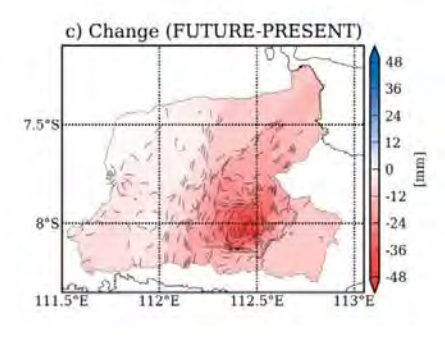
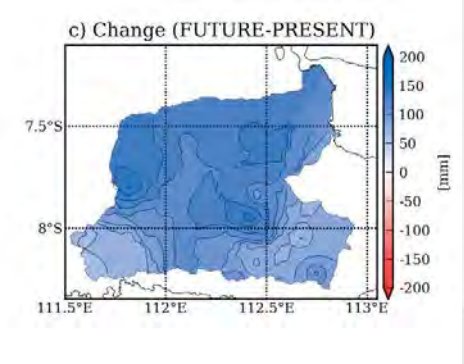
Projection of changes in Seasonal Rainfall

Dry season will be drier, Wet season will be wetter

Dry Season



Wet Season



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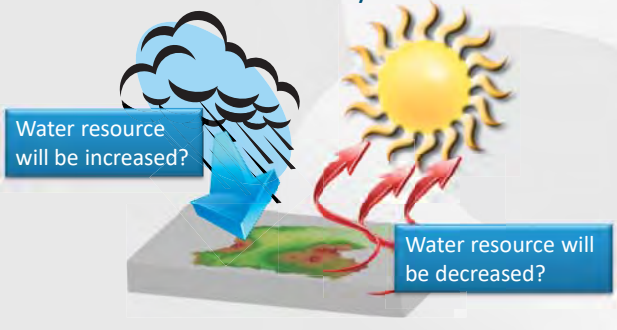
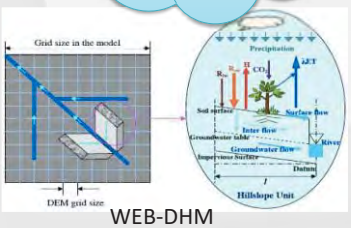
Summary of Projected Climate Change

- Surface Air Temperature will increase around1.5 degrees by 2050 with high confidence.
- Annual total rainfall will increase slightly, however, the trend is not consistent among GCMs.
- Extreme rainfall intensity will increase.



Physical based runoff model was applied for the evaluation.



WEB-DHM

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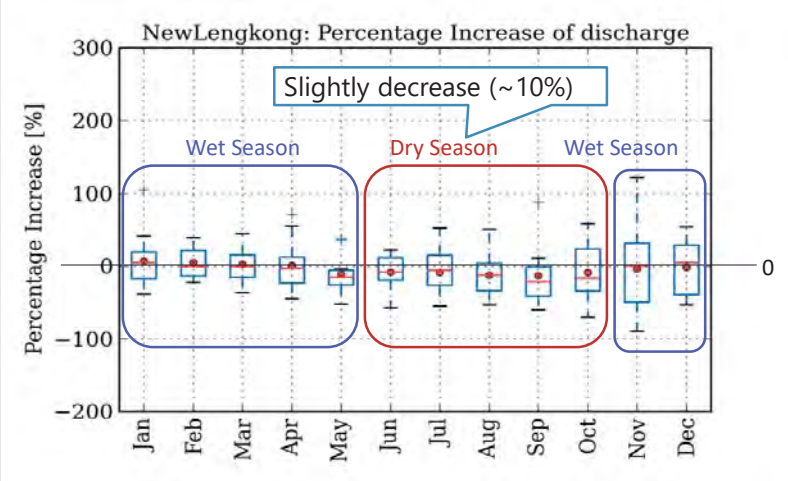
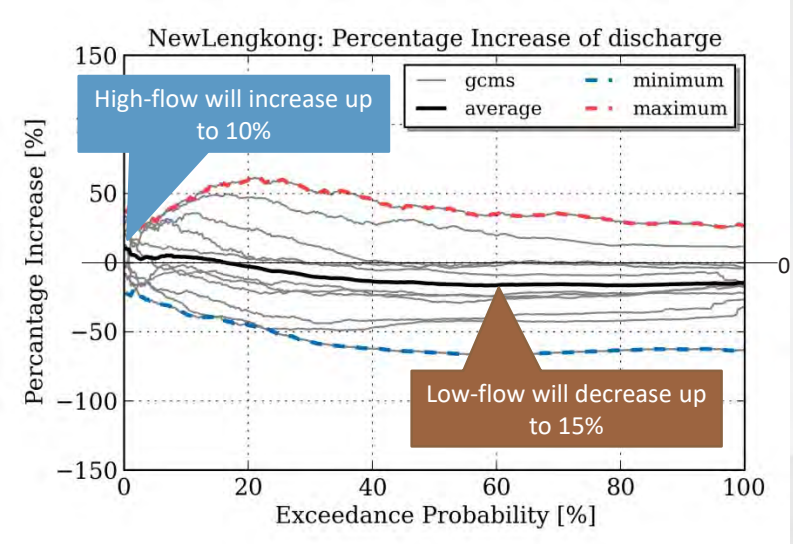
Percentage Increase of Monthly Flows

Percentage Increase [%] = 100 * (QFuture – QPresent) / QPresent



Percentage Increase of River Discharge at New Lengkong



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Changes in Flood Discharge

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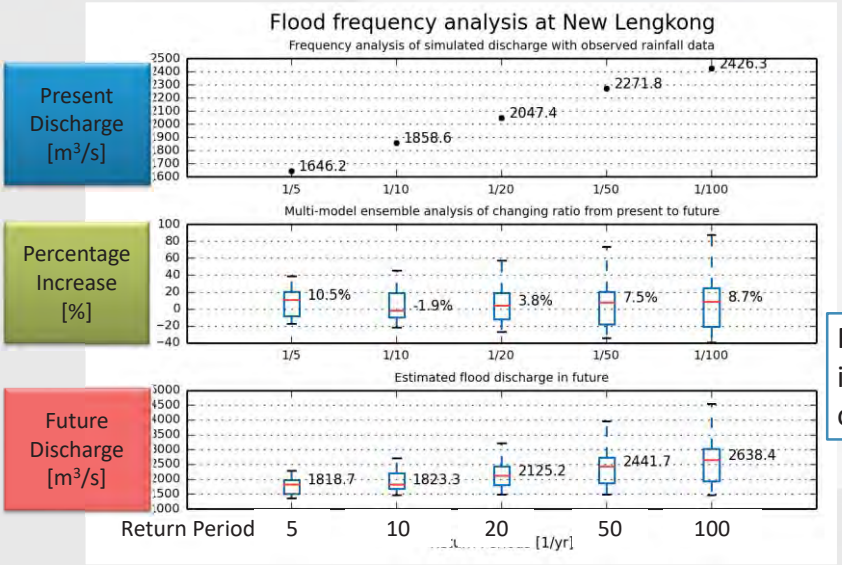

Flood Discharge will increase about 10% or less

Summary
Projected Change on Water Resources

- Wet season discharge will not change significantly, while the dry season discharge will slightly decrease, however, the trend is not consistent among the GCMs.
- More than half of climate models predict severe drought/flood conditions in the future climate.
- Annual mean P-E will slightly decrease, however, the trend is not consistent among the GCMs.

Mainstreaming DRR into Development

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"The prevention of new risk and the reduction of existing risk through the implementation of integrated and inclusive measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthens resilience." (SFDRR)

New risk: intensifying hazard by Climate Change, urbanization, population increase, …
Existing risk: exposed population and assets, vulnerable urban state, …

Mainstreaming DRR: is a systematic approach where we can scientifically assess the existing and newly arising risks and can quantitatively prospect future damages and impacts we will have, and then can strategically organize the resilient structure of society and economy that invest in sustainable development.

Integrated process of CCA and DRR

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Basic Concept of CCA	Institutional and Policy Framework	DRR Planning and Implementation
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Space Technology for CCA and DRR

Different types of satellite, with different purposes of:

- Science (GHG, Gravity etc.) / Astronomical (telescope)
- Communication / Broadcast
- Navigation / Positioning
- Earth Observation: Weather / Ocean / Ground

HODOYOSHI-1
(60kg)
Land Observation

ASNARO
(500kg)
Land Observation

GOSAT (1.7 tons)
GHG Observation

ALOS-2 (2 tons)
Land Observation

MTSAT-2 (4.7 tons)
Weather Observation

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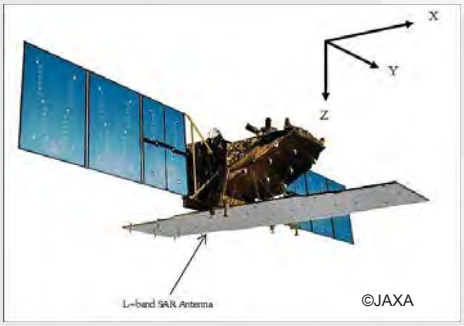
Reference: ALOS-2

ALOS-2/PALSAR-2

The Advanced Land Observing Satellite “DAICHI-2”(ALOS-2) is the follow-on JAXA L-band SAR satellite mission of ALOS, which contributes to cartography, regional observation, disaster monitoring, and resource surveys.



Orbit	Sun-synchronous orbit: altitude = 628km, inclination = 97.9º
	Local sun time : 12:00 ± 15 min
	Revisit time: 14 days; number of cycles/day: 15 3/14
	Orbit control: ≤ ± 500 m
Mission design life	5 years (with a goal of 7 years)
Spacecraft mass	2120 kg
Spacecraft size (deployed)	9.9 m (x) x 16.5 m (y) x 3.7 m (z)
Spacecraft power generation	5.2 kW (EOL)
Downlink communications	X-band: 800 Mbit/s (16 QAM), 400/200 Mbit/s (QPSK)
	Ka-band: 278 Mbit/s (QPSK) via the DRTS (Data Relay Technology Satellite) of JAXA
Launch	H-IIA launch vehicle from TNSC

Precipitation Radar Satellite

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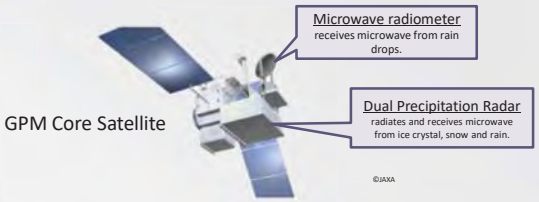
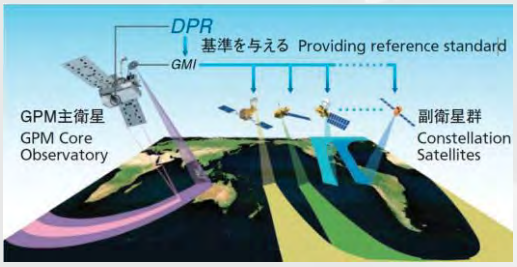
GPM's Mission

The Global Precipitation Measurement mission is an international network of satellites that provide the next-generation global observations of rain and snow to advance our understanding of Earth's water and energy cycle, improve forecasting of extreme events, and provide accurate and timely information to directly benefit society.





Source: http://global.jaxa.jp/activity/pr/brochure/files/sat04.pdf

Source: Modified by PASCO based on the website http://www.satnavi.jaxa.jp/project/gpm/sche.html

GSMaP (Global Satellite Mapping of Precipitation)

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- Products produced by MW-IR algorithm based on the information from GPM-Core GMI, TRMM TMI, GCOM-W AMSR2, DMSP series SSMIS, NOAA series AMSU, MetOp series AMSU and Geostationary IR
- Globally updated every hour and available 4 hours later for free

Source: http://sharaku.eorc.jaxa.jp/GSMaP/index.htm

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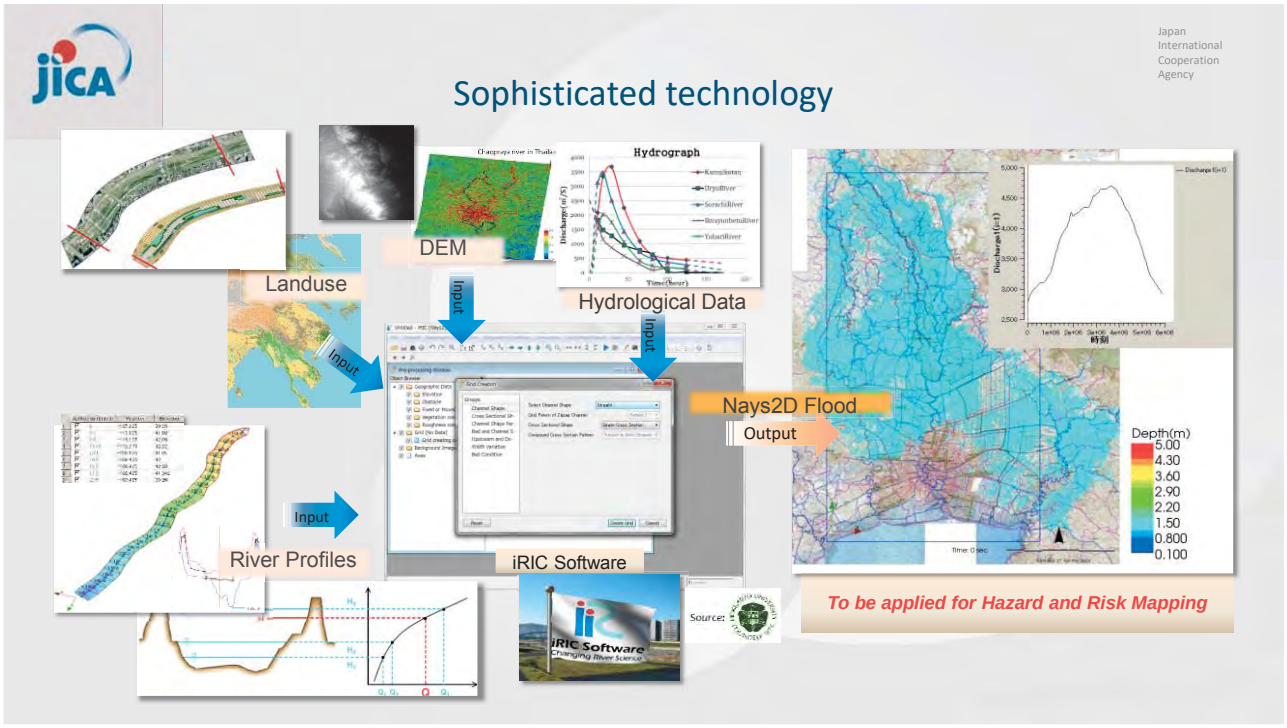
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Sophisticated technology
DEM
Hydrograph
Hydrological Data
Landuse
Input
Input
Input
Nays2D Flood
Output
Depth(m)
5.00
4.30
3.60
2.90
2.20
1.50
0.800
0.100
Input
River Profiles
iRIC Software
Source:
To be applied for Hazard and Risk Mapping


STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION
Thank you

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Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration [CN20 Project]

Regional Forum

5 September 2017, Bangkok, Thailand

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration

*[Concept Note No. 20 of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015): **CN20 Project**]*

[Priority Programme No. 3 ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020]

Regional Forum

5 September 2017, Bangkok, Thailand
JICA Project Team

Objectives of the CN20 Project

The aims of the project are:

(i) Strengthen institutional and policy frameworks for DRR and CCA;
(ii) Enhance the integrated planning for DRR through the implementation of national development plans and action plans that integrate DRR and CCA at all level; and
(iii) Build partnership in linking DRR and CCA at all levels.

The specific objectives are:

(a) Promote the development of umbrella laws and regulations that govern the integration and synchronisation of DDR and CCA in Member States;
(b) Foster relationships between national ministries and agencies responsible for DRR and CCA;
(c) Facilitate the establishment of a clear institutional and policy framework on DRR and CCA integration in Member States;
(d) Strengthen participatory risk assessment, incorporating disaster and climate risks as a basis for decision-making;
(e) Promote the development of joint funding mechanisms for both DRR and CCA at the national level; and
(f) Support joint training, meetings, and other opportunities for increased interaction and cooperation.

Expected Outputs of the CN20 Project

Expected output	Activity
1. Documentation of good practices in institutional strengthening and policy development on linking DRR and CCA in ASEAN Member States	1.1. **National workshop** on *good practices in integrated plan and policy development, funding mechanisms; and risk assessments for DRR and CCA* in the Member States 1.2. ***Identification of common approaches*** to strengthen institutional and policy development for DRR and CCA 1.3. ***Synthesis, analysis and recommendations*** 1.4. Drafting and publication of One Against Disaster and Climate Risks
2. Assessment of the implementation of national action plans on DRR and CCA and the effectiveness of national platforms	2.1. **National workshop** *to review the progress of the implementation of the national action plan on DRR and CCA* 2.2. Organisation and conduct of **a regional forum** on the progress and lessons learned by the Member States 2.3. Documentation of the outcomes of national workshops and the regional forum
3. Senior official-level roundtable discussions on policy and programme interventions to strengthen the connection and coherence of DRR and CCA efforts at all level	3.1. Preparatory meetings for the senior official-level forum, including arrangement with media 3.2. Holding of **the senior official-level forum** with broadcast media coverage

Implementation Flow of the CN20 Project

2nd Project Steering Committee	July 27, 2016, Bangkok	[Inception Report]
1st Field Study	Aug 1-12, **Thailand**; Aug 15-26, **Lao PDR**	
2nd Field Study	Sep 19-30, **Myanmar**; Oct 3-14, **Cambodia**	
3rd Field Study	Nov 14-25, **Viet Nam**; Nov 28-Dec 7, **Malaysia**; Dec 8-9, **Singapore**; Dec 12-14, **Brunei Darussalam**	
3rd PSC Meeting	Dec 7, Vientiane	
4th Field Study	Jan 9-20, 2017, **Indonesia**; Jan 23-Feb 3, **the Philippines**	
4th PSC Meeting	March 1, Bangkok	[Draft Progress Report]
ACDM Meeting	April 4, Vientiane	[Progress Report]
National Workshops	**May 31, Myanmar; July 6, Viet Nam; July 12, Philippines**	
5th PSC Meeting	July 6, Bangkok	
6th PSC Meeting	Sep 4, Bangkok	
Regional Forum	**Sep 5-6, Bangkok**	**Draft Work Plan**
ACDM Meeting, 5th AMMDM	**Oct 17-19, Lao PDR**	**Endorsement of the Work Plan**
Senior Official-Level Forum	**Nov 16, Jakarta**	**[Publication of Good Practices]**
7th PSC Meeting	Dec, Jakarta *(t.b.c.)*	[Draft Final Report]

Baseline study

We are here!

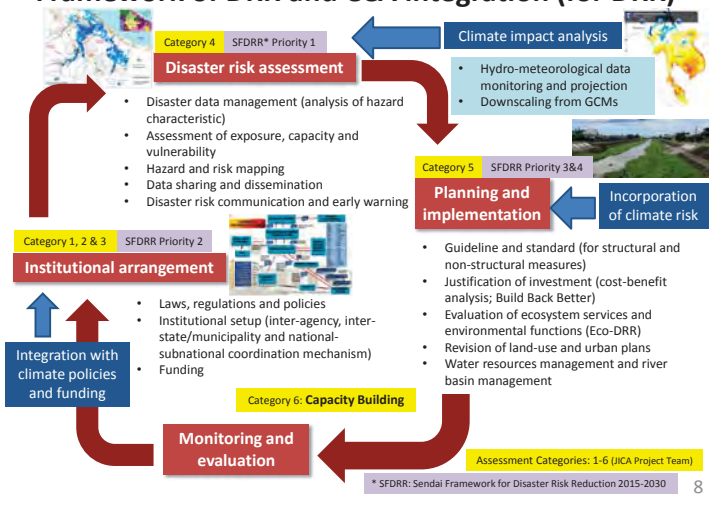
Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
1. Laws, regulations and policies	1) National development plan 2) DRR laws 3) CCA laws 4) Relevant sectoral laws	• DRR and CCA concepts are incorporated • DRR, CCA and relevant sectoral laws, regulations and policies are enforced • DRR and CCA are mainstreamed in each ministry's policies
2. Institutional arrangement	1) National DRM system 2) National CCA system 3) Transboundary DRM	• National DRM and CCA committees have been set up for inter-ministerial coordination • A multi-stakeholder transboundary DRM system has been set up
3. Financial arrangement	1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services (PES)	• Funds are allocated for DRR and CCA activities with a monitoring and tracking system • PES is implemented based on the economic evaluation
4. Risk assessment	1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination	• Disaster database is recorded and used for science-based analysis • Climate risk is analysed based on hydro-meteorological data monitoring and downscaling from Global Climate Models • Hazard and risk maps are prepared by assessing the damages of past disasters and the capacity and vulnerability of local authorities

Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
5. Planning and implementation	1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient Investment 4) Drought risk reduction	• Guidelines and standards incorporating disaster and climate risk are developed and used • Land-use and urban plans are prepared by incorporating disaster and climate risk and with evaluation of ecosystem services • Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner • Drought risk reduction measures including water resources management and agricultural measures are implemented
6. Capacity building	1) DRR and CCA training 2) Sector-wise training	• DRR and CCA trainings for national and local government officials and other stakeholders are provided • Special training programmes are implemented for specific purposes such as a climate school for farmers

Framework of DRR and CCA integration (for DRR)



Main Findings of the Field Study in ASEAN (1)

Category	Evaluation *(and issues)*
1. Laws, regulations and policies	• DRR and CCA concepts are incorporated individually in national development plans except in the Philippines and Lao PDR wherein both concepts are integrated • Legal framework for DRR and CCA is *composed of several legal documents but not integrated* in all Member States.
2. Institutional arrangement	• Vertical and horizontal DRM systems and CCA systems and related legal frameworks have been developed in all Member States. However, *integration of those systems and legal frameworks is lacking or insufficient.* Indonesia and Malaysia have better conditions in these aspects.
3. Financial arrangement	• *Funding for DRR and CCA activities is insufficient* in general. Better countries are Indonesia and the Philippines for DRR and CCA and Viet Nam for forest management.
4. Risk assessment	• Some countries have developed disaster database including Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. • All Member States have hydro-meteorological data management system. However, *some counties have a problem of insufficient coverage of the observation stations such as in upstream river basins and rural areas*. Countries of better condition are Malaysia, Singapore, Thailand and Viet Nam. *Hydro-meteorological data sharing of international rivers is insufficient* (except in the Lower Mekong River).

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Main Findings of the Field Study in ASEAN (2)

Category	Evaluation *(and issues)*
4. Risk assessment *(cont.)*	• Some countries have downscaled from GCMs including Indonesia, Malaysia, the Philippines, Singapore and Viet Nam. *There are no standard values of climate change impacts set in the Member States yet.* • Flood hazard maps or risk maps without incorporating climate risk are prepared in Brunei Darussalam, Malaysia, the Philippines, Thailand and Viet Nam, but *their resolution is insufficient for DRR and preparedness planning* in general. Malaysia and Viet Nam have prepared flood hazard maps with climate change impacts in some areas. *Hazard maps or risk maps of landslide are generally insufficient* (relatively better countries: Indonesia, the Philippines and Thailand). *Storm surge and drought hazard maps or risk maps are generally insufficient.*
5. Planning and implementation	• *DRR planning and implementation without considering CC impacts are insufficient* in general (better country: Malaysia). *DRR planning and implementation with CCA is lacking or insufficient* in general (countries with good practices or potential good ones: Brunei Darussalam, Indonesia, the Philippines, Singapore and Viet Nam). *Guiding tools for planning and implementation including the related risk assessment etc. is lacking.*
6. Capacity building	• *Integrated DRR and CCA training is rarely conducted* except in Indonesia. Community-based DRM are conducted in most Member States. Climate field schools which train farmers to use weather forecast for agriculture are successful in Indonesia, Myanmar and the Philippines.

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Results of the National Workshops

Myanmar – May 31
Viet Nam – July 6
Philippines July 12

Main outputs of the National WS in Myanmar (May 31, 2017)

Key issues and necessary actions in Myanmar	Expectations to ASEAN
Laws/ Regulations/ Policies ● Integration of DRR and CCA policies and plans ● Development of relevant sectoral laws and regulations	● Clarification of the effect of DRR and CCA integration in other ASEAN countries
Institutional Arrangement ● National coordination mechanism (weak coordination and cooperation among implementing activities, particularly for river basin management from upstream to downstream to manage flood, drought and landslide risks and sedimentation) ● Mainstreaming DRR and CCA in each ministry (by appointing a focal unit in each department and exchanging staff between the RRD and line ministries) ● Strengthening the functions of committees at district and township levels to deal with DRR and CCA issues	• Coordination mechanism for DRR and CCA integration **Knowledge sharing on good practices of policies, institutional arrangement and funding**
Funding ● Insufficient funds for DRR activities in line ministries (the National Disaster Management Fund is mostly for response, recovery and reconstruction; not for prevention and mitigation) ● Lack of funds for CCA ● Budget tagging of DRR and CCA expenditures ● No payment system for environmental conservation	● Resource mobilisation methods in other ASEAN counties ● Fund raising by an ASEAN-wide approach


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Risk Assessment ● Integration of disaster database with all sectors ● Improved hydro-met monitoring system for flood and drought (incl. groundwater monitoring) ● Climate risk analysis capacity incl. downscaling from GCMs ● Monitoring system for landslide ● Insufficient hazard maps and risk maps ● Improved data accuracy and reliability ● Dam safety against floods; flood risk assessment for each basin ● Improved early warning and communication systems at local level ● Require cost-benefit analysis of DRR and CCA expenditures to justify the investment	● Data sharing among ASEAN countries with a unified standard (by establishing a regional responsible body) Regional climate models for ASEAN ● Hazard mapping and risk assessment technology ● Flood risk assessment for dam safety ● Salinity intrusion monitoring and analysis ● Cost-benefit analysis of DRR and CCA expenditures **risk assessment methods and technology** **Justification of DRR and CCA investment**
Planning and Implementation ● Sectoral planning capacity of each ministry ● Climate and disaster resilient design of infrastructures (for reducing the long-term maintenance cost) ● Urban and land-use plan with DRR and CCA ● Slope protection methodology ● Catchment (river basin) management against drought; water storage facilities ● Climate smart agriculture, crops diversification	● To develop guiding tools for integrating DRR and CCA (and build capacity by implementing a pilot project using it) Slope protection pilot projects ● Climate smart agriculture **Guiding tools for climate and disaster resilient design**
Capacity Building ● Education of DRR and CCA; development of curriculums for schools ● Public awareness with easy to understand materials ● Training of trainers and experts ● Usage of ICT equipment	● Training and capacity building Technical assistance ● Exchange program **Training opportunities; education and public awareness**

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Main outputs of the National Workshops in Myanmar, Viet Nam and the Philippines

Category	Necessary national activities	Expected regional activities
Institutional development		
Policies, laws and regulations	• Strict issuances of environment compliance certificate, building permits, no build zones and safe zones; • Development of relevant sectoral laws and regulations; • Integration of DRR and CCA policies and plans	• **Share the effects of DRR and CCA integration**
Management system	• Strict implementation of integrated water resources management (IWRM) through coordination of relevant agencies; • River basin management for drought, flood and landslide risk and sedimentation management; • Coordination between DRR and CCA national committees and the focal points; • Mainstreaming DRR and CCA in each ministry by appointing a focal unit; • Strengthening the functions of subnational committees for DRR and CCA	• **Share coordination mechanisms of DRR and CCA integration**
Financial arrangement	• Increase funds for DRR and CCA activities; • Budget tagging of DRR and CCA expenditures; • Develop a payment system for environmental conservation	• **Share resource mobilisation methods;** • **Fund raising by an ASEAN-wide approach**

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Risk assessment		
Data management	• Set up a central database and a data sharing system through coordination of relevant agencies; • Upgrade and increase the coverage of hydro-meteorological monitoring system (groundwater monitoring system too) and mobilise social capital and private funds for that	• **Establish standardised database and a data sharing system;** • **Share experiences on database development and management**
Climate risk analysis	• Build capacity on sectoral climate impact modelling and socio-economic impact analysis; • Improve climate risk analysis capacity including downscaling from global climate models	• **Share climate risk assessment and modelling methodologies;** • **Standardise the methodologies;** • **Develop a regional climate model**
Hazard and risk mapping	• Integration of climate projections to geo-hazard maps; • Provision of high resolution base maps covering the entire country; • Provision of simplified guidelines and standards for hazard mapping and risk assessment; • Capacitate subnational governments' access and usage of database and tools; • Monitoring system for landslide	• **Share hazard mapping and risk assessment technologies;** • **Share salinity intrusion monitoring and analysis system**

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Planning and implementation		
Guideline and standard	• Update sectoral design, guideline and standard incorporating climate risk; • Translate climate projection to flood return periods; • Improve dam safety against floods; • Train national and local government officials to capacitate designs of water-related structures; • Updated training programmes for community-based DRM based on past experiences	• **Share guidelines, standards, planning methods and good practices and benchmark it;** • **Share dam management protocols and flood risk assessment methods;** • **Experts exchange programmes and cross-visits for learning and actual observation**
Land-use and urban planning	• Strengthen monitoring and evaluation of local development plans in accordance with the comprehensive land-use plan, zoning ordinance and national building code	• **Share monitoring and evaluation mechanism of land-use plan, zoning ordinance and building code**
Disaster resilient investment	• Further promotion of forest protection and rehabilitation; • Prioritisation of development projects based on risk levels; • Cost-benefit analysis of DRR and CCA expenditures to justify the investment	• **Training for geo-technical measures for flood- and landslide-prone areas; slope protection methods;** • **Capacity building for coastal zone management;** • **Share cost-benefit analysis of DRR and CCA measures**

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Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration

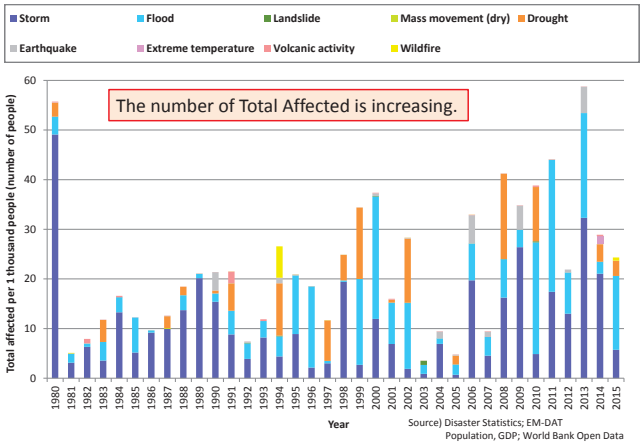
Objectives of the Regional Forum

- To develop and verify **the draft Work Plan** with relevant government agencies, that will be presented to **the ACDM Meeting** by the Co-chairs of the WG on P&M;
- Through sharing the outputs of the National Workshops and discussing **immediate collaborative activities and roles of each stakeholder**

Endorsement process of the Work Plan

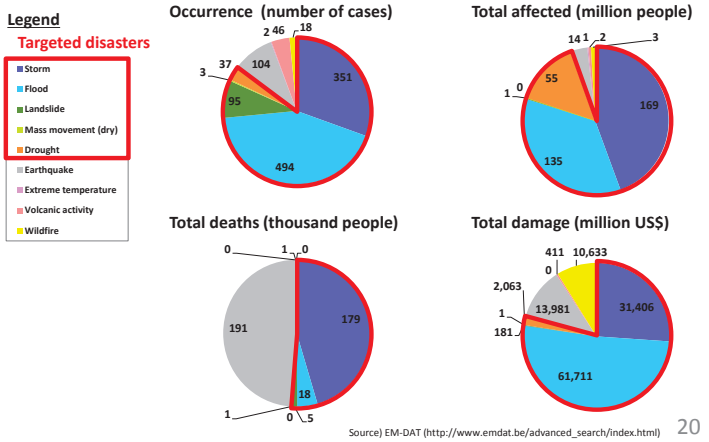
i) Following the Regional Forum, inputs will be incorporated into the draft Work Plan for endorsement at **the 8th Meeting of the WG on P&M** on 7 Sep 2017, Bangkok, Thailand.
ii) ASEAN Secretariat will circulate the draft Work Plan to the members of the WG on P&M for finalization by 15 Sep 2017.
iii) ASEAN Secretariat will then circulate the draft final Work Plan to the **ACDM** for further adoption by 22 Sep 2017.
iv) Co-Chairs of WG on P&M will report this at the **31st ACDM Meeting** on 17 Oct 2017.
v) This will be included in **the ACDM Chair Report** at **the 5th AMMDM** for endorsement on 19 Oct 2017 in Luang Prabang, Lao PDR.

Total Affected per 1,000 people in ASEAN countries



Source) Disaster Statistics; EM-DAT
Population, GDP; World Bank Open Data

ASEAN Disaster Statistics Overview in the past 30 years (1987-2016)



Source) EM-DAT (http://www.emdat.be/advanced_search/index.html)

DRR and CCA Agreements

DRR | **CCA**

Global:

- Sendai Framework for Disaster Risk Reduction 2015-2030
- 2030 Agenda for Sustainable Development Goals (2015)
- The Paris Agreement under the UNFCCC (2015)

*Goal 9. Build **resilient infrastructure***
*Goal 11. Make cities and human settlements inclusive, safe, **resilient** and sustainable*
*Goal 13. Take urgent action to **combat climate change** and its impacts*

ASEAN:

- ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2016-2020
- ASEAN Action Plan on Joint Response to CC (2012)
- ASEAN Vision 2025 on Disaster Management

*"Accelerate **investments in disaster risk prevention and reduction and CCA", "Continue sharing and dissemination of risk and climate information to further support risk-informed policy development, decision-making and investment** programming"*

- The Declaration of Institutionalising the Resilience of ASEAN and its Communities and Leaders (26th ASEAN Summit, 2015)

*"The **ACDM** to be assigned as the focal point for **cross-sectoral cooperation**"*

AADMER Work Programme 2016-2020

Excerpts

- ASEAN suffers damage in excess of USD4.4 billion each year on average as a consequence of natural hazards.
- The AADMER Work Programme 2016-2020 contributes to the aims of the AADMER, which are to reduce disaster losses and enhance regional cooperation to respond jointly to disasters. In the next five years, the goal of the new work programme is to build resilient ASEAN Community.
- From December 2011 to August 2015, the ASEAN Disaster Information Network (ADI NeT) recorded 869 natural disasters in the ASEAN region, with more than 80% caused by climate-related disasters such as floods, storms, strong winds, and drought. With this new normal, it is not enough for communities across ASEAN to prepare for the known risks. There is a need to anticipate and prepare for the unknown, such as unprecedented risks and unanticipated affected areas, magnified by climate change. Community-level resilience needs to move beyond the capacity to respond.
- Asia's forest cover is shrinking by 1% per year, and 70-90% of its original wildlife habitats have been lost.
- Natural resource management will be a strategy promoted by ASEAN to create natural buffers against risks and inclusive growth.
- By end of 2020, ASEAN will have replicable programmes which have demonstrated increased resilience of communities where they have been implemented. The spotlight and test will be on local capacities, specifically on how well communities can absorb shocks and thrive despite escalating risks and climate impacts.

Sendai Framework for Disaster Risk Reduction 2015-2030

GOAL: Prevent new and reduce existing disaster risk through the **implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures** that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience

Priorities for Action

Priority 1	Priority 2	Priority 3	Priority 4
Understanding disaster risk	Strengthening **disaster risk governance** to manage disaster risk	**Investing in disaster risk reduction** for resilience	Enhancing **disaster preparedness** for effective response, and to «Build Back Better» in **recovery, rehabilitation and reconstruction**
Disaster risk management needs to be based on an **understanding of disaster risk** in all its dimensions of **vulnerability, capacity, exposure** of persons and assets, hazard characteristics and the environment	Disaster risk governance at the national, regional and global levels is vital to the management of disaster risk reduction in all sectors and **ensuring the coherence of national and local frameworks of laws, regulations and public policies** that, by defining roles and responsibilities, guide, encourage and incentivize the public and private sectors to take action and address disaster risk	Public and private investment in disaster risk prevention and reduction **through structural and non-structural measures** are essential to enhance the **economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment**. These can be drivers of innovation, growth and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation	Experience indicates that disaster preparedness needs to be strengthened for more effective response and ensure capacities are in place for effective recovery. Disasters have also demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of the disaster, is an opportunity to «Build Back Better» through integrating disaster risk reduction measures. Women and persons with disabilities should publicly lead and promote gender-equitable and universally accessible approaches during the response and reconstruction phases

CN20 Project focuses on Priorities 1, 2 & 3 = Prevention and mitigation of disasters

Priority Programme No. 3, the AADMER Work Programme 2016-2020

ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community

1. Strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions

Outputs	Key Activities (by the ACDM Working Group on Prevention and Mitigation)	2016	2017	2018	2019	2020
1.1. **Documentation of good practices** in strengthening institutional capacity and policy development on DRR and CCA in ASEAN	1.1.1. Conduct **national workshops on good practices** in integrated plan and policy development, funding mechanisms, and risk assessments for DRR and CCA in the Member States *(by NDMOs)*		★ ★ National Workshops in Myanmar, Viet Nam and the Philippines		Inputs by the CN20 Project	
	1.1.2. Conduct regular **regional documentation and dissemination of good practices** and innovation of approaches in building community resilience		● Documentation at the Regional Forum			
	1.1.3. Come up with a regular **publication** of ASEAN: One Against Disaster and Climate Risks		● ■ CN20 Final Report			
1.2. **Capacity building** programme on DRR and CCA, to strengthen institutional capacity and policy development	1.2.1. Stocktake and map training institutes among ASEAN Member States who can form **the ASEAN Training Centres on DRR and CCA**			Training?		
	1.2.2. Develop **accreditation of civil society organisations/private sector/training institute** who can provide training for NDMOs on DRR and CCA			Knowledge sharing?		
	1.2.3. **Launch the ASEAN Training Programme for DRR and CCA** implementers from government, civil society, private sector and other sectors to boost a roster of certified ASEAN experts or professionals on DRR and CCA			Monitoring system?		
	1.2.4. Establish a **financing mechanism** to support continuing education for DRR and CCA implementers					
	1.2.5. Develop **peer-to-peer support programme** among ASEAN Member States to strengthen institutional and policy development related to DRR and CCA		○ ○ Discussion at the Regional Forum and Senior Official-Level Forum			
1.3. Established ASEAN **cross-sectoral collaboration** on DRR and CCA	1.3.1. Identify government agencies relevant to DRR and CCA at national level *(by NDMOs)*		▲ CN20 Progress Report			
	1.3.2. Establish mechanism to facilitate **inter-agency, multi-stakeholder collaboration** on DRR and CCA at the national level *(by NDMOs)*		★ ★ National Workshops in Myanmar, Viet Nam and the Philippines			
	1.3.3. Establish a **regional mechanism** to gather relevant ASEAN sectoral bodies engaged in DRR and climate change, including environment, agriculture, and food security, among others		○ ○ Discussion at the Regional Forum and Senior Official-Level Forum			
	1.3.4. Conduct a **regular dialogue** among the agencies and sectors to develop recommendations on the policy and implementation of DRR and CCA at the national and regional level					

The Declaration of Institutionalising the Resilience of ASEAN and its Communities and Leaders

The Heads of States/Governments of the ASEAN adopted the Declaration at the 26th ASEAN Summit in Malaysia on April 27, 2015. The Declaration stressed the importance of:

- Systematically mainstreaming DRM and CCA in relevant sectoral policies, strategies, plans, programmes, and projects;
- Further institutionalise DRM and CCA at the national and local levels;
- Encouraging all stakeholders to participate in planning and implementation;
- Accelerate investments in disaster risk prevention and reduction and CCA focusing on key development sectors such as water management, ecosystems management, agriculture, education, infrastructure and construction, transport and telecommunication, and risk financing and risk transfer;
- Address underlying risk drivers and compounding factors, such as climate change and climate variability, uncontrolled urbanisation, ecosystem degradation, weak governance, limited risk management capacity especially at the local scale, poor management of urban and rural development, consequences of poverty and inequality;
- Continue sharing and dissemination of risk and climate information to further support risk-informed policy development, decision-making and investment programming;
- Allocate resources to strengthen disaster preparedness;
- Enhance cooperation and collaboration among ASEAN Member States;
- The ACDM to be assigned as the focal point for cross-sectoral cooperation.

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ASEAN Action Plan on Joint Response to CC

Adopted at the 12th ASEAN Ministers Meeting on Environment (AMME, 2012)

C.1 Adaptation

(i) Sharing information on ongoing and planned efforts on research and development (R&D) in hydrological and agricultural management and practices that aim to enhance food security, agricultural productivity and water resources sustainability;

(ii) Sharing information on ongoing and planned adaptation efforts in urban, rural, and coastal areas;

(iii) Enhancing existing ASEAN climate/meteorological/oceanographical centers and networks to possibly look into:

- Assessing climate change impacts on socio-economic development, health, environment protection for example by establishing a network of academics to undertake a regional vulnerability study on climate change;
- Assessing detailed climate change impacts, vulnerability, adaptation options and needs for the region and sub-regions such as the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) and Greater Mekong Sub-region (GMS);
- Promoting regional climate information/data sharing in order to develop ASEAN climate change impact scenarios, and also to provide inputs to the Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC);
- Enhancing climate/meteorological/oceanographical observatory systems in the ASEAN region;
- Downscaling global climate models to produce climate change impact scenarios at the regional, national and local levels.

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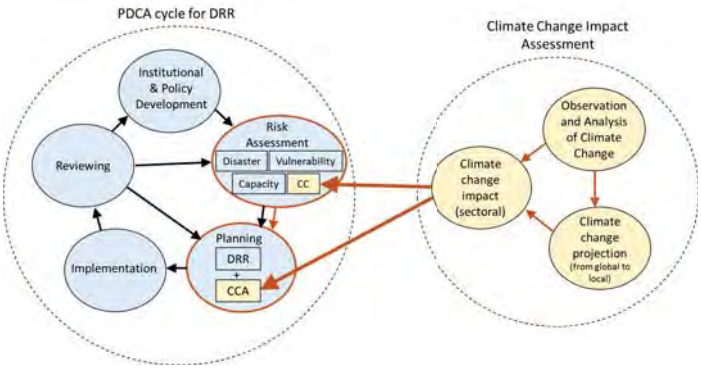
Schematic Image of DRR and CCA Integration



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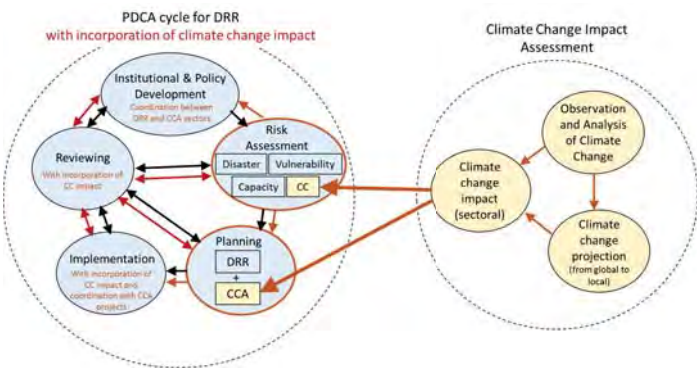
Schematic Image of DRR and CCA Integration



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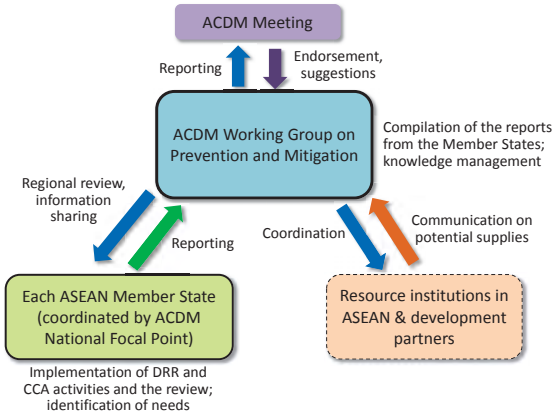
Implementation Structure of the Work Plan



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Expected Outputs and Outcomes

- Through continuous implementation and revision of the PDCA cycle for DRR with improved climate change impact assessment and its incorporation;
- It is expected that **the institutional capacity for DRR**, including policy formulation, risk assessment, planning and implementation through coordination of multiple agencies at national and subnational levels, **will be strengthened**.
- **Targeted outputs** of the Work Plan **are implementation of such demonstrable actions** with engagement of multiple agencies catalysed and facilitated by national disaster management organisations (NDMOs) and documentation and **arrangement of cross-learning mechanism for diffusion** of them.
- By doing so, it is expected that the ACDM develops **an autonomous knowledge management and capacity building system** for building disaster resilient and climate adaptive ASEAN in a long run.

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Group Work Sheet

1. Objective

To be discussed in the Regional Forum

5. Implementation structure

a. Working Group on Prevention and Mitigation

The WG on P&M is responsible for:

- Compilation and procession of the Information and knowledge collected from the Member States, sharing it among them and reporting it to the ACDM Meeting;
- Coordination and facilitation of mutual cooperation activities among the Member States by referring to their annual reviews and by using local resources; and
- Sharing regional needs for DRR and CCA integration with development partners and developing regional programmes with them.
- *Desired regional activities and further expectation to the WG on P&M*
- *Required technical assistance for that*
-

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b. ACDM National Focal Point

Each ACDM National Focal Point collects relevant information listed in Table 2 from line agencies, reviews it and reports it to the WG on P&M annually with particular focuses on:

- Management of disaster, hydro-meteorological, risk, vulnerability and socio-economic data and sharing of them with relevant agencies for synthetic analysis;
- Reviewing of DRR and CCA related plans and activities for close coordination and knowledge sharing among relevant agencies; and
- Capacity building and needs assessment based on the reviewing results, development of training programmes using domestic resources, and recommendation of resource institutions and agencies possible to provide capacity building services regionally.
- *Other proposed activities*
- *Required technical assistance to improve integration of DRR and CCA bilaterally*
-

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Table 2 DRR and CCA activities to be implemented and reported by each AMS

Activities		Review points
1. Institutional and policy development		
1.1 Policies, laws and regulations	National socio-economic development plan	*To be discussed in the Regional Forum*
	DRR and CCA laws and regulations	
	DRR and CCA related sectoral laws and regulations	
1.2 Management system	National and subnational DRR and CCA management systems	
1.3 Financial arrangement	Regular budgetary arrangements of line ministries for DRR and CCA	
	Special funds for local and community-based DRR and CCA activities	
	Payment for ecosystem services and insurance scheme	
2. Risk assessment		
2.1 Climate change impact analysis	Observation and analysis of hydro-meteorological data	
	Climate change projection	
	Standard values of CC impact	
2.2 Hazard and risk mapping	Hazard and risk mapping of flood, storm surge, landslide and drought	
3. Planning and implementation*		
3.1 Disaster risk reduction	DRR plans and implemented projects for flood, storm surge, landslide and drought	
3.2 Standard guideline for disaster and climate risk assessment and planning		

Day-2: Group discussion

What kind of regional collaborative activities will be beneficial for each AMS? What can be implemented from 2018?

1) What/which good practices is useful for sharing? What do you want to learn from others?

2) What kind of facilitation mechanism do you want for that? Do you want to visit other Member States? Can you accept those requests from others?

3) What kind of capacity building is the priority? What kind of technical assistance is needed?

4) What data sharing is beneficial? Risk assessment and hazard and risk mapping methodologies? An indicator set for monitoring and assessment of the impact of climate change on disaster?

6. Immediate collaborative activities

Following immediate collaborative activities will be implemented from 2018 under the Work Plan:

- *Available regional resources*

7. Further challenges

In order to strengthen DRR and CCA integration further beyond this Work Plan, following activities shall be planned in parallel:

Each ASEAN Member State:

- *Further actions*
-

Working Group on Prevention and Mitigation:

- *Further facilitation*
- *Collaboration with other regional groups: WG on KIM, AHA Centre, AWGCC, etc.*
-

Draft Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration

Group Work Sheet

1. Objective

To be discussed in the Regional Forum

5. Implementation structure

a. Working Group on Prevention and Mitigation

The WG on P&M is responsible for:

- Compilation and procession of the Information and knowledge collected from the Member States, sharing it among them and reporting it to the ACDM Meeting;
- Coordination and facilitation of mutual cooperation activities among the Member States by referring to their annual reviews and by using local resources; and
- Sharing regional needs for DRR and CCA integration with development partners and developing regional programmes with them.
- *Desired regional activities and further expectation to the WG on P&M*
- *Required technical assistance for that*
-

b. ACDM National Focal Point

Each ACDM National Focal Point collects relevant information listed in Table 1 from line agencies, reviews it and reports it to the WG on P&M annually with particular focuses on:

- Management of disaster, hydro-meteorological, risk, vulnerability and socio-economic data and sharing of them with relevant agencies for synthetic analysis;
- Reviewing of DRR and CCA related plans and activities for close coordination and knowledge sharing among relevant agencies; and
- Capacity building and needs assessment based on the reviewing results, development of training programmes using domestic resources, and recommendation of resource institutions and agencies possible to provide capacity building services regionally.
- *Other proposed activities*
- *Required technical assistance to improve integration of DRR and CCA bilaterally*
-

6. Immediate collaborative activities

Following immediate collaborative activities will be implemented from 2018 under the Work Plan:

- *To be discussed in the Regional Forum*
-

7. Further challenges

In order to strengthen DRR and CCA integration further beyond this Work Plan, following activities shall be planned in parallel:

Each ASEAN Member State:

- *To be discussed in the Regional Forum*
-

Working Group on Prevention and Mitigation:

- *To be discussed in the Regional Forum*
- *Collaboration with other regional groups: WG on KIM, AHA Centre, AWGCC, etc.*
-

Table1　DRR and CCA activities to be implemented and reported by each ASEAN Member State

Activities		Review points
1. Institutional and policy development		
1.1 Policies, laws and regulations	National socio-economic development plan	*To be discussed in the Regional Forum*
	DRR and CCA laws and regulations	
	DRR and CCA related sectoral laws and regulations	
1.2 Management system	National and subnational DRR and CCA management systems	
1.3 Financial arrangement	Regular budgetary arrangements of line ministries for DRR and CCA	
	Special funds for local and community-based DRR and CCA activities	
	Payment for ecosystem services and insurance scheme	
2. Risk assessment		
2.1 Climate change impact analysis	Observation and analysis of hydro-meteorological data	
	Climate change projection	
	Standard values of CC impact	
2.2 Hazard and risk mapping	Hazard and risk mapping of flood, storm surge, landslide and drought	
3. Planning and implementation*		
3.1 Disaster risk reduction	DRR plans and implemented projects for flood, storm surge, landslide and drought	
3.2 Standard guideline for disaster and climate risk assessment and planning		

** Planning and implementation of DRR steps are merged here as the review points for both steps are similar.*

Summary of the Regional Forum for Strengthening Institutional and Policy Framework on DRR and CCA Integration in ASEAN

Date and Venue: 5-6th September 2017, Pullman Bangkok Grande Sukhumvit, Bangkok, Thailand

Background and objective

The Concept Note No. 20 [CN20] for Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration is one of the Flagship and Priority Projects under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015). The CN20 Project being implemented by a JICA Project Team in 2016-2017 aims to support the Working Group on Prevention and Mitigation under the ASEAN Committee on Disaster Management (ACDM) in setting the direction and designing a work plan to realise these concepts.

Based on the field investigations in all ten ASEAN member countries and successful organization of three national workshops, this Regional Forum is organised by the Steering Committee of the CN20 Project to discuss the 'Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration'. Outcomes of the Regional Forum, including the Work Plan, will be presented to the ACDM Meeting by the Co-chairs of the Working Group on Prevention and Mitigation (WG on P&M) for further discussion on immediate collaborative activities and roles of each stakeholder.

DAY ONE (5TH SEPTEMBER 2017)

The Regional Forum was inaugurated with opening remarks by Mr. Chainarong Vasanasomsithi, co-Chair of the ACDM Working Group on Prevention and Mitigation (WG on P&M), from the Department of Disaster Prevention and Mitigation, Ministry of Interior, Thailand. He mentioned that the Regional Forum provides us a chance to exchange ideas and experiences to develop future work programme and strategies which would be in line with Sendai Framework for Disaster Risk Reduction 2015-2030.

The Regional Forum discussed on three main topics:

1) Why a Work Plan for DRR and CCA integration in ASEAN is needed?

2) What are necessary actions for DRR and CCA integration in ASEAN?

3) Immediate collaborative activities.

1) Why integration of DRR and CCA is needed?

Mr.Toshijo Maeda, Leader of the JICA Project, shared the assessment framework of DRR and CCA integration proposed by the JICA Project Team that consisted of six assessment categories:

1. Laws, Regulations and Policy
2. Institutional Arrangement
3. Financial Arrangement
4. Risk Assessment
5. Planning and Implementation, and
6. Capacity Building

He then showed how 1-5 assessment categories directly complement all four priorities of action of the Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 and ultimately leading to enhancement of capacity building (6th assessment category). After that he summarized status of DRR and CCA integration in each ASEAN country based on the outcomes of field studies carried out by JICA Project Team. For instance, vertical and horizontal DRM systems and CCA systems and related legal frameworks have been developed in all Member States but integration of those systems and legal frameworks is lacking or insufficient except in Indonesia and Malaysia where they are relatively in better condition.

Mr.Toshijo Maeda then explained the main outputs of the National Workshops in Myanmar, Viet Nam and the Philippines. In the national workshops, stakeholders discussed about necessary national activities and identified potential regional actions for DRR and CCA integration. Coordination mechanism, fund and resource mobilization, standardized database and data sharing system, standardized methodologies for climate risk assessment and modeling, sharing hazard mapping and risk assessment methodologies were important regional activities identified in the national workshops.

After a brief overview of the outcomes of the field studies by JICA Project Team and the National Workshops, he presented 'the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration' and its endorsement process for further discussion and verification of the content at the Regional Forum. Introducing the rational, objectives, concept and implementation structure of the action plan, Plan-Do-Check-Act (PDCA) cycle for DRR with incorporation of climate change impact was proposed as the concept for DRR and CCA integration. It was expected that ACDM WG on P&M will have a central role in the implementation of the action plan by establishing a regional review and information sharing with each ASEAM member states, coordination with resource institutes in ASEAN and development partners, and reporting to ACDM meeting. Similarly, the WG will receive endorsements and feedbacks from ACDM meeting, reporting from ASEAN member states and communication on potential supplies from the resource institutes and development partners.

It is expected that the institutional capacity for DRR, including policy formulation, risk assessment, planning and implementation through coordination of multiple agencies at national and subnational levels, will be strengthened through continuous implementation and revision of the PDCA cycle for DRR with incorporation of improved climate change impact assessment. For instance, implementation of demonstrable actions with engagement of multiple agencies catalysed and facilitated by national disaster management organisations (NDMOs) and documentation and arrangement of cross-learning mechanism for diffusion could be considered. In the long-run, the ACDM could develop an autonomous knowledge management and capacity building system for building disaster resilient and climate adaptive ASEAN.

2. Necessary actions for DRR and CCA integration in ASEAN

'Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration' was further discussed to verify the content and identify important actions. In addition to general comments to the work plan, participants were asked to formulate objectives, implementation structure and expected outcomes with reference to the proposed work plan as well as their national circumstances. Discussion on the potential roles of the WG on P&M and each ACDM for the implementation of the work plan and

available resources in ASEAM and potential synergistic regional activities (e.g. ACDM WG on Knowledge and Innovation Management, ASEAN WG on Climate Change, etc.) were also discussed.

Participants from ASEAN Member Countries and ASEAN Secretariat then responded to the work plan by sharing their existing or planned initiatives and experiences on DRR and CCA integration. Following are the main inputs and opinion shared by the participants:

- Cambodia have National Committee for Disaster Management (NCDM) that is the lead coordinating body for disaster and almost all twenty-two ministries are its members. All ministries have guidelines on how to deal during disaster. Cambodia has a disaster management law which is currently under the stage of implementation. Ministry of National Defense and Ministry of Interior are the lead ministries for search and rescue during disaster. There are offices from provincial down to the commune level. Commune level can report and request to provincial and national level if they need supports for disaster response (in case of big disasters). World Food Program is implementing new project PRISM for sharing real time information from disaster sites.
- Indonesia is preparing disaster report based on a participatory approach such as organizing annual multi-stakeholder meeting and Focus Group Discussion (latest one was in October 2016) and then report the result. Each ministry also update about their disaster related information. DRR and CCA integration at the community level is implemented through programs such as planting mangrove and coral plantation through community involvement. Indonesia is in the process of preparing DRR-CCA integration blueprint in the next annual multi-stakeholder meeting (expected in October 2017)
- Lao PDR expected that establishment of platform (and proposed Work Plan) for DRR and CCA will be useful not only for the Member States but also other partners.
- In Malaysia, NADMA, EPU are agencies for disaster. Malaysia have National Council Directive 20 for disaster risk management. Malaysia wants to learn from other country experiences.
- Thailand have committee for implementation DRR that includes most of the line agencies (28 ministry/agencies). Two line agencies, RID and ONEP, are also attending in this Regional Forum.
- Vietnam, like most of the Member States, have mechanisms for DRR and CCA, but specific activities on DRR or CCA are spread over multiple ministries. Vietnam has a coordination and reporting mechanism on DRR. If ASEAN have special committee for CCA, they could also be invited to receive specific inputs on CCA issues. Also there is a clear demand for knowledge and experience sharing as our DRR experts from relevant ministries visited Philippines to learn experience of post-Haiyan response and recovery.
- ASEAN Secretariat: The lead implementation is ACDM for disaster prevention and mitigation which is also linked with climate change adaptation. Environmental Committee of ASEAN is responsible for CC, but they could not attend the Regional Forum due to preparation of upcoming ASEAN minster level meeting.

Dr Hitoshi Baba, Senior Advisor for JICA introduced about integrated process of DRR and CCA highlighting three aspects: 1) concept of CCA based on experiences in Japan, 2) institutional and policy framework, and 3) DRR planning and implementation. Japan has taken a long-term perspective till the end of 21st century for CCA, while showing the basic direction in about coming 10 years as well as assessment of climate impacts formulated every five years and revision of plans accordingly. Mainstreaming of CCA will be promoted by using an adaptive approach that involves a repeated cycle

of conducting ongoing observation, monitoring, and projection of climate change and its impacts, implementing regular assessments of impacts, considering and implementing adaptation measures, monitoring the state of progress, and making revisions as required. Seven sectoral measures, including agriculture, water resources and natural disasters, are considered for adaptation.

He then stressed that unified authority is essential for a strong institutional policy framework. Adaptation criteria has to be constantly reviewed and revised as it is expected that the target of safety level, such as for flood, will substantially deteriorate by future increase in rainfall. He shared a case of international cooperation on assessing and integrating climate change impacts into the water resources management plan for Brantas and MusiRiver Basins in Indonesia. Based on the assessment it was found that dry season rainfall will decrease while wet season rainfall will increase, which could induce droughts and floods, respectively. For mainstreaming DRR, he stressed on a systematic approach to assess exiting and new risks and quantification of future damages. For that he showed why existing weather information satellites as well as sophisticated technologies should be used to estimate hydrological changes more accurately.

Responding to query by a participant from Indonesia on how to integrate government, private sector and community in DRR and CCA, Dr.Baba mentioned that we should use latest technology and science to enhance risk assessment capacity; however, it might be difficult for policy makers, private sector and community to understand the advance scientific assessment methods and technology. General language and easy to understand infographic should be used to disseminate the results in order to get required policy attention and interests from private sectors and communities. Then all government, private sector and community should sit together to share such information and take necessary actions.

After listening presentation from Dr.Baba, participants shared their experiences on stakeholder participation on DRR and CCA integration:

Thailand: Participants from Royal Irrigation Department (RID) Thailand shared that they have a system to acquire hydro-climatic data from Thai Meteorology Department (TMD), especially for Chao Phrya Basin, where hydrological monitoring stations have been installed, and RID analyze the data for forecasting. RID as such is not directly involved in implementation, so the results of analysis are then sent to respective provincial offices for implementation.
In addition to that, local government in Thailand has budget (about 1%) for DRR and DDPM gives training to local level about DRM. Thailand has also introduced insurance for agriculture products against drought impacts.

Lao PDR: Action plans and policy support at the central level is relatively good, even though it is not perfect. Main issue is the lack of capacity to implement the action plan at the local level, so Lao PDR is

considering to follow an outcome based approach for disbursing limited resources to support local level actions.

Vietnam: There are DRM plans at national, provincial and commune level. MARD or MONRE could be mandated to prepare standard design values and disaster maps. We need indicator set for monitoring and evaluation and assessment of CC and for the development of the dataset.

ASEAN: How to develop a hazard map is a regional issue.

Mr.Maeda: Various agencies are involved in the collection of disaster data, whilst some information are considered to be sensitive for public sharing. Collaborative actions are necessary.

Summary of the Group Discussion

1. Objective of the Work Plan

The ultimate objective of mainstreaming DRR and CCA into national and regional activities is to significantly reduce disaster risks and increase resilience through creating an enabling mechanism for capacity building, knowledge sharing and cross-sectoral collaboration leading to developing suitable policies, good practices, including data sharing platforms, among ASEAN Member States.

2. Implementation Structure

2.a Responsibility of Working Group on Prevention and Mitigation

The WG on P&M is responsible for:

- *Compilation and procession of the Information and knowledge collected from the Member States, sharing it among them and reporting it to the ACDM Meeting;*
- *Coordination and facilitation of mutual cooperation activities among the Member States by referring to their annual reviews and by using local resources; and*
- *Sharing regional needs for DRR and CCA integration with development partners and developing regional programmes with them.*

Additionally, ASEAN Member States raised the following priorities during the Regional Forum:

- *Need to detail out the function of WG to implement above mentioned activities*
- *Fund raising for DRR and CCA integration activities in ASEAN member states remains a common priority area for many countries.*

- *Knowledge sharing and exchange of experiences among the Members States on DRR and/or CCA, including*:
    - *Introducing of new/latest technologies;*
    - *Conservation of bio diversity as part of river basin management;*
    - *Collaborative discussion on transboundaries river basin issues;*
    - *Land use and forest management;*
    - *Financial or funding management system for DRR and CCA.*
- *Monitoring, data sharing, and evaluation*
    - *Data management*
    - *Information from grass-root level is not accurate as they do not use common information format. Common regional data monitoring and reporting format is necessary for reliable information, especially, for grass-root level where inaccuracy is a big issue.*
    - *DRR and CCA need more local level knowledge, not only regional level knowledge, such as risk information. Increasing the resolution of hydro-met information collection at the local level and feeding into a national database is needed;*
    - *Monitoring and Evaluation (M&E) is an important task of WG who can facilitate to develop guideline or framework on M&E.*
- *Capacity building and regional training programme*
    - *Assistance on the capacity building programmes among the Member States.*
    - *Assistance in terms of study or projects among the Member States.*

2.b ACDM National Focal Point

Each ACDM National Focal Point collects relevant information listed in **Table 1** from line agencies, reviews it and reports it to the WG on P&M annually with particular focuses on:

- *Management of disaster, hydro-meteorological, risk, vulnerability and socio-economic data and sharing of them with relevant agencies for synthetic analysis;*
- *Reviewing of DRR and CCA related plans and activities for close coordination and knowledge sharing among relevant agencies; and*
- *Capacity building and needs assessment based on the reviewing results, development of training programmes using domestic resources, and recommendation of resource institutions and agencies possible to provide capacity building services regionally.*

During the Regional Forum, ASEAN member states raised the following proposed activities and other required technical assistance to improve integration of DRR and CCA bilaterally:

- Monitoring and data sharing
    - *Data (sharing) is important for risk assessment. Agriculture, urban housing and public works and transport are the most affected sectors as compared to other sectors in many ASEAN member states. Risk information on these sectors is therefore important;*
    - *Reviewing of DRR and CCA related plans and activities for close coordination and knowledge sharing among relevant agencies;*
    - *Monitoring of implementation of integration of DRR and CCA and enforcement of relevant laws on DRR and CCA;*
    - *Monitoring of use of DRR-related expenditure of each line ministry*
    - *Enforcement of Early Waning System*
    - *Reporting on formulation of guidelines and standards*
    - *Activities that explore possibilities of consolidating climate change law; monitoring the use of DRR-related expenditure of each line ministries; and sharing disaster database, hydro-met data, hazard and risk maps and their technologies; and enforcing early warning systems; and*
    - *The reviewing of DRR and CCA related plans and activities for close coordination and knowledge sharing among relevant agencies.*
- Capacity building
    - *ACDM Focal Point should continue to be responsible for stakeholder engagement for integration of DRR and CCA;*
    - *Be responsible for encouragement and sustainability of networks and forums that bring various stakeholders together for integration of DRR and CCA*
    - *We need to enhance our capacity on how to collect relevant information such as risk information on different sectors. We need relevant tool and support on how to make the report.*
    - *Need to develop guidelines for mainstreaming DRR and CCA at the grass-root level.*
- Funding and budgets
    - *The lack of funding and HR capacities for planning and implementation remain a challenge, especially the lack of capacity to assess and understand resiliency at the community level;*
    - *Risk assessment is important and hence budgets should be allocated to ministries who have mainstreamed DRR and CCA using risk assessments;*
    - *Since budget for implementing the plans at the country level is not sufficient and as a result they could not be implemented well. Therefore, we need for more bottom-up approaches for DRR and CCA integration.*

Table 1　DRR and CCA activities to be implemented and reported by each ASEAN Member State

Activities		Review points
1. Institutional and policy development		
1.1 Policies, laws and regulations	National socio-economic development plan	■ *Monitoring of Current National Socio-economic Development Plan*
	DRR and CCA laws and regulations	■ *Progress of enactment and enforcement of individual DRR and CCA laws and regulations* ■ *Progress of enactment of integrated laws and regulations of DRR and CCA*
	DRR and CCA related sectoral laws and regulations	■ *Progress of enactment and enforcement of relevant sectoral laws and regulations*
1.2 Management system	National and subnational DRR and CCA management systems	■ *Progress in risk management system at national and local levels*
1.3 Financial arrangement	Regular budgetary arrangements of line ministries for DRR and CCA	■ *Progress in budget allocation and monitoring of DRR and CCA expenditures*
	Special funds for local and community-based DRR and CCA activities	■ *Progress in creation and operation of national and local DRR and CCA funds*
	Payment for ecosystem services (PES) and insurance scheme	■ *Progress in PES and insurance measures*
2. Risk assessment		
2.1 Climate change impact analysis	Observation and analysis of hydro-meteorological data	■ *Progress in monitoring systems and data sharing and analysis*
	Climate change projection	■ *Progress in projection of climate change impacts on rainfall, sea level rise etc.*
	Standard values of CC impact	■ *Progress in setting standard values for climate change.*
2.2 Hazard and risk mapping	Hazard and risk mapping of flood, storm surge, landslide and drought	■ *Progress in preparation of hazard maps considering the limitation of information disclosure by each Member State.*
3. Planning and implementation*		
3.1 Disaster risk reduction	DRR plans and implemented projects for flood, storm surge, landslide and drought	■ *Progress in planning, implementation and updating prevention and mitigation measures.* ■ *Progress in legally authorized DRR and CCA plans.*
3.2 Standard guideline for disaster and climate risk assessment and planning		■ *Progress in preparation of guidelines.*
4. Reviewing (by the ACDM National Focal Point)		
4.1 Data management		*Basic disaster, hydro-meteorological, risk, vulnerability and socio-economic data are periodically managed, updated and shared with relevant agencies for synthetic analysis and decision making*
4.2 Reviewing		*DRR and CCA related plans and activities are periodically reviewed for close coordination and knowledge sharing among relevant agencies*
4.3 Capacity building and needs assessment		*Based on the reviewing results, identify and implement capacity building programmes, identifying external technical assistances wherever necessary, and report to the WG on P&M; identify resource institutions to provide capacity building services regionally and report to the WG on P&M*

3. Immediate collaborative activities

Following immediate collaborative activities will be implemented from 2018 under the proposed Work Plan:

- *Capacity building for planning and implementation of measures for flood and landslide hazards with focus on spatial approaches for risk assessment and risk mapping at the local level.*
- *Integration and streamlining DRR and CCA laws and regulations at the national and sectoral level.*
- *Building capacity for accessing regional and global funds for integrating DRR and CCA.*
- *Measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies.*
- *Develop indicators for monitoring and evaluation of programs, policies and projects on climate change adaptation and disaster risk reduction.*

4. Further challenges

4.a Each ASEAN Member State

Cambodia	• *Human Resources Development and capacity building*
Indonesia	• *Strong coordination between ASEAN and Member States and within Member States since not all ministries recognize their role in DRR*
Lao PDR	• *Achieving national goals and Sendai Framework (such as understanding risk) is a future challenge. Resilience building and improving community and private sector coping capacity against future disasters is a challenge. Development of risk maps and relocation of people from risky areas is a challenge. All these need resources.* • *Local and national socio-economic development plan already integrate DRR and CCA, but to ensure that plans are implemented and goals achieved on resilience building is an important challenge.*
Malaysia	• *Need to strengthen the policy and institutional framework for DRR and CCA; strengthen capacity building; and establish sustainable financing*
Vietnam	• *Need to share among ASEAN member countries how to develop hazard maps; and to develop guidelines for risk assessment and planning for DRR and CCA*

4.b Working Group on Prevention and Mitigation

- *Viability of implementation is questionable because of the constraints of human resources and budget.*
- *Not all priority projects (out of 21) are implemented, so resource mobilization is a big challenge.*
- *Improved collaboration with other regional groups: WG on KIM, AHA Centre, AWGCC, etc., through knowledge sharing is needed.*

Closing the day one session, Mr.Vilayphong Sisomvang, Co-chair of the ADCM Prevention and Mitigation Working Group thanked all participants for important inputs to the work plan and stressed that the work plan is meant and belong to the Member States.

DAY TWO (6TH SEPTEMBER 2017)

Mr. Toshizo Maeda, opened the meeting by reviewing the draft of the "Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration" as well as the Table 1 of "DDR and CCA activities to be implemented and reported by each ASEAN Member State". Highlighting on the 5th September outcomes, he mentioned that achieving national goals, Sendai Framework and continuous enhancement of private public partnership in DRR-CCA is an important challenge in ASEAN. Vietnam is already prompting public-private partnership. Lao also try to enhance eco-policy for private sector including in DRR and CCA. Utilization of private sector resources and learning from other Member States could accelerate implementation of the work plan. He posed the question about how each country would implement the ACDM Focal Points of the work plan. Then he opened the floor up for comments.
Following are the additional ideas shared by the participants from the Member States on DRR and CCA integration:

- Thailand: The speaker raised the issue of collaboration between ministries at the national level that work under diverse mechanisms and responsibilities on DRR and CCA. How to integrate overlapping work plans is a big challenge? Different ministries in Thailand need to work on integration and coordination of action plans. He also mentioned the importance of learning from other member countries and sharing knowledge at the regional level.
- Lao PDR: Avoiding duplication of existing national and regional activities and enhancing coordination and cooperation between ministries and departments is essential for effective integration of DRR and CCA. The speaker addressed the need to include private partnerships at the national level regarding the ACDM Focal Points. He stressed the importance of including and engaging the private sector particularly for big investment projects and for resources for risk assessment. He also added that it is important to learn from other member nations.
    - Mr.Maeda stated the need at the national level for greater integration and coordination of budget allocation
- Malaysia: DRR and CCA should also be aligned with SDGs and it has been less discussed during the Regional Forum. Future development needed to be transformed by incorporating preparedness noting that that disaster and health outcomes should also be examined such as SDG targets on health could be used within this context and that sustainable development could be linked to DDR.
    - Mr. Maeda replied to the comment about SDGs saying that articles 9, 11, and 30 were relevant in this context. He also suggested that SDG indicators could be changed or adapted and then applied to the working plan. For example, indicators relating to climate change prevention and adaption.

- ASEAN Secretariat: There are not regional fund except ADMER funding which is used on request basis. We need to be clear about the purpose and mechanism of fund raising, whether fund raising refers to resource mobilization (monetary contribution, in-kind contribution) or capacity building. There should be a good system for communication among the Member States on fund raising issue.
    - Mr.Maeda responded to the question raised by the ASEAN Secretariat speaker regarding funding by explaining that the idea would be that funding would come from in kind contributions. First, the focus would be to put the working plan into action by 2018, and then attempts to enlarge the project would commence
- Co-chair of WG on P&M: Any plan we make should be implementable so the work plan should be prepared with this point in mind.

Following that the participants discussed about regional collaborative activities that will be beneficial for each ASEAM Member States and that could be implemented from 2018?

1) What/which good practices is useful for sharing? What do you want to learn from others?

Cambodia

- To share past disaster experiences among member states – case studies
- To share methodologies on data management and risk maps

Indonesia

- Good practices we can share are sharing data and information mechanism especially on DRR and CCA;
- Indonesia need to learn how to develop national policy on DRR and CCA integration among AMS, because we still have separated law and regulations on these;
- We need to learn community activities related to DRR and CCA integration from AMS by exchange program. The local actor should be the main priority.

Lao PDR

- We need common steps and milestones for sharing good practices and determine what could be achieved by each country within a given timeline and share it with everybody.
- Select pilot locality to check a range of aspects of good practices that could be shared for common understanding among all Member States. By this we could learn step by step.

Malaysia

- Sharing knowledge among the Member States on the conservation of bio diversity as part of river basin management.
- Collaborative discussion on transboundary river basin issues among Member States.
- Knowledge sharing on the financial or funding management system for DRR and CCA .

- Sharing on the land use and forest management by Member States.

Vietnam

- Cooperation mechanism among DRR & CCA agencies (how to work together between several committees (Maybe Indonesia have good mechanism).
- Data sharing mechanism especially for policy framework and risk assessment.

Thailand

- What could be implemented from 2018
- Learn from Member States on data collection and knowledge management for updating and sharing information gathered by various agencies.

2) What kind of facilitation mechanism do you want for that? Do you want to visit other Member States for that? Can you accept those requests from others?

Cambodia

- To make field trips to disaster-prone areas for case studies
- Formats/templates on disaster data management should be exchanged among member states.
- The NCDM can show how the close communication is done from communities to national level.
- The NCDM can show the current disaster data reporting system (PRISM: Platform for Real Time Integrated System) for other member states.

Indonesia

- We need to visit other member state regarding the exchange program.
- We need co-funding for implementing exchange program

Lao PDR

- Organize technical workshops to share good practices,
- Organize field visits (bilateral, regional as well as beyond ASEAN)
- Interactive web-platform that could be used not only for sharing information but also for interaction and contacting for further support,
- Need to find ways to align DRR and CCA integration Work Plan with global agreement such as Sendai Framework, SDGs and Paris Agreement on CC

Malaysia

- Sharing knowledge among the Member States on the conservation of bio diversity as part of river basin management.
- Collaborative research and pilot projects within ASEAN and technical assistance from International and advanced countries (who have good DRR and CCA practices). Funding via international support or co-funding among the ASEAN Member States.

- Collaborative discussion on transboundary river basin issues among Member States.
- Dialogues between related countries facilitated by ASEAN Working Group on Prevention and Mitigation.
- Knowledge sharing on the financial or funding management system for DRR and CCA. Discussions with advanced ASEAN Member States as well as International agencies and other advanced countries.
- Sharing on the land use and forest management by Member States: Collaborative discussions and research with advanced Asean countries, other advanced countries or International agencies on land use and forest management systems, including funding.

Vietnam

- Organize technical workshop to share good practices on DRR & CCA integration in ASEAN countries based on the needs of specific countries when
- We'd like to visit other Member States based on the pre-survey on DRR & CCA in other countries. (Now, Indonesia, The Philippines are candidates)

Thailand

- P&M is like a routine job we can work all the time, we have mechanism from national to local level as well as working group each for DRR and CCA. Sharing approaches to integrate activities and projects on DRR or CCA into DRR-CCA integrated framework is necessary but would like to know how to do that.

3) What kind of capacity building is the priority? What kind of technical assistance is needed?
(for the first question)

Cambodia

- Human resources development on data collection and analysis for preparation of risk maps
- Fundamental training programme for DRR and CCA integration

Indonesia

- Senior management trainee is required to improve our understanding on DRR and CCA integration. It should include line ministries that related to DRR and CCA.
- We still struggling with DRR mainstreaming, so that we require technical assistance on mainstreaming the integration on DRR and CCA

Lao PDR

- Bring Member States to learn planning and assessment of DRR and CCA. The technical assistance should not be just limited among member countries but could go beyond ASEAN such as learning from Japan

Malaysia

- Capacity building on climate change (prevention, mitigation and adaptation).

- Technical assistance and sharing of expertise on the analysis of data especially for disaster forecasting.

Vietnam

- How to integrate DRR & CCA in the legal document for example, new or revise law, revise law, strategies, degree, regulation and plans etc.
- Monitoring and evaluation on DRR & CCA integration of the legal documents (for the second question)
- To develop indicator sets and methods for monitoring and evaluation on DRR & CCA integration
- To implement pilot project to test the indicator sets, and monitoring and evaluation on DRR & CCA integration

Thailand

- We need organization at the ASEAN level such as CITC (Climate Change International Technical and Training Center) as a one-stop technical and training support on CCA related capacity building. For Disaster we have is AHA Center as a knowledge hub and as training center. We need to find ways for these or similar organization to work together in reality.
- We have different line ministries and there are national laws for disaster (DDPM Act) and climate change adaptation, often overlapping each other. Other ministry such as environment also invite DDPM. Similarly, RID is under agriculture and cooperative ministry while TMD is under information and communication ministry. So the main issue is how the merge and coordinate each other activities in a meaningful way.

4) What data sharing is beneficial? Risk assessment and hazard and risk mapping methodologies? An indicator set for monitoring and assessment of the impact of climate change on disaster?

Cambodia

- Methodologies for preparation of risk mapping
- Standardized reporting templates from line ministries for data collection
- The NCDM can share the current operation of subnational disaster reporting system from the local levels to the central levels.

Indonesia

- From our perspective, risk assessment and risk mapping data sharing are compulsory.
- We can exchange methodologies to enrich our Risk Assessment and mapping, also with the indicator set for monitoring and assessment of the impact of CC on disaster.

Lao PDR

- Support on development of common methodology, standards, and tools for data sharing which each country can use and implement for data generation and sharing

Malaysia

- Disaster forecasting for risk transfer.

Vietnam

- Hydro-meteorological data
- Scenario of climate change
- Strategy for DRR & CCA integration

5) What about potential experiences/support/supply you can provide among ASEAN Member State?

Cambodia

- Cambodia can provide other member states with new disaster related research findings especially experiences on flood.
- Cambodia welcomes field trips from other member states for case study. The NCDM can arrange field visit to disaster-prone areas

Indonesia

- We accept requests from other member states to come to our country and we can support technical assistance related to DRR activities such as how to develop risk assessment (methodology, practices), information sharing system, field visit to local community which has the best practice on DRR and CCA movement, etc. We also able to send our expert to other Member Countries.

Lao PDR

N/A

Malaysia

- Knowledge sharing on the financial or funding management system for DRR and CCA. Discussions with advanced ASEAN Member States as well as International agencies and other advanced countries.

- Sharing on the land use and forest management by Member States: Collaborative discussions and research with advanced ASEAN countries, other advanced countries or International agencies on land use and forest management systems, including funding.

Vietnam

- We can accept the delegates (trainee) from other ASEAN countries (Actually, we have received them before) on following:
  - CBDRM (community based disaster risk management)
  - Disaster management system in Vietnam
  - Documents of DRR

Thailand

N/A

Conclusion of the Regional Forum

Mr. Maeda thanked the participants for their input. Then moved on to reviewing the draft of the “Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration” which had been streamlined and input had been incorporated since the beginning of the meeting today.

In the concluding remarks,
Concluding remarks (Lao PDR): He thanked the participants for a good discussion, their proactive contributions, and stated that all inputs will continue to be developed and incorporated into the draft of the work plan and considered at the working groups. The draft will be circulated to all member states for comments before it is proposed to be endorsed in October. After the plan is endorsed, there will be a senior forum in November to discuss the implementation of the work plan. He thanked all the participants.

Both co-Chairs of the ASEAN Working Group on Prevention and Mitigation Working Group, Mr. Chainarong Vasanasomsithi and Mr.Vilayphong Sisomvang, thanked all participants, including participatns from ASEAN Member states, AHA Centerfor their proactive discussion and invaluable contributions to develop the work plan. They stated that the work plan will be continued to be developed and refined with the help of the JICA Project Team, ACDM Working Group on Prevention and Mitigation (WG on P&M) and drafts will be circulated to all Member States for comments before its endorsement. Co-Chairs will report work plan at the 31st ACDM meeting and included at the ACDM Chairs report in October and later on at the Senior Official-Level Forum (SOLF) in November for the endorsement.

Then after they thanked Mr.Toshijo Maeda and JICA Project Team for his good facilitation and hard work to support in organizing the forum. They then thanked Mr. Atsushi Soma, Deputy Director, Disaster Risk Reduction Team 1, Global Environment Department, JICA for his support and for joining the Regional Forum. They then thanked Mr.Hitoshi Baba, Senior Advisor, JICA for his contribution to the work plan and for sharing concept for integrating DRR and CCA to the participants.

The co-Chairs thanked Government of Thailand for venue and local support for organizing the Regional Forum.

添付資料 17：DRR と CCA の統合に関する制度･政策枠組み強化のための高級官僚レベル会合記録

目次

添付資料 17:DRRとCCAの統合に関する制度・政策枠組み強化のための高級官僚レベル会合

SENIOR OFFICIAL-LEVEL FORUM FOR STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION

Thursday, 16 November 2017
National Agency for Disaster Management (BNPB), Jakarta, Indonesia

BACKGROUND

The Concept Note No. 20 [CN20] for **Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration** is one of the Flagship and Priority Projects under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015). The concept of strengthening institutional capacity and policy frameworks for effective implementation of DRR and CCA actions is succeeded in the Priority Programme No. 3. ADVANCE: A Disaster Resilient and Climate Adaptive ASEAN Community under the AADMER Work Programme 2016-2020.

The CN20 Project currently being implemented by JICA Project Team during 2016-2017 aims to support the ACDM Working Group on Prevention and Mitigation (WG-P&M) in setting the direction and designing a roadmap to realise these concepts. The Project Team has completed a baseline study to assess the degree of DRR and CCA integration in each ASEAN Member State (AMS) and has organised three National Workshops in Myanmar, Viet Nam and the Philippines in May-July 2017. Subsequently, a Regional Forum on 5-6 September 2017 and the 8th Meeting of the ACDM WG-P&M on 7 September 2017, in Bangkok, Thailand were held to discuss the contents and immediate collaborative activities of the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration (hereinafter, Work Plan). The Work Plan was reviewed and endorsed by Co-Chairs and Members of the Working Groupon 22 September 2017, the ACDM on 5 October 2017.

OBJECTIVES

The Senior Official-Level Forum will provide an opportunity to:

1) Share good practices of DRR and CCA integration in AMS;
2) Explore linkages and entry points for collaborative engagement on DRR and CCA across relevant ministries/agencies; and
3) Prioritise immediate collaborative activities of the Work Plan and commence its implementation.

Reference: *Agreed immediate collaborative activities in the Regional Forum on 5-6 September 2017:*

Knowledge sharing and training on:

- *Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level;*
- *Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level;*
- *Building capacity for accessing regional and global funds for integrating DRR and CCA;*
- *Measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies; and*
- *Developing guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA.*

TARGET PARTICIPANTS

A total of about 60 participants from relevant ministries/agencies working on DRR and CCA.

Five (5) persons per ASEAN Member State, including one (1) Director General-level from the national disaster management office and four (4) senior officials from disaster management, environment/climate change agencies responsible for climate change impact assessment, and other DRR line agencies (e.g. hydro-meteorological agency, water resources management agency, public works agency for flood risk reduction, etc.).

SENIOR OFFICIAL-LEVEL FORUM FOR STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION

Thursday, 16 November 2017
15th Floor, Ballroom, National Agency for Disaster Management (BNPB), Jakarta, Indonesia

PROVISIONAL AGENDA

Thursday, 16 November 2017

07:45	*Bus departs from the hotel to BNPB*
08:30-09:00	*Registration*
09:00-09:20	**Opening Remarks** • Co-Chairs of Working Group on Prevention & Mitigation • Head of Legal and Cooperation Bureau, Badan Nasional Penanggulangan Bencana (BNPB) Self-introduction of the participants
9:20-9:50	**Session 1: Outlining the Work Plan** *Plenary discussion:* • Outline of the Work Plan o Introducing the outline of the Work Plan including the immediate collaborative activities: Co-Chairs of the WG on P&M • Main outputs of the CN20 Project o Highlighting main outputs of the country assessments, workshops, and the good practices: JICA Project Team
9:50-10:10	*Photo session and coffee break*
10:10-12:00	**Session 2: What are possible contributions to the immediate collaborative activities?** *Each country presents possible contribution and expectation to the immediate collaborative activities. [10 min/each]*
12:00-13:00	*Lunch break*
13:00-13:30	***Special Programme;*** *Visiting AHA Centre (13F) and BNPB Operation & Management Centre (11F) & Diorama (12F)*
13:30-15:20	**Session 3: How can the immediate collaborative activities be implemented practically?** *Group discussion followed by plenary discussion facilitated by the Co-Chairs of the WG on P&M:* *Participants discuss practical approaches to implement the immediate collaborative activities by matching the possible contributions and expectations expressed by each country and prioritising them.*

	• Group discussion *[50 min]* • Plenary discussion *[60 min]*
15:20-15:50	*Coffee break*
15:50-16:50	**Session 4: Today is the date to start it!** *Plenary discussion facilitated by the Co-Chairs of the WG on P&M:* *Participants discuss the summary of the Senior Official-Level Forum and adopt its output document.* • Commitment expression to implement the prioritised immediate collaborative activities of the Work Plan • Adoption of the output document
16:50-17:00	**Closing Remarks** • *Co-Chairs of the WG on Prevention and Mitigation*
17:30	*Bus departs for the hotel*

Senior Official-Level Forum for Strengthening Institutional and Policy Framework on DRR and CCA Integration
Participants' List

(16 November 2017 Jakarta, Indonesia)

Country	Name	Position/Affiliation
Indonesia	Mr Dicky Fabrian	Head of Legal and Cooperation Bureau, Badan Nasional Penanggulangan Bencana (BNPB)
	Ms Lilik Kurniawan	Director of Disaster Risk Reduction, BNPB
	Mrs Rucky Dewi	Head Division of International Cooperation, Legal and Cooperation Bureau, BNPB
	Ms Maulidya Indah	Head of Planning Infrastructure Development Agency (BPIW), Ministry of Public Works and Housing
	Mrs Gita Yulianti Suwandi	Head Section for Risk Management, BNPB
	Ms Tri Utami Handayaningsih	Analyst, BNPB
Lao PDR	Mr Vilayphong Sisomvang (Co-Chair)	Deputy Director General, Disaster Management Division, Social Welfare Department, Ministry of Labour and Social Welfare
	Mr Sombath Douangsavanh	Senior Cooperation officer, Disaster Management Division, Social Welfare Department, Ministry of Labour and Social Welfare
	Mr MONGPHACHAN Somvan	Deputy Director General, Ministry of Public Work and Transportation
	Mr Vithaya Somphanh	Director of Climate and Agro-Meteorological Division,
	Mr Malabou Baylatry	Deputy of Disaster Risk Reduction Division, Department of Climate Change, Ministry of Natural Resources and Environment
Malaysia	Mrs Ir. Bibi Zarina Binti Che Omar	Director of Mitigation Division, National Disaster Management Agency (NADMA) Malaysia Prime Minister's Department
	Ir Amiruddin Bin Alaldin	Director of Operation, Stormwater Management and Road Tunnel (SMART) Control Center
	Ms Anita Binti Ainan	Senior Assistant Director, Department of Irrigation and Drainage Malaysia
	Ms Che Siti Noor Binti Che Mamat	Principal Assistant Director, National Disaster Management Agency
	Mr Khairul Anam Bin Musa	Research Officer, National Hydraulic Research Institute (NAHRIM), institute under Ministry of Natural Resources and Environment (NRE)
Myanmar	Ms Phyu Lai Lai Htun	Director, Relief and Resettlement Department
	Dr Ni Ni Aung	Director, Ministry of Environment Conservation and Forestry
	Ms Ei Shwe Sin Win	Staff Officer. Relief and Resettlement Department
Philippines	Engr. Maria Visna Mar Manio	Director III, Department of Public Works and Highways (DPWH)
	Ms Alicias Myrabeth Escobar	Civil Defense Officer II
	Dr Esperanza O. Cayanan	Weather Services Chief/PAGASA-DOST
Singapore	Mr Chua Swee Leong, Eric	Division Commander. 3rd SCDF Division, Singapore Civil Defense Force
	Ms Nai Ying Chan	Strategic Planning Department, Singapore Civil Defense Force / SSO International Projects
Thailand	Mr Saharat Wongsakulwiwat (Co-Chair)	Director of Research and International Cooperation Bureau, Department of Disaster Prevention and Mitigation (DDPM)
	Mrs Suttapak Suksabai	Policy and Plan Analyst, Research and International Cooperation Bureau, DDPM
	Ms Chayathorn Thanawattanadamrong	Technical expert, Thailand Greenhouse Gas Management Organization (Public organization) / Capacity Building and Outreach Office)
	Ms Chompunut Songkhao	Environmental Official Practitioner Level, Office of Natural Resoureces and Environmental Policy and Planning
	Mr Somkid Saphaokham	Director, Upper Northern Irrigation Hydrology Center, Hydrologist Senior Professional Level
Vietnam	Mr Dang Quang Minh	Acting Director of Department of Community based Disaster Risk Management, Vietnam Disaster Management Authority
	Mr Khuat Duy Truyen	Vice Director of Division, Forest Protection Department, MARD
	Ms Nguyen Thi Thu Ha	Disaster Management Policy and Technology Center
ASEAN Secretariat	Ms Intani Kusuma	Technical Officer, Disaster Management and Humanitarian Assistance Division
JICA	Mr Shuichi Hirayama	Project Formulation Advisor (ASEAN Partnership)
	Mr Naoto Tada	JICA Expert at BNPB, Indonesia
Project Team	Mr Toshizo Maeda	JICA Project Team/IGES
	Mr Takashi Furukawa	JICA Project Team/CTII
	Mr Hirokazu Sakai	JICA Project Team/CTII
	Mr Takehiko Ogawa	JICA Project Team/CTII
	Mr Prabhakar Sivapuram	JICA Project Team/IGES
	Mr Binaya Raj Shivakoti	JICA Project Team/IGES
	Mr Makoto Tsukiji	JICA Project Team/IGES
	Mr Muchtar Muchamad	Local Consultant
	Ms Wannapa Srichai	JICA Project Team/IGES

添付資料17

Project for Strengthening Institutional and Policy Framework on DRR and CCA Integration [CN20 Project]

Senior Official-Level Forum

16 November 2017, Jakarta, Indonesia

Objectives of the CN20 Project

The aims of the project are:

(i) Strengthen institutional and policy frameworks for DRR and CCA;
(ii) Enhance the integrated planning for DRR through the implementation of **national development plans and action plans that integrate DRR and CCA at all level**; and
(iii) **Build partnership** in linking DRR and CCA at all levels.

The specific objectives are:

(a) Promote the development of umbrella laws and regulations that govern the integration and synchronisation of DDR and CCA in Member States;
(b) **Foster relationships** between national ministries and agencies responsible for DRR and CCA;
(c) Facilitate the establishment of a clear institutional and policy framework on DRR and CCA integration in Member States;
(d) Strengthen participatory **risk assessment**, incorporating disaster and climate risks as a basis for decision-making;
(e) Promote the development of joint funding mechanisms for both DRR and CCA at the national level; and
(f) Support **joint training, meetings**, and other opportunities for increased interaction and cooperation.

Expected Outputs of the CN20 Project

Expected output	Activity
1. Documentation of **good practices** in institutional strengthening and policy development on linking DRR and CCA in ASEAN Member States	1.1. **National workshop** on *good practices in integrated plan and policy development, funding mechanisms; and risk assessments for DRR and CCA* in the Member States 1.2. ***Identification of common approaches*** to strengthen institutional and policy development for DRR and CCA 1.3. ***Synthesis, analysis and recommendations*** 1.4. Drafting and publication of One Against Disaster and Climate Risks
2. **Assessment** of the implementation of national action plans on DRR and CCA and the effectiveness of national platforms	2.1. **National workshop** *to review the progress of the implementation of the national action plan on DRR and CCA* 2.2. Organisation and conduct of **a regional forum** on the progress and lessons learned by the Member States 2.3. Documentation of the outcomes of national workshops and the regional forum
3. **Senior official-level roundtable discussions** on policy and programme interventions to strengthen the connection and coherence of DRR and CCA efforts at all level	3.1. Preparatory meetings for the senior official-level forum, including arrangement with media 3.2. Holding of **the senior official-level forum** with broadcast media coverage

Implementation Flow of the CN20 Project

2nd Project Steering Committee	*July 27, 2016, Bangkok*	**[Inception Report]**
1st Field Study	Aug 1-12, **Thailand**; Aug 15-26, **Lao PDR**	***Baseline study***
2nd Field Study	Sep 19-30, **Myanmar**; Oct 3-14, **Cambodia**	
3rd Field Study	Nov 14-25, **Viet Nam**; Nov 28-Dec 7, **Malaysia**; Dec 8-9, **Singapore**; Dec 12-14, **Brunei Darussalam**	
3rd PSC Meeting	*Dec 7, Vientiane*	
4th Field Study	Jan 9-20, 2017, **Indonesia**; Jan 23-Feb 3, **the Philippines**	
4th PSC Meeting	*March 1, Bangkok*	**[Draft Progress Report]**
30th ACDM Meeting	April 4, Vientiane	**[Progress Report]**
National Workshops	**May 31, Myanmar; July 6, Viet Nam; July 12, Philippines**	
5th & 6th PSC Meetings	*July 6 & Sep 4, Bangkok*	
Regional Forum	**Sep 5-6, Bangkok**	**Draft Work Plan**
31st ACDM Mtg, 5th AMMDM	Oct 17-19, Lao PDR	**Endorsement of the Work Plan**
7th PSC Meeting	*Nov 15, Jakarta*	*We are here!*
Senior Official-Level Forum	**Nov 16, Jakarta**	**[Publication of Good Practices]**
8th PSC Meeting	*Dec, Bangkok*	**[Draft Final Report]**

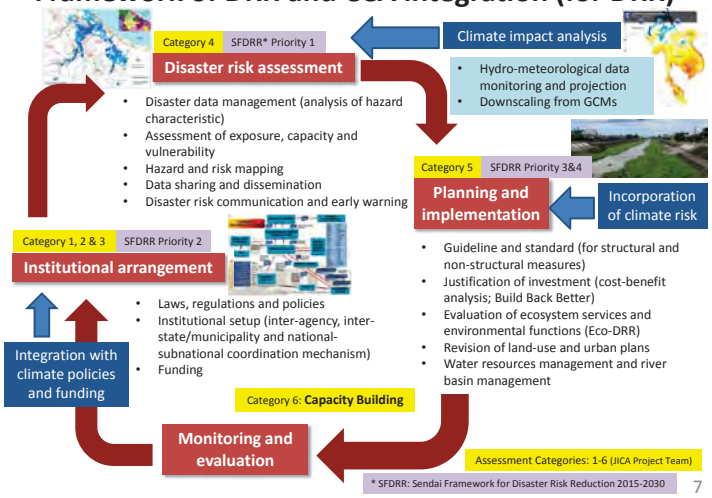
Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
1. Laws, regulations and policies	1) National development plan 2) DRR laws 3) CCA laws 4) Relevant sectoral laws	• DRR and CCA concepts are incorporated • DRR, CCA and relevant sectoral laws, regulations and policies are enforced • DRR and CCA are mainstreamed in each ministry's policies
2. Institutional arrangement	1) National DRM system 2) National CCA system 3) Transboundary DRM	• National DRM and CCA committees have been set up for inter-ministerial coordination • A multi-stakeholder transboundary DRM system has been set up
3. Financial arrangement	1) Funding for DRR 2) Funding for CCA 3) Payment for ecosystem services (PES)	• Funds are allocated for DRR and CCA activities with a monitoring and tracking system • PES is implemented based on the economic evaluation
4. Risk assessment	1) Disaster database 2) Hydro-meteorological data management and climate risk analysis 3) Hazard and risk mapping 4) Data sharing and dissemination	• Disaster database is recorded and used for science-based analysis • Climate risk is analysed based on hydro-meteorological data monitoring and downscaling from Global Climate Models • Hazard and risk maps are prepared by assessing the damages of past disasters and the capacity and vulnerability of local authorities

Assessment Framework of DRR and CCA Integration

Assessment category		Evaluation criteria
5. Planning and implementation	1) Guideline and standard 2) Land-use and urban planning 3) Disaster-resilient Investment 4) Drought risk reduction	• Guidelines and standards incorporating disaster and climate risk are developed and used • Land-use and urban plans are prepared by incorporating disaster and climate risk and with evaluation of ecosystem services • Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner • Drought risk reduction measures including water resources management and agricultural measures are implemented
6. Capacity building	1) DRR and CCA training 2) Sector-wise training	• DRR and CCA trainings for national and local government officials and other stakeholders are provided • Special training programmes are implemented for specific purposes such as a climate school for farmers

Framework of DRR and CCA integration (for DRR)



Main Findings of the Field Study in ASEAN (1)

Category	Evaluation *(and issues)*
1. Laws, regulations and policies	• DRR and CCA concepts are incorporated individually in national development plans except in the Philippines and Lao PDR wherein both concepts are integrated • Legal framework for DRR and CCA is *composed of several legal documents but not integrated* in all Member States.
2. Institutional arrangement	• Vertical and horizontal DRM systems and CCA systems and related legal frameworks have been developed in all Member States. However, *integration of those systems and legal frameworks is lacking or insufficient.* Indonesia and Malaysia have better conditions in these aspects.
3. Financial arrangement	• *Funding for DRR and CCA activities is insufficient* in general. Better countries are Indonesia and the Philippines for DRR and CCA and Viet Nam for forest management.
4. Risk assessment	• Some countries have developed disaster database including Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam. • All Member States have hydro-meteorological data management system. However, *some counties have a problem of insufficient coverage of the observation stations such as in upstream river basins and rural areas*. Countries of better condition are Malaysia, Singapore, Thailand and Viet Nam. *Hydro-meteorological data sharing of international rivers is insufficient* (except in the Lower Mekong River).

Main Findings of the Field Study in ASEAN (2)

添付資料1

Category	Evaluation *(and issues)*
4. Risk assessment *(cont.)*	• Some countries have downscaled from GCMs including Indonesia, Malaysia, the Philippines, Singapore and Viet Nam. *There are no standard values of climate change impacts set in the Member States yet.* • Flood hazard maps or risk maps without incorporating climate risk are prepared in Brunei Darussalam, Malaysia, the Philippines, Thailand and Viet Nam, but *their resolution is insufficient for DRR and preparedness planning* in general. Malaysia and Viet Nam have prepared flood hazard maps with climate change impacts in some areas. *Hazard maps or risk maps of landslide are generally insufficient* (relatively better countries: Indonesia, the Philippines and Thailand). *Storm surge and drought hazard maps or risk maps are generally insufficient.*
5. Planning and implementation	• *DRR planning and implementation without considering CC impacts are insufficient* in general (better country: Malaysia). *DRR planning and implementation with CCA is lacking or insufficient* in general (countries with good practices or potential good ones: Brunei Darussalam, Indonesia, the Philippines, Singapore and Viet Nam). *Guiding tools for planning and implementation including the related risk assessment etc. is lacking.*
6. Capacity building	• *Integrated DRR and CCA training is rarely conducted* except in Indonesia. Community-based DRM are conducted in most Member States. Climate field schools which train farmers to use weather forecast for agriculture are successful in Indonesia, Myanmar and the Philippines.

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Results of the National Workshops

Myanmar – May 31
Viet Nam – July 6
Philippines – July 12
and the Regional Forum, 5-6 Sep 2017


Main outputs of the National WS in Myanmar (May 31, 2017)

Key issues and necessary actions in Myanmar	Expectations to ASEAN
Laws/ Regulations/ Policies ● Integration of DRR and CCA policies and plans ● Development of relevant sectoral laws and regulations	● Clarification of the effect of DRR and CCA integration in other ASEAN countries
Institutional Arrangement ● National coordination mechanism (weak coordination and cooperation among implementing activities, particularly for river basin management from upstream to downstream to manage flood, drought and landslide risks and sedimentation) ● Mainstreaming DRR and CCA in each ministry (by appointing a focal unit in each department and exchanging staff between the RRD and line ministries) ● Strengthening the functions of committees at district and township levels to deal with DRR and CCA issues	• Coordination mechanism for DRR and CCA integration **Knowledge sharing on good practices of policies, institutional arrangement and funding**
Funding ● Insufficient funds for DRR activities in line ministries (the National Disaster Management Fund is mostly for response, recovery and reconstruction; not for prevention and mitigation) ● Lack of funds for CCA ● Budget tagging of DRR and CCA expenditures ● No payment system for environmental conservation	● Resource mobilisation methods in other ASEAN counties ● Fund raising by an ASEAN-wide approach


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Risk Assessment ● Integration of disaster database with all sectors ● Improved hydro-met monitoring system for flood and drought (incl. groundwater monitoring) ● Climate risk analysis capacity incl. downscaling from GCMs ● Monitoring system for landslide ● Insufficient hazard maps and risk maps ● Improved data accuracy and reliability ● Dam safety against floods; flood risk assessment for each basin ● Improved early warning and communication systems at local level ● Require cost-benefit analysis of DRR and CCA expenditures to justify the investment	● Data sharing among ASEAN countries with a unified standard (by establishing a regional responsible body) Regional climate models for ASEAN ● Hazard mapping and risk assessment technology ● Flood risk assessment for dam safety ● Salinity intrusion monitoring and analysis ● Cost-benefit analysis of DRR and CCA expenditures **risk assessment methods and technology** **Justification of DRR and CCA investment**
Planning and Implementation ● Sectoral planning capacity of each ministry ● Climate and disaster resilient design of infrastructures (for reducing the long-term maintenance cost) ● Urban and land-use plan with DRR and CCA ● Slope protection methodology ● Catchment (river basin) management against drought; water storage facilities ● Climate smart agriculture, crops diversification	● To develop guiding tools for integrating DRR and CCA (and build capacity by implementing a pilot project using it) Slope protection pilot projects ● Climate smart agriculture **Guiding tools for climate and disaster resilient design**
Capacity Building ● Education of DRR and CCA; development of curriculums for schools ● Public awareness with easy to understand materials ● Training of trainers and experts ● Usage of ICT equipment	● Training and capacity building Technical assistance ● Exchange program **Training opportunities; education and public awareness**

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Main outputs of the National Workshops in Myanmar, Viet Nam and the Philippines

Category	Necessary national activities	Expected regional activities
Institutional development		
Policies, laws and regulations	• Strict issuances of environment compliance certificate, building permits, no build zones and safe zones; • Development of relevant sectoral laws and regulations; • Integration of DRR and CCA policies and plans	• **Share the effects of DRR and CCA integration**
Management system	• Strict implementation of integrated water resources management (IWRM) through coordination of relevant agencies; • River basin management for drought, flood and landslide risk and sedimentation management; • Coordination between DRR and CCA national committees and the focal points; • Mainstreaming DRR and CCA in each ministry by appointing a focal unit; • Strengthening the functions of subnational committees for DRR and CCA	• **Share coordination mechanisms of DRR and CCA integration**
Financial arrangement	• Increase funds for DRR and CCA activities; • Budget tagging of DRR and CCA expenditures; • Develop a payment system for environmental conservation	• **Share resource mobilisation methods;** • **Fund raising by an ASEAN-wide approach**

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Risk assessment		
Data management	• Set up a central database and a data sharing system through coordination of relevant agencies; • Upgrade and increase the coverage of hydro-meteorological monitoring system (groundwater monitoring system too) and mobilise social capital and private funds for that	• **Establish standardised database and a data sharing system;** • **Share experiences on database development and management**
Climate risk analysis	• Build capacity on sectoral climate impact modelling and socio-economic impact analysis; • Improve climate risk analysis capacity including downscaling from global climate models	• **Share climate risk assessment and modelling methodologies;** • **Standardise the methodologies;** • **Develop a regional climate model**
Hazard and risk mapping	• Integration of climate projections to geo-hazard maps; • Provision of high resolution base maps covering the entire country; • Provision of simplified guidelines and standards for hazard mapping and risk assessment; • Capacitate subnational governments' access and usage of database and tools; • Monitoring system for landslide	• **Share hazard mapping and risk assessment technologies;** • **Share salinity intrusion monitoring and analysis system**

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Planning and implementation		
Guideline and standard	• Update sectoral design, guideline and standard incorporating climate risk; • Translate climate projection to flood return periods; • Improve dam safety against floods; • Train national and local government officials to capacitate designs of water-related structures; • Updated training programmes for community-based DRM based on past experiences	• **Share guidelines, standards, planning methods and good practices and benchmark it;** • **Share dam management protocols and flood risk assessment methods;** • **Experts exchange programmes and cross-visits for learning and actual observation**
Land-use and urban planning	• Strengthen monitoring and evaluation of local development plans in accordance with the comprehensive land-use plan, zoning ordinance and national building code	• **Share monitoring and evaluation mechanism of land-use plan, zoning ordinance and building code**
Disaster resilient investment	• Further promotion of forest protection and rehabilitation; • Prioritisation of development projects based on risk levels; • Cost-benefit analysis of DRR and CCA expenditures to justify the investment	• **Training for geo-technical measures for flood- and landslide-prone areas; slope protection methods;** • **Capacity building for coastal zone management;** • **Share cost-benefit analysis of DRR and CCA measures**

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Main points discussed at the Regional Forum

Formulation of the Work Plan:

- Objectives
- Roles and responsibilities of:
  - ACDM Working Group on Prevention and Mitigation
  - Each ACDM focal point
- Items to be reported by the ACDM focal point annually
- Immediate collaborative activities
  - What/which good practices is useful for sharing? What do you want to learn from others?
  - What kind of facilitation mechanism do you want? Do you want to visit other Member States? Can you accept requests from others?
  - What kind of capacity building is the priority? What kind of technical assistance is needed?
  - What data sharing is beneficial?
  - What experiences/support/supply you can share?

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Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration

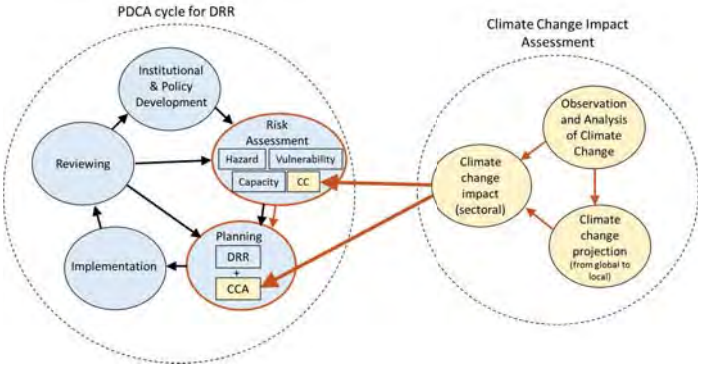
Endorsed by the 31st ACDM Meeting
on 17 October 2017 in Luang Prabang, Lao PDR

CHAIRMAN'S STATEMENT OF THE SIXTH MEETING OF THE CONFERENCE OF THE PARTIES TO THE ASEAN AGREEMENT ON DISASTER MANAGEMENT AND EMERGENCY RESPONSE AND THE FIFTH ASEAN MINISTERIAL MEETING ON DISASTER MANAGEMENT

19 October 2017
Luang Prabang, Lao PDR

4. **The Ministers noted with satisfaction the accomplishment across all the priority programmes of the AADMER 2016-2020 Work Programme that include** the adoption of the Risk and Vulnerability Assessment Guidelines, the AADMER Monitoring and Evaluation Framework, the convening of the 1st ASEAN Recovery Forum, the Framework for ASEAN Standardisation and Certification for Expertise on Disaster Management (ASCEND), the completion of the Disaster Emergency Logistic System of ASEAN (DELSA) Phase I Project, completion of the ASEAN Disaster Risk Financing and Insurance (DRFI) Programme Phase 1, Development of the Guideline for Urban Resilience, **the Work Plan for Strengthening Institutional and Policy Framework on Disaster Risk Reduction and Climate Change Adaptation**, as well as the convening of the 2017 ASEAN Strategic Policy Dialogue on Disaster Management.

Schematic Image of DRR and CCA Integration



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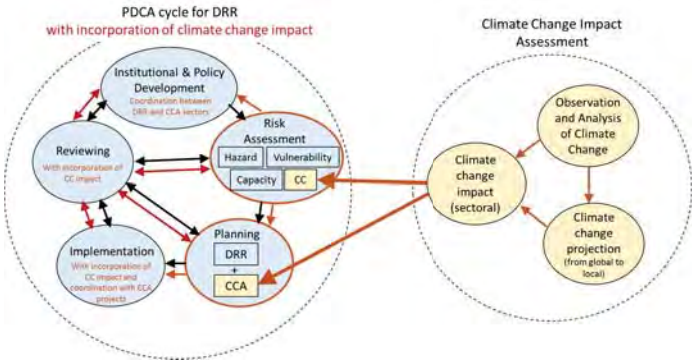
Schematic Image of DRR and CCA Integration



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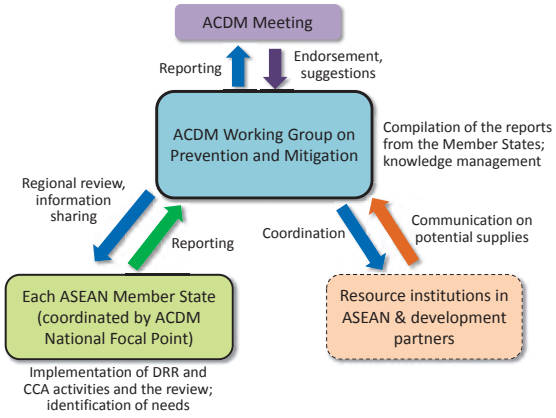
Implementation Structure of the Work Plan



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1. Institutional and policy development

1-1 Policies, laws and regulations

Category	Review point	Status and progress
National socio-economic development plan	DRR and CCA concepts are incorporated in the **national socio-economic development plan** and the prospect in a new plan	
DRR and CCA laws and regulations	**DRR-related laws and regulations** are enacted and enforced with consideration of CCA; DRR is mainstreamed in each ministry's policies	
	CCA-related laws and regulations are enacted and enforced with consideration of DRR; CCA is mainstreamed in each ministry's policies	
DRR and CCA related sectoral laws and regulations	DRR and CCA concepts are incorporated in relevant **sectoral laws and regulations** pertaining to land-use and urban plans, building codes, water resources and river basin management, forestry management, etc.	

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1-2 Management system

Category	Review point	Status and progress
National and sub-national DRR and CCA management systems	A **national DRM committee** has been setup for inter-ministerial coordination which also coordinates with the national CCA committee	
	A **national-subnational DRM system** has been setup for integrated DRM; Number of local governments that integrate DRR and CCA in their development plans	
	A **national CCA committee** has been setup for inter-ministerial coordination which also coordinates with the national DRM committee	
	A **transboundary DRM system** has been setup for flood, storm, landslide and drought by engaging multiple agencies and local governments	

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1-3 Financial arrangement

Category	Review point	Status and progress
Regular budgetary arrangements of line ministries for DRR and CCA	**Regular budget** is sufficiently allocated for DRR and CCA activities in each ministry/agency; A **budget tagging** or **monitoring system** for DRR- and CCA-related expenditures is introduced	
Special funds for local and community-based DRR and CCA activities	Special funds are allocated for **local and community-based DRR and CCA** activities	
Payment for ecosystems (PES) and insurance scheme	**PES** is implemented based on the economic assessment (relevant regulations; number of sites; budget; engagement of the private sector and communities, etc.)	
	Insurance scheme for agricultural products is implemented based on the economic assessment (number of the schemes; coverage areas; budget, etc.)	

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2. Risk assessment
2.1 Climate change impact assessment

Category	Review point	Status and progress
Observation and analysis of hydro-meteorological data	**Disaster data** is recorded and used for science-based analysis (data sharing and monitoring system; number of hydro-meteorological observation stations and their coverage; manual, automatic or telemetric system)	
Climate change projection	**Climate risk** is analysed based on hydro-meteorological data monitoring and downscaling from Global and Regional Climate Models (GCMs and RCMs)	
	Scenario for climate change (rainfall, sea level rise, etc.) is developed	
Standard values of CC impact	**Standard values of climate change impact** is determined with the aerial coverage	

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2.2 Hazard and risk mapping

Category	Review point	Status and progress
Hazard and risk mapping of flood, storm surge, landslide and drought	**Hazard maps and risk maps** for flood, storm surge, landslide and drought are prepared by assessing the damages of the past disasters, the capacity and vulnerability of local authorities and communities, and the climate risk and these maps are provided **with high resolution for local land-use planning** (coverage area; scale; accuracy; with/without climate change impact assessment)	

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3. Planning and implementation
3.1 Disaster risk reduction

Category	Review point	Status and progress
DRR plans and projects for flood, storm, landslide and drought with incorporation of climate change impact assessment	**DRR plans** for flood, storm and landslide are developed and implemented with structural and non-structural measures with incorporation of climate change impact assessment	
	Land-use and urban plans are prepared by incorporating disaster and climate risk and with an assessment of ecosystem services	
	Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner	
	Drought risk reduction plans including water resources management and agricultural measures are implemented	

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3.2 Standard guidelines for disaster and climate risk assessment and planning

Category	Review point	Status and progress
Standard guidelines for disaster and climate risk assessment and planning	**Guidelines and standards** incorporating disaster and climate risk are developed and used for planning	

4. Monitoring and evaluation
4.1 Data management

Category	Review point	Status and progress
Data management	Basic **disaster, hydro-meteorological, risk, vulnerability and socio-economic data** are updated periodically and shared with relevant agencies for synthetic analysis and decision-making	

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4.2 Reviewing

Category	Review point	Status and progress
Reviewing	DRR and CCA related plans and activities are **periodically reviewed** for close coordination and knowledge sharing among relevant agencies	

4.3 Capacity building and needs assessment

Category	Review point	Status and progress
Capacity building and needs assessment	Based on the reviewing results, **capacity building needs are identified** and **corresponding training programmes are arranged** using domestic resources; other required external technical assistances and identified resource institutions and agencies possible to provide capacity building services regionally are reported to the ACDM Working Group on Prevention and Mitigation	

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Work Plan: Agreed immediate collaborative activities

Knowledge sharing and training on: *(Possible contribution and expectation)*	Targets	Planned activities	
		2018	2019-2020
Capacity building for **planning and implementation** of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for **risk assessment and risk mapping** at the local level			
Integration of DRR and CCA **laws and regulations**, where applicable, with **coordination of relevant agencies** for the effective implementation at the national and sectoral level			
Building capacity for **accessing regional and global funds** for integrating DRR and CCA			
Measures to **share skills, knowledge and data** on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies			
Developing **guidelines and tools with indicators** for **monitoring and evaluation** of programmes, policies and projects on integration of DRR and CCA			

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Annual Progress Report of the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration in each ASEAN Member State

Date:

Name and title:

Agency:

Country:

1. Institutional and policy development

1-1 Policies, laws and regulations

Category	Review point	Name of plan/law/regulation	Status and progress
National socio-economic development plan	DRR and CCA concepts are incorporated in the national socio-economic development plan and the prospect in a new plan		
DRR and CCA laws and regulations	DRR-related laws and regulations are enacted and enforced with consideration of CCA; DRR is mainstreamed in each ministry's policies		
	CCA-related laws and regulations are enacted and enforced with consideration of DRR; CCA is mainstreamed in each ministry's policies		
DRR and CCA related sectoral laws and regulations	DRR and CCA concepts are incorporated in relevant sectoral laws and regulations pertaining to land-use and urban plans, building codes, water resources and river basin management, forestry management, etc.		

1-2 Management system

Category	Review point	Organisational structure and staffing	Status and progress
National and sub-national DRR and CCA management systems	A national DRM committee has been setup for inter-ministerial coordination which also coordinates with the national CCA committee		
	A national-subnational DRM system has been setup for integrated DRM; Number of local governments that integrate DRR and CCA in their development plans		
	A national CCA committee has been setup for inter-ministerial coordination which also coordinates with the national DRM committee		
	A transboundary DRM system has been setup for flood, storm, landslide and drought by engaging multiple agencies and local governments		

1-3 Financial arrangement

Category	Review point	Type of fund/financial mechanism	Status and progress
Regular budgetary arrangements of line ministries for DRR and CCA	Regular budget is sufficiently allocated for DRR and CCA activities in each ministry/agency; A budget tagging or monitoring system for DRR- and CCA-related expenditures is introduced		
Special funds for local and community-based DRR and CCA activities	Special funds are allocated for local and community-based DRR and CCA activities		
Payment for ecosystems (PES) and insurance scheme	PES is implemented based on the economic assessment (relevant regulations; number of sites; budget; engagement of the private sector and communities, etc.)		
	Insurance scheme for agricultural products is implemented based on the economic assessment (number of the schemes; coverage areas; budget, etc.)		

2. Risk assessment

2-1 Climate change impact assessment

Category	Review point	Type of assessment activity and responsible agency	Status and progress
Observation and analysis of hydro-meteorological data	Disaster data is recorded and used for science-based analysis (data sharing and monitoring system; number of hydro-meteorological observation stations and their coverage; manual, automatic or telemetric system)		
Climate change projection	Climate risk is analysed based on hydro-meteorological data monitoring and downscaling from Global and Regional Climate Models (GCMs and RCMs)		
	Scenario for climate change (rainfall, sea level rise, etc.) is developed		
Standard values of CC impact	Standard values of climate change impact is determined with the aerial coverage		

2-2 Hazard and risk mapping

Category	Review point	Type of mapping activity and responsible agency	Status and progress
Hazard and risk mapping of flood, storm surge, landslide and drought	Hazard maps and risk maps for flood, storm surge, landslide and drought are prepared by assessing the damages of the past disasters, the capacity and vulnerability of local authorities and communities, and the climate risk and these maps are provided with high resolution for local land-use planning (coverage area; scale; accuracy; with/without climate change impact assessment)		

3. Planning and implementation

3-1 Disaster risk reduction

Category	Review point	Type of DRR activity and responsible agency	Status and progress
DRR plans and projects for flood, storm, landslide and drought with incorporation of climate change impact assessment	DRR plans for flood, storm and landslide are developed and implemented with structural and non-structural measures with incorporation of climate change impact assessment		
	Land-use and urban plans are prepared by incorporating disaster and climate risk and with an assessment of ecosystem services		
	Public and private investments are channelled to strengthen resiliency of critical facilities, including schools, hospitals, evacuation facilities, roads and transport, river and coastal dykes, reservoirs and irrigation networks, forests and retardation areas, etc., and they are implemented in a stage-wise manner		
	Drought risk reduction plans including water resources management and agricultural measures are implemented		

3-2 Standard guidelines for disaster and climate risk assessment and planning

Category	Review point	Type of guideline	Status and progress
Standard guidelines for disaster and climate risk assessment and planning	Guidelines and standards incorporating disaster and climate risk are developed and used for planning		

4. Monitoring and evaluation (to be implemented by the National Project Focal Point)

4-1 Data management

Category	Review point	Type of activity	Status and progress
Data management	Basic disaster, hydro-meteorological, risk, vulnerability and socio-economic data are updated periodically and shared with relevant agencies for synthetic analysis and decision-making		

4-2 Reviewing

Category	Review point	Type of activity	Status and progress
Reviewing	DRR and CCA related plans and activities are periodically reviewed for close coordination and knowledge sharing among relevant agencies		

4-3 Capacity building and needs assessment

Category	Review point	Type of activity	Status and progress
Capacity building and needs assessment	Based on the reviewing results, capacity building needs are identified and corresponding training programmes are arranged using domestic resources; other required external technical assistances and identified resource institutions and agencies possible to provide capacity building services regionally are reported to the ACDM Working Group on Prevention and Mitigation		

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration: 2017-2020

添付資料17

Expectation and possible contribution to the immediate collaborative activities

Senior Official-Level Forum, 16 November 2017

Country: INDONESIA

Organisation: Ministry of Public Works and Housing, BNPB, and BAPPENAS

1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

Possible contributions *(with reference to good practices)*:

a. Ministry of Public Works and Housing (MOPWH) in the *Rencana Induk Pengembangan Infrastruktur PUPR Secara Terpadu dengan Pengembangan Wilayah untuk Pulau dan Kepulauan (*Master Plan for Integrated Infrastructure Development for 20 years) already overlayed numerous basic maps, which includes *Peta Indeks Risiko Bencana* and *Peta Daya Dukung dan Daya Tampung Lingkungan Hidup (DDDTLH)* that covered ecosystem services' map to regulate, prevent, and protect on disaster events (*Peta Jasa Ekosistem Pengaturan Pencegahan dan Perlindungan Bencana*).
b. Knowledge sharing session that involving local governments regarding preparation progress of Master Plan for Integrated Infrastructure Development for 20 years in all areas of Indonesia since in the middle of 2015.

Expectations (requests):

a. Local governments and dwellers could be more aware to DRR issue, specifically to implement DRR issue in the detailed planning, such as on the Detail Engineering Design (DED) and Bill of Quantity (BOQ), hence the infrastructure itself could minimize the impact of disaster events.
b. Integration on planning between central government and local government.

2

2. Knowledge sharing and training on integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level

Possible contributions *(with reference to good practices)*:

a. Applied policies related to DRR and CCA already placed as an important aspect in order to finalize the Master Plan for Integrated Infrastructure Development for 20 years. Furthermore, it should be applied by each technical sector of MOPWH (Directorate General of Water Resource Management, Directorate General of Highways, Directorate General of Human Settlements, and Directorate General of Housing Provision).
b. For instance, some good practices are :
   1) Directorate General of Highways managed the landslide that happened in Palu-Parigi road segment, Central Sulawesi by applying road cutting slope action.
   2) Training for Flood Control, Flood Countermeasures, and Eco-Based Flood Management by Education and Training Center Agency held on 2017.
   3) Training for Landslide Management on Road Structure by Education and Training Center Agency held on 2017.
   4) Training for Contractor to build the *Rumah Instan Sederhana Sehat (RISHA),* which one of the purpose is resilience to earthquake by Directorate General for Construction Development held on 2015.
   5) Etc.

Expectations (requests):

a. Public works and housing infrastructure could be constructed well and also integrated with applied policies related to DRR and CCA while MOPWH could has a good coordination with related agencies, both at national and local level.
b. By giving special attention to DRR and CCA issues from the planning process, applied technology on the proper site, and enhancing human capacity, the infrastructure construction could be implement more effective and efficient.

3

3. Knowledge sharing and training on **building capacity for accessing regional and global funds for integrating DRR and CCA**

Possible contributions *(with reference to good practices)*:

a. Construction progress of public works and housing infrastructures which are funded by several green funds scenario, which is not a loan scenario. For instance, an opportunity to get a grant under the Climate Initiative 4 Indonesia-Phillipine project from the Government of Germany.
b. Implementation of public works and housing infrastructure which are disaster resilience by applying technology which is suitable to minimize disaster impacts.
c. Capacity building for local government's employees to implement disaster resilience technology in the construction work.
d. Get the financial aid to implement disaster resilience technologies since it is more costly than business as usual scheme*
e. It is possible to conduct a training instead of knowledge sharing from the donor countries to enhance knowledge of the recipient countries.
f. Planning of Training courses that will be held on 2018 already made by Education and Training Center Agency.

**For instance, the construction work such as tunnel in the conservation forest will be more expensive compared to build usual roads.*

4

4. Knowledge sharing and training on measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies

Possible contributions *(with reference to good practices)*:

a. Countermeasures for DRR and CCA already facilitated in the content of *Rancangan Peraturan Menteri PUPR tentang Rencana Aksi Nasional Mitigasi dan Adaptasi Perubahan Iklim serta Pengurangan Risiko Bencana Kementerian PUPR Tahun 2017 – 2030* (Draft of MOPWH Ministerial Regulation about National Action Plan for Climate Change Mitigation and Adaptation and Disaster Risk Reduction 2017-2030) and *Rencana Induk Pengembangan Infrastruktur PUPR Secara Terpadu dengan Pengembangan Wilayah untuk Pulau dan Kepulauan* (Master Plan for Integrated Public Works and Housing Infrastructure Development for 20 years).
b. Products made by MOPWH which are related to DRR and CCA already published and can be accessed through http://www.pu.go.id/.

Expectations (requests):

a. Increase awareness from the center government, province government, and local government related to DRR and CCA issues. Hence, the planning could be integrated to DRR and CCA issues.
b. Products made by MOPWH which are related to DRR and CCA could be a guidance in the technical planning and capacity building improvement while also could be easily accesed.

5

5. Develop guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA and conduct associated training

Possible contributions *(with reference to good practices)*:

a. Evaluation and reporting mechanism for each program and product/sub-product from each directorate general/agency under the MOPWH, which are related to CCA and DRR already facilitated in the Draft of MOPWH Ministerial Regulation about National Action Plan for Climate Change Mitigation and Adaptation and Disaster Risk Reduction 2017-2030. Furthermore, it is already accomodate in e-monitoring system.
b. Action plans of MOPWH are integrated with e-monitoring system hence it could be monitored continously.
c. Under this e-monitoring system , the implication to DRR and CCA issue from programs or products/sub-products from each sector could be monitored. Moreover, the evaluation phase could be easier.

Expectations (requests):

a. E-monitoring system could be a tool to continously monitor and evaluate the implementation of DRR and CCA in each sector (day-by-day) and make the tagging process more efficient and effective.

6

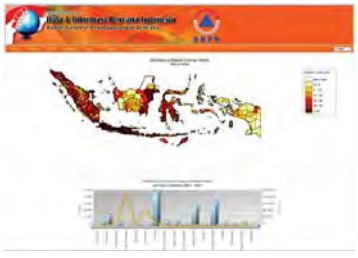
Draft for the Ministerial Regulations of :

- National Action Plan for Climate Change Mitigation and Adaptation and Disaster Risk Reduction 2017-2030
- Master Plan for Integrated Public Works and Housing Infrastructure Development for 20 years

will be legalized by the end of 2017 by the Minister of Public Works and Housing.

Disaster Database Managed by BNPB

Indonesia provides historical disaster databased on disaster events. These data are updated by local government aftermath the disaster in local area. Every region/city in Indonesia has local-level DM Agency that continously send the report. The data then are compiled and shown in statistic by DiBi (Data Bencana Indonesia – http://dibi.bnpb.go.id).



Coordination of Risk Asessment Conducted by BNPB

1. Indonesia Risk Map

- Risk distribution in spatial view
- Number of potential exposure
  - Population
  - Economic
  - Environment

Small scale : 250 K/50 K/25K
- Spatial Planning
- Planning Disaster Management Plan
- Disaster Risk Index

Large scale : 10 K/5 K
- Evacuation plans
- Rehabilitation and reconstruction

Recommendation actions on specific location

2. Indonesia Risk Index

Based on the request of the Ministry of Finance, as the basis for determining the priority of the Special Allocation Fund for Disaster Management, BNPB produce Indonesia disaster risk index (IRBI 2013) for nine types of threats (multi-hazard). IRBI 2013 is also used as a target in the National Medium Term Development Plan 2015-2019
Goal: Lowering the Disaster Risk Index in the centers of economic growth at high risk

http://inarisk.bnpb.go.id

- Results of disaster risk assessments on inaRISK portal base on national and provinces risk assessment with scale 1: 250,000 and is on going process for the data of 136 districts / cities with a scale of 1: 50,000 and 1: 25,000.
- Data from disaster risk assessments are dynamic data that is always evolving in accordance with data from the field.

MAINSTREAMING STEPS OF GLOBAL COMMITMENT ON DRR AND CCA THROUGH DEVELOPMENT

1. Establish the SDG Secretariat
   Establish at the Ministry of National Development Planning consisting of ministries, experts and civil society⟶Completed;
2. Syncronising
   Concepts, objectives, variables and indicators of the Framework, the Sendai Framework, Climate Change, and other global commitments with the Medium Term Development Plan⟶Completed;
3. Preparing the Law / Regulation of the President
   On targets, variables and indicators on the Framework, Climate Change Framework, and other global commitments worldwide;
4. Preparing the National Action Plan
   Implementation of SDG as a complement to the Medium-Term Development Plan, as well as a guide for local government⟶ On Going;
5. Conducting serial discussion, consultation, communication and socialisation with 34 provinces, 415 districts and 98 municipalities on how to incorporate the SDGs Framework, Sendai Framework, CCA, and other global commitments into the Regional Medium-Term Development Plan and SDG Action Plan⟶Ongoing;
6. Prepare the information system to monitor and evaluate the implementation of SDG's, Sendai Framework, CCA, and other global commitments ⟶ Ongoing;
7. Involve civil society and university to communicate, monitor and evaluate the progress of the implementation of SD⟶on progress;
8. Prepare and publish reports periodically on the achievement of SDG's, Sendai Framework, CCA, and other global commitments

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3. InaRISK

InaRISK is the results of risk assessment portal that uses ArcGIS server as the data services that illustrate the coverage area of disaster threats, the affected population, the potential loss of physical (Indonesia Rupiah), The potential economic losses (Indonesia Rupiah) and the potential environmental damage (hectare) and is integrated with the realization disaster risk reduction activities as a monitoring tool for disaster risk reduction index.

Usefulness InaRISK than as a portal for the sharing of spatial data base on GIS services are as:
- Tool dissemination of disaster risk assessments to the central government, local government, and other stakeholders as a basis for planning on disaster risk reduction programs.
- Helping central government, local government, and the parties to strategize the implementation of programs, policies, and activities to reduce disaster risk at the national and sub national levels.
- Assist the government in monitoring the achievement of disaster risk index in Indonesia.
- Provides spatial data for further analysis, such as MHEWS, spatial planning, etc.

SUPPORT FOR GLOBAL COMMITMENT ON DISASTER MANAGEMENT

1. Indonesia is a country which vulnerable to climate change and disasters - Extreme climate events (El Nino and El Nina), earthquakes, floods and landslides have a serious impact on many sectors and many people in different areas;
2. The Government of Indonesia has been paying serious attention to vulnerability, taking several policies.
3. At the same time, the Government of Indonesia has fully adopted and supported the implementation of the Sendai Framework, the Purpose of Sustainable Development, the Climate Change Agreement, and other global commitments;
4. Many programs have been implemented, but most programs are more responsive than prevention efforts. Therefore, mainstreaming of policy planning and budgeting, capacity building for local governments and local[12] communities, and the development of disaster-based infrastructure will be critical to adjusting climate change, reducing disaster risks and achieving sustainable development.

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration: 2017-2020

添付資料17

Expectation and possible contribution to the immediate collaborative activities

Senior Official-Level Forum, 16 November 2017

Country: Lao PDR

Organisation:

1

1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

Possible contributions *(with reference to good practices)*:

- CBDRM training for the District and Village Level;
- Provincial, District and Village Disaster Management Plan;
- National Risk Profile and hazard mapping developed at Saravane, Sekong, Attapue Province;
- Climate change adaption on agriculture

Expectations (requests):

- Capacity building-short-term training on Risk Assessment to understand the disaster risk
- Training on application Arc Map/Quantum GIS how to do the suitability analysis for disaster risk mapping

2

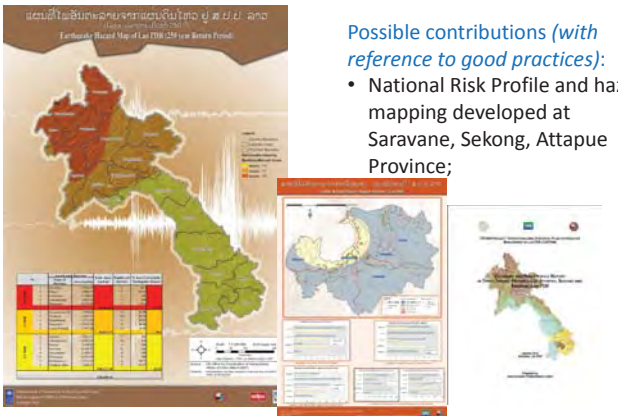
1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

Possible contributions *(with reference to good practices)*:

- CBDRM training for the District and Village Level;
- Provincial, District and Village Disaster Management Plan;

3

1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level



Possible contributions *(with reference to good practices)*:

- National Risk Profile and hazard mapping developed at Saravane, Sekong, Attapue Province;

4

2. Knowledge sharing and training on integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level

Possible contributions *(with reference to good practices)*:

- The draft on Climate Change Law of Lao PDR was going on which focus on adaptation and mitigation measures: involved national stakeholders consultative
- The Draft on Disaster Management Law of Lao PDR
- The integration of Disaster Risk Management into 8th National Socio-Economic Development Plan (2016-2020)
- The Sustainable Development Goals and Sendai Framework indicators had been mainstreamed into the five years plan of MoNRE and MoLSW 2016-2020

Expectations (requests):

- Financial supports to CC Law aims to submit the national assembly in 2018, as well as the DM Law development that is expecting to present and get approval by the National Assembly by 2019
- Action Plan on DDR from line ministries are not in place ?_Strategy on DRR as well as the contingency plan from line ministries

5

3. Knowledge sharing and training on building capacity for accessing regional and global funds for integrating DRR and CCA

Possible contributions *(with reference to good practices)*:

- Global Platform on DRR through Sendai Framework on DRR 2016-2030
- Asia Ministerial Meeting on DRR
- AADMER Partnership GROUP Meeting which have been organized annually back to back with ACDM Meeting
- ACDM Working Group Meeting – Open Session with Partners
- ASEAN Regional Forum on DRR and CCA
- National Platform on DRR

Expectations (requests):

- Production of good practices on DRR and CCA at country level
- Creating Concept Note on DRR and CAA Project to mobilize resources

6

4. Knowledge sharing and training on measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies

Possible contributions *(with reference to good practices)*:

- Climate Change projection and its impacts on water and forestry sectors
- ASEM Seminar on Water Resources Management and Sustainable Development "Integrated Water Resources Management for Sustainable Development"

Expectations (requests):

- Climate change and disaster vulnerability mapping
- National disaster risk profile and assessment update

7

5. Develop guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA and conduct associated training

Possible contributions *(with reference to good practices)*:

- Mainstreaming guideline on disaster management into development planning process;
- Command Rapid Assessment guideline;
- Mainstreaming guideline CCA in the agriculture sector;
- The Department of Climate Change has developed database management system based on the DesInventar platform which hosted at DCC (http://laodi.monre.gov.la/)
- Web Training, website for sharing on training information, materials and etc (http:/lao.astavanced.com)

Expectations (requests):

- Data collection, aggregation and analysis technique
- Monitoring, evaluation and reporting system related to SDGs and Sendai Framework indicators

8

http://laodi.monre.gov.la/

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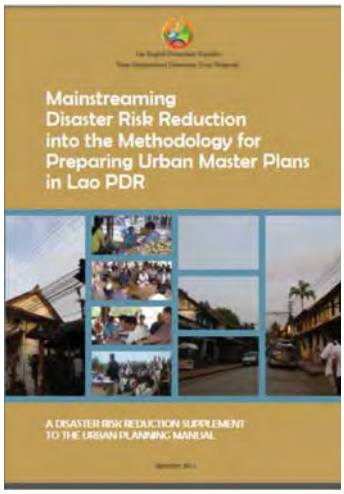

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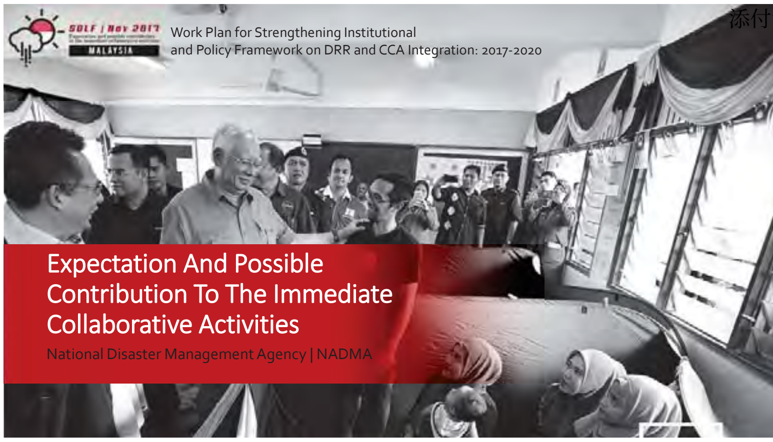

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Expectation And Possible Contribution To The Immediate Collaborative Activities

National Disaster Management Agency | NADMA

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1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

POSSIBLE CONTRIBUTION (s)

- FLOOD MANAGEMENT
  - Hazard & Risk Maps
  - Flood Prediction & Early Warning System
- STORM WATER MANAGEMENT
- FLOOD INFRASTRUCTURE(s)
  - SMARTunnel
  - Multi-Purpose Dam

EXPECTATION | REQUEST(s)

- EQ RISK ASSESSMENT
- METEOROLOGICAL EXPERTISE

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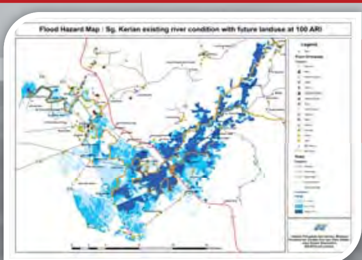
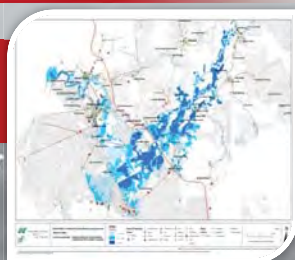
POSSIBLE CONTRIBUTION (s)

FLOOD MANAGEMENT

:: HAZARD AND RISK MAPS





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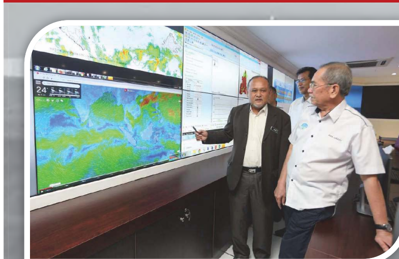
POSSIBLE CONTRIBUTION (s)

FLOOD PREDICTION & EARLY WARNING SYSTEM

:: PUSAT RAMALAN AWAL BANJIR NEGARA (PRABN)



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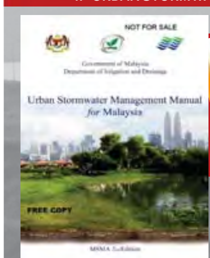
POSSIBLE CONTRIBUTION (s)

STORM WATER MANAGEMENT

:: URBAN STORMWATER MANAGEMENT MANUAL (MSMA)



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POSSIBLE CONTRIBUTION (s)

FLOOD INFRASTRUCTURES

:: STORMWATER MANAGEMENT AND ROAD TUNNEL (SMART)

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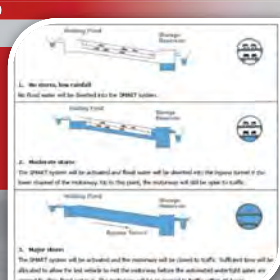
POSSIBLE CONTRIBUTION (s)

FLOOD INFRASTRUCTURES

:: STORMWATER MANAGEMENT AND ROAD TUNNEL (SMART)



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POSSIBLE CONTRIBUTION (s)

FLOOD INFRASTRUCTURE

:: MULTI PURPOSE DAM | TIMAH TASOH DAM

Timah Tasoh Western Flood Diversion Project

Pakej 1 : Ch6300, ch11100, ch13650 & ch22350
(4 JKR Bridges, 50m Concrete Wall Channel, 150m Earth Channel)
Kontraktor : Imanco Binaan Sdn Bhd
Status : 100% (SIAP)

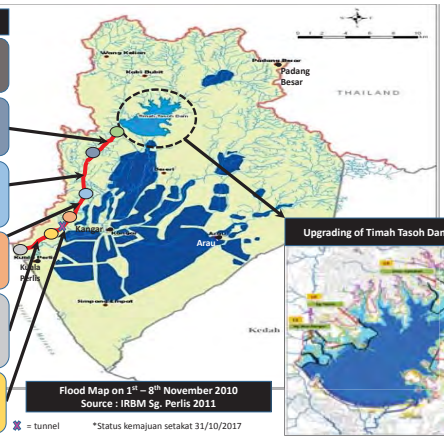
Pakej 2A : ch18000 – ch22450
(4.45km Earth Channel, 4 medium traffic bridges, 3 bed drop structures, 9 drainage and irrigation structures)
Kontraktor : Pria Pantai Sdn Bhd
Status : 100% (SIAP)

Pakej 2B : ch8900 – ch18000
(9.1km Earth Channel, 8 medium traffic bridges, 4 bed drop structures, 1 radial gate regulator, 37 drainage and irrigation structures)
Kontraktor : Tuah Usaha Sdn Bhd
Status : 100% (SIAP)

Pakej 2C : ch4800 – ch8900
(2.7km concrete wall channel, 2 JKR Bridges, 2 medium traffic bridges, 18 drainage and irrigation structures)
Kontraktor : Batu Bara Resources Corporation Sdn Bhd
Status : 100% (SIAP)

Pakej 3 : ch0 – ch3050
(2.8km Earth Channel, 250m concrete-lined channel in rock cut, 1 JKR bridge, 1 medium traffic bridge, 6 drainage and irrigation structures, 1 barrage 34m x 19m (6 bay))
Kontraktor : Pens Holdings Sdn Bhd
Status : 94%

Pakej 3A : ch3050 – ch4800
(710m tunnel, 0.7km concrete channel, 1 JKR bridge, 1 medium traffic bridge, 7 drainage and irrigation structures)
Kontraktor : A.M.I Construction Sdn Bhd
Status : 89.9%



Flood Map on 1st – 8th November 2010
Source : IRBM Sg. Perlis 2011

= tunnel

*Status kemajuan setakat 31/10/2017

SOLF | Nov 2017 MALAYSIA

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA: 2017-2020

2. Knowledge sharing and training on integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level

POSSIBLE CONTRIBUTION (s)

- NATIONAL POLICY IN CLIMATE CHANGE, NRE
- NATIONAL PLATFORM ON DRR , NADMA
- NAHRIM TECHNICAL GUIDE NO. 1 → Estimation Of Future Design Rainstorm Under Climate Change Scenario in Peninsular Malaysia
- NATIONAL WATER RESOURCE POLICY (2012), NRE

EXPECTATION | REQUEST(s)

- LAW & REGULATION ON DRR & CCA

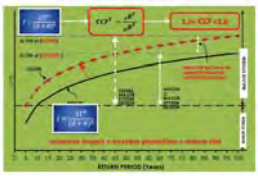
Objectives

- To assist engineers, hydrologists and decision makers in designing, planning and developing water-related infrastructure under changing climatic conditions.
- To introduce an approach of quantifying the scale of climatic change to surface water systems.
- The main purpose of this guideline is to derive climate change factor (CCF)

CCF – defined as the ratio of the design rainfall for each of the future periods (time horizons) to the control periods (present rainfall)

Methodology

CLIMATE CHANGE FACTOR



SOLF | Nov 2017 MALAYSIA

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA: 2017-2020

3. Knowledge sharing and training on building capacity for accessing regional and global funds for integrating DRR and CCA

POSSIBLE CONTRIBUTION (s)

- 11TH MALAYSIA PLAN
- DEVELOPMENT OF NATIONAL ADAPTATION PLAN

EXPECTATION | REQUEST(s)

- TRAINING ON DRR AND CCA
- FUNDING

SOLF | Nov 2017 MALAYSIA

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA: 2017-2020

POSSIBLE CONTRIBUTION (s)

11th MALAYSIA PLAN

:: INLINING NATIONAL BUDGET AND SDG

SOLF | Nov 2017 MALAYSIA

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA: 2017-2020

POSSIBLE CONTRIBUTION (s)

11th MALAYSIA PLAN

:: INLINING NATIONAL BUDGET AND SDG

SOLF | Nov 2017 MALAYSIA

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA: 2017-2020

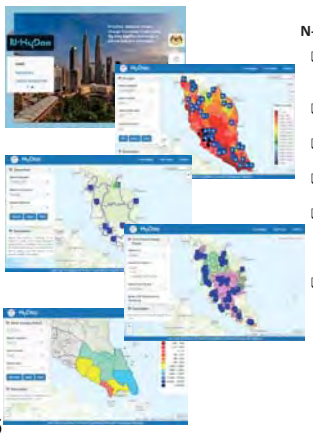
4. Knowledge sharing and training on measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies

POSSIBLE CONTRIBUTION (s)

- N-HyDAA DATA SHARING → NAHRIM-Hydro climate Data Analysis Accelerator
- FLOOD MANAGEMENT PROJECTS → River Basin based projects

EXPECTATION | REQUEST(s)

- DISASTER RISK DATA SHARING ON TRANSBOUNDARY RIVER BASIN



N-HYDAA – NAHRIM HYDROCLIMATE DATA ANALYSIS ACCELERATOR

- Risk assessment tool using 90 years observed and projected hydroclimate data from 2000-2100
- Covers 3,888 grids, 6kmx6km area & basin scale for 5 main parameters
- ***Visualise, Identify, Detect & Trace*** water related disaster;
- ***Support Decision Making*** in hazard & disaster management.
- Using Big Data Analytics (BDA) approach to examining large datasets (10 billion record) to ***uncover hidden pattern, unknown correlations and trends of climate change***
- Module:-

5. Develop guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA and conduct associated training

POSSIBLE CONTRIBUTION (s)

- VALUE MANAGEMENT (VA, VE & VR)
- SPP II | OUTCOME-BASED PROGRAM MONITORING

EXPECTATION | REQUEST(s)

- TRAINING ON M & E

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA: 2017-2020

Pengurusan Nilai (VM)

24 NOVEMBER 2009:

Jawatankuasa Perancang Pembangunan Negara (JPPN)* telah memutuskan untuk melaksanakan Pengurusan Nilai dilaksanakan ke atas projek Kerajaan yang bernilai RM50 juta dan ke atas.

29 DISEMBER 2009:

Pekeliling Unit Perancang Ekonomi, Jabatan Perdana Menteri (UPE, JPM) Bilangan 3/2009. (Garis Panduan Pelaksanaan Pengurusan Nilai)

RANCANGAN MALAYSIA KE-10

"A value-management approach towards planning and evaluation of projects will ensure that every project takes into account holistic life-cycle costs and benefits to ensure that every ringgit is well spent. "

*JPPN –merupakan badan tertinggi peringkat pegawai Kerajaan dalam pembentukan dan penyelarasan dasar yang dipengerusikan oleh Y.Bhg. Ketua Setiausaha Negara.

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA: 2017-2020

Thank you

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration: 2017-2020

添付資料17

Expectation and possible contribution to the immediate collaborative activities

Senior Official-Level Forum, 16 November 2017

Country: Myanmar

Organisation: **Ministry of Social Welfare, Relief and Resettlement**
Ministry of Natural Resources and Environmental Conservation

1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

Possible contributions *(with reference to good practices)*:
- Hazard, Risk and Vulnerability Assessment Report (Ayeyarwaddy, Bago and Yangon)
- Earthquake Risk Assessment in Mandalay Region
- Multi Hazard Risk Assessment in Rakhine State
- Child Centered Risk Assessment
- Training Module on Building Local Level Resilience to Climate Change in Myanmar

Expectations (requests):
- Training on Hazard Mapping and Risk Assessment Technology
- GIS Training and Exchange Programme

2

2. Knowledge sharing and training on integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level

Possible contributions *(with reference to good practices)*:
- Myanmar National Climate Change Policy-MNCCP
- Disaster Management Law and Regulations

Expectations (requests):
- Advocacy workshop on DRR and CCA laws and regulations
- Integration of DRR and CCA Laws and Regulations of other ASEAN Countries
- Developing the local level Climate Change Policy and local level Climate Change Strategy and Action Plan.

3

3. Knowledge sharing and training on building capacity for accessing regional and global funds for integrating DRR and CCA

Possible contributions *(with reference to good practices)*:
- Development Assistance Coordination Unit-DACU

Expectations (requests):
- Disaster Insurance System
- Public Awareness programme for Disaster Insurance

4

4. Knowledge sharing and training on measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies

Possible contributions *(with reference to good practices)*:
- Disaster Database
- Mobile Applications (KOBO, DAN)
- Myanmar Climate Change Strategy and Action Plan-MCCSAP(2016-2030)
- Myanmar Action Plan on Disaster Risk Reduction(2017-2020)

Expectations (requests):
- Flood Risk Assessment for Dam Safety
- Riverbank Erosion Management
- Training/Knowledge sharing on Climate Change Adaptation

5

5. Develop guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA and conduct associated training

Possible contributions *(with reference to good practices)*:
- Environmental Quality Guideline developed in 2015 December. (It can monitor the atmospheric condition)

Expectations (requests):
- Guideline on Monitoring and Evaluation
- Training

6

Thank You for Your Kind Attentions

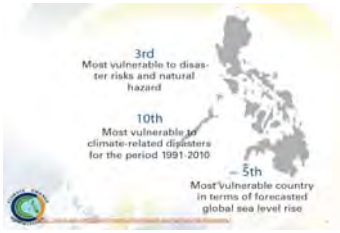
SENIOR OFFICIAL-LEVEL FORUM ON STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION

Thursday, 16 November 2017

DPWH DOST OCD

Overview

Area	300 sq Km
Population	102 Million
Capital	Manila
Location	Pacific Ring of Fire Typhoon Belt



Scope of Presentation

1. Overview
2. Possible Contribution to the immediate collaborative activities
3. Expectations

POSSIBLE CONTRIBUTION TO THE IMMEDIATE COLLABORATIVE ACTIVITIES

KNOWLEDGE SHARING AND CAPACITY BUILDINGE

1 Pre Disaster Risk Assessment

2 Response Mechanism

3 Flood Forecasting and Early Warning System

KNOWLEDGE SHARING AND CAPACITY BUILDINGE

4 Risk Assessment and Hazard Mapping

5 Conduct of Drills and Forum

6 Climate Change Impact

KNOWLEDGE SHARING AND CAPACITY BUILDINGE

7 Updating of the Philippine National Building Code

Green Building

8 Community Based Flood Early Warning System

9 Structural and non structural measures

EXPECTATIONS

EXPECTATIONS

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1 Exchange Program

2 Technical Assistance

3 Forging of Cooperation

Thank You!

Doumo Arigato Gozaimasu

Terima Kasih

Maraming Salamat!

添付資料17

Expectation and possible contribution to the immediate collaborative activities

Senior Official-Level Forum, 16 November 2017

Country: Singapore
Organisation: Singapore Civil Defence Force

Basic Info on Singapore

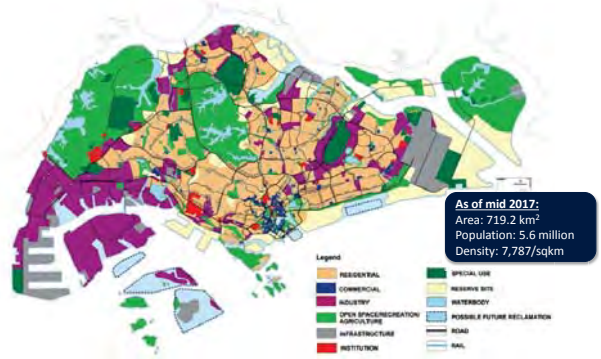
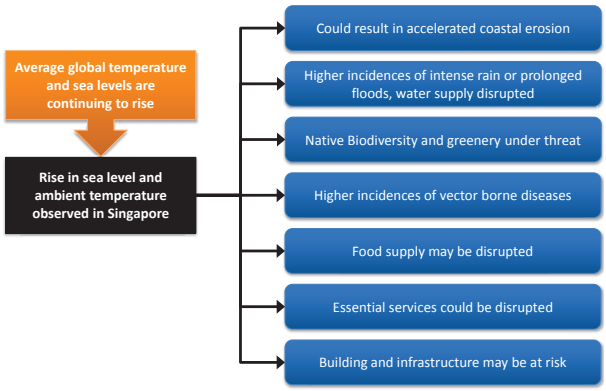


Figure 1. "Land use beyond 2030". Adapted from "*Land Use Plan to Support Singapore's Future Population*" by Ministry of National Development (MND). (2013)

Climate Change Impact on Singapore



WOG Effort to Address DRR & CCA

- Singapore pursued concurrent goals of growing the economy and protecting the environment since independence
- An Inter-Ministerial Committee on Climate Change was established in 2007 to enhance the WOG approach in coordinating climate change policies

Recent Initiatives to Address Climate Change includes:

i. Launch of "The Climate Action Plan for a Sustainable Future"
ii. Launch of the "Sustainable Singapore Movement"
iii. Implementation of a carbon tax in 2019 to factor the impact of greenhouse gas emissions

Example of Legal Instruments with DRR and CCA Elements

Entity	Relevant Legislative Act
Singapore Civil Defence Force (SCDF)	1. Civil Defence Act 2. Civil Defence Shelter Act 3. Fire Safety Act
Energy Market Authority (EMA)	1. Energy Conservation Act
National Environment Agency (NEA)	1. Environment Protection and Management Act 2. Transboundary Haze Pollution Act
National Parks (NParks)	1. Parks and Trees Act
Building and Construction Authority (BCA)	1. Building Control Act 2. Building Maintenance and Strata Management Act

Strategies to Mitigate Climate Change

1. **Improve energy efficiency as the key strategy to reduce emissions across the spectrum**
2. **Reduce carbon emissions from power generation**
3. **Develop and demonstrate cutting-edge low-carbon technologies**
4. **Respond to the challenge through collective action of government agencies, individuals, businesses and the community**

Coastal Protection

KEY RISKS

- Communities and property along Singapore's coastline could be affected by rising sea levels

WHAT WE HAVE DONE

- Set higher minimum reclamation levels
- Built geo-bags and seawalls
- Raised the height of some coastal roads

WHAT WE ARE DOING

- Coastal Adaptation study to identify options to better protect our coasts over the long term

Protecting Coastlines

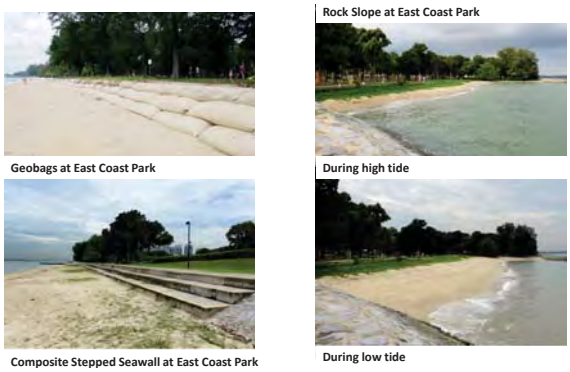


Figure 2. Examples of solutions to protect coastlines. Adapted from "*Singapore's Climate Action Plan: A Climate-Resilient Singapore, For a Sustainable Future*" by Ministry of Environment and Water Resources (MEWR) and Ministry of National Development (MND). (2016)

Water Resources and Drainage

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KEY RISKS

- Our water supply may be affected by more frequest and severe droughts
- Intense rainfall and rising sea levels may increase the risk of flooding

WHAT WE HAVE DONE

- Diversified our water supply: Four National Taps
- Created a water conservation programme
- Created a water efficiency scheme
- Designed a stormwater management system [Source-Pathway-Receptor Approach]

WHAT WE ARE DOING

- Build a fifth NEWater plant and two new desalination plants
- Study the feasibility of an innovative underground drainage and reservoir system

Holistic Water Management Strategy

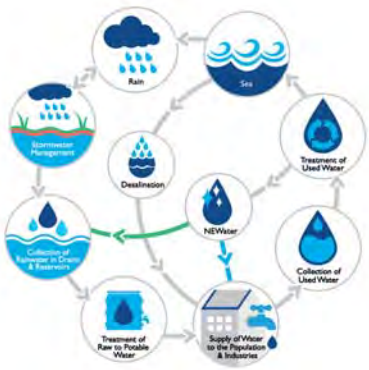


Figure 3. "Holistic Water Management Strategy". From the PUB, Singapore's National Water Agency (PUB) Website. (2017)

Projected Water Demand and Supply in the Future

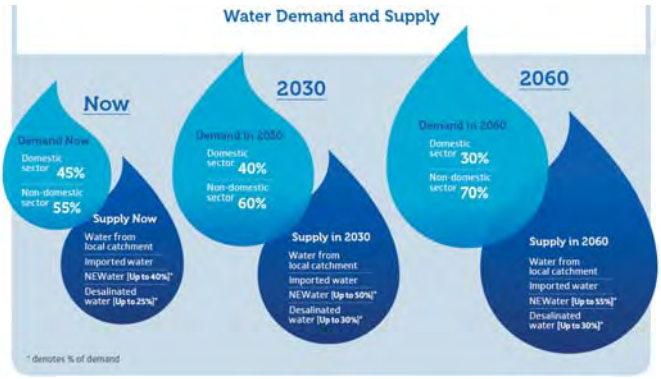


Figure 4. "Projected Water Demand and Supply in the Future". From "Our Water Our Future" by PUB, Singapore's National Water Agency (PUB). (2017)

Four National Taps

WATER FROM LOCAL CATCHMENT	IMPORTED WATER	NEWATER	DESALINATED WATER
• 17 reservoirs • 2/3 of Singapore is water catchment	• Agreement to import 250 mgd/day from the Johor River until 2061	• Currently meets 40% of Singapore's needs • Will meet up to 55% by 2060	• Most energy intensive and expensive to produce • Currently meets 25% of Singapore's needs • Will meet up to 30% by 2060

Figure 5. "Four National Taps". From the PUB, Singapore's National Water Agency (PUB) Website. (2017)

Stormwater Management System

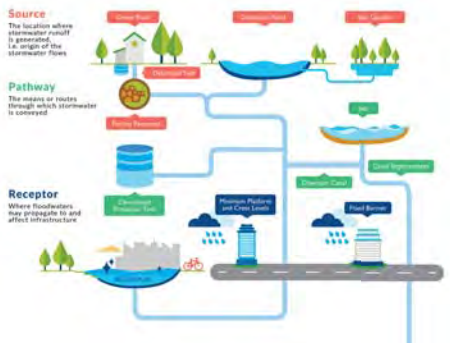


Figure 6. "Source-Pathway-Receptor Approach". From the PUB, Singapore's National Water Agency (PUB) Website. (2017)

Marina Barrage

Figure 6. Aerial view of the Marina Barrage. From the PUB, Singapore's National Water Agency (PUB) Website. (2017)

Network Infrastructure

KEY RISKS

- Intense rainfall, sea level rise, and temperature changes could affect the operations of our telecommunications, power and transport infrastructure

WHAT WE HAVE DONE

- Installed flood barriers of existing underground MRT stations in low lying areas
- Commenced upgrading of existing airport drainage system

WHAT WE ARE DOING

- Review resilience of power stations, transport and telecommunication infrastructure against localized flooding and temperature changes
- Build Changi Airport Terminal 5.5m above mean sea level

Flood Prevention Measures

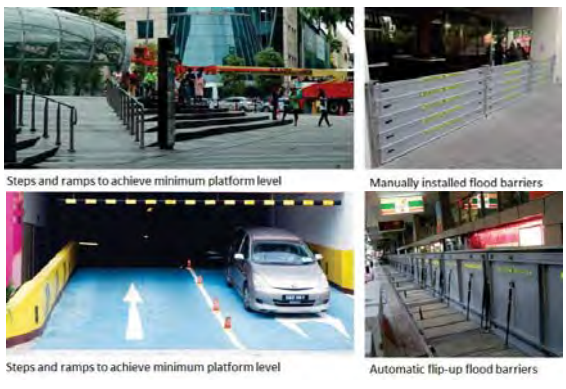


Figure 7. Examples of flood prevention measures. From "Managing Stormwater for our future" by the PUB, Singapore's National Water Agency (PUB). (2014)

Training and Capacity Building Programmes

添付資料17

- **Singapore Cooperation Programme**
  - Initiative for ASEAN Integration (IAI)
  - Sustainable Development Programme (SDP)
- **Training Academies**
  - Civil Defence Academy (under SCDF)
  - Singapore Environment Institute (under NEA)
  - Building and Construction Academy (under BCA)
- **Conferences/Forums/Dialogues**
  - ASEAN Strategic Policy Dialogue on Disaster Management (Annually around World Humanitarian Day)
  - World Cities Summit
  - Clean Environment Summit Singapore
  - Singapore International Water Week

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration: 2017-2020

添付資料17

Expectation and possible contribution to the immediate collaborative activities

Senior Official-Level Forum, 16 November 2017

Country: Thailand

Organisation: DRR-DDPM & CCA - ONEP

1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

Possible contributions *(with reference to good practices)*:

- National Disaster Prevention and Mitigation Plan 2015
- CBDRM Toolkit

Expectations (requests):

- Analysis of situation, they will exactly explore, including evaluate the emergency from Metrological and Hydrological data.
- Recovery plan, they will evaluate the exposure, the vulnerability, the affection to economic, social, livelihood and environment in order to implement the policy, the Strategic Plan, Law & Regulation, Institutional Support for Budget and Human resources management.

2

2. Knowledge sharing and training on integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level

Possible contributions *(with reference to good practices)*:

- No laws on CCA yet.
- There are some initiatives on integrating CCA in DRR practices.

- Disaster Prevention and Mitigation Act 2007
- No integrated Laws on CCA & DRR

Expectations (requests):

- Solid/permanent structure/body of collaboration between DDPM (responsible for DRR) and ONEP (responsible for CCA)
- National mandates given to DDPM and ONEP to incorporate laws and regulations between DDR and CCA

3

3. Knowledge sharing and training on building capacity for accessing regional and global funds for integrating DRR and CCA

Possible contributions *(with reference to good practices)*:

- UN recognition through its organizations/mechanisms: SGDs, UNDP, UNEP, Sendai Framework, UNFCCC, etc.
- AADMER Work Programme 2016 - 2020

Expectations (requests):

- Sponsored platforms of capacity building for DDPM and ONEP's national-local staffs to understand the linkages of the 2 issues
- International funded workshop of the integration of CCA aspects into long-term plans of DDPM
- Supported programs/projects of implementation integrated long-term plans to actions plans and M&E system
- Explain the role of the DRR guidelines as well as the Model Act in strengthening legal frameworks for international assistance.

4

4. Knowledge sharing and training on measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies

Possible contributions *(with reference to good practices)*:

- Understanding the knowledge and data on climate change impacts as extra potential risks that have to be considered from a beginning step of drafting DDR long-term plan in order to provide proper policies, sustainable implementation of river basin management, and countermeasures.

Expectations (requests):

- Data collecting system and database system that could distinguish data(values) of climate induced disasters/loss topping from the regular disasters
- Data and knowledge sharing between DDPM and ONEP
- To enforce the action plan, knowledge sharing of DRR to the National Multi level or sector.

5

5. Develop guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA and conduct associated training

Possible contributions *(with reference to good practices)*:

- N/A (still in a very initial stage)

Expectations (requests):

- Structure of database system on disaster and loss co-designed by DDPM and ONEP yielding important data categories needed for policy making, and implementation.
- Proper M&E system and indicators measuring progress and success of the short-long term policy and implementation
- Identify the existing legal framework for national assistance including discusses its implementation base on previous disaster situation and Community Base Disaster Risk Management

6

Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration: 2017-2020

添付資料17

Expectation and possible contribution to the immediate collaborative activities

Senior Official-Level Forum, 16 November 2017

Country: Vietnam

Organisation: Vietnam Disaster Management Authority -MARD

Expectations (requests):

- Promote the application of Geo- Spatial technology to develop and update risk assessment and risk mapping at commune level annually
- Satellite Imagery sharing;
- Digitalize risk maps which are developed by community
- Raising awareness for community about the risks

1. Knowledge sharing and training on capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

Possible contributions *(with reference to good practices)*:

- Application of Geo-spatial technology/Satellite Image to develop flooding risk maps after several Disasters events- Typhoons and Drought;
- Built the super Storm surge map for coastal provinces;
- The landslides risk maps for north mountainous is being developed - but still insufficient;
- Using GIS to digitize the risk maps which is developed by community
- Community based disaster risk assessment-CBDRA (risk assessment, risk mapping, development of the Disaster prevention and control plan);

2

2. Knowledge sharing and training on integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level

Possible contributions *(with reference to good practices)*:

Article 4. Basic principles of natural disaster prevention and control:

Natural disaster prevention and control contents must be integrated into national and local socio-economic development master plans and plans and sectoral development master plans and plans.

4

Circular to guide on how to implement the intergration

Guideline on how to implement the intergration

3. Knowledge sharing and training on building capacity for accessing regional and global funds for integrating DRR and CCA

Possible contributions *(with reference to good practices)*:

Natural Disaster Prevention and Control Funds

- 50/63 provinces established the Funds. Others are in processing
- 37/50 provinces do the collection

Expectations (requests):

Improve the capacity and effectiveness of management, utilization the established Funds;and The guideline for accessing Funding should be developed;

Expectations (requests):

- Strengthening Capacities through training and sharing skill to enhance Coordinated and Integrated Disaster Risk Reduction Actions and Adaptation to Climate Change into local social economic development plan.
- Develop common Guideline for integration of DRR and CCA;
- Promote the revising of National Strategy and Plan for DRR with incorporation CCA;

3. Knowledge sharing and training on building capacity for accessing regional and global funds for integrating DRR and CCA

Possible contributions *(with reference to good practices)*:

- **Payments for forest environmental services in Vietnam**

The services are stipulated in the Decree of Vietnam as followed:

+ Soil protection, erosion control and sedimentation of reservoir, river bed, stream bed.
+ Regulate and maintain water sources for production and social life;
+ Absorb and store carbon, reduce greenhouse gas emissions by measures to prevent forest degradation, reduce forest area and sustainable forest development.
+ Protect the natural landscape and preserve the biodiversity of forest ecosystems for tourism services;
+ Services to provide spawning grounds, feed sources and wild animals, using water from forests for aquaculture.

7

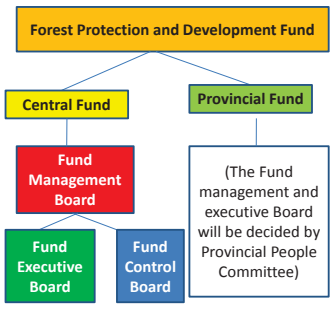
3. Knowledge sharing and training on building capacity for accessing regional and global funds for integrating DRR and CCA

Possible contributions *(with reference to good practices)*:

- **Results:**

In Vietnam, at present, there are 43/63 provinces established steering committee to implement the policy and 41/63 province established the Forest Protection and Development Fund

After 8 years of operation, there were 322 hydropower companies, 88 clean water companies and 59 tour operators signed the contracts.



8

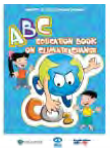
4. Knowledge sharing and training on measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies

添付資料17

Possible contributions *(with reference to good practices)*:

National forum on Natural disaster risk reduction and climate change adaptation

Sharing information via website



Joining CCA into schools

Mass media; E-learning ; Social Networks- Facebook, twister, etc.

Expectations (requests):

• Continue to implement theses activities to share skills, knowledge, data on climate change impacts

•To enhance of the E-learning , Social Networks;

•Data sharing via promoting bilateral and multi-lateral Agreement;

9

5. Develop guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA and conduct associated training

Possible contributions *(with reference to good practices)*:

•Develop and Approve a set of M&E indicators for the National Strategy and CBDRM program and guide on how to implementing, in which:

Indicator 13: The ratio of communes of a province develop natural Disaster prevention and control plan and Integrate into local socio-economic development plan.

Expectations (requests):

• Building capacity for community on how to Integrate the content of DRR and CBDRM into the local socio-economic development plan

. To revise and intergrate for a common M&E;

10

THANK YOU

添付資料17

GROUP EXERCISE

Implementation Plan of the Work Plan for Strengthening DRR and CCA Integration

Eight ASEAN Member States (AMSs) participating at the SOLF[1] discussed and prioritised one or more regional activities that were identified during the Regional Forum held in Bangkok in September. Following tables summarises outcome of the group exercise by each AMS.

INDONESIA

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level	Improve risk assessment and risk mapping capacities, as well as planning and implementation capacities, by: • Evaluation of CC impact on rainfall, temperature and sea level rise based on observed data and downscaling from Global Climate Models (GCMs); • Setting standard values of rainfall and sea level rise with CC impact for planning; • Trial of risk assessment and risk mapping at pilot areas; and • Developing a guideline for hazard and risk mapping without/with CC impact for scaling.	**1.** BNPB: a. Developing a guideline for hazard and risk mapping with CC impact for scaling b. DRR and CCA Convergence (support by UNDP) c. Disaster Risk Index Assessment in Local Level (with Climate Change) **2.** KLHK and BNPB (funding by USAID): Climate Change Adaptation for Resilient Programme **3.** KemenPU: a. Flood Risk Assessment b. Training of Trainers for Climate Change Mitigation, Adaptation, and DRR c. Training for Flood Control, Flood Counter Measured and Eco Base Flood Management	BNPB: a. Disaster Risk Index Assessment in Local Level (with Climate Change) b. Developing a guideline for hazard and risk mapping with CC impact for scaling. KemenPU: Training for Flood Control, Flood Counter Measured and Eco Base Flood Management	BNPB: Developing a guideline for hazard and risk mapping with CC impact for scaling. KemenPU: Training for Flood Control, Flood Counter Measured and Eco Base Flood Management
Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the	Streamline DRR and CCA policies by: • Integrating DRR and CCA in the national socio-economic development plan; • Integrating DRR in CC laws and regulations;	• Mainstreaming DRR and CCA in each ministry's plans and policies **1.** KemenPU will establish: a. National Action Plan for Climate Change Mitigation and Adaptation and Disaster Risk Reduction 2017-2030	• Integrate CCA in DRR/DRM laws and regulations	• Establishing a coordination system of DRR- and CCA-related agencies; • Integrating DRR and CCA in the national

[1] Representative from Brunei and Cambodia did not attend the SOLF

effective implementation at the national and sectoral level	• Integrate CCA in DRR/DRM laws and regulations; and • Mainstreaming DRR and CCA in each ministry's plans and policies; • Incorporating DRR and CCA in local development plans; • Establishing a coordination system of DRR- and CCA-related agencies.	b. By the end of 2017 (Ministerial Regulation) c. Master Plan for Integrated Public Works and Housing Infrastructure Development for 20 years by the end of 2017 (Ministerial Regulation) **2.** Bappenas and BNPB will establish: Government Regulation on Urban Areas with Climate Change Adaptation		socio-economic development plan

LAO PDR

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity [Guidance for 3-year planning]		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level		• Develop concept note on regional workshop; • Mainstreaming DRR and CCA into Development Sectors • Risk map, Vulnerability map, Hazard Map, planning and implementation (Regional) • Up scaling Standard Operating Procedure (SOP) on Early Warning System (National)	• Regional workshop on Mainstreaming DRR and CCA into Development Sectors • Study visits to the advance counties on mainstreaming DRR and CCA into Development Sectors	• Continue to develop disaster risk for key development sectors
Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level		• Draft of Climate Change Law • Integrate DRM and CCA into the Urban Law • All above are national activities	• Disaster Management Law presented and approved	•
Measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies		• Downscale Climate Change Model	• Climate change impact assessment for the key sector – agriculture, health, water resources	•
Developing guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA		• Data sharing on guidelines and tools on mainstreaming DRR and CCA through website (Regional)	• Continue to mainstreaming DRR and CCA into key sectors (National Activity) • Sharing tools in the Website	•

MALAYSIA

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity [Guidance for 3-year planning]		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level	Capacity building on climate modelling and CBDRM	-Training need assessment - Identification of resource person for training (trainers and trainee) - Formulating of training module for flood hazard and risk assessment with climate change effects; - Formulating CBDRM training module to transfer outcomes of flood hazard and risk assessment for resilience building of the communities	- Conduct trainings in host countries: <u>First quarter</u>: Inviting AMS to Malaysia for training on risk assessment and risk mapping taking into account CCA factor ; <u>Second Quarter</u>: Follow-up training <u>Third Quarter</u>: Training on CBDRM in other countries such as Lao PDR and/or Vietnam	- Ensure similar capacity on flood risk assessment and risk mapping by incorporating climate impact - Module on CBDRM that is customized to Malaysian specific situation

MYANMAR

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level	• Evaluation of CC impact based on rainfall data and temperature data • Application of Downscaling from Global Climate Models (GCMs) • Developing a guideline for hazard and risk mapping without and with climate change impacts • Extension of Risk Assessment and Risk Mapping at Priority Areas • Capacity Building or Training for Decision-makers and Implementers	• To secure budget • To set methodologies and schedule • To identify current conditions • To conduct a study tour on risk assessment and risk mapping	• To evaluate climate change impacts • To conduct the case studies on risk assessment and risk mapping in the priority areas • To invite experts in the field of risk assessment and risk mapping • To prepare the hazard and risk maps without and with climate change impacts	• To prepare guidelines and manuals for planning and implementation • To train decision-makers and implementers with the expertise of evaluation of impacts, preparation of hazard maps and risk maps. • To prepare guidelines and manuals for planning and implementation

THE PHILIPPINES

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity [Guidance for 3-year planning]		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level	Knowledge sharing in the preparation of hazard incorporating Climate Change Impacting and implementation capacities, by: • Evaluation of CC impact on rainfall, temperature and sea level rise based on observed data and downscaling from Global Climate Models (GCMs); • Setting standard values of rainfall and sea level rise with CC impact for planning;	• Knowledge sharing on available hazard map including climate change impact • Secure funds (outsource)	• Exchange program for hazard mapping and provide assistance in the formulation of hazard map with climate change impact • Share lessons learned	• Case study on the climate change impact • Initial draft of the hazard map incorporating the climate change impact

SINGAPORE

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity [Guidance for 3-year planning]		
		2018	2019	2020
Planning and Implementation / Risks Assessment and Mapping	Themed Workshops on Technology and Toolkits - Not limited to what AMS have, but also what is available COTS - E.g. Stormwater Management System, Flood Sensor Technologies, Early Warning Systems, Geographic Information Systems (GIS)			
Share Skills, Knowledge and Data; Laws and Regulations, Coordination of Relevant Agencies	Clustered Approach to Solutioning - Based on unique terrain characteristics - E.g. flash floods in urbanised landscapes, Mekong Delta flood management			
Guidelines and Tools with Indicators for Monitoring and Evaluation	Generic Framework, Cyclical Self-Audit System - Reconvene periodically (e.g. 3 years) for best practice sharing, technology knowledge refresh and evolution of existing clusters			

THAILAND

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level	Improve risk assessment and risk mapping capacities, as well as planning and implementation capacities, by: • Evaluation of CC impact on rainfall, temperature and sea level rise based on observed data and downscaling from Global Climate Models (GCMs); • Setting standard values of rainfall and sea level rise with CC impact for planning; • Trial of risk assessment and risk mapping at pilot areas; and • Developing a guideline for hazard and risk mapping without/with CC impact for scaling.	- Study visit - Information / Data Management - Resource - Need Assessment Training - Develop the concept note	- Implement the training course（Textbook, Guideline, Cost preparation, material, Tool , design agenda etc.）	- Deliver the training course (On the job training) - Study visit

VIETNAM

Listed activity (Knowledge sharing and training on)	Targeted achievement by 2020	Planned activity [Guidance for 3-year planning]		
		2018	2019	2020
Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level	Apply Spatial technology in risk assessment and risk mapping	- Develop a technical platform (Ex: Portal) for sharing and exchanging spatial data; - Training on Spatial technology (Ex: Satellite images processing) for Core Groups, line Ministry	- Advocacy platforms (training, study tour, workshop, etc.) - Provide necessary technical equipment. - Data sharing regulation - Training on Spatial technology (Ex: images processing) for Technical people from central to local level in each ASEAN member country;	- Pilot projects on using spatial images in risk assessment and risk mapping (Ex: using satellite images to monitoring landslides, Floods, etc.) - Sharing experiences
Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level	Streamline DRR and CCA policies by: • Integrating DRR and CCA in the national socio-economic development plan; • Integrating DRR in CC laws and regulations; • Integrate CCA in DRR/DRM laws and regulations; and • Mainstreaming DRR and CCA in each ministry's plans and policies; • Incorporating DRR and CCA in local development plans; • Establishing a coordination system of DRR- and CCA-related agencies.	• Advocacy platforms (training, study tour, workshop, etc.) • Guidelines on how to integrate DRR and CCA into the plan	• Advocacy platforms • Capacity building	• Pilot projects • Sharing experiences

SUMMARY OF
SENIOR OFFICIAL-LEVEL FORUM FOR STRENGTHENING INSTITUTIONAL AND POLICY FRAMEWORK ON DRR AND CCA INTEGRATION

Thursday, 16 November 2017
National Agency for Disaster Management (BNPB), Jakarta, Indonesia

BACKGROUND

The Senior Official-Level Forum (SOLF) is one of the important activities planned under the 'Project for **Strengthening Institutional and Policy Framework on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Integration under the** Concept Note No. 20 [CN20], which is currently being implemented by the by JICA Project Team during 2016-2017. The CN20 is one of the Flagship and Priority Projects under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme Phase 2 (2013-2015).

The Project Team has completed a baseline study to assess the degree of DRR and CCA integration in each ASEAN Member State (AMS) and has organised three National Workshops in Myanmar, Viet Nam and the Philippines in May-July 2017. Subsequently, a Regional Forum on 5-6 September 2017 and the 8th Meeting of the ACDM WG-P&M on 7 September 2017, in Bangkok, Thailand were held to discuss the contents and immediate collaborative activities of the Work Plan for Strengthening Institutional and Policy Framework on DRR and CCA Integration (hereinafter, Work Plan). The Work Plan was reviewed and endorsed by Co-Chairs and Members of the Working Group on 22 September 2017, the ACDM on 5 October 2017. Five activities on knowledge sharing and training for immediate collaboration are:

- *Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level;*
- *Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level;*
- *Building capacity for accessing regional and global funds for integrating DRR and CCA;*
- *Measures to share skills, knowledge and data on climate change impacts, implementation of river basin management, countermeasures for climate change impacts including policies; and*
- *Developing guidelines and tools with indicators for monitoring and evaluation of programmes, policies and projects on integration of DRR and CCA.*

OBJECTIVES OF SOLF

The Senior Official-Level Forum (SOLF) provides an opportunity to:

1) Share good practices of DRR and CCA integration in AMS;
2) Explore linkages and entry points for collaborative engagement on DRR and CCA across relevant ministries/agencies; and
3) Prioritise immediate collaborative activities of the Work Plan and commence its implementation.

A total of 47 participants attended the SOLF that included senior officials representing relevant ministries/agencies working on DRR and CCA from the eight ASEAN Member States[1], Co-Chairs of ACDM Working Group on Prevention and Mitigation (WG P&M), ASEAN Secretariat, and the members of the JICA Project Team.

Opening Remarks

Mr.Saharat Wongsakulwiwat, Co-Chair of ACDM-WG P&M and Director of Research and International Cooperation Bureau, Department of Disaster Prevention and Mitigation (DDPM), the Kingdom of Thailand welcomed all participants, highlighted on background of the project, and mentioned that recommendations, remarks and participation of everyone, especially the representative senior officials from the member states, on the Work Plan are crucial and will be used as inputs for the project team and for the development of the Work Plan. He encouraged everyone to share and exchange ideas, information and experiences to help fulfil objectives and sustainability of the project.

Mr.Dicky Fabrian, Head of Legal and Cooperation Bureau, Badan Nasional Penanggulangan Bencana (BNPB) welcomed all the participants and mentioned that BNPB felt honoured to host this important meeting on one of the flagship projects of ADMER and lucky to have JICA to support the project CN20. He mentioned that Indonesia is a disaster prone country, often known as 'disaster laboratory' of multi-hazards, with frequent occurrences of floods, landslides, volcano eruptions, earthquakes, tsunami etc. It was ranked 12th by the World Bank in terms of mortality. 40% of the citizens live in risk areas and potential for humanitarian catastrophe is high. This calls for integration of CCA and DRR since disasters will be influenced by climate change. He extended BNPB's full support to the SOLF under the WG on P&M for strengthening regional policy framework for CCA and DRR integration.

Session 1: Outlining the Work Plan

Mr. Vilayphong Sisomvang, Co-Chair of the ACDM-WG P&M, introduced the Work Plan and mentioned that the Work Plan was developed after discussion with representatives from AMS during the Regional Forum in Bangkok and then presented and endorsed by ACDM in Luangpraban, Lao PDR in October 2017. He then explained about the outline of the Work Plan and the framework of DRR and CCA integration and implementation mechanism of the Work Plan. The implementation of the Work Plan is expected to be done through the ACDM-WG P&M, as a central body, that coordinates with each ASEAN Member State and resource institutions and reports in turn to the ACDM meeting annually. He then highlighted on five immediate collaborative activities for three years (2018-2020) agreed in the Regional Forum in Bangkok to be further discussed at SOLF.

Mr.Toshijo Maeda, Leader of the JICA Project Team, elaborated the idea of the Work Plan and stressed that discussion on the details of immediate collaborative activities and to develop a workable program as two key objectives of the SOLF. Revisiting the background and objectives of CN20 project, expected outputs, and the overall idea of SOLF and its expected outcomes, he shared findings of the study by JICA Project Team on the state of DRR and CCA integration. Every ASEAN

[1] Brunei and Cambodia did not attend the SOLF

Member State (AMS) already has relevant laws and regulations but the level of coordination among various agencies varies. Some member countries are good at legal aspect, some are on setting up institutional networks, some on financial aspect and some on risk assessment, while others on technical capacity. Several good practices were collected from the ASEAN region covering five areas and published in the forma a good practices publication "*One Against Disaster and Climate Risks: A Repository of Good Practices for Strengthening DRR and CCA Integration in ASEAN*".

Presenting on the concept, he told that CCA needs to be integrated into DRR at planning and implementation, risk assessment, planning and M&E stages of Plan-Do-Check-Act (PDCA) cycle. However, he clarified that integration of all aspects of CCA, which is quite broad, is not the objective of proposed PDCA cycle for DRR and CCA integration. We are specific to integrating the risk assessment part of CCA into the DRR cycle noting that the scope of ACDM is limited to disaster only. He mentioned that ACDM-WG P&M and ASEAN Member States are the two main players for implementing the Work Plan, while involvement of other partners is of temporary nature as they could join and leave depending on the needs. He then stressed that annual reporting on the progress by the Member States is crucial for the implementation of the Work Plan and shared the reporting format for further discussion. He hoped that everybody will report annually and shared his belief that the reporting won't add a new burden to AMS as it also aligns well with the Sendai Framework Reporting.

Coming back to the main objective of the SOLF, he reiterated on agreed five immediate collaborative activities in the Work Plan that could be implemented regionally. These collaborative activities are different from the regular business of each AMS and these activities are meant to foster regional cooperation on DRR and CCA integration. How these activities could be addressed regionally is the main topic for discussion today. For instance, how ASEAN can improve funding base, how each member country could learn from other country, such as the Philippines, Vietnam, on the management and mobilization of disaster related funds? What kind of regional data sharing mechanism is necessary? Can we learn from the existing guidelines on disaster management and climate change adaptation from other countries? In order to do that what each AMS could contribute and what are their expectations and needed supports?

Session 2: Possible contributions to the immediate collaborative activities

In this session, senior officials from each member state presented their viewpoint on immediate collaborative activities of the Work Plan focusing on what each AMS could contribute towards the implementation of the immediate collaborative activities based on their capacity and strengths they have built on DRR and CCA. Similarly, they also shared their expectations from the collaborative activities such as exchange of knowledge and experiences, technical and financial support etc. Following table summarizes the key contributions (supply) and expectations (demands) of each AMS.

Country	Contributions	Expectations
Indonesia	• Knowledge sharing session that involving local governments regarding preparation progress of Master Plan for Integrated Infrastructure Development, including ecosystem services' map to regulate, prevent, and protect on disaster events. • Training for flood management (control,	• Integration of planning between central government and local government • Planning process, applied technology on the proper site, and enhancing human capacity on DRR and CCA issues for more effective and efficient

	countermeasures, and eco-based approaches), landslide management on road structure, and other courses by Education and Training Center Agency • Apply disaster resilient technology which is suitable to minimize disaster impacts on the public works and housing and capacity building for local government's employees for that. • Getting financial aid to implement costlier disaster resilience technologies such as *constructing a tunnel through the conservation forest was found to be more expensive compared to building usual roads* • Sharing countermeasures for DRR and CCA incorporated in the Draft of MOPWH Ministerial Regulation about National Action Plan for Climate Change Mitigation and Adaptation and Disaster Risk Reduction 2017-2030 and Master Plan for Integrated Public Works and Housing Infrastructure Development for 20 years. The regulation also incorporates DRR and CCA evaluation and reporting mechanism of programs and projects and already accommodates an e-monitoring system for continuous monitoring. • Share DRR and CCA related products made by MOPWH through website (http://www.pu.go.id/.). It could be a guide in the technical planning and capacity building improvement. • Share disaster management database by BNPB through DiBi (Data Bencana Indonesia –http:// dibi.bnpb.go.id), development of Indonesia Risk Index and Maps, and portal for sharing GIS information about disaster risks (InaRISK)	implementation of infrastructure construction • Increase awareness of relevant agencies from the centeral, provincial, and local level on integrating DRR and CCA issues in the planning. • Need support to use E-monitoring system as a tool to continously monitor and evaluate the implementation of DRR and CCA in each sector (day-by-day) and make the tagging process more efficient and effective
Lao PDR	• Share activities on CBDRM at the local level (district and village) implemented by several agencies. • Share experience on preparing national risk profiles consisting of risk and hazard mapping in norther provinces Saravane, Sekong, and Attapue; • Experiences of implementing projects on resilience on agriculture sector for CCA. • Already mainstreamed DRR and CCA as well as Sendai Framework in the National Five Year Plan 2016-2020; • Developing guidelines for mainstreaming CCA in agriculture sector; • Established information sharing platform database, Lao Disaster Information (LaoDi), at the national level based on the DesInventar platform, hosted at Department of CC (http://laodi.monre.gov.la/) • Web-based training platform for sharing on training information, materials and etc	• Short-term training on Disaster Risk Assessment • Training on application of GIS tools (Arc Map, Q-GIS etc) to conduct the suitability analysis for disaster risk mapping • Financial support on the development of CC and disaster management laws; • Developing strategy on DRR as well as the contingency plan from line ministries • Publication of good practices on DRR and CCA at country level and develop concept note to mobilize resource on DRR and CCA projects • Climate change and disaster vulnerability mapping • Updating of national disaster risk profile and assessment • Monitoring, evaluation and reporting

	(http:/lao.astavanced.com) • ASEM seminar on "Integrated Water Resources Management for Sustainable Development"	system related to SDGs and Sendai Framework indicators
Malaysia	• Its flood hazard and risk maps for major rivers and flood prediction and early warning system • Good practices of storm water management such as Urban Storm Water Management Manual for Malaysia, retention ponds and wetlands, operation/management of multi-purpose dams for flood mitigation in the townships, water supply and irrigation, and Storm Water Management and Road Tunnel (SMART). • Malaysia has a national platform on DRR and national water resource policy (which is in the process of becoming law); • Has a technical guide "Estimation of Future Design Rainstorm under CC Scenario in Peninsular Malaysia". This guideline helps to derive climate change factor (CCF); • Experience of aligning budget by mapping SDGs targets and 'Strategic Thrusts' of 11th Malaysia Plan; • NAHRIM can share climate data through N-HyDAA web-based model that has eight modules. • Share experience on Value Management (assessment, evaluation, and reporting) for projects development and SPP II system which is an outcome based monitoring that also looks into DRR. • Malaysia can receive visitors for training on above	• Malaysia still do not have laws on disaster so we would like to learn from other countries' existing disaster laws. • Expect trainings on DRR and CCA and funding mechanism and laws for the preparedness such as learning CBDRM from Lao PDR and other member states. • Data sharing on transboundary disaster such as between Malaysia and Kalimantan, Indonesia. • Need more training on M&E.
Myanmar	• Share experiences on hazard, risk and vulnerability assessment (reports for Ayeyarwaddy, Bago and Yangon) • Multi Hazard Risk Assessment in Rakhine State • Established development assistance coordination unit (DACU) which is expected to promote coordination on disaster assistance with development partners • Training Module on Building Local Level Resilience to Climate Change in Myanmar • Share experience on the preparation of Myanmar National Climate Change Policy-MNCCP, Disaster Management Laws and Regulations, Myanmar Climate Change Strategy and Action Plan-MCCSAP(2016-2030) and Myanmar Action Plan on Disaster Risk Reduction(2017-2020) • Developed a disaster database and can share information on climate change impacts. • Mobile applications, KOBO, to collect information from local authority for rapid response and another DAN mobile app to be introduced for public	• Trainings, knowledge sharing, and exchange programs on hazard mapping, risk assessment technology, GIS, disaster insurance system (including establishment and public awareness programs), riverbank erosion management, climate change adaptation and developing guidelines on monitoring and evaluation. • Need training and knowledge sharing on flood risk assessment for dam safety and river bank erosion management, as they are the main problems faced by Myanmar. • Advocacy workshop to understand integration of DRR and CCA laws and regulations, including other ASEAN countries experiences, and developing the local level climate change policy, strategy and action plan.

The Philippines	• Pre Disaster Risk Assessment: It is a hazard focused, location focused and time-based preparation. Members of council meet three days in advance to understand the potential hazards and prepare for response. • Response Mechanism: Have extensive network from national to barangay level with certain level of support for assisting response and roles are clearly defined when under a disaster. • Flood Forecasting and Early Warning System is available in three major river basins, seven river basins are ready and eleven river basins will be completed soon. Community Based Flood Early Warning System has been implemented for several years in which community learn technical aspect of early warning. It has been also expanded. • Risk Assessment and Hazard Mapping with respect to storm surge and flooding in Metro Manila • Conduct drills and forum for capacity building, including for communities and schools • Established award system for communities and organizations who have adopted CCA and performed well • Updating of the Philippine National Building Code • Enhancing flood forecasting and widening of storm surge and landslide in cooperation with other agencies. • Developing guideline and tools on DRR and CCA and conducted monitoring and evaluation of DRR and CCA projects. Every agency involved in DRR and CCA has their own monitoring an evaluation. • TOT (training of trainers) for data sharing and communities are also establishing their own data monitoring station (weather and climate parameters) and thresholds. • Similar to mobile apps and SMS in Myanmar, all hazards maps are also accessible from website.	• Exchange program and study visits • Technical assistance from each other on numerical modeling and GIS mapping and forging of cooperation with ASEAN
Singapore	• Set higher minimum reclamation levels, built geo-bags and seawalls, raised the height of some coastal roads, and coastal adaptation study to identify options to better protect our coasts over the long term • Diversified water supply and introduced Four National Taps, created a water conservation programme and water efficiency scheme, designed a storm water management system based on Source-Pathway-Receptor Approach, and build a fifth NEWater plant and two new desalination plants • Study the feasibility of an innovative underground drainage and reservoir system	

Thailand	• National Disaster Prevention and Mitigation Plan 2015 • CBDRM Toolkit • Although there are no integrated laws on DRR and CCA, some initiatives on integrating CCA in DRR practices have been initiated such as Disaster Prevention and Mitigation Act 2007 • Prior understanding of knowledge and data on climate change impacts as extra potential risks for drafting DDR long-term plan and provide proper policies on sustainable implementation of river basin management and countermeasures.	• Analysis of situation and emergency evaluation from metrological and hydrological data. • Evaluate exposure, vulnerability, and effects to economic, social, livelihood and environment for implementation of the policy, the strategic plan, law & regulation. • Solid/permanent structure for collaboration between DDPM and ONEP, including on data and knowledge sharing, and national mandates given to them to incorporate laws and regulations between DDR and CCA; • Capacity building for DDPM and ONEP's national-local staffs to understand the linkages between DRR and CCA such as an international funded workshop on the integration of CCA aspects into long-term plans of DDPM • Data collecting system and database system that could distinguish data(values) of climate induced disasters/loss from the regular disasters • Database system on disaster and loss co-designed by DDPM and ONEP in order to yield important information needed for policy making and implementation. • Proper M&E system and indicators for measuring implementation progress and success of the short and long term policies on DRR and CCA • Identify the existing legal framework for national assistance including implementation of previous disaster situation and Community Based Disaster Risk Management
Vietnam	• Application of Geo-spatial technology/satellite image to develop disaster risk maps after assessing several disasters events such as typhoons and droughts; • Developing super storm surge map for coastal provinces and landslides risk maps for north mountainous; • Community based disaster risk assessment-CBDRA (risk assessment, risk mapping, development of the Disaster prevention and control plan) and using GIS to digitize the risk maps in order to help easy information update, data storage management, analysis of information and combine with other technical maps, and for running risk models	• Promote the application of Geo-Spatial tools to develop and update risk assessment and risk mapping at commune level annually • Raising awareness for community about the risks • Strengthening capacities to enhance coordinated and integrated DRR and CCA actions into local social economic development plan. • Common guidelines for integrating DRR and CCA; • Help to revise National Strategy and Plan for DRR by incorporating CCA; • Improve the capacity and

	• Established Natural Disaster Prevention and Control Funds in 50 out of 63 provinces, while 37 provinces have collected 812 billion VNĐ (about 37 million USD) • Payments for forest environmental services in Vietnam and 43 provinces established steering committee to implement the policy and 41 provinces established the Forest Protection and Development Fund. After 8 years of operation, there were 322 hydropower companies, 88 clean water companies and 59 tour operators signed the contracts. The entrusted payment was about 7.466 billion VNĐ (about 340 million USD) and the collection is about VND 1,300 billion per year (59 million USD) on average by 2013. • Use of mass media, e-learning, social networks sites such as Facebook, twitter, etc., National Forum on Natural DRR and CCA, sharing information via Vietnam Disaster Management Authority website, and CCA into schools • Develop and approve a set of M&E indicators for the CBDRM program and guide on how to implement. Use an indicator to determine the ratio of communes in a province to develop natural disaster prevention and control plan and integration into local socio-economic development plan.	effectiveness of management and use the funds • Share skills, knowledge, data on climate change impacts • Building capacity for community on how to integrate the content of natural disaster in the local socio-economic development plan as well as monitoring and evaluation of relevant issues

Session 3: How can the immediate collaborative activities be implemented practically?

Participants from eight ASEAN Member States (AMSs) discussed practical approaches to implement the immediate collaborative activities by matching the possible contributions and expectations expressed in Session 2. Each country formed their own group to discuss and prioritise the most relevant activities for DRR and CCA integration, set targets to be achieved and then set annual plans for three years.

Following the group exercise participants discussed about the communalities among the countries on prioritized actions, targets and action plan. Based on the discussion, two activities were identified as Priority Work Plan for 2020:

Activity 1: Capacity building for planning and implementation of measures for flood, storm, landslide and drought hazards with focus on spatial approaches for risk assessment and risk mapping at the local level

Activity 2: Integration of DRR and CCA laws and regulations, where applicable, with coordination of relevant agencies for the effective implementation at the national and sectoral level

The SOLF then agreed on the roles and responsibility of each parties for the implementation of the agreed Work Plan for 2020. The WG P&M will take lead in coordinating the implementation with support from ASEAN Secretariat. The role of Climate Change International Technical and Training Center (CITC), Thailand Greenhouse Gas Management Organization (TGO), Bangkok, Thailand will be

explored in hosting the required capacity building activities proposed as a part of this Priority Work Plan for 2020. The SOLF agreed to implement Priority Work Plan for 2020 activities immediately in line with the AADMER Work Programme 2016-2020 and available resources. The Priority Work Plan for 2020 will be reviewed annually and its continuation beyond 2020 will be discussed along with a new AADMER Work Programme.

The Co-Chairs of the Senior Official-Level Forum, on behalf of the Co-Chairs of the ACDM Working Group on Prevention and Mitigation, signed the summary of the SOLF that outlined the agreed activities of Priority Work Plan for 2020. The meeting was then formally closed by the co-chairs.

ASEAN to implement work plan for disaster risk reduction and climate change

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ASEAN to implement work plan for disaster risk reduction and climate change

JAKARTA, 17 November 2017 – ASEAN officials in charge of Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) committed themselves to strengthening integration of actions in their respective agencies that will effectively address disaster risk and climate change, with particular focus on water-related disasters including flood, storm, landslide and drought.

The officials agreed on several immediate collaborative activities as indicated in the Workplan fo[illegible]t [illegible]y

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Framework on DRR and CCA Integration which was developed under the auspices of the ASEAN Committee on Disaster Management (ACDM) Working Group on Prevention and Mitigation with full support from the Japan International Cooperation Agency. The plan was endorsed at the 31st ACDM Meeting held in Luang Prabang, Lao PDR, on 17 October 2017.

The Senior Official-Level Forum held at the National Agency for Disaster Management in Jakarta, Indonesia today brought together over 50 high-ranking participants from disaster risk reduction and climate change offices, hydro-meteorological, public works agencies and other relevant institutions. The forum provided a platform to share good practices, explore inter-agency engagements, and to prioritise collaborative actions to be implemented in accordance with the Work Plan 2018 – 2020.

“Disaster risk reduction and climate change adaptation have several overlapping areas which make them easy to be integrated in approaches,” said Mr. Dicky Fabrian, Head of Legal and Cooperation Bureau from Indonesia’s National Agency for Disaster Management, who is hosting the senior official-level forum.

Speaking at the forum, Mr. Vilayphong Sisomvang, Co-Chair of the forum, representing Lao PDR, said that integrating disaster risk reduction and climate change adaptation in national and local development plans will help ASEAN tackle climate change impacts in a more effective manner.

“The collaborative actions outlined in the work plan will need to be prioritised and implemented by all relevant agencies and institutions through the coordination of the ACDM Working Group on Prevention and Mitigation,” added Mr. Saharat Wongsakulwiwat, who is also the Co-Chair of the forum, representing Thailand. “Once implemented effectively and practically, we will be able to create an enabling risk governance environment for long-term risk reduction,” he explained.

Growing populations living in hazard-prone areas in Southeast Asia, coupled with more intense, severe and longer impacts of climate change, require strong linkage between disaster risk reduction and climate change adaptation, where greater intensification of disasters in the region was exacerbated by the effect of climate change risks.

The JICA project team has completed a baseline study to assess the degree of such integration in each ASEAN country. Three national workshops have been organised in Myanmar, Viet Nam and the Philippines between May and July 2017, and a regional forum has been held in Bangkok, Thailand in September 2017 to discuss the work plan. A publication showcasing good practices in ASEAN for strengthening

disaster risk reduction and climate change adaptation integration is also published.

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For more information about the Forum and the Project on “Strengthening Institutional and Policy Framework on Disaster Risk Reduction and Climate Change Adaptation Integration,” visit https://www.drrandcca.com.

November 17th, 2017 | ASEAN Secretariat News

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