Japan International
Cooperation Agency
(JICA)

Study on Economics of River Basin Management for Sustainable Development on Biodiversity and Ecosystems Conservation in Sabah (SDBEC)

Final Report

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PADECO Co., Ltd.

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Contents

List of Abbreviations

ABS	Access and Benefit Sharing
BBEC	Bornean Biodiversity and Ecosystems Conservation Programme
BBOP	Business and Biodiversity Offsets Programme (BBOP)
CBD	Convention on Biological Diversity
CCA	Community Conserved Area
CRBR	Crocker Range Biosphere Reserve
CRP	Crocker Range Park
CUZ	Community Use Zone
DID	Department of Irrigation and Drainage
DoA	Department of Agriculture
DOE	Department of Environment (Federal)
EE	Environmental Education
EPU	Economic Planning Unit
EPD	Environmental Protection Department
FiT	Feed-in-Tariff
FSC	Forest Steward Council
GEF	Global Environment Facility
HoB	Heart of Borneo
ICCA	Indigenous and Community Conserved Area
ITBC	Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
JKKK	Village Security and Development Committee
KPLB	Ministry of Rural Development (Sabah)
LIGS	*Lembaga Industri Getah Sabah*/Sabah Rubber Industry Board
MSPO	Malaysian Palm Oil Council
MAB	Man and Biosphere Programme, UNESCO
MPOA	Malaysia Palm Oil Association
MOSTI	Ministry of Science, Technology and Innovation, Malaysia
NGO	Non Governmental Organisation

NRO	Natural Resources Office
PES	Payment for Ecosystem Services
RSPO	Roundtable on Sustainable Palm Oil
REDD+	Reducing Emissions from Deforestation and Forest Degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SDBEC	Sustainable Development on Biodiversity and Ecosystems Conservation in Sabah
SDC	Sabah Develop Corridor Blueprint
SEDA	Sustainable Energy Development Authority of Malaysia
SEDIA	Sabah Economic Development and Investment Authority
SFD	Sabah Forestry Department
TEK	Traditional Ecological Knowledge
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UPM	Universiti Putera Malaysia

Chapter 1 Introduction

1.1 Background of the Study

The Japan International Cooperation Agency (JICA), the State Government of Sabah and Universiti Malaysia Sabah (UMS) jointly implemented the technical cooperation project, entitled "Sustainable Development for Biodiversity and Ecosystem Conservation in Sabah" (SDBEC). The project purpose of SDBEC is as "Promotion of Sustainable Development." In the Project Design Matrix (PDM) of SDBEC, an activity concerning Payment for Ecosystem Services (PES) is planned to achieve the Output 2 "Sabah's experiences are shared nationally and internationally for biodiversity conservation and sustainable development" as follows: -

Activity 2-2: To undertake study on possible sustainable financing mechanisms for biodiversity (i.e. the payment for ecological services (PES), biodiversity accounting, rationalisation of incentives and taxes for sustainable development, REDD+, CSR and strengthening of the Biodiversity Centre Fund, etc.)

As a part of the above activity, JICA commissioned PADECO Co., Ltd. to conduct the Study on PES for SDBEC, then their consultant, Dr. Jiro Iguchi was dispatched as an expert of economic incentive for river basin management.

In addition, the study aims at contributing to the management of "Crocker Range Biosphere Reserve" (CRBR). Under SDBEC and its preceding programme (Bornean Biodiversity and Ecosystems Conservation Programme/BBEC2), JICA assisted the management of Crocker Range Park (CRP), which is a catchment area for the populated west coast of Sabah. In June 2014, CRP and its surrounding areas were designated as CRBR under Man and Biosphere Programme (MAB) by UNESCO. The State Government of Sabah plans to formulate a management plan for CRBR.

The CRBR consists of three zones, such as the core area (CRP and the forest reserves), the buffer zone and the transition area. In its buffer zone and transition area, sustainable development for biodiversity conservation is critical, as some areas even nearby the core area are occupied by large scale oil palm plantations. To achieve comprehensive natural resources management in the buffer zone and transition area, introduction of economic incentive and market-based mechanism including PES would prove to be an effective measure, in addition to the conventional command and control by the government and the voluntary control which has been applied to the management of CRP.

Furthermore, currently UNDP-GEF is assisting a project entitled "Biodiversity Conservation in Multiple-use Forest Landscapes in Sabah, Malaysia". One of the 12 subcontracts (SC-4) for the project is to support the development of new state-level policies and regulations for PES and pilot implementation of PES within the demonstration landscape. The subcontract will approximately be started in October 2015 for a duration of 4 years.

1.2 Objectives of the Study

In line with the above background, the objectives of the study are defined as follows: -

- To collect information and analyze policies, strategies, plans and implementation of PES and other economic incentive for biodiversity conservation and river basin management in Sabah
- To present recommendations on designs and feasibility of PES and other economic incentive for biodiversity conservation and river basin management in CRBR. (The recommendations should also contribute to the development of state-level policies and regulations for PES assisted by UNDP-GEF.)

1.3 Detailed Work Plan

The study was implemented following the detailed work plan as follows.

Task1: Preparation (in late Nov. 2014)
1=1 The reference literature was reviewed to determine information to be collected in the field study.

1-2 Advanced practices of PES (both domestic and international) was identified and screened for applicability to the natural and socioeconomic conditions in CRBR.

1-3 The expert prepared an inception report, in Japanese and also in English and submit it to the Global Environment Department, JICA.

Task 2: Field study (in early and middle Dec. 2014)
2-1 During the field study, the expert had discussions with the long- JICA term experts dispatched to SDBEC as often as required to agree on the implementation plan of the study and to have their comments on information collected and analysis by the study.

2-2 The expert interviewed the concerning agencies and organisations to collect necessary information. As the expert had been dispatched as the long-term expert for the project preceding to SDBEC (BBEC2) and has sufficient information on the biodiversity conservation and management of CRBR up to 2011, he efficiently collect information focusing on progress since then, as well as specific issues related to PES.

The respondents of the interview survey and information collected from them include: -

- Natural Resources Office: comments and confirmation on the study plan, current status of CRBR management plan, on-going and planned activities on economic incentive for biodiversity conservation, arrangement of the final reporting of the study, progress of the PES policy formulation under the UNDP-GEF project, etc.

- Sabah Parks: comments and confirmation on the study plan, current status of CRBR management, on-going and planned activities on economic incentive for biodiversity conservation, etc.

- Sabah Forestry Department: progress of the PES policy formulation under the UNDP-GEF project, progress of on-going and planned activities by the Department for PES such as Malua Biobank, REDD+, studies on PES, forest certificate, etc.

- Sabah Biodiversity Centre (SaBC): a role of SaBC for introduction of PES to Sabah and management of CRBR, current status of ABS in Sabah, etc.

- Ministry of Rural and Entrepreneurial Development (Kementerian Pembangunan Luar Bandar Sabah/KPLBS): Status and monitoring system of poverty and poverty alleviation in CRBR, reconfirmation and updating of the facts on poverty alleviation in Sabah, feasibility of branding products in CRBR, etc.

- Sabah Economic Development and Investment Authority (SEDIA): Classification and strategy for development of the area overlapping with CRBR in Sabah Development Corridor Blueprint, etc.

- Rural Development Corporation (Korporasi Pembangunan Desa/KPD) including OISCA Sabah: Status of rural development in CRBR, reconfirmation and updating of the facts on rural development in Sabah, feasibility of branding of products in CRBR, etc.

- Department of Agriculture Sabah: Status of rural development in CRBR, reconfirmation and updating of the facts on rural development in Sabah, feasibility of branding of products in CRBR, etc.

- Sabah Wildlife Department: on-going and planned activities on PES, etc.

- Department of Irrigation and Drainage: Feasibility of PES through water supply service in CRBR, etc.

- Jetama Sdn. Bhd. (a concessionaire for water supply service in the west coast of Sabah): Feasibility of PES through water supply service in CRBR, etc.

- Sabah Fisheries Department (as promoting agency of "Tagal"): Feasibility of PES utilizing Tagal, etc.

- Sabah Tourism Board: Status of tourism in CRBR, feasibility of PES through tourism in CRBR, etc.

- Malaysia Palm Oil Association: status and problems as a member of RSPO, etc.

- Environmental Protection Department (as a secretary of SEEN): environmental education as a tool of river basin management and PES, etc.

- Institute of Tropical Biology and Conservation, Universiti Malaysia Sabah: environmental education as a tool of river basin management and PES, etc.

- Lands and Surveys Department: Legal restrictions for institutional design of PES, etc.

- District Offices overlapping with CRBR (Penampang, Papar, Beaufort, Keningau, Ranau, Tuaran) and Kota Kinabalu City Hall (Dewan Bandaraya Kota Kinabalu/DBKK): Status of rural development in CRBR, reconfirmation and updating of the facts in the draft buffer zone management plan of CRBR in 2011, etc.

2-3 The expert visited the site Kg. Tudan, the pilot project site for management of CRBR under SDBEC where traditional hillside farming, organic faming, beekeeping, and composting are carried out.

2-4 Based on the analysis of the gathered information, the expert prepared recommendations for introduction of economic incentive and market-based mechanism for biodiversity conservation. At first, ecosystem services in CRBR that could be targeted by PES were identified, such as water supply, erosion control, tourism value generated by rare species, etc. Institutional design (mechanism) for payment to the ecosystem services with some options were discussed, such as collaboration with the palm oil industry, electricity companies, the tourism industry, etc., creation or allocation of fund for PES, taxation, subsidies, transfer of development rights including biodiversity offset, etc.

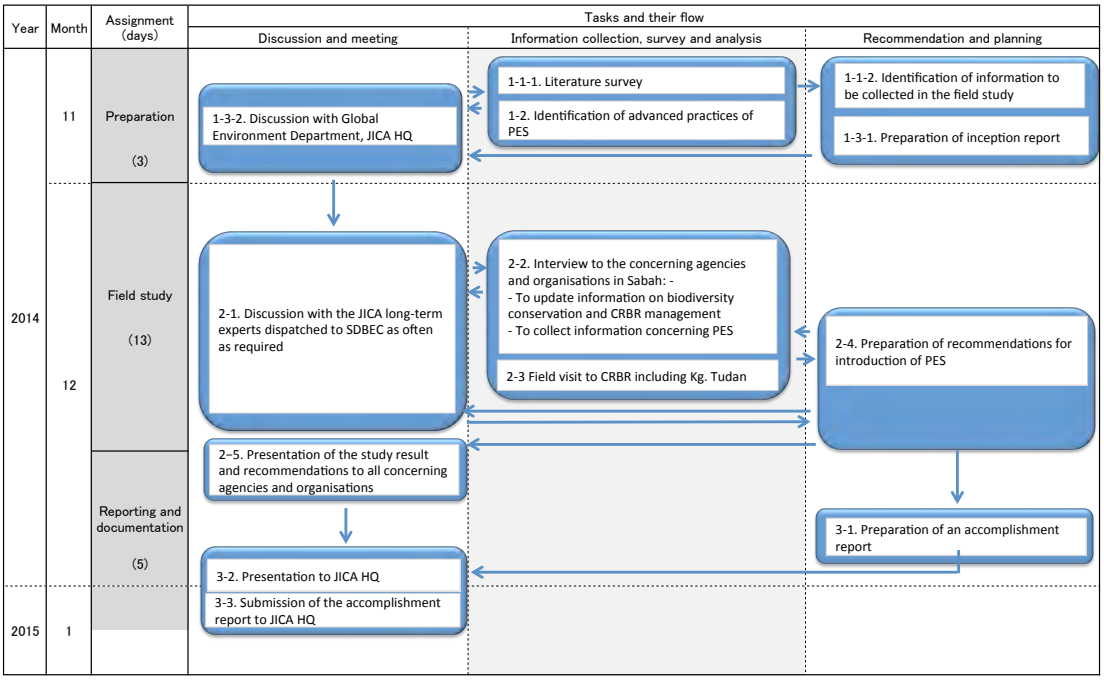
2-5 The expert presented the study result including the recommendations above at a final reporting where all the agencies and organisations concerned in the management of CRBR were presented. The recommendations were discussed in the platform/framework for formulation of management plan of CRBR. Compilation of the recommendations into the management plan will also be discussed.

Task 3: Reporting and documentation (in late Dec. 2014 and early Jan. 2015)

3-1 The expert prepared a final report both in English and Japanese.
3-2 The expert gave a presentation of study result to the Global Environment Department, JICA.
3-3 The expert submited the final report to the Global Environment Department, JICA.

1.4 Implementation Schedule

An implementation schedule of the study is presented below.



1.5 Expected Outputs

- Recommendations on introduction of economic incentive including PES for biodiversity conservation and river basin management in CRBR

- Contribution to the formulation of state-level policies and regulations for PES planned in the PES component of the UNDP_GEF project (Biodiversity Conservation in Multiple-use Forest Landscapes in Sabah, Malaysia)

Chapter 2 Rural Development and poverty in Sabah

2.1 Poverty in Sabah and Malaysia

It is critical to understand and analyse socio-economic status in Sabah and CRBR and government intervention to improve the status, to prepare feasible recommendations for introducing PES and other economic incentives. In particular, the rural areas in Sabah has suffered and still suffer poverty, though the government has making much efforts for these 40 years to alleviate and eradicate the poverty. The rural development in Sabah is always discussed by the government together with poverty eradication. Understanding the context of poverty and poverty alleviation in Sabah and discuss PES and other economic incentive in line with their policies and implementation on poverty alleviation is essential to make the recommendations feasible and effective.

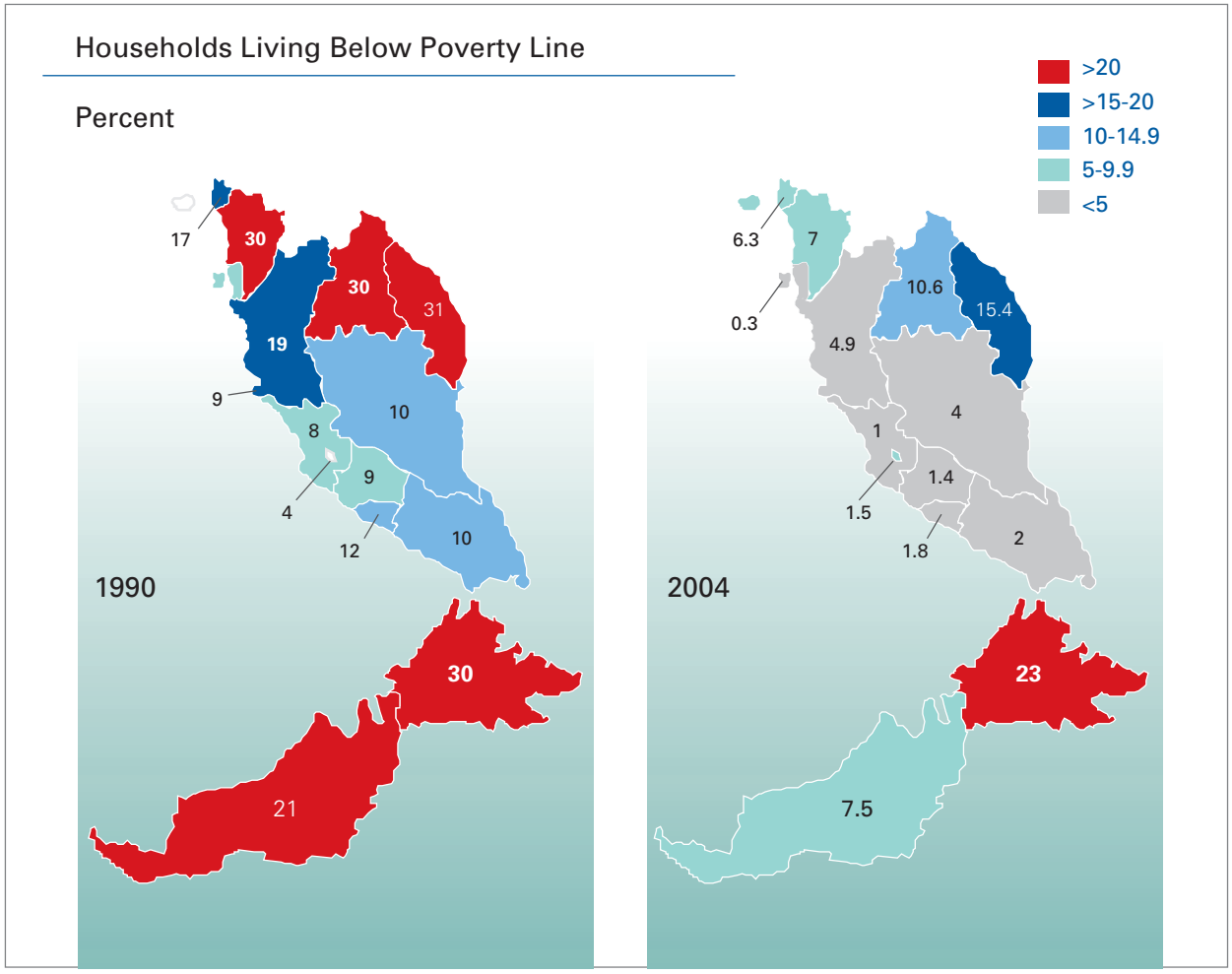
Malaysian government's long-term poverty eradication programmes have successfully addressed poverty since the early 1970s. The poverty incidence in Malaysia declined sharply from 52.4 % in 1970 to 6.1 % in 1997. At present, the nation's poverty incident is at a minimal of 1.7% as of 2012 in the whole nation. However, Sabah failed to realize significant decrease in the incidence in 1980s and 1990s, even though the whole nation ssaw it go down to 1/5th. Poverty incident in Sabah fluctuated around 20% for almost 15 years from the middle of 1990s (Table 1, Figure 1)[1]. Though recent figures (2009 and 2012) show reduction by half in four years, the latest figure (8.1% in 2012) is still extremely high in comparison with those in any other states (Figure 2).

Table 1 Incidence of Poverty in Sabah and Malaysia 1976-2012

Year	1976	1979	1982	1987	1995	1997	1999	2002	2004	2009	2012
Total in Sabah	58.3%	41.1%	29.2%	n.a.	28.71%	21.37%	24.31%	16.00%	24.22%	19.7%	8.1%
Urban	25.9%	21.3%	15.9%	n.a.	15.36%	10.24%	14.25%	9.25%	13.97%	9.8%	5.3%
Rural	65.7%	50.1%	36.1%	n.a.	35.75%	27.72%	30.22%	23.64%	35.79%	32.8%	12.9%
Total in Malaysia	37.7%	37.4%	n.a.	19.4%	8.7%	6.1%	8.5%	6.0%	5.7%	3.8%	1.7%

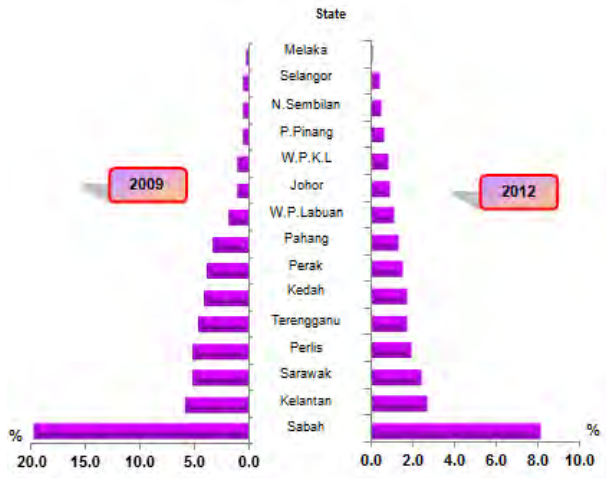
Source: Government of Malaysia, 1984
UKM, 2006
Department of Statistics Malaysia, 2014
Ministry of Tourism, Culture and Environment Sabah, 2014
Economic Planning Unit, 2014

[1] The causes of the fluctuation could be explained as follows. In 1999, the incidence of poverty has slightly increased to 24.31% and again decreased and recorded the lowest of 16.00% in 2002. It again increased to 24.22% in 2004. The increase of the poverty incidence in 1999 can be explained by the lag effect of the Financial Crisis of 1997, which was felt in 1999. It can be speculated that the sudden decrease in the incidence of poverty in 2002 was associated with the strong deportation policy implemented in the late 2001 and throughout 2002 which might have resulted in the expansion of employment opportunities for Malays in low-waged labour market on the one hand and the fierce operation of the Sabah state government to remove local squatters of prime real estate close to cities and major towns which might have resulted in under-registering of the local poor. As the control on the immigration got relatively weaker, the number of migrant workers increased again and the Malaysian poor seemed to have been crowded out from the low-waged market. In addition, the policy to remove local squatters got implemented less and the registration of the Malaysian poor seemed to have been increased since 2002. The explanation about the increased poverty incidence in 2004 that government capacity to identify the poor was improved in 2004 may also be in line with the above inference (PADECO et al. 2007).



Source: IDS, 2008

Figure 1 Households Living Below the Poverty Line



Source: Department of Statistics Malaysia, 2014

Figure 2 Incidence of poverty by state, Malaysia 2009 and 2012

Sabah's economic structure is heavily dominated by the primary sector and the export of a few commodities, mainly oil and gas. In the gross domestic products in Sabah in 2012, the service sector contributed about 50.4% to Sabah's overall GDP, followed by agriculture at 22.9%, mining and quarrying 16.9%, manufacturing 7.9% and construction at 1.4%. In 2003, persons employed in the agriculture, forestry, fishery and hunting accounts for 31.3% of the total labour force in Sabah, while the national average for agricultural sector accounts for 13.8% of the total labour force. Sabah is located far from the economic centre of Malaysia. In comparison with the other states in Malaysia, development of manufacturing sector faces difficulties due to the disadvantage of geographical condition, insufficient basic infrastructure, serious shortage of human resources and absence of institutional/political conditions with special consideration.

2.2 Policy and Institution for Rural Development and Poverty Eradication in Sabah

2.2.1 The 10th Malaysia Plan

The latest 5-year national development plan in Malaysia, the 10th Malaysia Plan (EPU, 2010) states "Malaysia can effectively declare victory in its fight against poverty" because the incidence of poverty has been drastically reduced from 49.3% in 1970 to only 3.8% in 2009, with hardcore poverty nearly eradicated. Thus in the 10th plan, the Government's focus will shift towards the low-income segment, specifically the bottom 40%, which consists of 2.4 million households. The strategy for the bottom 40% differs from the issue of poverty, in that it is not a case of dispensing assistance but ensuring that low-income households have the opportunity to enjoy a better standard of living.

On the other, the Plan also states that pockets of poverty nevertheless remain, both in terms of specific geographies and particular communities. The Government remains committed to transmitting assistance and welfare to the poor and vulnerable. Special programmes will be undertaken to address poverty on a sustainable basis, especially in terms of providing income generating opportunities, such as through agropolitan projects.

2.2.2 Sabah Development Corridor (SDC) Blueprint (2008-2025)

The Sabah Development Corridor (SDC), the blueprint for the period of 18 years from 2008 to 2025 was initiated to enhance the quality of life of the people in Sabah by accelerating the growth of the state's economy, promoting regional balance and bridging the rural-urban divide while ensuring sustainable management of the state's resources.

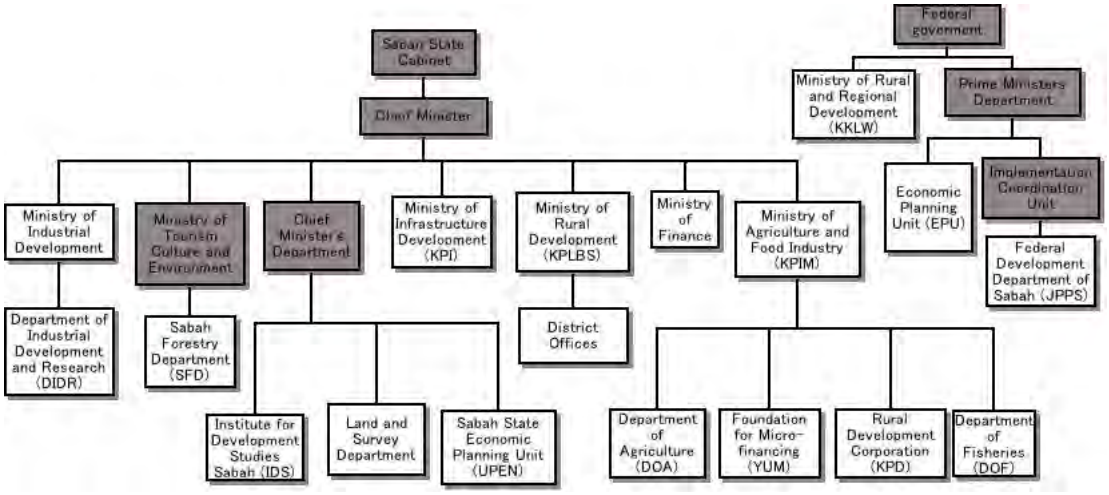
By 2025, the SDC initiative aims to triple Sabah's Gross Domestic Product (GDP) per capita, and increase its GDP by four times through the implementation of the prioritised programmes. In total, more than 900,000 new jobs are expected to be generated during the SDC implementation period. Hardcore poverty is targeted to be eliminated by the end of the Ninth Malaysia Plan (9MP) with overall poverty halved from 23% in 2004 to 12% in 2010.

Identifying the key challenges against poverty eradications such as remoteness of poor population, infrastructure in rural areas and accurate data to monitor poor households, most importantly basic infrastructure and utilities need to be made available within rural areas. Other initiatives to eliminate poverty under the SDC would include: -

- Expanding the size and scope of existing poverty eradication schemes
- Improving productivity in rural areas especially through agriculture
- Promoting small scale rural entrepreneurship

2.2.3 Agencies in charge of poverty alleviation and rural development

Figure 3 shows agencies playing important roles for poverty alleviation in Sabah and organisational relationship among them.



Source: PADECO et al. 2007

Figure 3 Agencies for Poverty Alleviation in Sabah

2.3 Issues in the Rural Development and Poverty Alleviation from Perspective of Biodiversity Conservation in Sabah

From 2006 to 2007, on consignment of Japan Bank for International Cooperation (JBIC), PADECO Co., Ltd., Tokyo University of Agriculture and Kyushu University conducted "the JBIC Pilot Study on Knowledge Assistance for Income-Generation through Sustainable Natural Resource Use in Poverty Areas in Sabah." The purpose of the Study is as follows:

> *To propose basic ideas of possible new ODA loan projects which are envisaged to contribute towards correcting economic disparity in Sabah, through sustainable utilization of the natural resources by the local communities, by way of examining and evaluating one (1) or two (2) pilot projects only for the whole duration of the study which will be implemented with no encumbrances whatsoever on the Malaysia side. The study shall focus primarily on the hard-core poor in the state of Sabah in areas to be determined by the relevant Executing and Implementing agency (ies).*

In the final report of the Study (PADECO et al. 2007), issues of the poverty and on-going poverty eradication programme in Sabah were analyzed from the perspective of sustainable rural development as well as biodiversity conservation as follows.

Based the literature review and the observation of ten cases of poverty alleviation programme in Sabah,
Source: PADECO et al. 2007
Figure 4 is a problems tree showing causes of poverty in Sabah and the cause-effect relationships among them. Based on the problem tree, major and common problems causing poverty in Sabah could be summarised as follows.

(1) Common route causes: remoteness and low education level

The remoteness is a common cause for inaccessibility to educational institutions and inaccessibility to the market. The low educational level is also a common cause for lack of information among poor households and difficulty in outreach by government agencies for development.

(2) Less competitiveness of the product in the market

The majority of the poor are dependent upon household labour in agricultural activities, fishing, hunting and gathering. Given the inaccessibility to the market and marketing skills due to the remoteness and the low educational levels, it is assumed that most products are for self-consumption rather than income-generating sales.

(3) Little knowledge on sustainable resource use

Due to small production size and inefficient farming or fishing methods, productivity of rural farmers and fishermen is relatively low. Resultantly, they often tend to exploit natural resource to improve short-term productivity which could degrade natural resources and lower productivity in the long run.

(4) Ineffective poverty-eradication programs

Ineffective poverty-eradication programmes are one of the causes of poverty. The JBIC Study found many instant examples of poverty eradication projects which have been abandoned after assistance by the government was completed. In the Gana Resettlement and Integrated Development (GRID) project initiated in 1997 by Sabah Forestry Department in Kota Marudu district, the original goal for forest conservation by relocating those used to live in the forest to a new village was not yet successful after 10 years. A lot of people are back and forth between the forest and the newly built village. The resettled people have also suffering from the lack of amenities and difficult market accessibility and they seemed to maintain the old life style. It can be said that the project itself is not effective yet for both environment protection and poverty alleviation.

(5) Limited capacity of the government officers and agencies

One of the causes for ineffective poverty-eradication programmes is poor monitoring and evaluation due to lack of human resources (in both terms of number and expertise).

(6) Few alternatives to monoculture plantation

Establishment of monoculture plantation with government investment has been a common means to alleviating poverty. The crop of monoculture used to be mainly oil palm, but now rubber is getting popular recently owing to its high price in the international market in these few years. Some of the past monoculture estate programmes in Sabah contributed to less number of poor in comparison to their counterpart in the peninsular Malaysia, while they were successful as a profitable industry. One of the causes of this is that many of the targeted poor easily sold their lot of the plantation, after the land ownership was transferred to them from the state.

(7) Conflict between protection and poverty eradication

The matter of conflict between economic development of poor rural communities and management of the protected areas has been one of the most difficult issues for years in terms of nature conservation in Sabah. The approaches the government agencies have taken to solve the conflict between protection and utilization of natural resources in the protected areas in Sabah vary according to local conditions and strategies of the agencies. Some approaches were successful, while others were not.

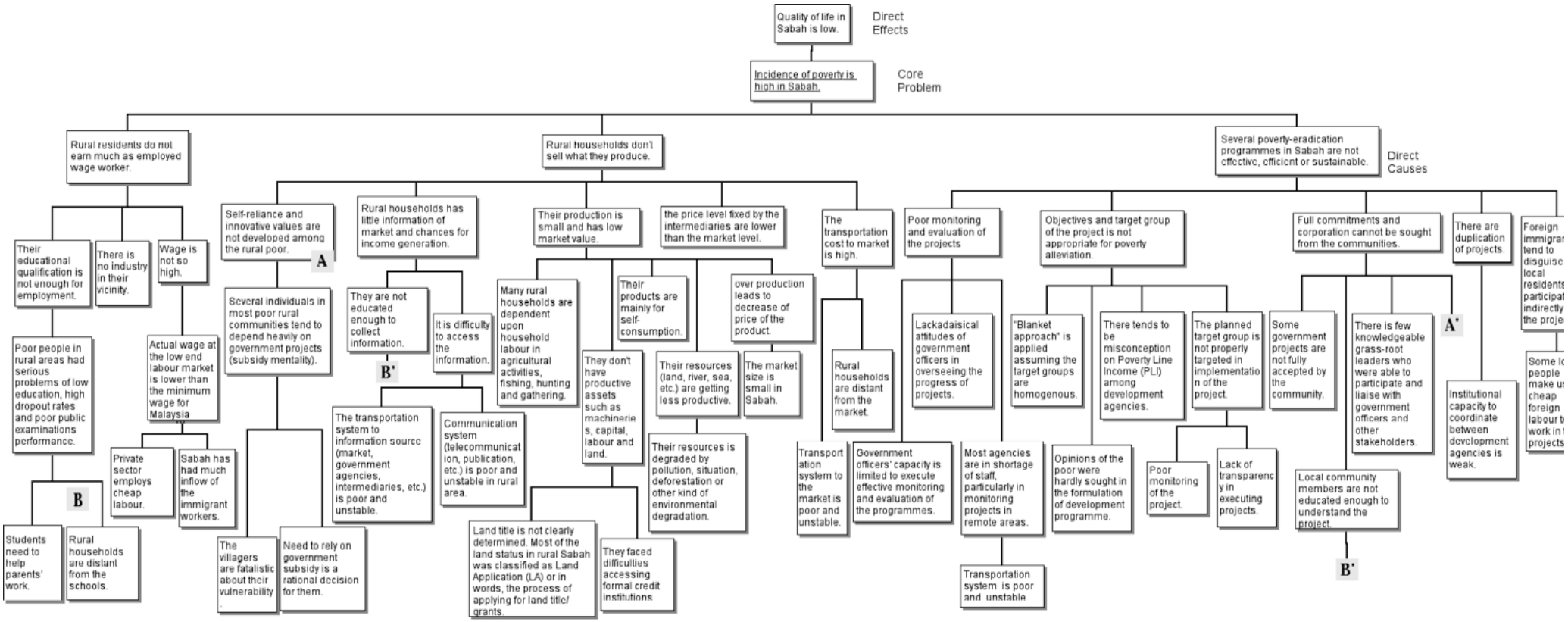
(8) Little consideration of social factors

Many government officers in charge of poverty alleviation programs claimed that the people targeted by their programs have an “attitude problem”, and that is the reason why the programs are not effective and sustainable as expected. However, when we carefully study the target population of these particular cases, there are certain social and/or economic reasons why they cannot sustain the poverty program well. For example, the social study on seaweed farming in Banggi island revealed that some of the key factors determining successful application of seaweed farming in different villages are social factors, such as religious and cultural meaning of the seaweed farming in the specific ethnic groups. In planning and implementation of poverty alleviation programmes, while technical factors were considered well, such factors are not well considered. That would be one of the causes of ineffective poverty alleviation programmes by the government.

(9) Additional causes

The small size of market in Sabah is also a factor contributing to poverty. Since market size is small, with lower population density in Sabah, over production leads to vast decrease of price of the product.

Another additional factor is an effect of foreign immigrants to the minimum wage. Sabah has had much inflow of the immigrant workers accounting for about 28.9 % of the total population of Sabah according to the official statistics in 2010. The presence of the migrant workers played a role in lowering the actual income by taking the jobs at the lower end of the labour market.



Source: PADECO et al. 2007

Figure 4 Problems Tree Concerning Poverty in Sabah

Chapter 3 Introduction and Plan of Economic Incentives for Nature Conservation in Sabah

3.1 Introduction of PES and other positive economic incentives to conservation at the national level

3.1.1 PES policy formulation

In 2012 at several national level seminars and conferences on conservation, EPU claimed needs for development of PES mechanism, discussing that the current regulation may not have been sufficient to protect ecosystem services and alternative policy to create and develop systematic market mechanisms that would improve the way ecosystem services are used (EPU 2012a, EPU 2012b).

In 2012, as early stage of exploring these mechanisms, EPU and UPM with assistance from UNDP conducted a scoping study on PES that looked into potential ecosystem services and its users (key sectors). They found lack of understanding on PES, needs of capacity development for PES and the fact that PES is not explicitly incorporated in the laws of Malaysia, though certain elements of PES do exist in a number of laws. They also found that many valuation studies of ecological services were conducted but few had been applied to development of a PES mechanism. There is no central database for these valuations and lessoned learned either. Economic valuation on marine ecosystems is less than that of terrestrial ecosystems.

A national level UNDP-GEF funded project, the National Biodiversity Planning to Support the Implementation of the CBD 2011-2020 Strategic Plan in Malaysia (NBSAP) aims to revise NBSAP by 2015 to meet national priorities and the Aichi targets (UNDP 2012a). In preparation of the revised NBSAP, identification of potential means of capturing the ecosystem services including through policies such as payments for ecosystem services and other positive incentives is planned.

As a way forward for 11th Malaysia Plan, EPU is preparing key recommendations for biodiversity conservation. The 4th key recommendation discussed is “Strengthening Financial Mechanism in Management of Natural Resources and Conservation,” and one of the goals of this recommendation is “Implementation of Payment for Ecosystem Services (PES) for water utilization, biodiversity conservation, and recreational areas for ecotourism” (EPU, 2014a).

3.1.2 REDD+ at national level

At the national level, UNDP supported the Government of Malaysia through the national level project “National REDD+ Readiness in Malaysia.” The project (2011-2013) aimed to provide policy recommendations and support for developing institutional and legal frameworks, supporting capacity building and developing a sustainable financing mechanism for REDD+ (UNDP, 2012c). The project engaged with the Forestry Departments Peninsular Malaysia, Sabah and Sarawak to ensure the inclusion of the three federal territories in the development of a cohesive REDD+ national process. As a result, Malaysia began to develop a National REDD+ Strategy. The Roadmap for REDD+ Implementation, within the strategy, outlines the scope of REDD+ activities to be considered within Malaysia, the proposed national reference emission levels, the proposed financing structure and benefits sharing mechanisms for REDD+, the methods of ensuring safeguards, and the management structure for REDD+ implementation in the country.

3.2 Introduction of PES and other Economic Incentives for biodiversity conservation in Sabah

3.2.1 PES Policy formulation under Biodiversity Conservation in Multiple-use Forest Landscapes in Sabah, Malaysia (the UNDP GEF Project)

"Biodiversity conservation in multiple-use forest landscapes in Sabah, Malaysia" is a project funded by UNDP-GEF, which started in January 2012 and expected to be completed in December 2018. The objective of the project is to bring land use in connecting landscape and protected areas under a common and integrated management umbrella strategy in order to mainstream biodiversity, ecosystem functions and resilience, while enabling ongoing sustainable uses. The project will meet this objective by achieving three interconnected outcomes: (1) provisioning of an enabling environment for optimized multiple use planning, financing, management and protection of forest landscapes; (2) demonstration of multiple-use forest landscape planning and management system, and (3) demonstration of innovative sustainable financing methods for multiple-use forest landscape management.

According to the Project Document (UNDP 2012b), the State of Sabah has yet to capitalize on the various goods and services provided through payment for ecosystem services (PES) mechanisms. According to the Project Document, WWF commissioned a study to scope out possible catchment services for PES in Sabah and Sarawak in 2011. They identified seven basins as potential pilot sites to test the business case for implementing payments for catchment services, including the Labuk and Kintabatagan river basins in Sabah. The Project Document suggests conduct a scoping study in Sabah which is similar to the above mentioned scoping study of PES under another UNDP-GEF project at the national level.

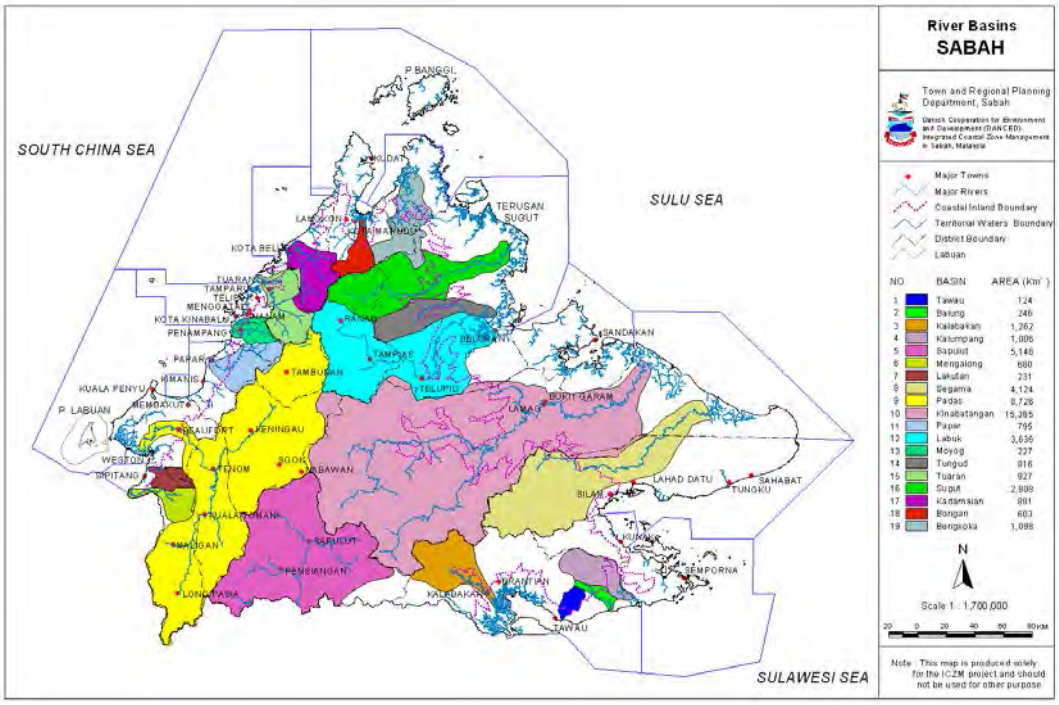
Under Outcome (1) (provisioning of an enabling environment for optimized multiple use planning, financing, management and protection of forest landscapes), UNDP will also support the creation of an enabling environment to permit the introduction and implementation of innovative sustainable funding through REDD+, bio-banking and PES mechanisms. Under Outcome (3) (Sustainable financing of protected areas and associated forest landscape areas demonstrated at the pilot site), the project will support the design and development of three alternative revenue generation schemes and disbursement using pilot modalities of REDD+, biodiversity offset, and PES

According to the draft inception report of the project in Aug. 2014, 9 subcontracts in total are planned under the Project. The fourth one is to support the development of new state-level policies and regulations for PES, and pilot landscape level demonstration of PES (scheduled for 4 years from Oct. 2015). According to the interview with deputy director of SFC, they made a few changes to the subcontract. Originally, they planned three subcontracts in total for Malua Biobank, REDD+ and the PES policy formulation. These are combined, reorganized and split in two, 1) subcontract on state level policy, and 2) subcontract on investment. The revised plan of the subcontracts will be documented by the end of 2014. Besides PES, under the project they have started study on No Net Loss policy, and Business and Biodiversity Offsets Programme (BBOP). They hired Forest Trend as a contractor for the study.

3.2.2 Valuation of catchment service and "Quick scan watershed service" under Heart of Borneo Initiative

REDD+ is a mechanism under UNFCCC whereby developing countries that are willing and able to reduce emissions from deforestation and degradation are paid by developed countries for doing so. In the sense, it can be considered as an example of PES at international level.

The forests of Sabah provide vital ecological services, such as water supply, flood control, carbon sequestration and climate regulation. There are 19 river basins in Sabah (Figure 5), most of which are located in the upland regions in the interior of Sabah. These catchments contain pristine forests that are important in regulating the hydrological cycle. The Kinabatangan river basin on the East Coast is the largest, covering an area of 15,385 km^2 followed by the Padas river basin on the west coast which covers an area of 8,726 km^2. There are 13 main rivers in these 19 river basins. At 560 km in length, the Kinabatangan River draining much of the eastern region of Sabah is the longest in Sabah, and the second longest river in Malaysia (Town and Regional Planning Department, 1998).



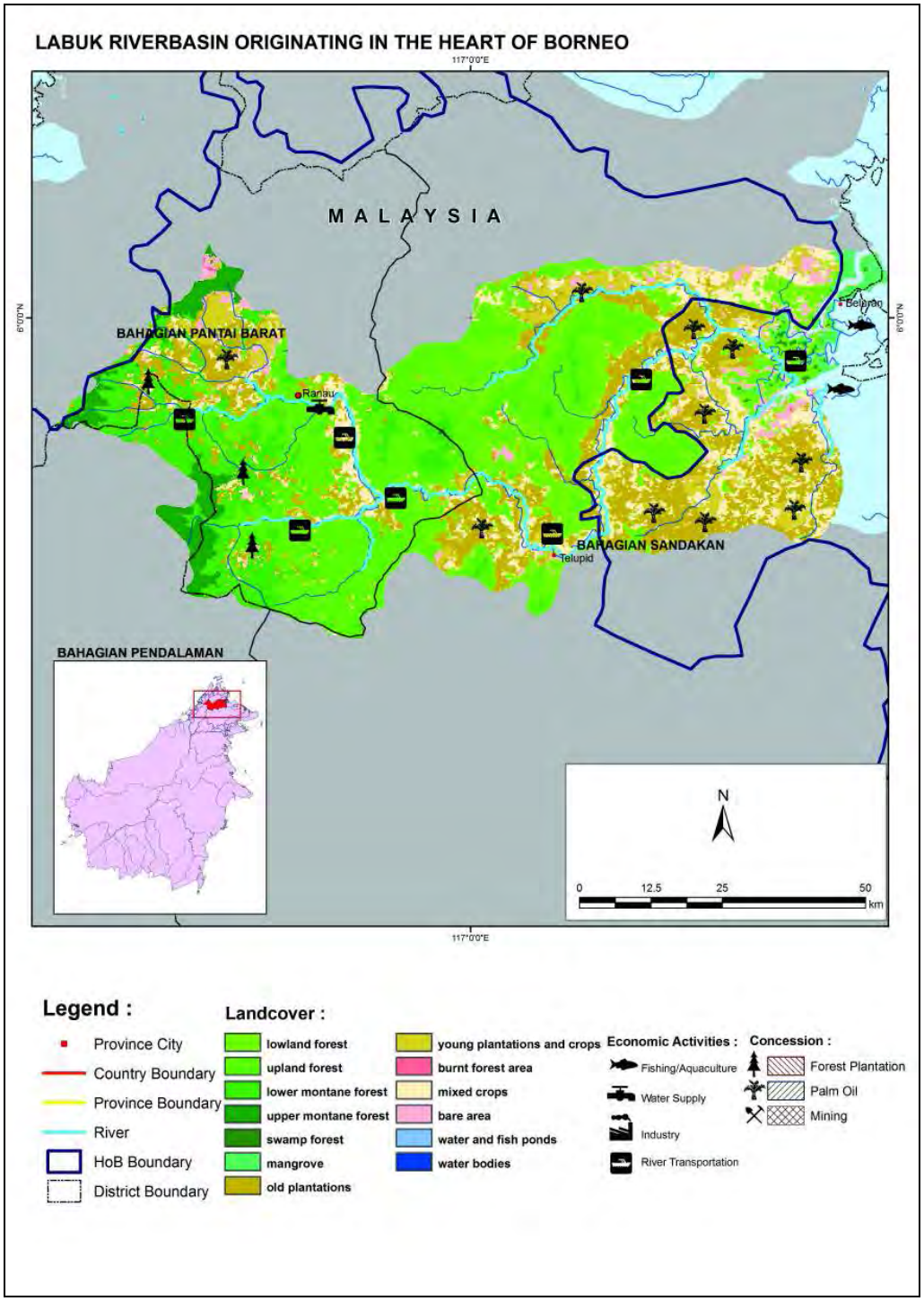
Source: Town and Regional Planning Department, 1998

Figure 5 River Basins in Sabah

Witteveen Bos Indonesia (2011) conducted a study named "Quick scan watershed service" under the Heart of Borneo Initiative commissioned by WWF. Considering how PES is the key to answering the question of "who is willing and also able to pay for forest conservation and who should drive this?", the study aims at conducting rapid assessment on the various catchment services from the Heart of Borneo and identifying the users and beneficiaries of these catchment services. The study is the first step towards building an economic case to value forests in the economy and more practically implementing a system to help finance forest conservation and management. In the study, seven river basins in the three countries have been selected as potential pilots to test the business case for implementation of payments of catchment services. In Sabah, the Labuk river basin and Kinabatangan river basins were identified.

They found that the Labuk river basin is especially interesting as a pilot site because of the demonstrated link between logging and large scale palm oil and sediment and nutrient discharges in Labuk Bay (Figure 6). The impact on aquaculture in Labuk Bay and the tourism

industry on Turtle Island Marine Park could provide a basis for payment for catchment services. In addition, the relatively large population, the plans for hydro-electro power and the scarcity of water are other reasons why payments for catchment services of the Labuk river basin might be economically attractive.

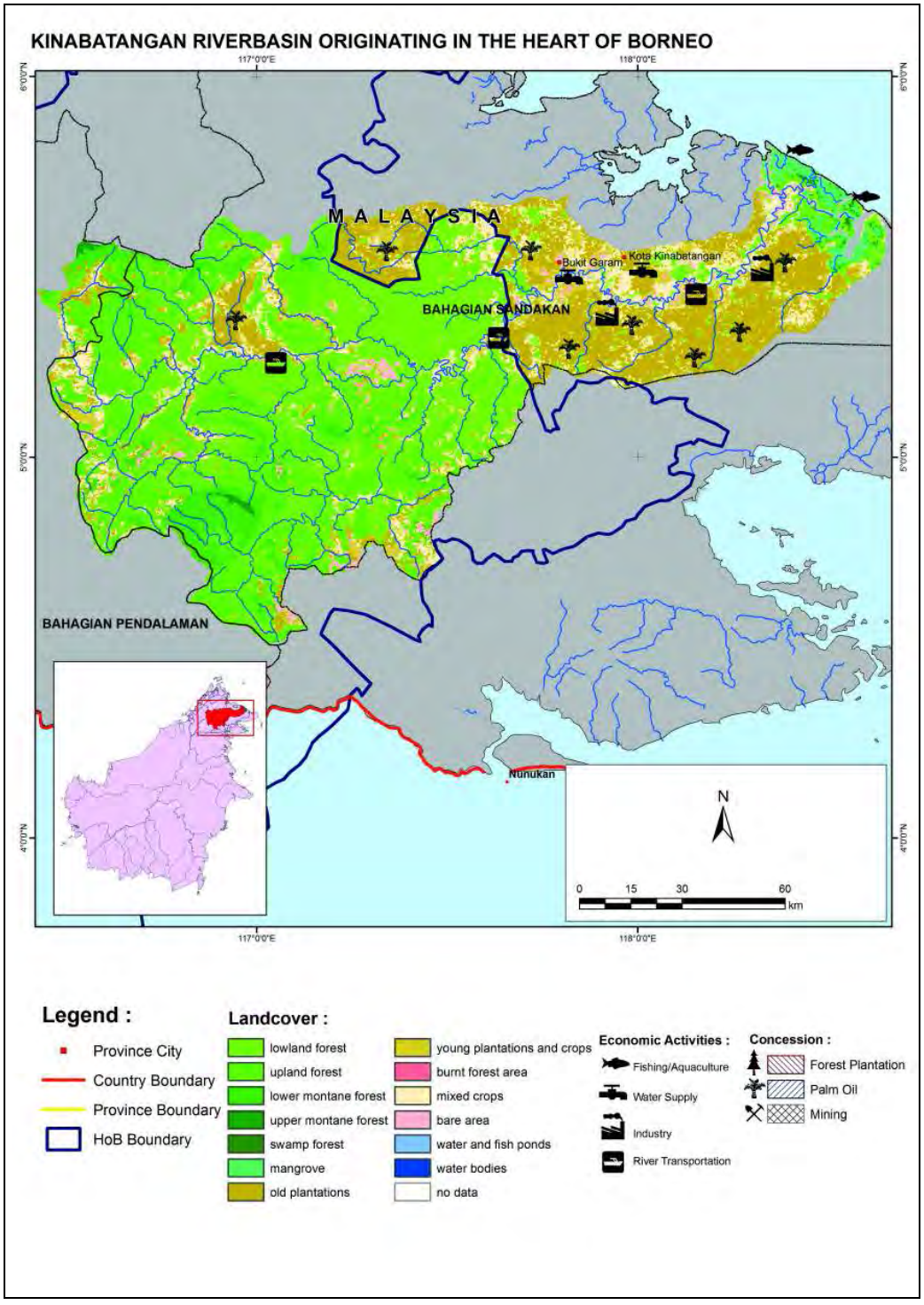


Source: Witteveen Bos Indonesia, 2011

Figure 6 Labuk river basin originating the Heart of Borneo and its land use

For the other pilot site, Kinabatangan river basin, they found that it provides an interesting economic case due to its large scale palm oil plantations. Palm oil plantations pose a threat to

the forest and at the same time experience the impact from deforestation due to floods. Other beneficiaries of this catchment include the tourism industry, aquaculture and the Kinabatangan population in terms of prevention of flooding, assured transportation and improved livelihoods.



Source: Witteveen Bos Indonesia, 2011

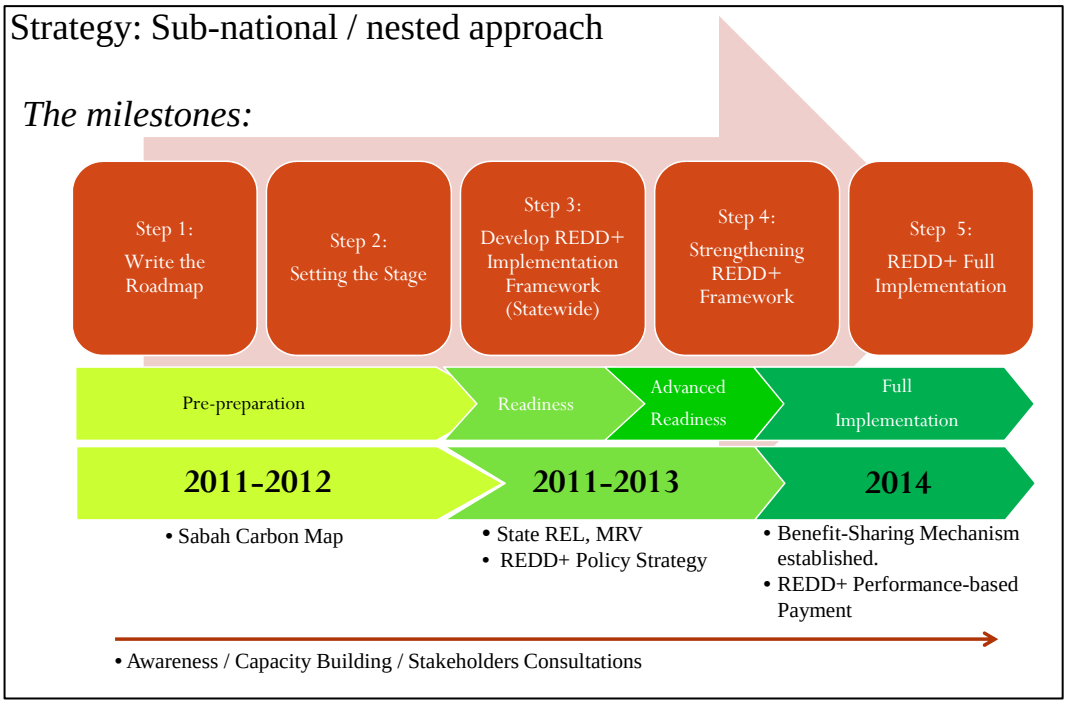
Figure 7 Kinabatangan river basin originating the Heart of Borneo and its land use

On the west coast, the Padas river basin is being utilized by the biggest hydroelectric plant (tenom pangi) in Sabah with installed capacity of 66MW also connected to the west coast grid. Many rivers in Sabah also have high recreation value. For example, the upper Padas river and Kiulu river are popular for white water rafting.

3.2.3 Bio-carbon funding such as REDD+

In 1990s, SFD implemented some pioneering carbon sequestration projects, and then in 2000s carbon stock assessment as along with assessment of carbon at risks were conducted. A study commissioned by the Sabah Forestry Department in 2009 estimated that carbon potential in the 3.6 million ha forest reserves as 566 million tonnes of carbon with a potential value of US$2.8 billion (UNDP, 2012b). SFD also worked closely with the Federal Government and WWF-Malaysia and formulated the Sabah REDD+ Readiness Roadmap (Figure 8). In a paper presented in the National Inception Workshop on REDD+ in Feb. 2012, SFD concluded status of REDD+ in Sabah as follows: -

- Sabah is on the right track to capitalize on the potential REDD+ money, with 500,000 Verified Carbon Units (VCUs) up for sales.
- Real transaction of carbon money is yet to take place.
- The Sabah REDD+ Roadmap is a guidance to press forward the REDD+ Implementation in the State, in line with the National Development.
- More pilot projects to be implemented.
- Success relies heavily on the measures to address all the pre-requisites.
- Sub-national approach is the most pragmatic way forward and should be supported by all.
- The bottom line is that the State wants to be rewarded for keeping its forests and to prove to the skeptics that money does grow on trees. (Sabah Forestry Department, 2012)



Source: Sabah Forestry Department, 2012

Figure 8 Sabah REDD+ Roadmap

Currently the European Union (EU) is implementing the project "Tackling Climate Change through Sustainable Forest Management and community Development," (the EU-REDD Project). Under the EU-REDD Project, SFD is developing the necessary tools to design and implement the state REDD+ strategy, and focusing on Measurement Reporting and Verification (MRV), safeguards, enhancing capacity and providing technical support (SPC and the REDD Desk, 2014). The EU-REDD Project has three pilot subprojects, Gana Highland Project, Kinabalu Eco-Linc Project and Kinabatangan Project. While Gana Highland Project is implemented directly by SFD, Kinabalu Eco-Linc Project and Kinabatangan Project are implemented by Sabah Parks and Sabah Wildlife Department respectively. Kinabalu Eco-Linc Project is aimed at the establishment of an ecological connectivity between Kinabalu Park and Crocker Range Park, and the target area overlaps with CRBR.

SFD is also collaborating with WWF Malaysia in the delivery of elements of the Roadmap, specifically in developing carbon accounting methodologies, appropriate legal and policy frameworks, and financing mechanisms for REDD+ development. The Heart of Borneo project, a trans-boundary conservation project spanning across Indonesia, Brunei and Malaysia, is also considered a platform where elements of the Roadmap for REDD+ Readiness can be developed and delivered. An international conference meeting was held in August 2011 in Sabah titled "Forest and Climate - Decoding and Realising REDD+ in the Heart of Borneo (HoB), with Specific Focus on Sabah" to foster collaborative engagement with relevant stakeholders on REDD+ development in the territory.

3.2.4 Forest certification

Forest certification can be considered as an example of ecolabelling scheme, another mechanism utilizing economic incentives for biodiversity conservation (OECD, 2013). It is the policy of the State Government of Sabah, to have all long term licensed areas, certified under any internationally recognized scheme by 2014, with a 5-year notice period given in 2009 (Sabah Forestry Department, 2003). As of the end of 2013, a total of 863,762 ha of the State's forests are under some form of certification, while the total area of the commercial forest (Class II) is 2,177,732ha, and the total area of all forest classes under SFD is 3,614,730ha (Sabah Forestry Department, 2014).

As of May 2013, 386,607ha of the forest has been fully certified under the Forest Stewardship Council (FSC). The remaining certified forests are mainly certified under Verification of Legal Compliance (VLC). According to the Deputy Director (Forest Sector Planning), the most important target is that everything from the forest is legal and has clear origins; therefore, SFD is using any scheme applicable at various levels, to certify their forest. For operators who are not able to get forest management certification, Verification of Legal Origin (VLO) can be obtained. Once they clarify legal origin of timber by VLO, they can move up to acquiring VLC.

SFD also plans to get their protected forest, such as Class I, Class VI, etc. certified. Though no timber is produced from the protected areas, they can still be certified.

3.2.5 Other innovative financial mechanisms (lead by SFD)

Malua BioBank implemented by Sabah Forestry Department is even introduced in one of the series of reports published by The Economics of Ecosystems and Biodiversity (TEEB), an international initiative to draw attention to the global economic benefits of biodiversity (TEEB, 2010). Malua BioBank is a collaborative effort of a private equity firm and Sabah Forestry Department, which has given conservation rights to the Malua BioBank for a period of 50 years.

The aim is to raise US$10 million for the rehabilitation of 34,000 hectares of formerly logged forest adjacent to the Danum Valley Conservation Area. The Malua BioBank sells Biodiversity Conservation Certificates, which are each equivalent to 100 square meters of protected and restored rainforest. Certificates were sold at $10 per unit (equivalent to $1,000 per hectare). The certificates are registered in the environmental registry and can be traded or retired. Revenue generated from certificate sales is used to fund the running costs of the project and is invested in a trust fund for the conservation management of the 50-year license. Any profit beyond this will be shared between the forest management license holders (Yayasan Sabah) and the Malua BioBank investors. Purchase of Certificates from the Malua BioBank cannot be used by companies to offset their impacts on rainforests in other locations.

In the interview with SFD, it was informed that a small number of biodiversity credit issued by Malua BioBank has been sold, though they targeted anybody marketing internationally. One of the reasons for the small transaction is the global market recession. The mechanism of BioBank also competes with conventional donation and philanthropy works. BioBank is a business, while a lot of people just want to donate. SFD extended to finance the project for another year. It is too early to conclude BioBank. They would not be ready for transaction of biodiversity value. Even for the carbon transaction, people are still skeptical.

Under the UNDP-GEF project mentioned above, SFD also started a study on No Net Loss policy, and Business and Biodiversity Offsets Programme (BBOP). They hired Forest Trend as a contractor for the study. SFD is discussing biodiversity offset for oil palm plantation in the framework of RSPO.

3.2.6 Conservation fees through tourism

According to Sabah Tourism Board, there is an innovative practice of collection of conservation fee from tourism through tour operators in Sabah. Kinabatangan Corridor of Life Tourism Operator Association (KiTA) levy their members for conservation. KiTA was initiated by WWF with some lodge operators for nature conservation and membership is on voluntary basis. KiTA members contribute RM10 for every guest who purchased a tour package in the area. The participating lodges, comprising KiTA members, pooled the money together and channeled it into on-going or new conservation efforts in the Kinabatangan area. WWF-Malaysia was the custodian of the fund.

Another case of payment by tourists for conservation of a certain area with high conservation value is conservation of Lankayan island. Lankayan island is of the three islands located in Sugud Islands Marine Conservation Area (46,000ha) under Sabah Wildlife Conservation Enactment. The area is managed by a private non-profit organization, REEF Guardian. They use the conservation fee collected from tourists visiting the island for research and conservation of ecosystems and turtles. Tourism attraction in the island is snorkeling and scuba diving.

It is also common in Sabah that the agencies managing protected areas, such as Sabah Parks, Sabah Forestry Department, Sabah Wildlife Department, etc. charge fees to visitors at entrances of protected areas. The fees are usually called “conservation fee” rather than entrance fee, to clearly indicate the purpose of the collection to the payers. On the other hand, according to Sabah Parks, the total collected conservation fee from tourists even in the popular Kinabalu Park and Tungku Abdul Rahman Park is nowhere near to bearing the whole cost of management of the parks. Sometimes MONRE misunderstands and expects Sabah Parks to establish sustainable financing of park management totally depending on conservation fees collected from visitors, but it is argumentative. Sabah Parks consider that the recreational service for tourists is only a part of various services provided by the ecosystem in the protected area;

therefore the cost of conservation of the protected area need not to be covered only from the payment by tourists.

Some of the respondents to the interview in the Study discussed introduction of collections of conservation fee from all visitors coming to Sabah at entrance/exit points, referring to the case in Indonesia where exit fees differs at different exit points. They also discussed collection of fees at hotels and accommodations, referring to the case in Melaka where the state government imposes RM2/room per night as heritage tax to all hotels in the state as state regulation.

Sabah Tourism Board also suggested that feasibility of PES through tourism relies on a market segment targeted as service users. The Japanese tourism market is positive about payment for and contribution to conservation effort, such as adapting trees, coral planting, etc.

3.2.7 RSPO and palm oil certifications

Palm oil certification by RSPO and other organizations have been introduced to the oil palm industry in Sabah. In Sabah there are 30 members of RSPO, including big companies such as Sime Darby, IOI, KRK, etc. and the number of RSPO has been increasing. Malaysia Palm Oil Association (MPOA) is a secretariat of RSPO. There is another certification body, Malaysian Palm Oil Council (MSPO) which is local to Malaysia and getting mandatory. MSPO certification is more suited for all oil palm planters including small holders in Sabah, while RSPO is voluntary and is only applicable to big companies.

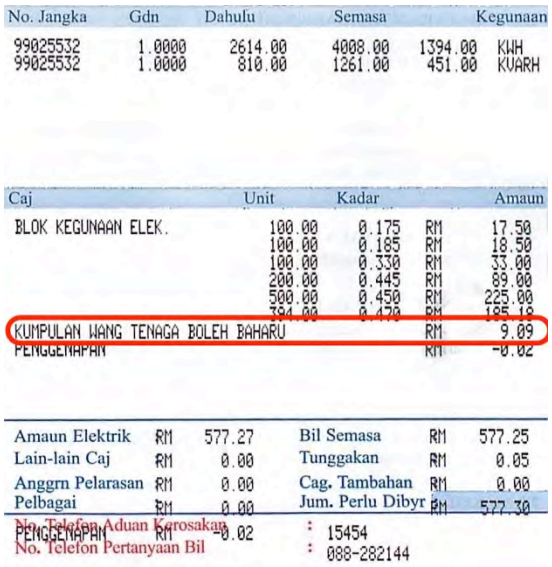
The big palm oil producers in Sabah and Malaysia, such as IOI, Sime Darby and Felda Global Ventures have their own productive facilities in Europe; therefore, they cannot quit RSPO and give up the European market. In the EU countries, they don't buy product without the RSPO certification. These big companies have RSPO certification for almost all their estates. On the other hand, in China, India and Pakistan, they buy palm oil even without RSPO certifications. Small oil palm plantation holders are selling their products mainly to china without RSPO certification. Bigger companies such as KRK, who have some mills, allot some of their mills for the EU market with the RSPO certification, while using other mills for the local and Chinese markets. They even have two mills side by side, one of which is for RSPO and the other is for the local market. Currently even medium-sized planters are getting more and more RSPO oriented.

MPOA sees compliance with conditions for RSPO certification has been becoming more strict and rigid. Their focus now is not only on environment, but also human rights, child labor, safety of workers, etc. Such shift of criteria of RSPO certification has made the palm oil industry in Malaysia wonder if RSPO has a biased view and might have hidden agenda to protect the vegetable oil industry in Europe which cannot compete with palm oil. Because of this, MPOA discussed quitting the secretariat of RSPO. In Indonesia, when RSPO tried to apply living conditions of workers as one of the criteria for certification, the palm oil industry in Indonesia abandoned RSPO setting up their own Indonesian Sustainable Palm Oil Foundation (ISPO), mainly selling the palm oil to China and India.

MPOA understand Malaysian local MSPO certification doesn't work for the EU market. While the US market doesn't mind palm oil certifications much. They understand it is similar to what happened with the timber certifications in the past. According to preferences of different markets, the producers could apply for different palm oil certifications, in the same way as the timber industry in Malaysia has two options of timber certification, national level and international level.

3.2.8 Surcharge for "Renewable Energy Fund" imposed in electricity bill in Feed-in-Tariff (FiT) Mechanism

To promote the use of renewable energy in Malaysia, the Government has implemented Feed in Tariff (FiT), a new mechanism under the Renewable Energy Act 2011. Effective from 1st January 2014, the Government will collect an additional 1.6% on consumers' monthly electricity bills (Figure 9) to be paid to the "Kumpulan Wang Tenaga Boleh Baharu" (Renewable Energy Fund). Domestic consumers with usage 300kWh and below will be exempted.



No. Jangka	Gdn	Dahulu	Semasa	Kegunaan	
99025532	1.0000	2614.00	4008.00	1394.00	KWH
99025532	1.0000	810.00	1261.00	451.00	KVARH

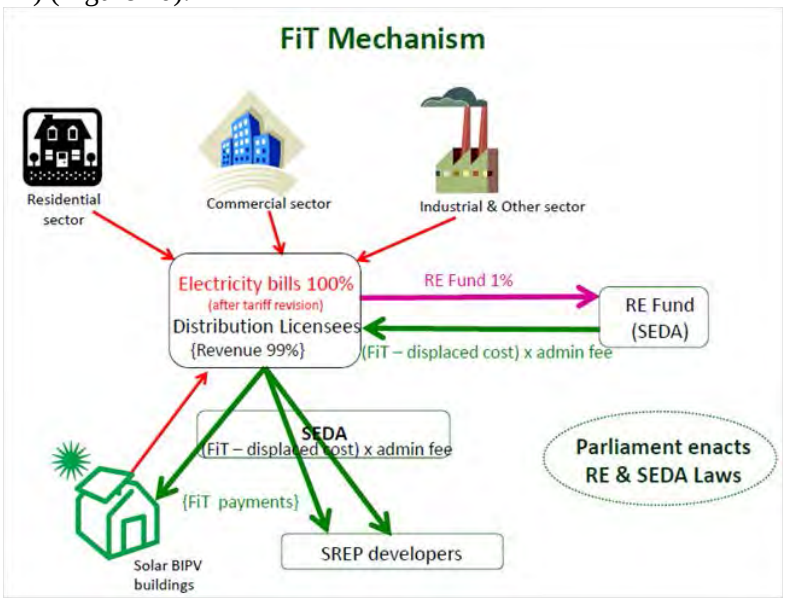
Caj	Unit	Kadar		Amaun
BLOK KEGUNAAN ELEK.	100.00	0.175	RM	17.50
	100.00	0.185	RM	18.50
	100.00	0.330	RM	33.00
	200.00	0.445	RM	89.00
	500.00	0.450	RM	225.00
	394.00	0.470	RM	185.18
KUMPULAN WANG TENAGA BOLEH BAHARU			RM	9.09
PENGGENAPAN			RM	-0.02

Amaun Elektrik	RM	577.27	Bil Semasa	RM	577.25
Lain-lain Caj	RM	0.00	Tunggakan	RM	0.05
Anggrn Pelarasan	RM	0.00	Cag. Tambahan	RM	0.00
Pelbagai	RM	0.00	Jum. Perlu Dibyr	RM	577.30
PENGGENAPAN	RM	-0.02			

No. Telefon Aduan Kerosakan : 15454
No. Telefon Pertanyaan Bil : 088-282144

Figure 9 Surcharge for Renewable Energy Fund in a consumers' monthly electricity bill

The amount collected at the Renewable Energy Fund is used for the purpose paying for renewable energy projects such as landfill gas, biogas, biomass, solar, mini hydro etc. The Renewable Energy Fund is under the management of the Sustainable Energy Development Authority (SEDA) (Figure 10).



Source: http://ecoideal.com.my/2011/06/feed-in-tariff-fit-set-to-drive-renewable-energy-development-in-malaysia/

Figure 10 FiT Mechanism in Malaysia

A total of 2,268 renewable energy projects under FiT have been commissioned in Sabah and Peninsular Malaysia until March 2014 and the projects have generated 188.3 megawatt (MW) to the national grid or one percent of the overall power generation capacity. It also contributes 108.57MW from solar energy, 52.3MW from biomass, 15.7MW from mini hydro and 11.73MW from biogas. In Sabah, the renewable energy accounted for three percent or 36.5MW of power generation capacity in the state[2].

As the FiT is a payment mechanism for producers of electricity from renewable energy sources by the users of electricity, it is not necessarily Payment for Ecosystem Services. However, promotion of renewable energy will indirectly contribute to conservation of ecosystem services. If we will have abundant electricity supply from renewable energy sources, demand for new construction of thermal power plants using fossil fuel will be less.

3.2.9 Tagal system

The "Tagal system" is designed as such by local communities to ensure cleanliness of the river and to maintain a sustainable stock of fish. The Tagal system is originated in Sabah and considered as a significant example of successful community management of resources in Malaysia which is introduced in 10th Malaysia Plan. Currently the Tagal system is practiced in 531 village and 221 rivers in Sabah. The Tagal system involves the prohibition of fishing in the river for one or two years. Sabah Fisheries Department promoted the Tagal system by empowering the concerned local communities and by preparing the legal framework for the system.

Uniqueness of the Tagal system is not only its origin in the tradition of indigenous communities in Sabah, but its revival in the modern legal and administrative system lead by the state government. Sabah Inland Fisheries and Aquaculture Enactment 2003 clearly stipulates authority of communities on management of inland fisheries resources. With the Enactment and other legal and administrative means, Sabah Fisheries Department is successfully re-introducing this traditional management method of natural resources to many communities in Sabah.

Practice of the Tagal system often include an aspect of PES or economic incentives for biodiversity conservation. In many villages and rivers where the Tagal system applied, local communities develop alternative sustainable livelihood by promoting ecotourism based on the fish resources increased by the system, such as sports fishing, homestay, swimming with the fish, fish massage, fish feeding venture, etc. The village level institutions established for the Tagal system have a potential to contribute to other mechanisms of PES for catchment conservation.

3.2.10 Rules and Regulations on Access and Benefit Sharing (ABS)

"Fair and equitable sharing of benefits arising from genetic resources" in one of the three main goal of the Convention on Biological Diversity. The goal was to establish a mechanism that puts the developing countries in a position to market "their" genetic resources profitably in future. One of benefits arising out of the properly established Access and Benefit Sharing mechanism of genetic resources can be the incentive for conservation and the sustainable use of local biodiversity provided by profits arising from commercialisation of genetic resources.

Sabah Biodiversity Enactment (2000) stipulates the Sabah Biodiversity Council to regulate the access to biological resources and a basic framework of access and benefit sharing in the state.

[2] http://www.seda.gov.my/?omaneg=000101000000010101010001000010000000000000000000000&y=45&s=3926 (retrieved on 6 Jan. 2015)

Under BBEC Phase 2, the study on Traditional Ecological Knowledge (TEK) to promote Access and Benefit Sharing (ABS) and Clearing-House Mechanism (CHM) was initiated as a part of capacity development of Sabah Biodiversity Centre (SaBC). SaBC is in the process of developing CHM. The Sabah Biodiversity Rules and Regulations (Access and Benefit Sharing) was approved by the State Cabinet.

According to Sabah Biodiversity Centre, currently Sabah Biodiversity Enactment which is a fundamental enactment for ABS in Sabah is in the process of amendment and its revision will be tabled in the first seating of the state assembly in April 2015. New rules and regulations on ABS following the amended Enactment will be tabled and approved by the state cabinet accordingly. The change in the Enactment is on the function of Sabah Biodiversity Centre. The bill and rules and regulations are now in Attorney General's Office.

Chapter 4 Issues and Opportunities of Crocker Range Biosphere Reserve

4.1 Issues in Management of the Buffer Zone and Transition Area of CRBR

4.1.1 Objectives of the management of CRBR

The management plan of CRBR is in the process of formulation at present. On 10 Dec. 2014, Sabah Parks organized a workshop to identify stakeholders and main objectives and an organization for the management of CRBR, inviting the concerning agencies. In the objectives analysis part of the workshop, the participants set a core objective and direct means (intermediate objectives) as follows (though they haven't been documented and officially approved by any authority yet) :

Core Objective:

- To protect biodiversity, ecosystem and cultural diversity including genetic diversity.

Direct Means to achieve the Core Objective

- To improve ecosystem conservation in the Core Area
- To promote sustainable community livelihood in the Buffer Zone and Transition Area
- To promote research and education in CRBR

4.1.2 Population and Communities

The CRBR overlaps with 8 districts and one city (Kota Kinabalu City) located in western Sabah, Malaysia (Figure 11). Densely populated urban areas in Kota Kinabalu city and the 8 districts are not included in the CRBR. A total of population in the 8 districts and Kota Kinabalu city is around 1,254,700 (2008) as shown in Table 2. The population in the 8 districts has been almost doubled from 1991 to 2010.

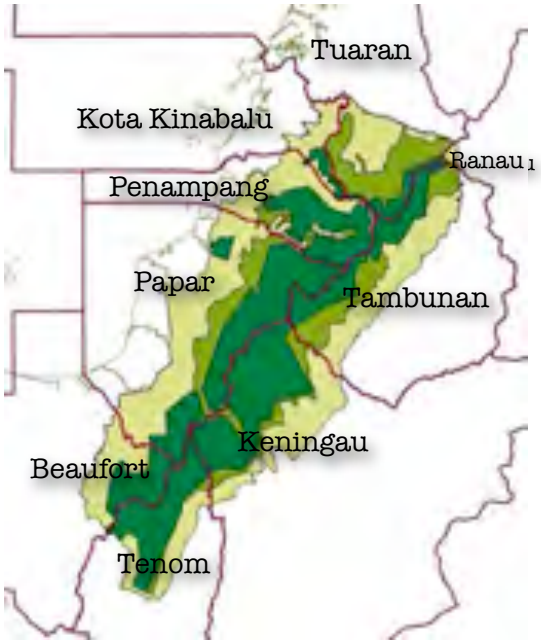


Figure 11 Eight districts and Kota Kinabalu city overlapping with CRBR

Table 2 Population of the 8 Districts Surrounding CRBR and Kota Kinabalu City

		Population		
Administrative areas	Area (km^2)	1991	2000	2010
Penampang	466	86,941	137,002	159,600
Papar	1,243	59,473	92,451	111,400
Beaufort	1,735	48,742	64,756	75,900
Tenom	2,409	37,954	48,353	54,400
Keningau	3,533	88,456	155,069	195,700
Tambunan	1,347	19,726	29,294	35,000
Ranau	2,978	49,358	74,456	88,800
Tuaran	1,166	63,995	84,974	97,800
Subtotal of 8 Districts	14,877	456,636	688,355	818,600
Kota Kinabalu	350	209,175	372,047	436,100
Total of the 9 administrative areas	15,227	665,811	1,060,402	1,254,700
Sabah (whole)	73,711	1,743,685	2,603,485	3,214,200

Source: Data of the National Census in 2010 provided by Beaufort District Office in 2011, Sabah Parks (2004)

Table 3 indicates the areas of CRBR occupying the eight districts and Kota Kinabalu city along with the population of CRBR in comparison with the total population of the districts and the city. The confirmed total population in CRBR is around 99,000 which is 12.1% of the total population of the eight districts.

Table 3 Populations in CRBR

	Area (km^2)		Population		
Administrative areas	CRBR (% in the area of the district/city)	Total area of District/City	CRBR		Total population in the district (2010)
Penampang		466	16,162	(10.1%)	159,600
Papar		1,243	22,320	(20.0%)	111,400
Beaufort		1,735	2,053	(2.8%)	74,600
Tenom		2,409	4,645	(8.5%)	54,400
Keningau		3,533	28,404	(14.5%)	195,700
Tambunan		1,347	17,571	(51.7%)	34,000
Ranau		2,978	767	(0.9%)	88,800
Tuaran		1,166	7,179	(7.3%)	97,800
Subtotal of 8 Districts		14,877	99,101	(12.1%)	818,600
Kota Kinabalu		350	N/A		447,200
Total	3,505.84 (23%)	15,227	N/A		1,254,700

Number of villages in CRBR is 399 (Table 4), and their locations are indicated in Figure 12.

Table 4 Number of Villages in CRBR

DISTRICT	PENAMPANG	PAPAR	BEAUFORT	TENOM	KENINGAU	TAMBUNAN	RANAU	TUARAN	KOTA KINABALU	TOTAL
Number of villages	**44**	**73**	**24**	**29**	**92**	**57**	**2**	**61**	**17**	**399**
Buffer zone	9	2	0	2	1	12	0	26	0	52
Transition area	32	54	16	26	50	38	2	29	17	264
Core area	0	0	0	1	1	0	0	0	0	2
Location unknown	3	17	8	0	39	6	0	7	0	80

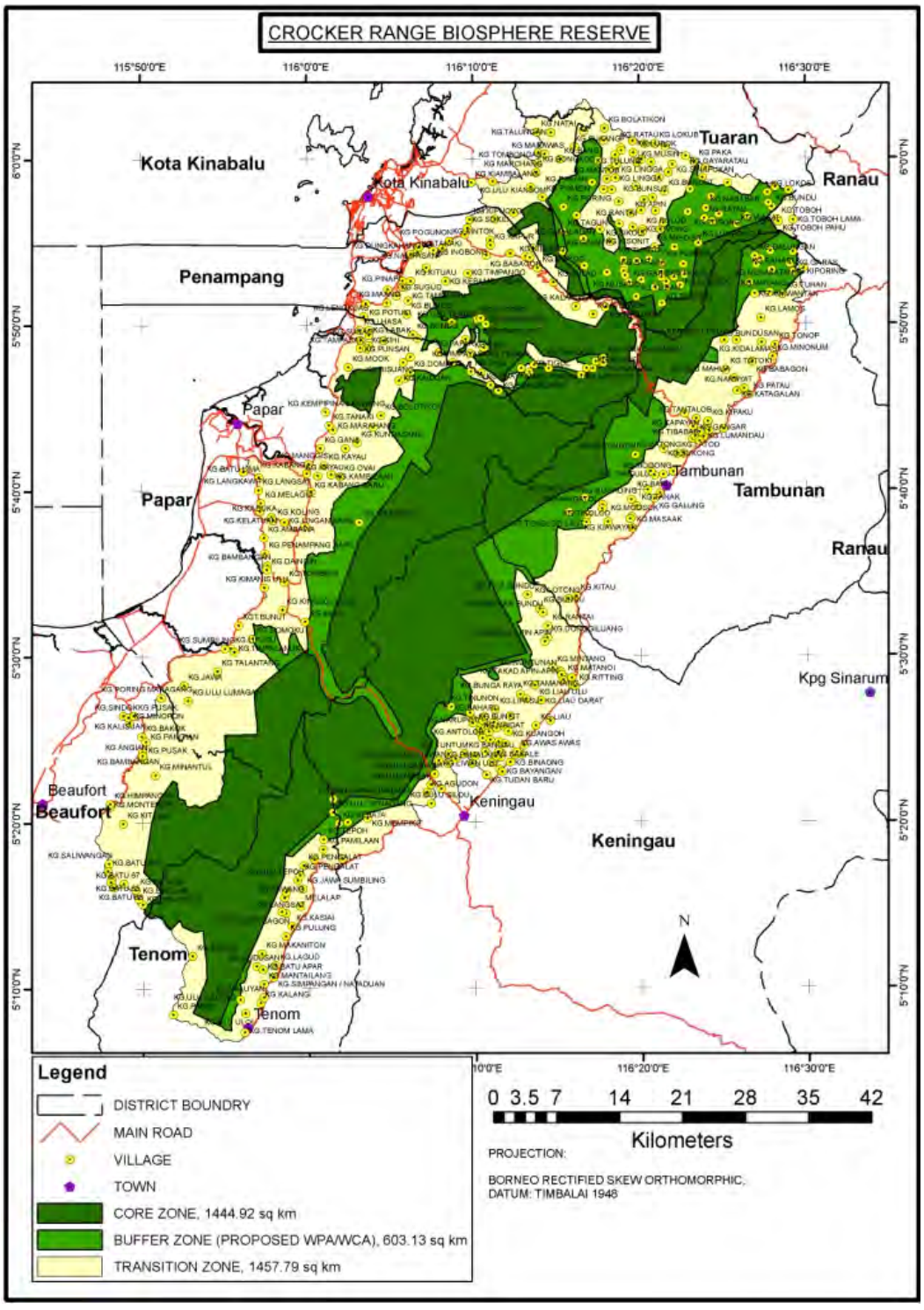


Figure 12 Locations of Villages in CRBR

4.1.3 Status of Poverty and Rural Development

In the CRBR, we have in total 1,895 poor households registered in the poverty database e-Kasih and targeted in the poverty eradication schemes by the government (Table 5). They make up 9.6% of the total estimated number of households (19,820) in CRBR.

Table 5 Number of poor households in CRBR registered in e-Kasih

DISTRICT	PENAMPANG	PAPAR	BEAUFORT	TENOM	KENINGAU	TAMBUNAN	RANAU	TUARAN	KOTA KINABALU	TOTAL
Number of e-Kasih Registered households										
hardcore poor	34	22	1	15	73	148	0	1	2	296
poor	159	162	6	82	155	365	0	46	0	975
moderately poor	90	181	9	55	52	199	0	34	4	624
Total	283	365	16	152	280	712	0	81	6	1,895
Ratio in the all households in CRBR	8.8%	8.2%	3.9%	16.4%	4.9%	20.3%	0.0%	5.6%		9.6%

Source: e-Kasih data from Sabah Development Office in 2011, Department of Statistics Malaysia, Sabah (2009)

4.1.4 Livelihood Support Schemes Applied to the Buffer Zone and Transition Area

As stated above, in CRBR, there are 399 villages with at least 99,000 people in total. The people living in the area are relatively poor from the national standard. Following the national five-year development plan (10th Malaysia Plan), the government is now trying to eradicate hardcore poverty and decrease number of poor household in Sabah by 2015 with various rural development schemes. Many of the schemes are in line with the objectives of CRBR; therefore, they should be promoted in the management of CRBR, however some of the schemes impose risks of having a negative impact on the ecosystem in CRBR which should be monitored by the management of CRBR (Appendix 3).

The Ministry of Rural Development Sabah (KPLB) is primarily responsible for poverty eradication and rural development in Sabah including CRBR. For the buffer zone and the transition area overlapping with the 8 districts (Penampang, Tuaran, Ranau, Tambunan, Keningau, Tenom, Beaufort and Papar), the District Offices under the Ministry of Rural Development Sabah are in charge of implementing and monitoring programmes and projects for poverty eradication and rural development. For the part of the buffer zone and the transition area in Kota Kinabalu city, Kota Kinabalu City Hall (DBKK) is primarily responsible for rural development and poverty eradication.

4.2 CRBR as Natural Capital for the State Level Development Plan

CRBR is also important for natural capital supporting development planned in Sabah Development Corridor Blueprint. CRBR overlap with and in between the four zones, such as the SME Agro-food Zone, Interior Agropolitan Zone, Tourism and Highland Agri Zone and Sabah Industrial Zone in the Sabah Development Corridor (Figure 13).

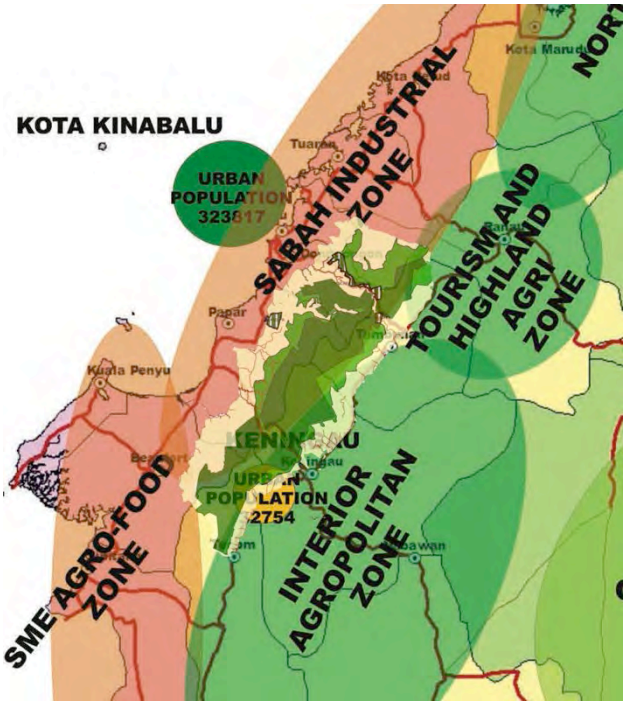


Figure 13 Zoning in Sabah Development Corridor and CRBR

4.3 Ecosystem Services to be Conserved in CRBR

The following important ecosystem services of CRBR could be defined as what potential PES or other economic incentives conserve:

- Water supply (regular flow and quality)
- Flood control, disaster control
- Carbon sequestration
- Recreation (landscape, rare species, etc.)
- Genetic resources

Types of land use to secure the above ecosystem services identified up to now are as follows:

- Conservation of existing forest
- Reforestation and enrichment of existing forest
- Traditional shifting cultivation with a sufficient fallow period
- Wet paddy
- Tagal
- Alternative livelihood with the ecosystem services maintained

4.4 Catchment Service of CRBR

4.4.1 Users and Providers of Catchment Service of CRBR

One of the most important ecosystem services of CRBR that various concerning agencies and stakeholders point out is water supply and water regulating services. It provides regular and clean water for domestic use and also agriculture and other production by not only the 99,000 people who are living in CRBR but also the whole population living downstream of CRBR (which would be around 1/3 of the whole population in the state). The water flow regulation by CRBR also benefits the people by lowering risks of flooding and other disasters. Undisturbed forest upstream, in general, controls erosion and load of sediment in rivers and even contributes

to conservation of marine ecosystems, such as coral ecosystem, and maintenance of fishery resources.

Such catchment service is maintained by the forest ecosystem in CRBR. In other words, the service is maintained by means of forest conservation in the core area of CRBR (Crocker Range Park and the three forest reserves) by Sabah Parks and Sabah Forestry Department, while forest conservation and sustainable land uses in the buffer zone and the transition area of CRBR is supported by the landowners. Thus, we can consider Sabah Parks, Sabah Forestry Department and the landowners as providers of the catchment service. On the other hand, the population downstream utilizing the water for domestic use, irrigation, etc. can be considered as service users (Figure 14).

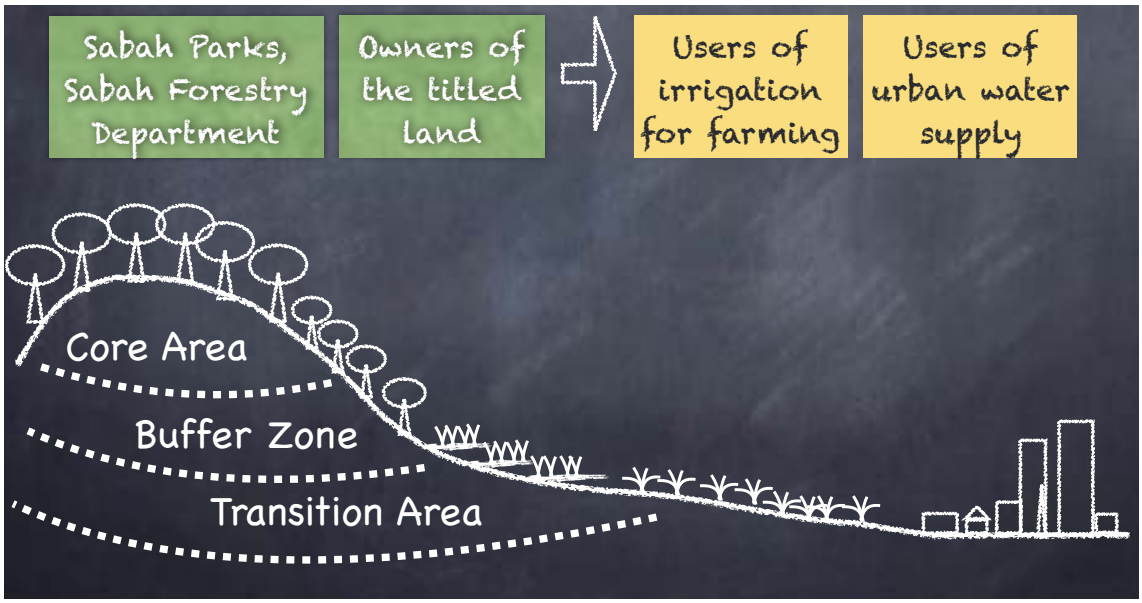
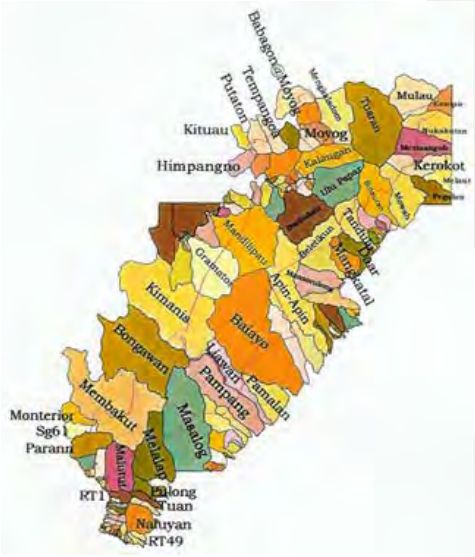


Figure 14 Providers and users of catchment service of CRBR

4.4.2 Outline of the Catchment Service

CRP overlaps with 17 sub-catchment areas (Figure 15), while CRBR has more subcatchment (Figure 16). In 2009, Sabah Parks calculated total volume of water flown out 18 rivers from Crocker Range Park (Table 6). In 2013, Mr. Maipol Spait, Terrestrial Park Manager, Sabah Parks attended a workshop on PES organized in Philippine by ASEAN Centre for Biodiversity (ACB). He presented a proposal of PES for water supply service from CRP at the workshop. In the proposal, water volume of the 8 main rivers from CRP was estimated. He estimated value of the water supply as RM700/day by multiplying a certain rate of value to the total volume of water.



Source: Greer (1998)

Area	River	Size of catchment area (km^2)	% of park area[1]	Sub-catchment	Size of sub-catchment area (km^2)
West coast	Tuaran	37	2.6	**Tuaran**	31
				Mulau	6
	Moyog	59	4.2	**Moyog**	59
	Papar	491	35.1	**Upper Papar**	398
				Mandalipau	93
	Kimanis	64	4.6	**Kimanis**	64
	Bongawan	54	3.9	**Bongawan**	54
	Membakut	93	6.6	**Membakut**	93
Interior plain	Pegalan-Padas	538	38.4	**Sinsulan**	34
				Bolotikon	37
				Apin-Apin	41
				Bayayo	180
				Pampang	59
				Masalong	81
				Melalap	59
				Malutut	47
North east	Liwagu	12	0.9	**Nukakatan**	12
	Total	1348[2]	96.3 %		1348[2]

[1]Percentage of total area of the park (1399 km2); [2] Total catchment area excluding small catchment areas

Figure 15 17 Sub-catchment Areas Overlapping with CRP

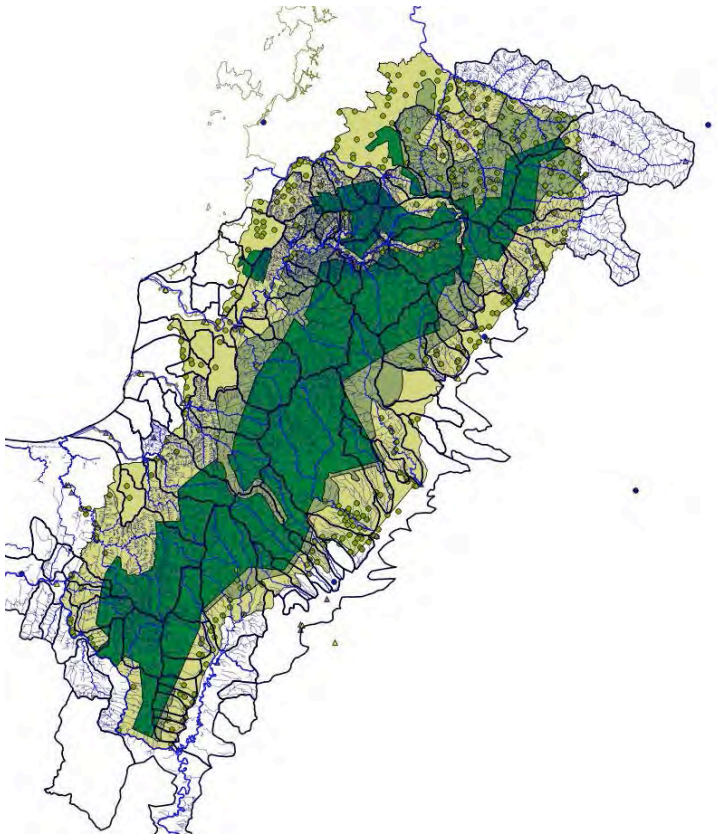


Figure 16 Sub-catchment Areas Overlapping with CRBR

Table 6 Measurement of Water Volume of Rivers from Crocker Range Park (2009)

No.	River	Water Vol (L) in 1 minute	Water Vol (L) in an hour	Water Vol in 1 day
Penampang District*				
1.	Sg. Ulu Papar	610,200	36,612,000	878,688,000
2.	Sg. Ponobukan	364,800	21,888,000	525,312,000
3.	Sg. Buayan	241,200	14,472,000	347,328,000
4.	Sg. Terian	75,000	4,500,000	108,000,000
Total				1,859,328,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Papar/Beaufort* District				
1.	Sg. Bongawan**	169,500	10,170,000	391,392,000
2.	Sg. Kimanis	229,880	13,788,000	330,912,000
3.	Sg. Membakut	201,000	12,060,000	289,440,000
Total				1,011,744,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Keningau* District				
1.	Sg. Baiayo	410,400	24,624,000	590,976,000
2.	Sg. Pampang	121,920	7,315,200	175,564,000
3.	Sg. Apin-apin	75,000	4,500,000	108,000,000
4.	Sg. Liawan	62,400	3,744,000	89,856,000
5.	Sg. Keritan	22,200	1,332,000	31,968,000
Total				996,364,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Tambunan* District				
1.	Sg. Tondulu	90,600	5,436,000	130,464,000
2.	Sg. Tikolod	43,200	2,592,000	62,208,000
3.	Sg. Bolotikon	37,800	2,268,000	54,432,000
4.	Sg. Mahua	29,400	1,764,000	42,336,000
Total				289,440,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Tenom* District				
1.	Sg. Mosolog	151,800	9,108,000	218,592,000
2.	Sg. Melalap	15,000	900,000	2,160,000
Total				220, 752,000 billion litter
Total water volume of Crocker Range Park				**4,377,628,000 billion water**

Note:
*Measurement procedure Cross-Section
**Average Water Volume at Sg. Bongawan (downstream and upstream)

4.4.3 Application of Tagal system

The Tagal system has its origin in the tradition of the communities in the buffer zone and transition area of CRBR. In 2011, 76 villages (19% of all the villages) applied the Tagal system in CRBR (Table 7). As discussed above current practice of the Tagal system already includes an

aspect of PES or economic incentives for biodiversity conservation. Furthermore, though the Tagal system was originally developed to conserve fisheries resources based on Sabah Inland Fisheries and Aquaculture Enactment 2003, the village level institutions in the Tagal system have a potential to contribute to other mechanisms of PES for catchment conservation. Expansion of function of the Tagal system to provide positive incentives for conservation of ecosystem services of river systems other than fisheries resources should be discussed.

Table 7 Number of Villages covered by Tagal Programme in CRBR (as of 2011)

DISTRICT	PENAMPANG	PAPAR	BEAUFORT	TENOM	KENINGAU	TAMBUNAN	RANAU	TUARAN	KOTA KINABALU	TOTAL
Number of villages covered by Tagal programme	14	20	0	2	6	17	2	12	3	76
Ratio to all villages in CRBR	31.8%	27.4%	0.0%	6.9%	6.5%	29.8%	100.0%	19.7%	17.6%	19.0%

Chapter 5 Proposal of PES and other economic incentives for management of CRBR

The following are recommendations on possible assistance to introduce PES and other economic incentives for management of CRBR, based on information collected and analysis through the interviews, literature survey and field survey, etc. It needs much efforts and time to introduce such economic incentives as they require consent of various stakeholders such as many concerning agencies, local communities, the private sector in proposed transactions, international agencies providing useful frameworks, etc. Further discussion is required on feasibility of each of the recommended interventions below among the stakeholders. The order of the recommendations follows immediacy and feasibility of each recommendation within the framework of SDBEC (the project period, institution and resources available).

5.1 Recommendation No.1: Payment for Catchment Service of CRBR and its Pilot Project

5.1.1 Laws enabling payment for catchment service

(1) Water Resources Enactment

Clause 52(2) of Sabah Water Resources Enactment (1998) stipulates as the following:

52.(2) The Director may levy, in accordance with the rules, water management fees, and charges representing the cost of management activity undertaken by the Director or a person authorised by the Director, on a person—
(a) holding a licence issued under Part IV;
(b) who owns or occupies land within a declared floodplain area;
(c) who is benefitted by a water protection area; and
(d) where the Minister has authorised such charges, a person who owns or occupies land within a water conservation area.

A person *(c) who is benefitted by a water protection area* is applicable to the users of the catchment service of CRBR, provided that catchment upstream is gazetted as water protection area under the enactment.

In reality, though the water protection area and the water conservation area are stipulated in the enactment for protection of catchment, and the government identified and proposed 78 water protection/conservation areas; none of them has been gazetted in the state.

The buffer zone of CRBR was designed following the water protection areas proposed by DID. Once the Water Catchment Area will be gazetted, there will be legal restrictions on development activities there. In the Water Protection Area, no land shall thereafter be alienated, no person shall be authorised to erect a new structure, establish a new plantation or clear land. In the Water Conservation Area, the Water Resource Department may notify the owner or occupier of the land regarding the specified types of activities that are prohibited, that to be undertaken in a specified manner or at a specified location, as well as those activities that are prohibited.

(2) Park Enactment

Clause 45.(2)(f) of Park Enactment (1984) of Sabah stipulates as follows: -

45.(2) *The Board, subject to the special conditions stated in the declaration, shall have power to do all things expedient or reasonably necessary or incidental to the discharge of its*

functions and in particular but without prejudice to the generality of the foregoing —

…

(f) to levy fees or to collect dues from persons utilizing the accommodations, amenities, facilities or services provided under this Enactment;

Based on this clause, considering the catchment service of CRP as the "service provided," some officers of Sabah Parks discuss that this clause provides a legal basis to levy fees for the catchment service[3]. However, Water Department considers the clause is not applicable to the catchment service and Water Resources Department can only charge the catchment service.[4]

5.1.2 Pilot Project for Babagon Catchment: Background

Currently NRO, as the secretary for Water Resources Council is proposing declaration of catchment of Babagon dam as Water Conservation Area and Water Protection Area under Water Resources Enactment in gazette. The proposal for the Action Plan was prepared as a result of the JICA training (Oct-Nov. 2014) as shown in Appendix 4.

Application of payment mechanism for the catchment service in the Babagon catchment would facilitate consent of landowners of titled lands in the catchment and other stakeholders for the gazette. Once the Babagon catchment is declared in gazette, it will be the first legal water protection/conservation areas in the state and it could be a model for the other proposed water protection/conservation areas.

Land status in the Babagon catchment and the proposed Water Protection/Conservation Areas are shown in Figure 17 and summarized as follows:

Area of the Babagon catchment: 3,114 ha (7,695 acre)
Number of land owner: 322
Total area of alienated land: 1,324 ha (3,271.7 acre)
Acreage of Dam Area: 155 ha (384 acre)
Area of the Forest Reserve (Crocker Range Forest Reserve): 705 ha (1,741 acre)
Approximate state land: 930 ha (2,300 acre)
Total number of land applications: 79 (5 approved) No title yet

The whole catchment of the Babagon dam is included in CRBR. The Crocker Range Forest Reserve is a part of the core area of CRBR. The rest of the catchment including the alienated lands is in the transition area (or buffer zone) of CRBR. Referring to the coordinates of the villages derived from the GIS of CRBR developed under BBEC II, the catchment may includes 4 villages with JKKK such as Kg. Kapur, Kg. Kintok, Kg. Tampasak and Kg. Kalasunan[5].

[3] In practice, Sabah Parks already levy fees for commercial entities (hotels and restaurans) setting water intakes at rivers in Kinabalu park.

[4] To include carbon fixation as a service provided by forest reserves in legal sense for the EU-REDD+ Project, SFD required revision of the enactment recently in 2013. Then they can prepare rules and regulations to conserve and transact the service.

[5] The coordinates of the villages in the CRBR GIS have not been confirmed by ground truth, so they might not be accurate.

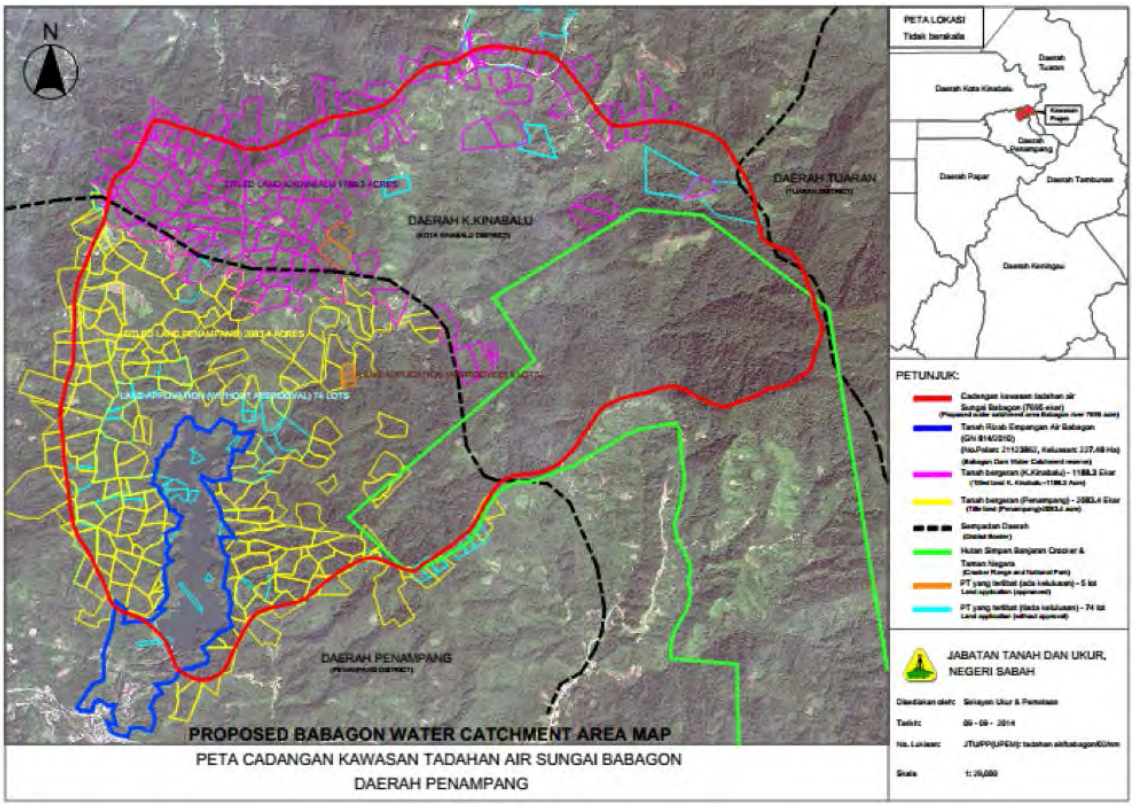


Figure 17 Land status and proposed water protection/conservation areas in the Babagon catchment

Babagon dam is a main source of water supply in Kota Kinabalu. According to the Water Department, the Babagon dam covers a little less than a half (48.4%)[6] of the whole water supply in Kota Kinabalu city. As the population of the city is 465,000 at present, we can assume approx. 225,000 people rely on water from Babagon dam. Babagon dam is owned by the state government and managed by JETAMA Sdn Bhd, the concessionaire of the Water Department.

5.1.3 Pilot Project for Babagon Catchment: Payment Mechanism

The expected stakeholders in a mechanism of PES for Babagon catchment are as follows:

- Landowners of the catchment
- Users of water supply from Babagon dam
- Director of Water Resources (Director of Irrigation and Drainage)
- Water Resources Council
- Water Department
- JETAMA (as a manager of Babagon dam)
- Lands and Surveys Department
- Sabah Forestry Department (as a manager of Crocker Range Forest Reserve)
- Sabah Parks (as a manager of CRBR)
- NGOs assisting the indigenous communities in the catchment

A proposed mechanism of PES for Babagon catchment is shown in Figure 18.

[6] According to the information from Water Department, the average daily production of water in Kota Kinabalu in 2013 is 366,867.69m^3/day from the three water sources including Babagon dam. Among them Babagon dam shares 177,784.66 m^3/day (48.4%).

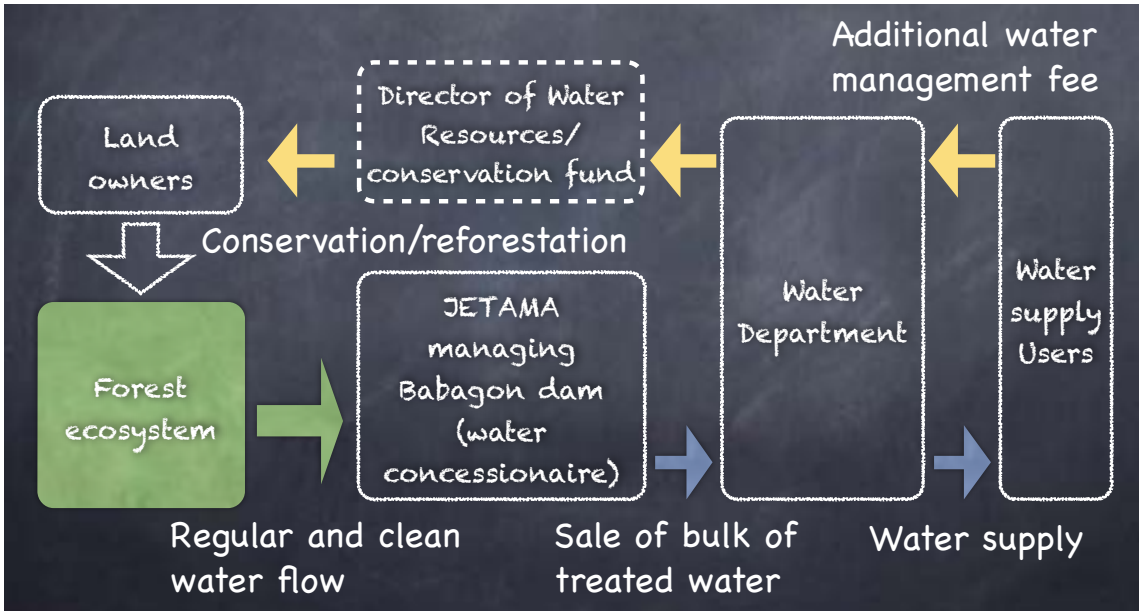


Figure 18 A proposed mechanism of PES for Babagon catchment

Regulatory measures (detailed conditions for land use in the alienated land in the Water Conservation Area according to the enactment) must be applied together with PES. It will take time to prepare such regulatory measures, as regulations should be determined through discussions with the landowners and documented and each different land use and crops require specific regulations. The process is like the planning and implementation of regulations in the Community Use Zone (CUZ) in Crocker Range Park under BBEC. We can refer to the agreement processes and institutions for the CUZ in CRP and Community Conserved Areas (CCAs) in Kinabalu Eco-Linc Project. Establishment of a PES mechanism requires awareness building of landowners and other stakeholders in the communities in the catchment through the River Environmental Education Programme (REEP), etc.

5.2 Recommendation No.2: Control Subsidies to Maintain Ecosystem Services in Rural Development in CRBR

5.2.1 Issues: current status of the subsidies biased to the monoculture

Currently new plantation and re-plantation of oil palm and rubber by local communities are heavily subsidized. According to the Department of Agriculture, MPOA has a scheme to provide financial assistance of RM9,000 per hectare for new plantation and re-plantation of oil palm up to 5ha, which is called TBSPK (*Skim Tanam Baru Sawit Pekebun kecil*/ New Planting Scheme for Palm Smallholders). LIGS may also give similar subsidy for rubber plantation as well, which covers cost of seedlings, land preparation and plantation.

The agencies or associations promoting rural development and poverty eradication generally tend to increase rubber and oil palm plantation in the "idle land," – land alienated to communities but yet to be developed – without evaluating ecosystem services provided by the forest in the "idle land." Therefore, the "agropolitan" scheme has been the mainstream option of poverty eradication, while there have been less established schemes to subsidise alternative livelihood to maintain/improve ecosystem services. Even in CRBR, there are some MESEJ and Micro MESEJ projects (settlement of poor households with rubber/ oil palm plantation) implemented under KPLB.

5.2.2 Interventions

By regulating such negative financial incentive given by the government for conservation of ecosystem services, and providing positive incentives instead through PES and other means, the land owners in the buffer zone and Transition Area may have a third option in addition to the first two, 1) to develop monoculture or 2) not to develop monoculture, such as 3) not to develop monoculture but making profit through conservation and sustainable land use.

Economic incentives and subsidy for agropolitan and monoculture plantation in CRBR should be regulated. On the other hand, more subsidies and economic incentives should be provided for sustainable land use with ecosystem services maintained/improved, such as Tagal, beekeeping, organic farming, agroforestry, fertigation of ginger, hillside farming, fruit trees, diversification of crops, handicraft, NTFP, etc.

Such direction of rural development in CRBR should be adopted by the concerning agencies and their district branches, such as KPLB, District Offices, Fisheries Dept., KPD, Dept. of Agriculture, MPOA, LIGS, SLDB, etc. with their clear recognition of the boundary of CRBR and the villages in it.

5.3 Recommendation No.3: Recommendations on the pilot projects in Kg. Tudan and other villages under SDBEC

Kg. Tudan is a small village in located above 1,100m amsl in the buffer zone of CRBR. The village was selected as a pilot site under SDBEC for the management of CRBR. Rubber can still grow in this altitude but is not productive. Palm oil plantation is not applicable because of the altitude and also the steep slope. Before the project, there was minimal assistance from the government for improvement of livelihood. With technical assistance under SDBEC, the villagers improved their livelihood with environmentally sustainable methods such as beekeeping, hillside farming, compost making, etc. Under the pilot project, Participatory 3D Modeling of the village and surrounding area is also implemented.

Once the pilot project proposed for the Babagon catchment mentioned is successfully achieve gazetting water protection/conservation areas applying PES of catchment services secured by the certain land uses by the landowners, the model of PES developed in the pilot project can be replicated in and around Kg. Tudan. Such land uses includes forest conservation, conservation of riparian area, plantation of more permanent type crop, introduction of soil conservation in hillside farming, longer fallow for shifting cultivation, introduction of the Tagal programme, etc. Kg. Tudan is located in catchment of Libodon river which is considered as one of the many headwaters of Tuaran river which then flows along the western flank of the Crocker Range before discharging into the sea some 80 km away. In Tuaran River downstream there are five intakes for water supply, such as Telibong, Telibong II, Kg. Bawang, Kg. Topokon and Kg. Topokon II. Among the total water produced from the five intakes in Tuaran river, 116,782.10m^3/day is used in Kota Kinabalu area, and the remaining 39,780.87m^3/day was used in Tuaran district in 2013. The amounts cover 31.8% of the total water supply in Kota Kinabalu city and 99.5% of water supply in Tuaran district. Simply multiply the percentages to the total populations of Kota Kinabalu city (465,000 in 2014) and Tuaran district (97,800 in 2010), in total approx. 245,000 people could be benefited by water supply from Tuaran river. In comparison with the big contribution of the land uses in Babagon catchment to secure water supply from Babagon dam, contribution of the land uses in Kg. Tudan to the water supply from the whole Tuaran river is small. However, clear connection between the land uses in Kg. Tudan and supply service downstream could justify PES similar to the proposed Babagon pilot project.

To secure sustainability of initiatives started in the pilot study, scheme to provide subsidies, technical assistance and other assistance for the alternative livelihood maintaining ecosystem services should be introduced in Tudan. Besides the subsidies and assistance to monoculture plantation, there are some scheme to promote various livelihood maintaining ecosystem services as listed in Appendix 3. According to the Department of Agriculture, in Sabah, consumers don't want to pay additional cost for organic products. However, if farmers can produce organic fertilizer and the cost and price of the organic products is same as ordinary products, the consumers choose the organic products. To harvest such organic crops which has price competitiveness with ordinary crops, at least at the initial stage of introduction of organic farming, the farmers require subsidies or other assistance from the government.

Kg. Tudan was selected as a pilot site because it is in a critical area on higher elevation. Methodology and technology such as hillside farming examined in Kg. Tudan could be applicable to the other villages in CRBR on lower elevation, as they share needs to produce crops on steep slopes. On the other hand, the majority of 400 villages in CRBR are located on elevation lower than Kg. Tudan. Critical question in the lower villages is if the alternative livelihood with less negative impact to biodiversity would be economically comparable with the monoculture of oil palm and rubber. If there is a chance to conduct other pilot projects in villages on lower elevation and successfully confirm the alternative livelihood has comparable economic performance with the monoculture, that would contribute much to extension of the livelihood to the other 400 villages in CRBR[7].

5.4 Recommendation No.4: Introduction of conservation fees in tourism

As discussed above, collections of conservation fees for CRBR, the Kinabalu and Crocker Range area or the all the protected areas in Sabah at the exit points and accommodations can be proposed.

Promotion of collection of conservation fees at entry of specific ecotourism attractions in CRBR is also proposed, such as: -

- "One village one tourism attraction" in CRBR
- Salt trails
- Blooming rafflesia (in sustainable manner)
- Other rare species
- Agrotourism (traditional farming, organic farming)
- Ethnotourism (Kadazandusun culture, TEK)

5.5 Recommendation No.5: Sale of power generated by small hydropower plants through the Feed-in-Tariff (FiT) mechanism

Possibility of utilisation of the FiT mechanism stated above for conservation of CRBR and river basin management should be examined. According to Renewable Energy Act 2011, to a feed-in approval holder (who generates renewable energy), a distribution licensee (Sabah Electricity Sdn. Bhd. in Sabah) pay feed-in-tariff for renewable energy generated. The Act also specify the renewable resources to which feed-in-tariff is payable, such as biogas, biomass, small hydropower and solar photovoltaic.

[7] In the final report of the Community-Based Conservation Survey at Kg. Tudan, Sabah (ERE, 2014), there is no clear indication of the boundary of Crocker Range Forest Reserve, which is a part of the core area of CRBR and neighbors to Kg. Tudan on the south and west (in between Kg. Tudan and Crocker Range Park).

Construction of small hydropower plants within CRBR connected to the state electricity grid could be discussed for electrification of the rural villages as well as payment through the feed-in-tariff mechanism. A committee consisting of landowners and community members in the catchment of the hydropower plant can manage the plant and account the feed-in-tariff collected from Sabah Electricity Sdn. Bhd. If there is a functioning Tagal committee established to implement the Tagal programme of the river, they can utilize such institution for management of the small hydropower plant. Then the income can be spent not only for maintenance of the plant but also for payment of forest conservation and other land uses securing the catchment service.

There are still many questions to confirm feasibility of such mechanism in CRBR, e.g. if the mechanism would be financially viable considering the initial installation and operation cost and actual income generated by the feed-in-tariff, if Sabah Electricity Sdn. Bhd. could technically connect supply lines to small hydropower plants in the rural areas in CRBR, if there would be any financial instruments (subsidies, loans, etc.) to assist initial installation of hydropower plants[8]. To answer these questions, further study and discussion with SEDA and other concerning agencies are required.

5.6 Recommendation No.6: Establishment of CRBR PES Fund

To make the proposed PES mechanisms accountable with appropriate public interventions, establishment of a trust fund is advised. So-called CRBR PES fund can pull payment from the service users and facilitate payment to the service providers (Figure 19). The Sabah ICCA Review conducted under BBEC II (Cooke and Vaz, 2011) suggests utilise Sabah Biodiversity Centre Fund stipulated in Sabah Biodiversity Enactment for such purpose as follows: -

RECOMMENDATION 6
An ICCA Fund to be created and managed by the Sabah Biodiversity Centre
…
Action: A Sabah Biodiversity Centre Fund should be established specifically for ICCAs and the Sabah Biodiversity Council should convene a discussion on the sourcing of funds from a variety of national and international sources to support initiatives related to community-conserved areas. The Centre should establish the necessary processes to administer the fund in an effective, equitable and transparent way, and a framework for accessing funding through Payment for Ecosystem Services (PES), Reducing Emissions from Deforestation and Forest Degradation (REDD) and other schemes for maintaining areas under forest cover or investments in habitat restoration, or any other suitable funding source.
Lead agency: Sabah Biodiversity Centre, ICCA Working Group

[8] In Sabah and Sarawak, Embassy of Japan in Malaysia through its Consular Office in Kota Kinabalu using its Grant Assistance for Grassroots Projects (GAGP), the Centre of Excellence for Rural Informatics (CoERI) of University Malaysia Sarawak (UNIMAS), and PACOS Trust (Sabah based NGO) have been technically and financially assisted installation of micro-hydropower plants and solar power plants in many rural villages. These power plants aim electrification of the rural villages for fulfilling basic human needs, and sometimes they also aim power supply for rural informatics such as provision of telecommunication centres with internet connection. Though there has not been a case of connection of supply line to sell surplus power to the state level power grid, utilization of such assistance for initial installation and operation of the hydropower plants in CRBR for FiT could be discussed.

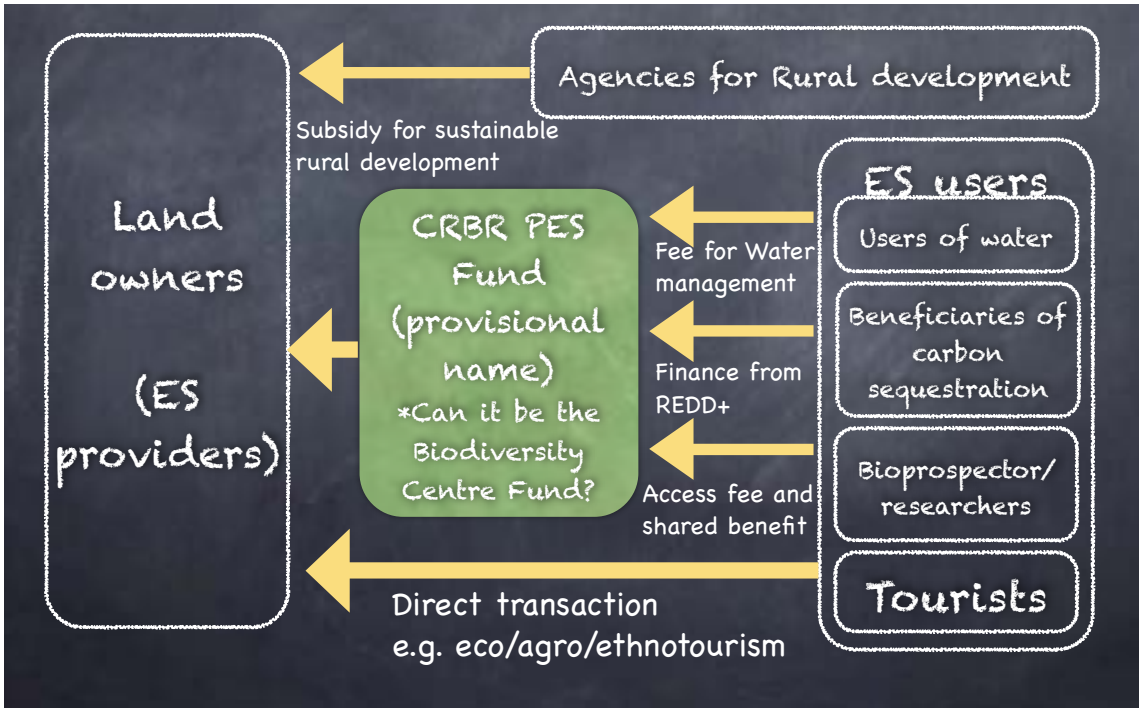


Figure 19 Flow of payment through CRBR PES Fund

5.7 Recommendation No.7: Collaboration with the Palm Oil Industry

The number of oil palm plantations is increasing in Beaufort and Tenom district near the CRP boundary within CRBR transition area. The impact of the oil palm plantations were one of the major threats to conservation of the core area, then intervention to the operation of the plantations and further expansion of plantations is needed for management of CRBR.

To lower the impact of the palm oil industry in CRBR, we can refer to the strategy and activities applied to the palm oil industry in Kinabatangan river basin including introduction of positive economic incentives for conservation. In the Ramsar Site Management Plan for Lower Kinabatangan-Segama Wetlands (SaBC, 2011), the directions to promote the activities for the sustainable palm oil production in the Kinabatangan and Segama river basins are as follows: -

- To promote branding the palm oil produced in Kinabatangan and Segama river basins for its sustainable production, including promotion of Certified Sustainable Palm Oil (CSPO) by RSPO and other palm oil certificates. Branding as well as certification of palm oil production will be an effective measures to achieve the conservation with benefiting the palm oil industry.
- To promote pollution control of the oil palm plantations and palm oil mills including utilization of biogas and biomass as proposed in the study by DOE on water pollution of Kinabatangan river, applying advanced technology with technical cooperation from research institutes inside and outside Malaysia.
- To enhance forest connectivity including the conservation and rehabilitation of riparian forests proposed by WWF-Malaysia under K-CoL, with cooperation from the palm oil industry.

In addition, payment by oil palm planters for their usage of water from the forest upstream could also be discussed. For big planters, biodiversity offset within CRBR would be applicable.

5.8 Recommendation No.8: Introduction of the initiatives for REDD+

Following the REDD+ Roadmap and collaborating with the activities led by Sabah Forestry Department, economic incentives will be introduced through REDD+ framework to CRBR. However, the core area would be considered as forest without threat and there would be no value in the REDD+ framework. Assessment of carbon at risk in the Buffer Zone and the Transition Area in CRBR and measurement of carbon value by forest conservation and sustainable management are proposed.

The ongoing Kinabalu Eco-Linc Project is a pilot project of the EU REDD Project. The southern part of the target area of the Eco-Linc Project overlaps with the buffer zone and the transition area of CRBR. In the context of CRBR management, considering the Eco-Linc Project as a pilot for introducing REDD+ initiatives to CRBR, replication of the achievement in other areas in CRBR, such as the pilot project sites of CRBR under SDBEC and the Babagon catchment, can be proposed.

5.9 Recommendation No.9: ABS and Bioprospecting

The forest and villages in CRBR could be pilot sites for enforcement of the revised Sabah Biodiversity Enactment and its rules and regulations on ABS (benefit sharing from genetic resources and associated TEK). Although possible interventions rely on legal framework provided by revised enactment and the rules and regulations, scientific research and bioprospecting of genetic resources and traditional ecological knowledge (TEK) in CRBR as a pilot project could be proposed to examine and fine tune revised rules and regulations for ABS. For obtaining free, prior and informed consent (FPIC) from the indigenous communities owning TEK, drawing up of bio-cultural protocols (minutes of understanding) between the communities, SaBC and other concerning parties would help the communities know their legal rights about ABS.

ABS may not generate revenue for the State and private sectors in Sabah and Malaysia in a short term. The revision of the laws and expected lengthy process for obtaining FPIC from the indigenous communities may take even longer than the other recommended interventions.

5.10 Recommendation No.10: Quarries in CRBR

When Sabah Parks defined the outer boundary of CRBR, existing quarries were excluded based on site observation. As the transition area of CRBR is rich in rock reserves, there will be applications of new quarries in future. In general the use of ecosystem services for quarrying includes the need for freshwater supplies for mineral processing, which can be very significant. Then payment by quarry operators for catchment service they are utilized could be discussed.

Quarries are also in general associated with adverse impact on biodiversity. Biodiversity offset for No Net Loss within CRBR as conditions for approval of quarry operation could be discussed[9].

[9] In 2010, Hap Seng Building Materials Sdn. Bhd., one of the major constructing companies in Sabah who also operates many quarries started a project collaborating with Sabah Forestry Department for 30 months. The project aims to (1) recruit field workers for forest rehabilitation and protection works, forest management activities and tree planting, and (2) to undertake the experimental “no net loss” voluntary endeavor of the department, by restoring at least 40 hectares of degraded lands and forests (Sabah Forestry Department, 2014).

Chapter 6 Recommendations for the PES policy formulation at state level

As stated above in Section 3.2, the project "Biodiversity conservation in multiple-use forest landscapes in Sabah, Malaysia" (2012-2018) funded by UNDP-GEF includes a subcontract to support the development of new state-level policies and regulations for PES, and pilot landscape level demonstration of PES (scheduled for 4 years from Oct. 2015). Here in this Chapter, based on the analysis of status of introduction of economic incentive for nature conservation in Sabah, and discussion for application of economic incentive stated above, recommendations on formulation of state-level policies for PES are presented.

6.1 Policy Recommendation No.1: Introduction of PES to the Water Resources and Catchment Management in the State

The state-level policies for PES should be formulated in synergy with the policies and plans on water resources management including catchment management. The recommendation in Section 5.1, introduction of payment for catchment service of CRBR and its pilot project in the Babagon catchment could be considered as a model for catchment management of the entire state.

Below are summarized the past and ongoing plans and efforts for catchment management in Sabah. The protection of the water catchments is under the purview of DID based on the Water Resources Master Plan for Sabah developed in 1994. The Master Plan also identified the needs for catchment management. Water Resources Enactment was enacted in 1998 which stipulates various powers and responsibilities for water resources management including the management of catchments. To manage water catchments is to manage activities in the catchments and this is done through the determination of access in catchment, monitoring approved access and enforcement for non-compliance. Catchment management plans are developed to facilitate these controls. Experience gained from the development of the pilot Integrated Catchment Management Plan for the Moyog River catchment in 1999 and DANIDA's capacity building in integrated catchment management planning project in 2002 has helped DID to develop other catchment management plans such as for Kota Marudu and Kinabatangan. In 2005, the Director of DID was officially assigned as Director of Water Resources stipulated in the Water Resources Enactment. In Feb. 2006, based on the Enactment, a State Water Resources Council chaired by the Chief Minister of Sabah was established to ensure that water catchment areas in Sabah are well managed.

On the other hand, these experiences unveiled various challenges in catchment management in Sabah. One of them is socio-economic issues among the people residing in the catchment. The catchment management plans included measures determined by the stakeholders to address issues in the catchment. Such measures include gazettal of areas into water protection areas, or water conservation areas. These measures have financial, political and socio-economic implications. Measures such as gazettal of a water protection area require the government to acquire lands that are already alienated. Acquiring these lands would be a cost to the government. Gazettal of a water conservation area is another measure whereby activities in that land may need to be changed. Change of land activities could mean a change of lifestyle and loss of income to the landowners. The government may have to compensate this.

The introduction of PES for the water supply service from the catchment would address the above problem concerning economic cost and benefit of catchment management for land owners, and it may promote gazettal of water protection/conservation areas. In the proposed pilot project for conservation of the Babagon catchment, it is planned to establish a payment mechanism for the owners and occupants in the catchment through water bill collection, etc. so

as to give them an economic incentive to agree on the gazettal. If the pilot project is successful, we can consider extending the approach to combine PES and gazettal of water protection/conservation areas to the other proposed water catchment areas in the state.

6.2 Policy Recommendation No.2: Consideration of PES in Poverty Eradication and Rural Development

In development of the state-level PES policies, poverty eradication planned and implemented by the federal government and state government should not be considered as "external factors." Poverty related information including the national poverty database (e-Kasih) and various poverty eradication scheme applied by the government should be utilized during planning and implementation of the PES policies. In consideration of poverty eradication and rural development scheme which may have negative impact on ecosystem services, in addition to the regulatory measures such as EIA, etc., intervention and coordination on determination of project sites and plan including application of PES should be considered.

Specifically, application of poverty eradication scheme which may have a negative impact on the ecosystem services should be avoided around protected areas and candidate sites for international recognition (Mount Kinabalu World Natural Heritage Site, CRBR, Lower Kinabatangan Segama Wetlands Ramsar Site) and protected areas under domestic laws, with high conservation values. Instead, alternative livelihood and income generation including application of PES should be discussed.

As organizational structure in order to realize such a policy, it is desirable that the agencies, such as NRO, etc. who are in charge of natural resources conservation an introduction of PES to participate in the various existing poverty eradication committees. These poverty eradication committees are inter-agency and formed at state level as well as district level, for making important decisions on poverty eradication and rural development. In turn, also in the organizational structure for implementation and policy development of PES, it is recommended to have agencies not only for nature conservation but also for poverty eradication, such as the State Economic Planning Unit (EPU), Ministry of Rural Development (KPLB), SEDIA poverty eradication, etc.

6.3 Policy Recommendation No.3: Utilization of Feed-in-Tariff (FiT) Mechanism

Utilization of Feed-in-Tariff (FiT) mechanism for promotion of renewable energy could be considered as a state-level PES policy. In Section 5.5, construction of small hydropower plants within CRBR for selling electricity in the FiT mechanism is recommended. Though there are still many questions to confirm feasibility of such mechanism in CRBR, the approach could be applicable to the other part of the state.

In addition, the FiT mechanism affords an economic incentive to reduce pollution of river from the oil palm industry. During the oil palm industry produces palm oil and palm kernel oil, they also have huge amount of by-product such as empty fruit bunches, palm kernel cake, palm oil mill effluent, palm tree trunks (during replanting palm trees), etc. The industry used to discharge them as "waste" after some processing to natural environment. In particular, palm oil mill effluent could pollute river water if it is discharged without proper processing.

As stated above, in the recently introduced FiT mechanism, renewable resources to which feed-is payable includes biomass. Thus, electric power generation utilizing biomass in the by-product from the palm oil industry are offered an economic incentive through the FiT mechanism, in addition to incentive by in-house power generation for the plantation and oil palm mills. Such

use of the palm oil by-product reduces discharge of waste to natural environment including palm oil mill effluent and contribute to maintenance and improvement of ecosystem services.

6.4 Policy Recommendation No.4: Others

The collection of conservation fees at the exit points from Sabah and collection of fixed amount of fee from all guests in hotels and accommodations in Sabah (or in particular area) recommended in Section 5.4 for CRBR management can be also considered as an option of state-level PES policy. CRBR PES fund recommended in Section 5.6 need not to be limited to payment for ecosystem services of CRBR, state-level PES fund can be discussed utilizing Sabah Biodiversity Centre Fund, etc.

REDD+ is considered as a PES mechanism whereby developing countries that are willing and able to reduce emissions from deforestation and degradation are paid by developed countries for doing so. Thus, activities and projects under the REDD+ framework lead by Sabah Forestry Department (SFD) are considered as PES utilizing an international framework. The state-level PES policy could include further development, extension and institutionalization of the activities under REDD+, together with other innovative financial mechanisms implemented or planned by SFD (such as forest certification, biobank, biodiversity offset, etc.).

As stated in Section 5.9, CRBR could be a pilot site for enforcement of the revised Sabah Biodiversity Enactment and its rules and regulations on ABS, though realization of the pilot project may take even longer than the other recommended interventions. Institution building for ABS based on the revised law and regulations could be promoted by the state-level PES policy.

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Appendix 1: Record of interview survey (25 organisations/sections) and field survey in Kg. Tudan

Record of interview with the Tambunan District Officer

(1) Date and time: 14:30-16:00, 2 Dec. 2014

(2) Interviewee
- Mr. Thomas Logijin, District Officer, Tambunan (Tel. +60 13 868 6788)

(3) Venue
- Tambunan District Office

(4) Questions: -
- Update of the socioeconomic and poverty status in Tambunan (since the planning of CRBR management in 2011 under BBEC II)
- Comments on introduction of Payment for Ecosystem Services (PES) to CRBR

(5) Facts and comments

- As an official figure after confirmation in the census in 2010, population in Tambunan is 36,297. After 4 years with 1.5% annual growth of the population, it would be 40,000 at present. Populations of men and women are not different much.
- Several agencies could be service providers in PES of CRBR, Sabah Parks for services of Crocker Range Park (Core Area), Forestry Department for the Forest Reserves (Core Area), and Lands and Surveys Dept. for the Buffer Zone and Transition Area.
- The water in the rivers in a half of the area of Tambunan, the right bank of Pagalan river is fed by CRP. 4years ago water of the river was clear but nowadays it is getting dirtier.
- In the titled land, according to the law, they can develop as they like. To avoid the lengthy EIA process stipulated in the state enactment, landowners tend to declare less than 100ha for development. Even for MESEJ, the poverty alleviation projects implemented by District Offices under KPLB, they propose each project in the land less than 100ha for the purpose.
- Flooding is common, but floodwater recedes quickly. A lot of opening of forest titled land may have affected that.
- People want to plant oil palm and rubber.
- Areas of rubber and oil palm plantation has been growing, while the area of wet paddy is stable from the figures in the table below.

Planted Area of Main Crops in Tambunan District in 2007

District	Wet Paddy	Dry Paddy	Rubber	Cocoa	Coconut	Oil Palm
	hectare					
Tambunan	1,827	-	1,220	153	5	45
Ratio in the total area of the district	1.4%	-	0.9%	0.0%	0.0%	0.0%

Source: Department of Statics Malaysia, Sabah (2009)

- In Tambunan, most farmers produce wet paddy rice for their own consumption. According to the Tambunan District Office in 2011, production of rice was more than their self consumption (205% of the demand), but they didn't sell the surplus in the market as it is considered as taboo, then the surplus rice had been kept there for many year. It seems economically wasting, but they follow the custom. The old generation still keeps this custom, but the new generation changes. They are selling 7% of (6% in wet, 1% in dry) of rice produced in Tambunan.
- Ginger production emerging in 2011 has been decreased because of crop disease (bacterial wilt/ *layu bakteria*), for which there is no cure. Thus we are introducing fertigation for ginger treating water. It is still in trial and it is costing. The trial is supported by the state agriculture dept.
- Concerning the water supply as ecosystem service from Crocker Range, according to Water catchment enactment, the government has a power to charge for usage of water irrigated from Water Protected Areas. However, the clause has not been enforced, as any of the proposed Water Protection

Areas under the enactment have not been gazzetted. The paddy farmers in Tambunan have never paid for irrigation as well.

- The socio-economic status in the part of CRBR in Tambunan which JICA found in 2011 has not changed much.
- People like to declare themselves as poor households to get many kids of government assistance. Being registered under e-kasih, they can get allowance provided by the welfare department, a house, and support on livelihood. In Tamabunan, we have spent much for the poor households, but their attitude doesn't change. They would like to keep taking services from the government by being poor.
- In 2011, Tambunan District Office was introducing a method of rubber planting with less adverse environmental impact (no use of machinery for earthmoving), which is called "peringan." We have applied the method in a village. However, it was considered as irrelevant, as it requires labor input from villagers. On the other hand, assisting scheme for rubber and oil palm plantation by the federal agencies such as RISDA (Rubber Industry Smallholders Development Authority) and MPOB (Malaysia Palm Oil Board) provide free service for the villagers including preparation for planting. Villagers have no incentive to apply for the peringan in comparison to such free services.
- In 2011, under the assistance by Sabah Fisheries department, 76 Tagal committees existed in Tambunan District. All major rivers in Tambunan (Pegalan/tendulu/some rivers in Trus Madi FMU) were covered by Tagal system.
- Fisheries Department is now constructing a "Fresh Water Biodiversity Centre" in Mahua just beside of the substation of Crocker Range Park near Mahua Waterfall. Sabah Parks is aware of the plan. It is a breeding centre for fresh water fish for aquaculture, such as tilapia, catfish, *ikan perian*, etc.
- Our MESEJ projects are not called as an "agropolitan" projects, as its size is small, only less than 100ha. We call far larger projects as agropolitan projects, such as the project in Tongod by SLDB with 1,000 acres and the rubber plantation in Bangi and Pitas by LIGS.
- To the projects under PKS, PPES, PPP and 1AZAM which JICA found in 2011, we don't have much addition. Recently we have 1Azam involving 100 person, done by Ministry of Food and Agricultural Industry, Sabah. We just provided e-kasih data about poor household. This year, we didn't issue any new PPP and PPES, as they haven't been sustainable. We assisted shiitake and ginger production under the scheme. Ginger production was good but there was no continuation after the assistance completed. Though they can make benefit even after the assistance, but they don't continue, as they prefers easier production with financial assistance. It might be caused by their economical consideration and also their attitude. They just accept poverty and wait for support from the government. We spent much for infrastructure especially for shiitake hut (RM10,000) but it is not in use. Then we stopped new project under PPP and PPES.
- I am not aware of the two villages in Tambunan, which were recently selected as new pilot sites for CRBR.

(6) Reference collected (as attached): -

- Land Use in Tambunan
- Poverty income line set by Malaysian government in 2012

2014/12/24 (at night)
from Thomas Bogijin DO Tambunan

6.0 PENGGUNAAN TANAH

6.1 Status tanah

- 6.1.1 Town Lease (ha) : 13,608 ha
- 6.1.2 Country Lease (ha) : 1,548.101 ha
- 6.1.3 Provisional Lease (ha) : 192.718 ha
- 6.1.4 Native title (ha) : 14,517.218 ha
- 6.1.5 Field register (ha): 2,356.156 ha
- 6.1.6 T.O. L. (ha): Tiada Maklumat
- 6.1.7 Luas Tanaman Kelapa Sawit : 1,417.33 ha (3,502.22 ekar)
- 6.1.8 Luas Tanaman Getah : 1,140.94 ha (2,819.34 ekar)

Temporary occupation ~~lease~~ license (for logging usually)

6.1 Tanah "alienated/ gazetted"

- 6.1.1 Tanah Negeri (ha) : 135.30 ha
- 6.1.2 Tanah Persekutuan (ha) : Tiada Maklumat
- 6.1.3 Lembaga Tabung Getah (ha) : Tiada Maklumat
- 6.1.4 Borneo Semudra (ha): Tiada Maklumat
- 6.1.5 Jabatan Perikanan (ha) : Tiada Maklumat
- 6.1.6 KPD (ha): Tiada Maklumat
- 6.1.7 SAFODA (ha): Tiada Maklumat
- 6.1.8 Jabatan Pertanian (ha) : Tiada Maklumat
- 6.1.9 Jabatan Perkhidmatan Haiwan dan Perusahaan Ternak (ha): 499 ha
- 6.1.10 Hak milik Jabatan / agensi Kerajaan lain (senaraikan) : Tiada Maklumat
- 6.1.11 Tanah perindustrian (ha) : Tiada Maklumat
- 6.1.12 Jumlah keluasan tanah pertanian (ha): Tiada Maklumat
- 6.1.13 Jumlah keluasan tanah perikanan (ha): Tiada Maklumat
- 6.1.14 Jumlah keluasantanah perumahan (ha): Tiada Maklumat
- 6.1.15 Hutan Simpan Negeri (ha) : 27,812 ha
- 6.1.16 Taman Negara (ha) : 14,335 ha

From Thomas Logijin
D.O. Tambunan 4 Dec. 2014

PENDAPATAN GARIS KEMISKINAN (PGK) TAHUN 2012

Wilayah	Miskin		Miskin Tegar	
	Isi Rumah	Per kapita	Isi Rumah	Per kapita
Sem. Malaysia	**830**	**210**	**520**	**130**
Bandar	840	220	510	130
Luar Bandar	790	190	530	120
Sabah & Labuan	**1,090**	**240**	**660**	**140**
Bandar	1,080	240	630	140
Luar Bandar	1,120	240	710	150
Sarawak	**920**	**230**	**600**	**140**
Bandar	960	230	630	150
Luar Bandar	870	220	570	140

Sumber : Unit Perancang Ekonomi (EPU), Jabatan Perdana Menteri

Record of interview with the Rural Development Corporation (*Korporasi Pembangunan Desa*/KPD)

(1) Date and time: 8:30-10:00, 3 Dec. 2014

(2) Interviewees: -
- Datuk (Datu) Basrun Hj. Datu Mansor, General Manager/ CEO, KPD
- Ms. Jamilah Lee Nyuk Choon, Group Manager (Agriculture), KPD
- Mr. Awang Sallih Awang Labai, Planning and Development Manager, KPD

(3) Venue: Head office, KPD

(4) Questions: -
- Update of their assistance in rural development in CRBR (since the planning of CRBR management in 2011 under BBEC II)
- Comments on introduction of Payment for Ecosystem Services (PES) to CRBR

(5) Facts and comments

- The list of scheme of KPD for rural development in CRBR (beekieeping, vanilla, pomelo, mashroom and homestay) which JICA prepared in 2011 is still valid.
- KPD has its training centre in Tenom. It used to be in Kneingau but we moved it in 1980s.
- The mushroom project in Tambunan in 2011 was shifted to Moyog (Penampang), Kudasan (Ranau) and Kimanis (Papar).
- In 2004, Ministry of Agriculture and Food Industry, as a result of JICA's assistance for the study on Development for Enhancing Rural Women Entrepreneurs in Sabah (PUANDESA) prepared a master plan for development for rural women entrepreneurs. The master plan was approved by the state government. The coordinator for implementation of the master plan is Ministry of Agriculture and Food Industry. KPD is one of the many implementers. The plan cannot be implemented without funding. Various government agencies have different priorities.
- KPD is now promoting fertigation method of ginger in Tambunan, Keningau and Tenom in collaboration with MARDI. Local farmers grow usually ginger on shifting cultivation and it degrade farmland much and they can only grow ginger in a same place for 2-3 harvesting cycles. In the pilot project in Tambunan, the target ginger farmers used to shift their farmlands then their last farmland is far away from their house and they needed to stay overnight in the farm. By introduction of the fertigation method, they are now growing ginger in their backyard.
- Ginger and rice are harvested on hill. We understand that uphill farming degrade water supply and water regulation services in downstream. If the environmental authorities give us budget, then we can shift the farmers from hill. However, we are an agency in charge of poverty alleviation rather than nature conservation. We can contribute to development and introduction of farming methods maintaining ecosystem services, in the training centre in Kundasan, and through the fatigation method for ginger.
- KPD does not conduct any agropolitan scheme. KPLB does. They apply MESEJ scheme on the hillside next to Crocker Range Park in Ulu Kimanis, Papar. KPD is assisting farmers without moving them (in-situ rural development).
- OISCA Sabah Charter is NGO, a separate entity from KPD. It is not a part of KPD. KPD is assisting OISCA.
- Concerning water supply service of uphill, KPD used to be in charge of irrigation and water supply in Kudasan, Ranau. It was exceptional arrangement as water supply and irrigation were under Water Department and DID except Kundasan. As we found this task is too big for KPD later, Water Department took over the task in 2012 even in Kudasan.
- For payment of water supply service, additional payment on water bill could be considered. However, the reason of the raise of bill must be transparent and accountable for the users.

Record of interview with Sabah Parks (in charge of Kinabalu Eco-Linc)

(1) Date and time: 11:00-12:00, 3 Dec. 2014

(2) Interviewees: -
- Mr. Maipol Spait, Terrestrial Park Manager, Sabah Parks
- Mr. Andy Martin, Field Officer for Kinabalu Eco-Linc Project

(3) Venue: the Hall, Kinabalu Park Headquarters

(4) Questions: -
- Update of information of Kinabalu Eco-Linc Project in relation to introduction of PES to CRBR (since the planning of CRBR management in 2011 under BBEC II)
- Comments on introduction of Payment for Ecosystem Services (PES) to CRBR

(5) Facts and comments

- Eco-Link is now implemented as one of the three pilot projects under the EU REDD+ Project (Tackling Climate Change through Sustainable Forest Management and Community Development) which is lead by Sabah Forestry Department.
- Feasibility study of Eco-Link project was conducted by ERA Consulting Firm from 2010 to 2011, funded SEDIA. The idea to connect between Kinabalu Park and Crocker Range Park by wildlife corridor is originated in BBEC Phase 1 (probably in the Crocker Range Park Management Plan). The idea is also originated in Heart of Borneo which is promoting connectivity of wildlife throughout Borneo island.
- In the plan of Eco-Link in 2011, there was no clear indication to contribute to REDD+ or carbon sequestration. However, the plan was proposed through Sabah Forestry Department to EU to apply for financial assistance under REDD+.
- EU is financing 75% of the project cost while Sabah Parks bares the remaining 25%.
- In 2013, Mr. Maipol attended a workshop on PES organized in Philippine by ASEAN Centre for Biodiversity (ACB). Mr. Maipol presented a proposal of PES for water supply service from CRP at the workshop. In the proposal, water volume of the 8 main rivers from CRP was estimated. He estimated value of the water RM700/day by multiplying a certain rate of value to the total volume.
- Sabah Park Enactment stipulate that Sabah Parks can collect fee from users of the park.
- For the three pilot projects under EU REDD+ Project including Eco-Linc, we introduce Monitoring, Reporting and Verification (MRV). A MRV expert is assigned in Sabah Forestry Department as a requirement from EU.
- Sabah Parks signed MOU with the board of trustees of one Community Conserved Area (CCA) in Bundu Tuhan at the workshop organized yesterday. It is one of the 9 CCAs planned under Eco-Linc Project. In the project period of four years (2014-2017), we will sign MOUs for all the 9 CCAs. IN this December, we will sign a MOU for CCA in Kiau.

Record of interview with the Institute for Tropical Biology and Conservation (ITBC), Universiti Malaysia Sabah

(1) Date and time: 9:00-10:00, 4 Dec. 2014

(2) Interviewee: -
- Prof. Charles Vairappa, Director, Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah (ITBC)

(3) Venue: the office of director, ITBC

(4) Questions: -
- What is ITBC's role in environmental education and other contribution for PES in CRBR

(5) Facts and comments

- In SDBEC, ITBC would like to focus on environmental education, while in the preceding programmes assisted by JICA, in BBEC Phase 1, ITBC was focusing on technical capacity building including establishment of BORNEENSIS reference collection centre and in BBEC Phase 2 we worked for the policy issues and the third country training programme (TCTP). Then environmental education is our focus in SDBEC.
- As a part of the CRBR management, Mr. Arman and Ms. Sahana from ITBC have worked for River Environmental Education Programme (REEP).
- In the environmental education contributed to newly established PES mechanisms for the CRBR river basin management, ITBC can be in charge of its technical aspect while Sabah Parks may play a role of a coordinator.
- Faculty of Business, Economic and Accounting or its researcher, such as Dr. James Alin may contribute to design a mechanism for PES in CRBR.

Record of interview with Sabah Wildlife Department

(1) Date and time: 11:30-13:00, 4 Dec. 2014

(2) Interviewee: -
- Mr. Augustine Tuuga, Deputy Director I, Sabah Wildlife Department (SWD)

(3) Venue: Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah

(4) Questions: -
- On-going and/or planned activities implemented by Sabah Wildlife Department for PES and other economic incentives for wildlife conservation

(5) Facts and comments

- So far, SWD is charging entrance fee for Lankayan island and Lower Kinabatangan Wildlife Sanctuary (RM2/person), Lankayan island and Gomantong cave. We utilize the fee for conservation of the protected areas.
- We also charge entrance fee at Sepilok Orangutan Rehabilitation Centre (SORC).We are managing the facilities SORC only, while Kebil-Sepilock Forest Reserve surrounding the Centre is under management of Sabah Forestry Department.
- Lankayan island is of the three islands located in Sugud Islands Marine Conservation Area (46,000ha) under Sabah Wildlife Conservation Enactment. The area is managed by a private abnd non-profit organization, REEF Guardian. They use entrance fee for research and conservation of turtles. Tourism attraction in the island is snorkeling and scuba diving. Their activity includes sea turtle monitoring.
- Lower Segama Wildlife Conservation Area (LKSW), the protected area established through BBEC has remoteness as a bottleneck for tourism development.
- I cannot confirm if the riparian reserve along (within) LKSW has been declared in gazette. However, recently even some parts of riparian areas along Kinabatangan river in oil palm plantations were declared as riparian reserves. The riparian reserve in LKSW discussed earlier must have been declared.
- We have a visitor centre in LKSW and two permanent staff members are posted. Mr. Tsubouchi brought some Japanese tourists to the centres.
- I am from Kinarut area. One company owned by my cousin tried to log his titled land. The forest is in a water catchment of a village downstream, Kg. Tampasak, Kinarut, Papar. I was a member of JKKK (Village Security and Development Committee), we requested not to log the area. A forest officer in charge told us as it is titled land, it is legally up to the land owner to log the forest. Anyway logging didn't happened, and the water resource was utilized for gravity water supply to the village. Applying PES concept, the villagers downstream as users should pay for maintenance and conservation of the forest upstream. However, they don't have much cash income and they cannot afford to pay.
- In Tomani, Tenom, they own forest in a good condition, they want to conserve the forest for water supply and it is under their native communal title.
- Concerning the EU REDD+ Project, Lower Kinabatangan Wildlife Sanctuary was selected as one of the three pilot projects. At first, SFD conducted a workshop for introduction of the EU REDD+ project. In the workshop, we discussed pilot project sites, then we determined them.
- Initially I was in charge of the EU REDD+ Project from SWD. Since I was very busy, then Mr. Peter Malim took over the role.
- REDD+ , we will retain forest as much as possible, and hopefully have reforestation project in some parts of the area. We are still in the process of mapping, in terms of carbon stock.
- We work together with people for alternative use of the land rather than development of oil palm in a few projects between Batu Puti and Deramakot such as Bukit Garam, Lamag, etc.. We conduct capacity building of the people there specifically that for ecotourism.

- Mr. Raymond Alfred, executive secretary for BCT, is also Project Coordinator for EU REDD+ Projet. He is mapping the forest in terms of carbon stock.
- Kulamba, as well as Tabin Wildlife reserve were declared under forest enactment but managed by SWD according to the cabinet decision. The Kulamba Wildlife Reserve management plan prepared by SWD with input from Dr. Junaidi Payne is not around. It should be in SWD.
- Concerning ABS, we haven't done much on documentation and conservation of Traditional Ecological Knowledge. The Economic Valuation of Wildlife in Sabah including study of hunting was conducted by PACOS under the DANCED Project.
- Throughout Southeast Asia, at present people don't realize the value of ecosystem services and necessity of payment for the ecosystems services. We just need to learn from the good practices in other countries to raise awareness. Amount they prepare to pay relies on economic condition of the people. People who own the land would not be satisfied with the amount the users can pay.

Record of interview with Lands and Surveys Department

(1) Date and time: 9:00-10:30, 5 Dec. 2014

(2) Interviewee: -
- Mr. Brnard Liew, Principal Assistant Director, Lands and Surveys Department (LSD)

(3) Venue: Mr. Liew's office, LSD Headquarters

(4) Questions: -
- Restrictions and opportunities in the enforcement of land related laws for institutional design of PES

(5) Facts and comments

- So called "communal title" means Communal Native Title, one of the types of native title. It is stipulated in Section 73 of Land Ordinance.
- Most of the households in the villages in CRBR including the poor households registered in e-Kasih usually own land and right to use the land, though they don't generate income from them.
- Being stipulated in Section 65-69, Land ordinance: They have customary tenure,and right to use the land, so-called natives continuous occupation..
- Lower Segama Wildlife Conservation Area was declared in the gazette in 2012.
- Land can be alienated. However, even in alienated land, water still belongs to the state government, they cannot block water ways.
- The original purpose of riparian reserve is to provide access to rivers, but it is effective for protection of ecosystem. The guideline of the width and riparian reserves was applied when we survey boundary of riparian reserves for alienation.
- During alienation process we marked up the riparian reserves in the area. We confirmed them. In alienation the riparian reserves were not gazetted, but the boundary to the riparian reserves are only shown in the title.
- Along Kinabatangan river, for non alienated land, we recently survey and gazette certain part of riparian reserve.
- What SFD recently did for riparian reserves is to cut down oil palms in riparian reserve. Such planting in riparian reserve is illegal. Such enforcement of law is nothing to be appreciated as "voluntary environmental contribution."
- Concerning riparian reserves, since 1930 we have stipulation of riparian reserve in Land Ordinance, but detailed regulations on size of the reserves were not in the ordinance. For 70 years we applied our own way and marked up riparian reserve boundary. Before year 2000, we marked up riparian reserves following a guideline "as long as the river is navigable." We also had a kind of guideline stipulated by DID or the Public Works Dept. Before 2000, small rivers (less than 3m width) did not have riparian reserve, and along the big river during alienation LSD marked up at least 20m of riparian reserve to make the river navigable.
- According to Water Resources Enactment, in Water Conservation Area alienation of land is allowed with restrictions, while Water Protection Area cannot be alienated (Section 34 and 36).
- We can declare Water Conservation Area which includes titled lands, but DID has faced difficulties to convince land owners to accept such declaration. Maybe PES can work in Water Conservation Area. The landowners can be service providers. They cannot control a river which is under control of the state, while they can control use of the land they own in the catchment area.
- Concerning REDD+, carbon inside the forest reserve and protected area is not an issue. Carbon outside of them is.
- The two new pilot villages for CRBR after Tudang are Kg. Sintuong Tuong and Kg. Kiporing, Tambunan District. Though District Officer, Tambunan would not be aware of selection of the two villages, Assistant District Officer (ADO) must know. one of the two ADOs. We have maps of their land titles near the villages, they are scattered in between state land. Our GIS provides detailed information of each titled land, but no detailed information for land application.

- Lands and Surveys Dept. can provide information including GIS data of land titles in CRBR to you as log as being requested by Sabah Parks or NRO. Viewing of the GIS data of the titled land (boundary and title number, etc.) in whole Sabah state is possible by referring with the published GIS database (JTUWMA) with ArcGIS.
- LSD has 8 divisional offices. Every day each office updates the part of GIS they are in charge. Every 2 weeks the data in the whole state are synchronized.
- If you have the free mobile application of ArcGIS on your smartphone with GPS. You can just refer to JTUWMA to know status of the land where you are. The PC version of ArcGIS (including the free web-based software) can also view the database.
- Such GIS data of titled land is only available in Sabah in Malaysia. We have published the database using cloud technology since two years ago. The database was close to get the award of IT in Malaysia.

Record of interview with Sabah Tourism Board

(1) Date and time: 10:30-11:30, 5 Dec. 2014

(2) Interviewees: -
- Mr. Humphrey Ginibun, Marketing Manager, Sabah Tourism Board
- Ms. Halimah Haji Hassan, manager, Tourism Product Division

(3) Venue: The office of Sabah Tourism Board

(4) Questions: -
- Status of tourism in CRBR, and practices of PES through tourism in Sabah

(5) Facts and comments

- Concerning practices of collection of conservation fee from operators and visitors, Kinabatangan Tour Operator Association levy their members for conservation, but they don't force tour operators to join them. It is voluntary basis. KITA was initiated by WWF with some lodge operators for nature conservation. The members of Kita includes Mr. Cede Prudente and Mr. Alex Yee, the owner of Rumah Terbalik also.
- There is Orangutan Educational Centre in Rasa Ria Resort Hotel which is managed and owned by Sabah Wildlife Department. The hotel maintains the Centre.
- Reef Guardian, an NGO and Dr. Sen, Sabah Wildlife Department manages Sugud Island Marine Conservation Area and entrance fee is collected.
- It seems Sabah Environmental Trust (SET) headed by Dr. Rahimatsah Amat, former Chief Technical Officer for WWF in Sabah is doing something for PES.
- Charging exit fees would be an option for PES. In Indonesia, they set different exit fees according to departure points, such as Rp.150,000 from Jakarta, Rp. 200,000 from Bali, Rp. 75,000 from Bandon, etc. The collected fees are used for certain purposes.
- In Melaka, the state government charges "heritage fee" on guests/rooms of all hotels in the state. The rate is 5%. The fee is used for maintenance of the World Heritage.
- Boneo Ecotours managed by Mr. Albert Teo, the private company operating Sukau Rainforest Lodge, contribute to tree planting. Nestle also funded for tree planting in Kinabatangan area.
- Feasibility of PES through tourism depends on a market segment targeted as service users. The Japanese tourism market is positive about payment for and contribution to conservation effort, such as adapting trees, coral planting, etc.
- In Ulu Kimanis near Crocker Range Park, there is a hotel named Manis Manis "Rooftop of Borneo" Resort promoting nature tourism.

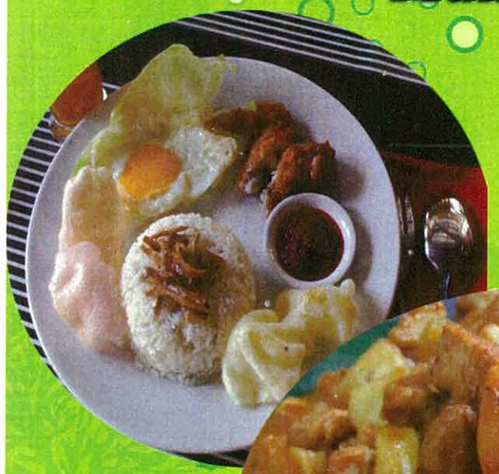
(6) Reference collected (as attached): -

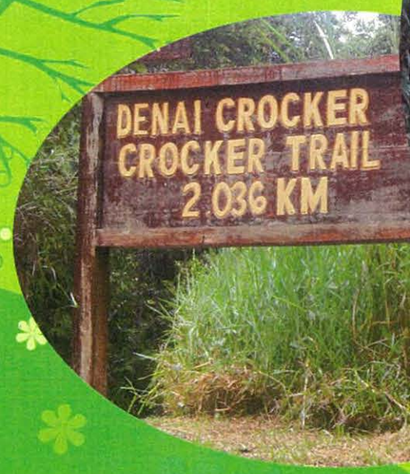
- Advertisement of a private nature resort in CRBR
- *Sabah Tourism Quick Facts (updated as at 9.9.2014)*

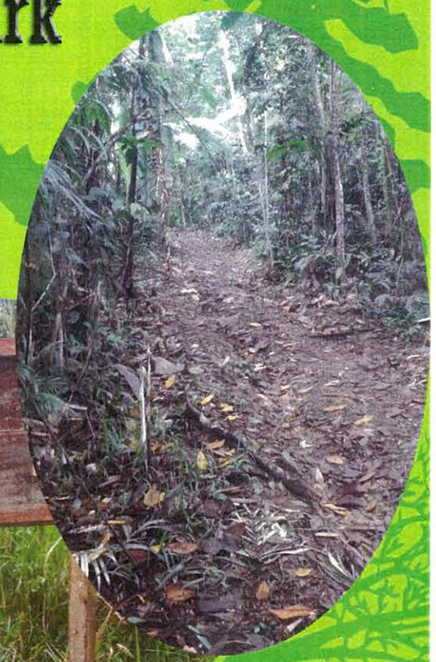
From Tourism (STPB)
t Dec. 2014

Manis Manis
ROOFTOP OF BORNEO RESORT
CROCKER RANGE NATIONAL PARK

Manis Manis "Rooftop of Borneo" Resort, Crocker Range Park
Your New Eco Nature Destination







For more Info: Please Contact

088 719 900 (Sales Office)
+6 019 809 8683 (Resort Mobile)

info@manismanisresort.com

From: ~~STB~~ STPB 5 Dec. 2014

Vision

To achieve a minimum 10% of the total national receipts by the year 2020.

Mission

To market position SABAH, Malaysian Borneo as the premier nature adventure destination in the world.

While every care has been taken in compiling the data in this Quick Facts , Sabah Tourism cannot be held responsible for any inaccuracy, omission or alteration that may occur. The co-operation and assistance of all parties concerned in providing data for this Quick Facts are gratefully acknowledged.

All Information is correct at the time of printing:

09.09.2014

Research Division, Sabah Tourism Board,
Ministry of Tourism, Culture and Environment

SABAH TOURISM

Quick Facts

Updated as at 09.09.2014

SABAH TARGET ARRIVALS 2014

Domestic Visitors 2.36 mil

International Visitors 1.16 mil

Total Arrivals 3.52 mil

Tourism Receipts RM 6.988 bil (e)

SABAH VISITOR ARRIVALS 2013

Domestic Visitors 2,293,923

International Visitors 1,089,320

Total Arrivals 3,383,243

Tourism Receipts RM 6.684 bil

2013 Sabah Hotel Room Supply

Star Rating	Hotel No.	Room No.
5 Star	9	3,041
4 Star	14	3,080
3 Star	46	4,380
2 Star	40	2,452
1 Star	38	1,344
3 Orchid	34	1,004
2 Orchid	33	859
1 Orchid	25	484
No Rating	343	7,912
Total / Overall	582	24,556

*** 2013 Sabah Hotel Average Occ. Rate = 62.2%**

Source : Respectives Hotels / * Based on Tourism Malaysia

Note : 1. Information extracted from Hotel Inventory Survey 2013.

Summary Of Direct Scheduled Flight Frequency & Seat Capacity

From	To	Airlines	Weekly Flight	Weekly Seat	Days of Service Arrival	Days of Service Departure
DOMESTIC FLIGHTS						
Kuala Lumpur	BKI	MH	72	11,520	Daily	Daily
	BKI	AK	77	13,860	Daily	Daily
	BKI	OD	14	2,520	Daily	Daily
	TWU	AK	28	5,040	Daily	Daily
	TWU	MH	14	2,016	Daily	Daily
	SDK	MH	7	1,260	Daily	Daily
	SDK	AK	18	3,240	Daily	Daily
Penang	BKI	AK	11	1,980	Daily	Daily
Johore Bahru	BKI	AK	21	3,780	Daily	Daily
	TWU	AK	4	720	1,3,5,7	1,3,5,7
Kota Bharu	BKI	AK	3	540	2,4,6	2,4,6
Labuan	BKI	MH	7	1,260	Daily	Daily
	BKI	MASWings	35	2,380	Daily	Daily
Sarawak						
Kuching	BKI	MH	9	1,440	Daily	Daily
		AK	21	3,780	Daily	Daily
Bintulu	BKI	MASWings	14	952	Daily	Daily
Sibu	BKI	MASWings	14	952	Daily	Daily
Miri	BKI	AK	11	1,980	Daily	Daily
	BKI	MASWings	15	1,020	Daily	Daily
Grand Total			395	64,[illegible]		
FLIGHTS WITHIN SABAH						
Kota Kinabalu	LDU	*MASWings*	35	2,380	Daily	Daily
	SDK	*MH*	14	2,016	Daily	Daily
		AK	18	3,240	Daily	Daily
		MASWings	31	2,108	Daily	Daily
	TWU	*MH*	14	2,016	Daily	Daily
		MASWings	14	952	Daily	Daily
		AK	28	5,040	Daily	Daily
Lahad Datu	BKI	*MASWings*	35	2,380	Daily	Daily
Sandakan	BKI	*MH*	14	2,016	Daily	Daily
		AK	18	3,240	Daily	Daily
		MASWings	31	2,108	Daily	Daily
	TWU	*MASWings*	14	952	Daily	Daily
Tawau	BKI	*MH*	14	2,016	Daily	Daily
		AK	28	5,040	Daily	Daily
		MASWings	14	952	Daily	Daily
	SDK	*MASWings*	14	952	Daily	Daily
Grand Total			336	37,408		

Source: Respective Airlines

Golf 2013		
	International	Malaysian
No. of Pax	14,486	24,144
Total Pax	38,630	
Total Golf Receipt (RM)	RM49.9 mil	

Diving 2013		
	International	Malaysian
No. of Pax	52,538	9,645
Total Pax	62,183	
Total Dive Receipt (RM)	RM352.7mil	

MICE 2013		
	International	Malaysian
No. of Pax	10,848	23,953
Total Pax	34,801	
Total Event	476	
Total MICE Receipt (RM)	RM 75.4mil	

Respective Hotels & Resorts/Dive Operators/Golf Operators

Sabah Top Ten International Visitor Arrivals - Market Share (Nett)

Country	2012		2013	
	Pax	Market Share %	Pax	Market Share %
1. China Including HKG & Macau	193,010	28.6	360,361	40.6
2. South Korea	80,383	11.9	106,213	12.0
3. Brunei	82,499	12.2	99,122	11.2
4. Taiwan	45,479	6.7	52,541	5.9
5. Japan	26,006	3.9	32,506	3.7
6. UK & Ireland	30,723	4.6	30,776	3.5
7. Indonesia by Air	23,858	3.5	29,407	3.3
8. Australia	30,917	4.6	29,184	3.3
9. Singapore	27,778	4.1	28,863	3.3
10. Philippines by Air	33,012	4.9	23,520	2.6

Source: Immigration Dept, Sabah

Tourism Receipts to Sabah Year 2013

	International	Malaysian
Average Per Capita (RM)	2,817.1	1,576.0
Average Length of Stay (Nights)	6.5	4.5
Tourism Receipts (RM Mil)	3,069	3,615
Total Receipt (RM Mil)	6,684	

Tourist Expenditure Average Per Capita and Average Length of Stay (Nights) Year 2013 (RM)

1. Australia	4,356.3	8.5
2. Russia	4,319.0	9.0
3. UK & Ireland	4,222.4	9.7
4. New Zealand	4,150.0	8.7
5. Netherlands	3,594.3	9.9
6. Sweden	3,552.7	9.6
7. Italy	3,513.5	8.7
8. USA	3,317.1	8.8
9.Switzerland	3,313.9	9.8
10. Germany	3,305.3	9.8
11. Denmark	3,215.2	9.6
12. Canada	3,164.3	9.0
13. Finland	3,149.0	9.5
14. France	3,131.6	9.2
15. China & Hong Kong	3,092.1	6.0
16. Belgium & Luxemburg	3,035.0	9.0
17. Norway	3,016.7	9.0
18. Japan	3,006.0	6.3
19. South Korea	2,849.2	6.6
20. Taiwan	2,804.7	6.1
21. Singapore	2,330.2	4.2
22. Brunei	2,291.3	4.2

Source : Tourism Malaysia/Sabah Tourism

Record of interview with Ministry of Rural Development (*Kementerian Pembangunan Luar Bandar/KPLB*)

(1) Date and time: 14:30-15:30, 5 Dec. 2014

(2) Interviewees: -
- Mr. Abu Bakar Abdul Latip, Deputy Permanent Secretary, KPLB
- Mr. Rozhan Zul Azri bin Talikop, Assistant Secretary, Poverty Eradication Section (including MESEJ), KPLB

(3) Venue: The office of the Deputy Permanent Secretary, KPLB

(4) Questions: -
- Status and monitoring system of poverty and poverty alleviation in CRBR, reconfirmation and updating of the facts on poverty alleviation in Sabah, etc.

(5) Facts and comments

- KPLB is only concern about quality of life and income. KPLB has a target group. KPLB doesn't have fund then has to get fund from the federal government (KKLW).
- In 2009, poverty ratio in Sabah was 19.7%, then in 2012 it decreased to 8.1%. These figures are from the Economic Planning Unit (EPU) and statistic department, under the federal government. They may have updated figures.
- The hard core poverty line in rural area in Sabah in 2009 was RM670, and it was RM710 in 2012.
- The data of e-Kasiah is not published, but it is available for government agencies on request.
- Concerning MESEJ (progaramme implemented by KPLB relocating 33 households to a newly developed plantation of rubber or oil palm for poverty alleviation), we don't call MESEJ as "agropolitan" scheme, as developed area under MESEJ is less than 100ha and too small to call agropolitan scheme. Usually we call larger projects, such as the plantations in Bangi, Pitas, Kota Marudu (Kg. Gana) as agropolitan scheme.
- Projects sites for MESEJ are selected in stateland, not in the existing villages.
- In Penampang District, there was one MESEJ project proposed in Kg. Timpangoh Laut three years ago. We cannot confirm if it is in CRBR.
- In Tenom District, there were some MESEJ and Micro-MESEJ projects three years ago, but all are outside of CRBR. There has been no new MESEJ approved project for these three years.
- In Tambunan, there were one MESJ project outside CRBR, and 5 projects under Program Kampung Sejahtera (income generation in existing villages) in CRBR three years ago. There has been no new MESEJ approved project for these three years.
- In Keningau, there were two MESEJ projects with oil palm plantation outside CRBR. There was a proposal of Micro MESEJ Project in Bingkor in CRBR three years ago. It is in fact implemented in another place Apinapin. It is on the west side of the highway then it must be in CRBR.
- In Tuaran there is no on-going or planned MESEJ project in CRBR.
- In Papar, we have two MESEJ projects, Kinosolodon 1 and Kinosolodon 2 with rubber plantations just next to Crocker Range Park, then they must be in CRBR.
- In Beaufort, there are three MESEJ projects in Montenior 1, Montenior 2 (both are rubber) and Garama (oil palm). They probably are outside of CRBR.
- Ranau has no MESEJ project.

(6) Reference collected (as attached): -
- Indication of poverty line in Sabah, in 2009 and 2012
- *Sabah Key Indicators 2012/2013*

016. 8408599

From KPLB
5 Dec. 2014

PENDAPATAN GARIS KEMISKINAN (PGK) NEGERI SABAH & LABUAN (2009 & 2012)

WILAYAH	MISKIN		MISKIN TEGAR	
	PGK 2009	PGK 2012	PGK 2009	PGK 2012
	ISI RUMAH	ISI RUMAH	ISI RUMAH	ISI RUMAH
SABAH & LABUAN	1,050	1,090	630	660
BANDAR	1,020	1,080	590	630
LUAR BANDAR	1,080	1,120	670	710

SABAH KEY INDICATORS 2012/2013

State Economic Planning Unit
Chief Minister's Department
Sabah, Malaysia

Contents

TABLE 1 : AREA

Total Land Area (excluding Labuan)	:	**73,902 Sq. Km***
Percentage of Malaysia	:	**22.4%**
Percentage of Peninsular Malaysia	:	**39.9%**
Population Density (2013)	:	**46 per sq km**
Compares to Malaysia Population Density (2013)	:	**91 per sq km**

Source: Department of Statistics Malaysia, Sabah
Note: *Includes Island Area

TABLE 2 : POPULATION

	2009	2010	2011P	2012P	2013P
Population (million) (excluding Labuan)	3.18	3.21	3.32	3.37	3.42
Percentage of Malaysia's Population (%)	11.3	11.2	11.4	11.4	11.4
Annual growth rate (%)	1.6	0.9	3.4	1.5	1.5
Compares to Malaysia's annual growth rate (%)	1.8	1.8	1.6	1.6	1.5

Source: Department of Statistics Malaysia, Sabah
Note: P= population projections

TABLE 2A : POPULATION BY ETHNIC GROUP

Unit ('000)	2009	2010	2011	2012	2013P
Malaysian Citizens	**2,254.0**	**2,317.0**	**2,457.7**	**2,510.0**	**2,563.4 (74.8%)**
Malay	357.0	184.2	232.6	241.3	250.3 (7.3%)
Kadazan/Dusun	539.5	568.6	580.1	591.9	603.9 (17.6%)
Bajau	392.8	450.3	459.6	469.3	479.2 (14.0%)
Murut	96.1	102.4	104.6	106.9	109.2 (3.18%)
Other Bumiputera	443.2	659.9	668.8	682.6	696.7 (20.3)
Chinese	279.2	295.7	298.9	302.0	305.2 (8.9%)
Others	146.3	48.5	113.0	104.2	118.9 (3.5%)
Non-Malaysian Citizens	**929.8**	**889.8**	**858.7**	**861.7**	**864.7 (25.2%)**
Total	**3,183.8**	**3,214.2**	**3,316.4**	**3,371.7**	**3,428.0 (100%)**

Source: Department of Statistics Malaysia, Sabah
Note: P= preliminary, ( ) = % of total population

TABLE 2B : POPULATION BY DISTRICT

Unit ('000)	2009	2010	2011	2012	2013
SABAH	**3,183.8**	**3,214.2**	**3,316.4**	**3,371.7**	**3,428.0 (100%)**
Tawau	399.9	402.4	412.1	424.9	428.1 (12.5%)
Lahad Datu	211.4	213.1	211.6	218.3	222.5 (6.5%)
Semporna	139.4	140.4	136.1	144.1	146.2 (4.3%)
Sandakan	450.4	453.5	423.0	424.6	428.9 (12.5%)
Kinabatangan	162.4	165.6	158.0	157.1	159.5 (4.6%)
Beluran	104.6	105.4	107.5	111.2	112.9 (3.3%)
Kota Kinabalu	432.3	436.1	423.9	481.9	487.3 (14.2)
Ranau	87.7	88.8	146.3	102.4	105.2 (3.1%)
Kota Belud	87.8	89.2	94.9	98.9	101.3 (2.9%)
Tuaran	96.6	97.8	110.5	114.0	117.3 (3.4%)
Penampang	158.5	159.6	133.9	136.1	140.0 (4.1%)
Papar	110.0	111.4	145.3	145.3	151.9 (4.4%)
Kudat	84.4	85.4	84.6	87.4	87.7 (2.6%)
Kota Marudu	71.8	72.9	70.5	71.3	72.4 (2.1%)
Pitas	40.7	41.3	41.1	40.5	41.1 (1.2%)
Beaufort	74.9	75.9	75.3	70.6	71.9 (2.1%)
Kuala Penyu	19.7	20.0	21.0	21.5	22.2 (0.7%)
Sipitang	35.2	35.5	39.8	39.4	40.6 (1.2%)
Tenom	54.0	54.4	58.7	60.2	61.6 (1.8%)
Nabawan	30.4	30.7	33.2	34.0	34.8 (1.0%)
Keningau	193.9	195.7	184.3	185.1	187.5 (5.5%)
Tambunan	34.6	35.0	36.8	38.1	39.0 (1.1%)
Kunak	71.3	72.0	67.1	66.3	67.5 (1.9%)
Tongod	31.6	32.0	37.7	37.9	38.6 (1.1%)
Putatan	n/a	n/a	63.0	60.6	62.2 (1.8%)

Source: Department of Statistics Malaysia, Sabah

TABLE 3 : CLIMATE

Unit	2009	2010	2011	2012	2013
Kota Kinabalu					
Air Temperature:					
Mean Max (°C)	32.2	32.4	31.3	32.4	32.1
Mean Min (°C)	24.2	24.3	24.0	24.1	23.8
***Rainfall* (mm)**	2,747.6	3,394.6	2,782.2	2,541.4	3,112.9

Source: Malaysian Meteorological Department & Department of Statistics Malaysia, Sabah

TABLE 4 : LABOUR FORCE

Unit ('000)	2009	2010	2011	2012	2013
Labour Force	1,345.3	1,480.7	1,538.8	1,579.8	1,638.5
(% of Malaysia)	11.9	11.9	12.7	12.0	10.6
Labour Force Participation Rate (%)	65.1	65.9	67.0	67.4	66.8
(compares to Malaysia) (%)	62.9	63.7	64.4	65.5	69.0 (3rd Qtr.)
Unemployment Rate (%)	5.5	5.5	5.6	5.4	n/a
(compares to Malaysia) (%)	3.7	3.3	3.1	3.0	3.1
% Distribution of employed person with tertiary education	15.7	14.1	15.9	15.0	n/a
(compares to Malaysia) (%)	23.3	23.4	24.3	24.3	n/a

Source: Department of Statistics Malaysia, Sabah

TABLE 5 : EMPLOYMENT

Unit ('000)	2009	2010	2011	2012	2013
Number of employed	1,270.6	1,398.6	1,452.7	1,494.5	1,590.8
% of total					
Agriculture, Forestry & Fishing	32.2	35.2	26.0	26.2	27.1
Mining and Quarrying	0.3	0.4	0.4	0.8	0.3
Wholesale & Retail Trade	15.9	16.1	17.4	18.2	20.1
Manufacturing	7.5	8.7	11.2	10.6	9.7
Construction	9.2	8.3	9.4	9.3	9.2
Accommodation & Food Service Activities	6.1	5.5	6.4	7.0	6.0
Public Administration & Defence, Education, Health & Social Work Activity	16.6	12.0	12.2	12.2	11.9
Others	12.2	13.8	17.0	16.5	15.7

Source: Department of Statistics Malaysia, Sabah

TABLE 6 : EDUCATION

Unit (number)	2008	2009	2010	2011	2012
Students per teacher (Primary, Secondary & Technical)	14.0	13.0	12.2	12.4	12.3
(compares to Malaysia)	14.8	13.9	13.3	13.0	12.6
Number of Schools (Primary, Secondary & Technical)	1,271	1,273	1,277	1,283	1,286

Note: Include Government assisted schools
Source: Sabah Education Department, Department of Statistics Malaysia, Sabah

TABLE 7 : MEDICAL

Unit (number)	2008	2009	2010	2011	2012
Population per doctor*	2,407.6	2,132.5	1,908.7	1,865.2	1,821.5
Population per Government doctor	3,267.2	2,773.3	2,418.5	2,293.5	2,219.7
Population per dentist*	21,736.1	18,839.0	17,563.9	14,569.1	11,314.4
Government hospital beds	4,059	4,136	4,136	4,155	4,446
Population per Government hospital bed	771	770	802	798	758
Government hospitals	22	22	23	24	24
Private hospitals/Medical Institution	8	7	7	7	5

Source: Health Department, Sabah. "Social Statistics Buletin Malaysia (2007 - 2012)" publication
Note: Including number of beds in Mental hospital
- Government hospitals including Mental hospital
* Government and private

TABLE 8 : TELECOMMUNICATIONS

Unit (number)	2009	2010	2011	2012	2013
DEL penetration rate per 100 household	18.8	18.8	17.4	17.6	19.6
Cellular telephone penetration rate per 100 inhabitants*	77.8	92.6	88.8	87.6	n/a
Broadband penetration rate per 100 household	14.5	25.6	32.7	47.3	53.8

Source: Telekom Malaysia; Malaysia Communication and Multimedia Commission, Department of Statistics Malaysia, Sabah
Note: DEL = Direct Exchange Line
*Includes Labuan

TABLE 9 : UTILITY

Unit	2009	2010	2011	2012	2013
(Mil. Litres)					
Production of water per day	877.2	931.2	989.0	1,053.1	1,131.0
Estimated demand of water	986.0	994.0	1,037.0	1,095.0	1,131.8
('000 KW hrs)					
Electricity Generation	4,552.6	4,829.2	4,990.4	5,341.6	5,403.3
Electricity Consumption	3,835.5	4,038.6	4,094.8	4,463.6	4,675.5

Source: Sabah Electricity Sdn. Bhd.
Water Department, Sabah

TABLE 10 : GROSS DOMESTIC PRODUCT

	2008	2009	2010	2011e	2012p
Real GDP (RM Billion)	39.1	40.9	42.1	42.7	44.4
Real GDP Growth (% growth)	10.7	4.8	2.7	1.3	4.1
Income Per Capita (RM)	17,523	15,515	17,118	19,038	19,010
RM billion (% growth)					
Agriculture	10.1 (-3.6)	9.7 (-3.8)	9.3 (-3.9)	9.8 (4.6)	9.2 (-5.4)
Mining and Quarrying	8.0 (85.3)	9.6 (19.9)	9.9 (3.6)	8.3 (-16.5)	9.2 (10.3)
Construction	0.8 (-2.0)	0.9 (6.9)	1.0 (19.1)	1.1 (7.5)	1.3 (13.1)
Manufacturing	3.4 (2.4)	3.1 (-7.7)	3.3 (4.7)	3.5 (5.8)	3.5 (0.3)
Services	16.5 (2.2)	17.4 (5.0)	18.2 (5.1)	19.8 (8.3)	21.1 (6.5)

Source: Department of Statistics Malaysia, Sabah
Note: GDP in Constant 2005 prices
Note: Income Per Capita at Current Prices
e=estimate, p=preliminary

TABLE 11 : EXTERNAL TRADE AND INFLATION

	2009	2010	2011	2012	2013P
Merchandise Exports (RM billion)	37.2	43.6	49.4	47.7	45.4
Merchandise Imports (RM billion)	26.0	27.9	32.8	37.4	36.0
Trade Balance (RM billion)	11.2	15.7	16.6	10.3	9.3
Inflation Rate (%)	1.7	1.6	2.9	1.8	1.8

Source: Department of Statistics Malaysia, Sabah

TABLE 12 : MAJOR TRADING PARTNERS

	2009	2010	2011	2012	2013
Total Exports (RM billion)	**37.2**	**43.6**	**49.4**	**47.7**	**45.4**
Exports to:					
(% share)					
Peninsular Malaysia	10.2	11.5	11.7	12.6	14.7
Japan	4.0	4.4	5.5	5.6	4.2
China	20.9	18.0	22.1	18.2	13.3
India	8.6	7.5	7.9	10.0	14.7
Australia	8.0	10.8	8.5	14.6	13.4
Thailand	6.3	6.5	5.0	4.6	3.9
Pakistan	2.7	5.0	3.5	2.5	2.0
Korea	4.1	4.4	5.5	3.8	2.9
Netherlands	3.7	3.8	4.2	4.8	4.8
Sarawak	5.3	5.0	4.9	4.4	5.9
Total	**73.8**	**76.9**	**78.8**	**81.1**	**79.8**

TABLE 12 : MAJOR TRADING PARTNERS - *(CONT.)*

	2009	2010	2011	2012	2013
Total Imports (RM billion)	**26.0**	**27.9**	**32.8**	37.4	36.0
Imports from:					
(% share)					
Peninsular Malaysia	49.2	48.5	48.1	49.8	51.4
USA	9.6	6.1	4.9	4.7	4.5
Japan	3.1	3.1	3.3	3.9	3.0
Sarawak	1.1	1.1	0.9	0.9	0.8
Singapore	10.0	11.7	13.7	12.1	13.4
China	4.7	5.8	5.2	5.5	6.1
Total	**77.7**	**76.3**	**76.1**	**76.9**	**79.2**

Source: Statistics Department of Sabah

TABLE 13 : MAJOR EXPORT ITEMS

Unit (% share)	2009	2010	2011	2012	2013
Palm Oil	33.8	34.7	38.9	35.0	31.8
Crude Petroleum	37.4	35.4	32.9	38.8	40.2
Plywood	3.5	2.9	2.4	2.1	2.3
Sawn Timber	2.0	1.6	1.1	0.8	0.8
Palm Kernel Oil	3.3	4.7	5.6	3.8	3.7
HBI	1.3	2.5	2.0	1.8	1.1
Methanol	1.9	2.4	2.7	3.2	2.8
Veneer Sheets	0.4	0.4	0.2	0.2	0.2
Total	**83.6**	**84.6**	**85.8**	**85.7**	**82.9**

Source: Department of Statistics Malaysia, Sabah

TABLE 14 : MAJOR IMPORT ITEMS

Unit (% share)	2009	2010	2011	2012	2013
Food	10.2	9.8	10.1	10.0	10.4
Mineral fuels, lubricants etc.	18.2	20.1	21.3	17.9	21.6
Manufactured goods	13.8	13.1	14.2	17.3	13.1
Chemicals	10.2	10.8	11.2	9.7	9.8
Machinery and transport equipment	32.8	30.6	28.4	31.4	31.8
Total	**85.2**	**84.4**	**85.2**	**86.3**	**86.7**

Source: Department of Statistics Malaysia, Sabah

TABLE 15 : FORESTRY

Unit ('000 m^3)	2009	2010	2011	2012	2013P
Sawlogs production	4,252	3,484	2,212	1,966	1,773
Sawn Timber production	741	515	356	326	269

Source: Department of Statistics Malaysia, Sabah

TABLE 16 : AGRICULTURE

Unit (tonne)	2009	2010	2011	2012	2013P
Crude Palm Oil Production	5,449,694	5,315,996	5,843,165	5,542,649	5,776,459
Palm Kernel Production	1,233,027	1,202,802	1,317,779	1,253,902	1,315,888
Cocoa Beans Raw/ Roasted Exports	4,117	4,477	1,828	1,742	1,225
Rubber Exports	63,494	55,088	51,348	59,681	56,405

Source: Department of Statistics Malaysia, Sabah

TABLE 16A : LAND UTILIZATION BY CROP PLANTED

Unit (ha)	2008	2009	2010	2011	2012P	% Share 2012
Oil Palm	1,330,364	1,311,164	1,414,625	1,447,024	1,452,584	88.0%
Rubber	75,082	80,139	87,028	108,083	115,306	7.0%
Paddy	38,935	43,413	43,168	45.275	39,621	2.4%
Cocoa	8,399	7,075	6,936	6,488	4,133	0.2%
Coconut	18,875	17,555	18,083	16,713	16,756	1.0%
Coffee	2,749	2,595	2,582	2,550	2,368	0.14%
Sugar Cane	29	36	73.2	78	49	0.003%
Tea	362	362	362	365	413	0.02%
Tobacco	571	177	183	136	121	0.01%
Fruits	17,412	17,726	17,815	17,546	17,674	1.07%
Vegetables	2,767	2,921	2,945	4,224	2,978	0.18%
Cash Crops	1,778	1,862	1,900	1,713	1,596	0.1%
Spices	685	770	540	498	484	0.03%
Others*	1,165	1,100	995	1,100	995	0.06%
Total	**1,499,173**	**1,486,895**	**1,597,235**	**1,651,793**	**1,655,078**	**100.0%**

Source: Agriculture Department, Sabah
*Including sweet potatoes, yam, potatoes, ground nuts, soya beans, long beans and sago
Note: P= Provisional Data (subject to changes)

TABLE 16B : LIVESTOCK PRODUCTION

	2009	2010	2011	2012	2013e	2013e Self-sufficiency
Beef (metric tonnes)	464	222	529	479	484	11%
Pork (metric tonnes)	7,844	7,788	8,050	8,670	8,666	100%
Chicken (metric tonnes)	37,730	40,765	28,972	37,968	41,306	89%
Duck (metric tonnes)	370	288	591	473	450	89%
Chicken Eggs (million pcs)	505	540	603	574	580	100%
Duck Eggs (million pcs)	3.1	3.1	4.9	4.7	4.7	100%
Fresh milk (million litres)	7.04	8.2	8.7	9.6	8.5	85%

Source: Veterinary and Livestock Department, Sabah
Note: e= estimate

TABLE 16C : FISHERY PRODUCTION

Unit (tonne)	2008	2009	2010	2011	2012
Marine Fish	173,999.29	172,570.60	174,579.32	176,945.23	178,062.71
Fish	*149,819.16*	*150,998.26*	*149,409.84*	*150,093.12*	*151,834.89*
Prawn	*8,514.46*	*9,194.56*	*10,501.19*	*10,972.98*	*11,840.68*
Mollusc	*11,861.45*	*8,744.77*	*11,170.60*	*12,404.31*	*10,852.18*
Brackish Water Fish	7,821.98	13,432.54	22,012.25	17,146.27	14,542.74
Seaweed	11,129.85	138,855.90	207,850.40	239,405.00	331,470.00
Fresh Water Fish	4,893.39	4,934.85	4,939.12	4,145.03	4,048.42
Total	**197,844.49**	**329,793.89**	**409,381.09**	**437,641.55**	**520,113.87**
Unit (pcs)					
Ornamental Fish	10,840	19,250	29,570	133,881	93,909
Fish Fry - Government					
Fish Fry (Freshwater)	*3,793,620*	*3,971,554*	*4,513,623*	*4,555,096*	*1,971,583*
Fish Fry (Brackishwater)	*108,182*	*152,715*	*4,910*	*21,135*	*37,500*
Fish Fry - Private Sector					
Penaeus Monodon	*59,000,000*	*43,100,000*	*20,218,000*	*26,347,620*	*10,800,000*
Penaeus Vannamei	*169,114,000*	*575,700,000*	*595,238,500*	*1,128,935,080*	*1,079,641,750*
Fish Fry (Freshwater)	*1,173,850*	*1,136,100*	*1,244,030*	*4,226,091*	*37,500*
Fish Fry (Brackishwater)	*6,650,000*	*7,228,062*	*9,360,823*	*6,735,795*	*6,833,947*
Freshwater Prawn	*n/a*	*n/a*	*n/a*	*49,000*	*8,200*
Total	**239,850,492**	**631,307,681**	**630,641,156**	**1,170,883,698**	**1,103,728,855**

Source: Fishery Department, Sabah
Note: Brackish water fish culture includes fish, prawn, mussels, oyster and others

TABLE 17 : MANUFACTURING

Unit ('000 M^3)	2009	2010	2011	2012	2013
Exports of Sawn Timber	461	463	363	245	242
Exports of Veneer Sheets	98	147	74	46	53
Exports of Plywood	992	910	764	643	649
Exports of Wooden Mouldings	56	54	39	30	19
Tonne					
Exports of Palm Kernel Oil	536,160	582,102	565,251	509,693	664,043
Exports of Methanol	1,162,832	1,267,413	1,258,051	1,429,874	1,122,772
Exports of Hot Briquetted Iron	479,369	775,278	719,368	680,865	475,098
Exports of Uncoated Printing and Writing Paper	133,686	123,945	104,495	120,350	113,377

Source: Department of Statistics Malaysia, Sabah

TABLE 18 : TOURISM

Unit	2009	2010	2011	2012	2013
Foreign arrivals (number)	562,144	795,953	845,910	941,795	1,089,320
Annual growth (% p.a.)	-19.8	41.6	6.3	11.3	15.7
Domestic (number)	1,683,924	1,708,716	1,998,687	1,933,996	2,293,923
Annual growth (% p.a.)	5.3	1.5	17.0	-3.2	18.6
Total arrivals (number)	2,246,068	2,504,669	2,844,597	2,875,761	3,383,243
Annual growth (% p.a.)	-2.4	11.5	13.6	1.1	17.6

Source: Sabah Tourism Board

TABLE 19 : TRANSPORT

Unit	2009	2010	2011	2012	2013
Cargo discharged at all airports (million kg.)	18	19.0	16.4	14.5	n/a
Cargo loaded at all ports (mil.tonne)	13.6	14.6	14.6	13.9	14.0
Cargo discharged at all ports (mil. tonne)	10.7	13.9	13.3	13.9	13.5
Imports of motor cars	22,451	24,514	26,409	26,300	30,036

Source: Department of Statistics Malaysia, Sabah

TABLE 19A : LENGTH OF ROAD BY TYPE

Unit (Kilometre)	2008	2009	2010	2011	2012
Sealed	8,130	8,480	9,388	9,718	10,377
Gravel	10,886	10,707	10,154	10,417	10,101
Earth	679	635	595	666	658
Total	**19,695**	**19,822**	**20,136**	**20,799**	**21,136**

Source: Sabah Public Works Department

TABLE 20 : GOVERNMENT FINANCE

Unit	2009	2010	2011r	2012	2013e
Government Revenue (RM billion) (% share))	**3.0**	**4.2**	**3.8**	**4.4**	**4.1**
Collection from Forest	9.8	6.1	4.0	3.3	2.4
Collection from Lands	4.8	5.3	6.6	5.1	6.0
Collection from Petroleum Royalty	27.4	23.6	21.8	23.4	24.0
Collection from Proceeds, Dividends and Interest	11.5	5.8	24.9	23.4	28.1
Sales Tax on Crude Palm Oil	26.2	25.7	26.2	27.9	22.9
Federal Grant and Contributions	10.1	8.4	8.6	8.5	8.4
Total Government Expenditure (RM billion) (including Development Exp.)	**3.9**	**5.3**	**5.4**	**5.6**	**6.4**
Government Development Expenditure (RM billion)	**1.0**	**1.6**	**0.9**	**1.1**	**1.3**

Source: State Ministry of Finance
Note: * = Estimates from "Estimates of Revenue and Expenditure for the Year 2014" publication
Note: Government expenditure includes Federal Reimbursements, Federal Loans and State Government Funding
Note: r= revised, e= estimate

TABLE 21 : BIMP-EAGA					
Unit	**2009**	**2010**	**2011**	**2012**	**2013**
Sabah Exports to: (RM '000)					
Philippines	634,592	1,641,110	2,115,509	1,473,512	705,676
Annual change (% p.a.)	-44.8	159.0	28.9	-30.3	-52.1
Indonesia	3,532,728	1,316,347	851,639	607,646	471,669
Annual change (% p.a.)	1.5	-62.7	-35.3	-28.6	-22.4
Brunei Darussalam	237,034	252,160	294.535	561,764	396,763
Annual change (% p.a.)	-10.8	6.4	16.8	-27.5	-29.4
Sabah Imports from: (RM '000)					
Philippines	182,643	274,532	210,501	227,972	289,426
Annual change (% p.a.)	-45.7	50.3	-23.3	7.3	27.0
Indonesia	1,359,843	1,308,716	1,265,349	1,297,325	857,370
Annual change (% p.a.)	99.9	-3.8	-3.3	2.8	-33.9
Brunei Darussalam	9,476	18,450	23,808	13,954	17,421
Annual change (% p.a.)	31.2	94.7	29.0	-40.3	24.8
Trade Balance with: (RM '000)					
Philippines	451,949	1,366,578	1,905,008	1,245,540	416,250
Indonesia	2,172,885	7,631	-431,710	-689,679	-385,701
Brunei Darussalam	227,558	233,710	270,727	547,810	379,342

Source: Department of Statistics Malaysia, Sabah.

TABLE 22 : POVERTY RATE				
Unit (%)	**2004**	**2007**	**2009**	**2012**
Poverty Rate	23.0	16.0	19.7	8.1
Hardcore Poverty Rate	6.5	3.7	4.8	1.6

Source: Department of Statistics Malaysia, Sabah

TABLE 23 : MEAN MONTHLY HOUSEHOLD INCOME				
Unit (RM)	**2004**	**2007**	**2009**	**2012**
Sabah	2,487	2,866	3,102	4,013
Malaysia	3,249	3,686	4,025	5,000

Source: Department of Statistics Malaysia, Sabah

State Economic Planning Unit
Lot 6 - 10, Wisma SEDIA,
Off Jalan Pintas, Penampang
88300 Kota Kinabalu
Sabah, Malaysia

Record of interview with Sabah Parks

(1) Date and time: 9:00-10:30, 9 Dec. 2014

(2) Interviewees: -
- Mr. Ludi Apin, Park Manager (Terrestrial), Sabah Parks

(3) Venue: The office of Mr. Ludi Apin, Sabah Parks

(4) Questions: -
- On-going and planned activities on economic incentive for biodiversity conservation in CRBR, etc.

(5) Facts and comments

- At present Sabah Parks already charge water supply from Kinabalu Park in Kundasan area. We only charge for commercial use, while we don't charge for use by local community. The rate is RM900 a year regardless amount of usage. The main commercial users are hotels and restaurants. We charge only to those who applied to us. The charge is applied to commercial users whose water intakes within the park boundary. DID has a plan to channel water from the park to surrounding communities.
- In Crocker Range Park, there are many dikes for channeling water to irrigation and local communities downstream. We don't charge it as the whole use is considered as non-commercial use, though the irrigation for paddy in Tambunan could be considered as commercial use.
- The decision was made by the board for Sabah Parks more than 10 years ago to charge for water use from the parks with demarcation of commercial and community uses. "Commercial use" is defined as activities generating cash income.
- There is no micro hydro power generation facility in Crocker Range Park. Even if we had it, we would not charge it unless it is commercial use.
- The estimation of water volume from main rivers from CRP is done by Maipol. The estimation covers only for the eight main rivers, a part of total volume of water flowing out from CRPP. If we have a long term Hydrological monitoring data in CRP. It is very effective way of estimating water volume. 3 years data is required.
- I understand that Kinabalu Eco-Linc is only activity directly related to REDD+ Sabah Parks implement.
- What we collect at the entrances of the parks is not entrance fee, it is conservation fee. The collected fee goes to Trust fund of Sabah Parks at first.
- We also collect guide fee for Kinabalu, and CRP.. It is paid to guides registered by Sabah Parks. Payment is controlled by Sabah parks.
- We also collect the permit fee, from a point to another point. (Masilau - Laban Rata, - the peak) which is fed to trust fund.
- The total collected fee is not enough to bear the whole cost of management of the parks. MONRE requested Sabah Parks to establish sustainable financing of park management totally depending on conservation fee collected from visitors, but it is argumentative. I said we cannot. The government should pay various public services the Park provided, not only recreational services which can be paid by tourists.

(6) Reference collected (as attached): -

- Programmes for visitors organized by Sabah Parks and charge
- List of fees set by Sabah Parks

2014/129
from Ludi SP

Programmes & Charges

NO.	PARK	PROGRAMMES	CHARGES (RM) Per person		DAY/ TIME	VENUE
			M'sian	Non M'sian		
1.	Kinabalu Park	Botanical Garden	4.00	5.00	Daily 9am, 12am, 3pm	Kinabalu Park
2.		Guided Walk	2.00	3.00	Daily 11am	
3.		Muti-Vision Show	2.00	2.00	Daily/ 2pm Weekend & Public Holiday (Friday-Monday)/ 7.30pm	
4.		Kinabalu Natural History Gallery	2.00	3.00	Daily 9am – 3pm	
5.		Package 1-3	6.00	8.00	As stated above	
6.		Canopy Walk	3.00	5.00	Daily 9am – 4pm	Poring Hot Spring
7.		Butterfly Farm	3.00	4.00	Daily 9am – 4pm except the next day of Public Holiday	
8.		Package 6-7	4.00	7.00	As stated above	
9.		Tropical Garden	2.00	3.00	Daily 1.30pm	
10.		Orchid Conservation Centre	5.00	10.00	Daily 11am, 2.30pm & 3pm	
11.		Package 9-10	4.00	7.00	As stated above	
12.		Nephentes Rajah Natural Site	5.00	10.00	Daily 9am – 4pm	Mesilau Nature
13.	Tunku Abdul Rahman Park	Marine Exhibit Centre	2.00	3.00	Daily 9am – 3pm, except Monday	Manukan Island

2014/12/9
from Ludi SP

SABAH PARKS FEES

KINABALU PARK

	Non-Malaysian RM	Malaysian RM	
Entrance/ Conservation	15.00	3.00	*18 yrs & above*
	10.00	1.00	*Below 18*
	15.00	1.00	*Above 55*
Climbing Permit *(From Timpohon Gate/ Mesilau Substation)*	100.00	30.00	*18 yrs & above*
	40.00	12.00	*Below 18*
	100.00	12.00	*Above 55*
Expedition	200.00	100.00	*18 yrs & above*
	5.00	2.00	*Below 18*
	200.00	50.00	*Above 55*
Insurance	7.00	7.00	*Person/ day*
** *Death per accident only*			*RM50,000*
Permanent disablement as a result of an accident			*RM50,000*
Expenses per accident only			*RM5,000*
Repatriation of remains			*RM2,000*
Certificate *(per person)*	10.00	1st Class, full colour, up to summit	
	1.00	2nd Class, Black & white, down from summit	

OTHER PARKS

	Non-Malaysian RM	Malaysian RM	Location
Entrance/ Conservation	10.00	3.00	
	18 yrs & above	*18 yrs & above*	
	6.00	1.00	
	Below 18	*Below 18*	
	10.00	1.00	*All Parks area except Turtle Islands Park*
	Above 55	*Above 55*	*Per person*
	6.00	FOC	
	Below 6	*Below 6*	
		0.50	
		Student below 16	
	60.00	20.00	*TIP only*
	18 yrs & above	*18 yrs & above*	
	30.00	10.00	
	Below 18	*Below 18*	
Expedition	200.00	100.00	*All Parks area Per person*
Barbecue	5.00	5.00	*All Parks area Per person*
Camp site	*5.00 (18 yrs & above)* 2.00 *(Below 18)*		*All Parks area Per person/ per night*
Diving *(per person / per day)*	50.00	20.00	*TARP, PTP & TIP*
	40.00	40.00	*Sipadan Island Park*

Record of interview with Kota Kinabalu City Hall (DBKK)

(1) Date and time: 10:30-12:00, 9 Dec. 2014

(2) Interviewees: -
- Datuk Yeo Boon Hai, Director General, Kota Kinabalu City Hall (DBKK)
- Syron A. Tanggolou, Public Relations Officer (Contact: Syron@dbkk.sabah.gov.my, 2514182, 016-8181574

(3) Venue: The meeting room, DBKK

(4) Questions: -
- Status of rural development in CRBR, reconfirmation and updating of the facts in the draft buffer zone management plan of CRBR in 2011, etc.

(5) Facts and comments

- Babagon dam is within the administrative boundary of Kota Kinabalu.
- We don't have MESEJ project in Kota Kinabalu but there are some private rubber plantations.
- In the Ridge Conservation Area classified by Town and Regional Planning, development is still accepted by classifying it as the "Residential Special," where some limitation is applied (1 house per acre).
- The population of Kota Kinabalu is 465,000 at present. Within it, the country side (inland from Kg. Kokol), we may only have less than 5,000 people.
- In ridge top areas, development should be controlled according to the Sabah Conservation Strategy in 1992.
- We used to enter Kinabalu Park for free, when I was DO in Kudat.

Record of interview with Water Department and JETAMA

(1) Date and time: 14:30-16:00, 9 Dec. 2014

(2) Interviewees: -
- Mr. Lim Lam Beng, Deputy Director, Water Department
- Ms. Rosina Daisy, Chief Engineer (Operation and Management), Water Department
- Mr. Mohd. Azri, Chief Engineer (Planning and Development), Water Department
- Mr. Albert Lim, Technical Manager, JETAMA Sdn. Bhd.

(3) Venue: The meeting room, Water Department

(4) Questions: -
- Feasibility of PES through water supply service secured by CRBR

(5) Facts and comments

- JETAMA: We take water supply treated water to the government. The Babagon dam is owned by the Water Department, we take water from the dam. JETAMA's client is the Water Department.
- Our water supply is sourced in rivers and rivers and dams. We support people in the watershed who want to open and develop the area. The development in the watershed affects quality of supplied water much. The water quality matters, while water flow is not much affected by development in the watershed.
- The watershed of Babagon dam is not accessible then it is not developed much. A few chicken farms exist but their impact is not significant. The quality of water from Babagon dam is very good. Quality of water taken from river is out of our control.
- Quarry in watershed could affect water quality much. They remove forest and dig up the ground then it causes pollution.
- Majority of the watershed of Babagon dam is protected areas. Villages in the watershed were to sites relocated nearby Babagon dam. There is no village at present in the watershed of Babagon dam, as it is crucial for water supply to the state capital.
- Area of the watershed of Babagon dam is 30km^2 as a part of the whole watershed of Moyog river (200 plus km^2). We have many tributaries along Moyog river.
- We have to follow whatever regulations DID (acting director for Water Resources) applies.
- Water Department is users of raw water (river), while the Water Resources Council. Water resource is the state matter rather than the federal matter.
- JETAMA is one of the water concessionaires for water supply. It is in charge of Kota Kinabalu,
- The Water Resources Council is the one who determine water resources management and we are supposed to follow the decisions.
- Thus, it is not Water Department to impose the water bill for conservation of watershed as PES. Once the Director of Water Resources asks us such payment, we will pay. Approval by the state assembly or cabinet is not needed for such decision.
- Our Chief Minister is a chairman of the Water Resources Council. NRO is the secretary. Water Department, Lands and Surveys Department and other concerning agencies are members of the Council.
- Director of DID is currently an acting director of Water Resources. Water Resources Department is not fully established. Then there is a conflict among JPS, as they are a water user while they are also a water conservator.
- Currently we cannot increase bill for drinking water, though we have an authority to determine the bill. Drinking water is heavily subsidized by the government. Payment for water supply services could be between a government agency to another government agency, rather than payment from the end users.

Record of interview with Sabah Forestry Department

(1) Date and time: 8:30-10:00, 10 Dec. 2014

(2) Interviewees: -
- Mr. Frederick Kugan, Deputy Director (Forest Sector Planning), Sabah Forestry Department

(3) Venue: The office of Mr. Kugan, The Headquarters of Sabah Forestry Department in Sandakan

(4) Questions: -
- Progress of the PES policy formulation under the UNDP-GEF project (Project on Biodiversity Conservation in Multiple-use Forest Landscape in Sabah, Malaysia)
- Progress of on-going and planned activities by the Department for PES such as Malua Biobank, REDD+, studies on PES, forest certificate, etc.

(5) Facts and comments

(Progress of the PES policy formulation under the UNDP-GEF project)

- Yesterday (9 Dec. 2014) we had the 3rd Project Board Meeting. In the meeting we made a few changes on the subcontract for PES policy formulation. Originally, we had in total three subcontracts on Malua Biobank, REDD+ and the PES policy formulation. These are combined, reorganized and split in two, 1) subcontract on state level policy, and 2) subcontract on investment. The revised plan of the subcontracts will be documented by the end of 2014.
- The Technical Working Group of the Project is haired by Dr. Glen Reynolds, Royal Society. Dr. Junaidi Payne, Dr. Rahimatsah Amat and other local scientists are members of the working group.
- The Technical Working Group reports to the Project Board which is chaired by NRO. The Secretary of the Board is SFD. Mr. Jeflus Sinajin is Project Director and Mr. Kugan is National Director. SaBC is also a member of the board.
- The project is with international funding through UNDP-GEF for 5 years from 2013. Under the Project, we started study on No Net Loss policy, and Business and Biodiversity Offsets Programme (BBOP). We hired Forest Trend as our contractor for the study.
- Progress of the project is slow. We now focus on policy issues. No Net Loss and biodiversity assessment are given the first priority at present.
- Though in the draft inception report, commencement of the subcontract for PES policy formulation is scheduled in October 2015. Based on the progress of the project up to now, it would be delayed.

(Progress of on-going and planned activities for PES by the Department)

- Not so much.
- We have come out with some proposals prepared internally to charge ecosystem services such as water usage in the forest reserves. Such payment can be conditions to issue licenses for concessionaires and any other operators occupying the forest reserve, by putting the condition in the license agreement.
- We are also discussing application of PES to the geothermal power project planned in Andrassy Forest Reserve, Tawau. Malua Biobank is another effort of application of economic incentive for conservation.
- We conducted case studies of PES during our visit to the American countries. Dr. Robert Ong, Deputy Head, Forest Research Centre, SFD went to Costa Rica, and other countries for the study.
- Concerning conservation fees collected from tourists, we can discuss collection at entry points including airport, or at all hotels like the Heritage fee in Melaka. 21% of the area of Sabah is currently protected areas and we target to increase it to 30% in future.
- Concerning the water supply service provided by forest, legal definition of such service is critical. Forest produce and services are defined in the forest enactment. To include carbon fixation as a service provided by forest reserves in legal sense for the EU-REDD+ Project, we revised the

enactment recently in 2013. Then we now can prepare rules and regulations to conserve and transact the service. It is a part of the REDD+ roadmap we prepared.

(REDD+)

- Under the EU-REDD Project, we are getting to implement pilot projects. “Permanency issue” of the pilot projects was raised by MONRE. They even questioned permanency of Kinabalu Ecolinc, as the area is owned by communities. They don’t know what is community conserved area.
- Another pilot project in Kg. Gana and its surrounding forest reserve has the same issue. Woodlots under management by the communities there is additionally planned. The officers are skeptical especially Datuk Sam Mannan himself.
- The other pilot project under EU-REDD Project is in Kinabatangan, by Wildlife Dept. they deal with land owners, oil palm plantations and logging operations to establish a corridor providing connectivity. They work together with FELDA Global Ventures, discussion how to improve connectivity. They also apply Environmental and Social Safeguards (ESS) for REDD+.
- Within the REDD+ Roadmap, a committee, 4 Task Forces (TFs) such as, Finance TF, Environmental and Social Safeguards (ESS) TF, Policy TF and Technical (Measurement Reporting and Verification/MRV) TF.

(Malua Biobank)

- Small number of biodiversity credit issued by Malua Biobank has been sold, though we targeted anybody marketing internationally. One of the reason for the small transaction is the global market recession. The mechanism of Biobank also competes with the conventional donation and philanthropy. Biobank is business, while a lot of people just want to donate. We extended for another year to finance the project. It is too early to conclude Biobank. The market is not ready for transaction of biodiversity value. Even for the carbon transaction, people are still skeptical.

(Forest certification)

- We have given a new license for next five years from FSC. Not only FSC, but applying any scheme at various levels, we will certify our forest. For those who are not able to get forest management certification, Verification of Legal Origin (VLO) can be applied, which is more towards the market in EU. The most important target is everything from the forest is legal and has clear origins. The legality verification program as a progressive, two-tiered system. Once they clarify legal origin of timber by VLO, they can moved upward to Verification of Legal Compliance (VLC).
- One of the issue in FSC is that the FSC certification is forbidden to any forest plantations established in areas converted from natural forests after 1994.
- We also plan to get our protected areas certified. Though no timber is produced from the protected areas, they can still be certified.
- We will address the stages to reach the target for full certified produce in Sabah. We audit long-term license holders for their compliance to laws and regulations. Once the compliance is confirmed, we will check requirements for certification. After confirmation, we will issue certification.

(Market base conservation, what comes next?)

- Biodiversity offset for oil palm plantation. RSPO is now discussing compensation through biodiversity offset. Problem is small holders. Small holders tend to go to MSPO, the Malaysian version of RSPO, rather than RSPO.

(The three forest reserves in CRBR)

- We are going to prepare management plans for all FRs in Sabah, including the three FRs in CRBR.
- The management plans for the FRs might be simple, and we can just document the plans. We prepare 10 years plan updated every 5 years. Management plan is also necessary for forest certification.
- CRBR is included in the corridor project connecting Kinabalu Park, CRP, Sipitan, brunai, Sarawak and Kalimantan, under HoB.

(Lower Kinabatangan and Segama Wetlands/LKSW)

- The core area of LKSW is forest reserve, which can be managed by us, SFD.
- We have a contract UMS to conduct social baseline survey, providing feedback to the EE aspect.
- There are many conservation initiatives in the Kinabatangan river basin. You have your own way under LKSW.
- We have restored riparian reserve, 15 meter from the river bank adopting voluntary basis approach. Riparian reserve was surveyed and legally marked but in some parts river course changed. If river bank shifted to inland to the boundary of riparian reserve and alienated land, legally they can plant crops up to the river bank.

Record of interview with Malaysia Palm Oil Association (MPOA)- Sabah

(1) Date and time: 14:00-16:30, 10 Dec. 2014

(2) Interviewees: -
- Mr. Ganga G. Pilai, Executive Secretary, Malaysia Palm Oil Association (MPOA)- Sabah

(3) Venue: The office of MPOA-Sabah, Sandakan

(4) Questions: -
- Status and problems of RSPO as its member

(5) Facts and comments

- Awareness of the planters about biodiversity conservation has improved.
- Datuk Sam Mannan, the director of Sabah Forestry Department is very much aware of collaboration with the oil palm industry.
- The reforestation project in Kinabatangan funded by Nestle is based on voluntary action by the oil palm industry.
- Conservation of riparian reserve is not voluntary, it is mandatory. Planting crops in riparian reserve is illegal. However, sometimes erosion of river bank makes the plantation close to the river bank.
- Ms. Maria Ajik, SFD recently reported in her Facebook page about illegal opening in forest reserve.
- Concerning the news that MPOA would exit RSPO, the new Chief Executive of MPOA is not happy with RSPO, as he sees RSPO is one-sided to European. The other certification body, MSPO is getting mandatory and more suited for small holders and all oil palm planters. However, RSPO is voluntary and is applicable for only big companies.
- In particular, in the EU countries, they don't buy product without the RSPO certification. Their concern is not only environmental impact, but also safety feature and human right.
- In China and the eastern country, such as India and Pakistan, they buy our palm oil. China buys crude oil from us then process and sell them to EU. However, now the EU countries are getting more aware of origins of palm oil in the final products.
- It is up to you to prove timber origin when you sell it to the EU countries. They buy rubber wood.
- Japan is going to organize Olympic game in 2020. There is a protest for Japan's import from illegal timber logged from Sarawak for the Olympic stadium.
- MPOA is an association, RSPO members are our member, such as Sime Darby. MPOA is the secretariat of RSPO. The new CE discusses that we could quit the secretariat, but it didn't materialized. I am not sure what happened in KL. MPOA council members definitely don't like how RSPO run following European NGOs' rule.
- IOI has their own infrastructure in Europe, then they cannot quit RSPO. So does Sime Darby and Felda Global Ventures. These big company certifies almost all their estates.
- Trade statics are available from MPOC, in their magazine, "Oil and Fats."
- Small holders are selling their product to china. Big company such as KRK, who has some mills, determines to select some mills for the EU market with the RSPO certification, while using the other mills for the local and china markets. They have two mills side by side, one of which is for RSPO and the other is for the local market. Even medium size planters are getting more and more RSPO oriented.
- In sabah we have 30 members RSPO. The number of RSPO has increased.
- The United Planation, Danish company in West Malaysia is a pioneer for the RSPO certificat ｉおｎ, but they don't have an estate in Sabah.
- MPOA annual report, 2013 is available and downloadable from the website.
- Compliance of RSPO certification has been becoming more strict and rigid. Their focus is now also on human right, child labor, etc. That is like they change a goal post. RSPO has a biased view.

- RSPO may have hidden agenda to protect the vegetable oil industry in Europe which cannot compete with palm oil. Different from canola and soy bean field, oil palm plantation can be considered as forest according to UN definition (with 60% forage cover). Production of palm oil is more efficient in the same area of the land.
- The European market doesn't like any product with palm oil, pursuing "palm oil free."
- The criteria for RSPO certification at present give priority to safety of workers such as investing them helmets. In Indonesia, RSPO applied living conditions of workers as one of the criteria. Then Indonesia abandoned RSPO and made their own Indonesian Sustainable Palm Oil Foundation (ISPO) and mainly sell the palm oil to china and India.
- Our own MSPO doesn't work for the EU market. While the US market doesn't mind palm oil certification much. It is similar to the timber certification. According to preferences of different markets, we could apply different palm oil certifications, in the same way as the certifications in the timber industry.

Record of interview with Tuaran District Officer

(1) Date and time: 9:30-11:00, 11 Dec. 2014

(2) Interviewee
- Mr. A. K. Ibnu Haji A. K. Baba, District Officer, Tuaran (Tel. +60 13 8963883)

(3) Venue
- Tuaran District Office

(4) Questions: -
- Update of the socioeconomic and poverty status in Tuaran (since the planning of CRBR management in 2011 under BBEC II)
- Comments on introduction of Payment for Ecosystem Services (PES) to CRBR
- Comments on the pilot project in Tudan under SDBEC

(5) Facts and comments

(Comments on PES)

- You understand our issues of poverty alleviation and environment that monoculture plantation of palm oil and rubber is a mainstream of rural development and poverty alleviation in Sabah, though it has negative impact on biodiversity and ecosystem services. That is correct in particular in the Buffer Zone and Transition Area of CRBR. For this we cannot stop deforestation in the privately owned land there.
- In our district, LIGS (*Lembaga Industri Getah Sabah*/Sabah Rubber Industry Board) promote rubber plantation and oil palm plantation is also promoted by the government. They are trying to increase rubber and oil palm plantation in the "idle land."
- The land alienated to communities but yet to be developed is considered as idle land. RISDA (Rubber Industry Small holders Development Authority), LIGS, etc. subsidize plantation of oil palm and rubber in the idle land, without understanding ecosystem services provided by forest in the idle land.
- By having a policy to conserve CRBR through PES, the land owners in the Buffer Zone and Transition Area may have the third option after 1) to develop or 2) not to develop, such as 3) not to develop but making profit through conservation and rehabilitation of natural forest.
- We, District Office is assisting people to get the land, and improve economic condition by promoting them to plant rubber trees and oil palm. I fully agreed with improving economic condition through conservation approach.
- The question is what is a mechanism enabling PES. When we are implementing each of necessary activities? How we can align them properly?
- We must identify villages in the Buffer Zone and Transition Area. As you said, we have in total 61 villages in CRBR in Tuaran, then JKKK of these villages should be educated.
- I don't see there is a big problem for introduction of PES in CRBR, as long as we have an appropriate mechanism established. If we establish such mechanism, nature conservation is getting more attractive option. Without damaging forest, you can still get profit more than what you get from rubber and oil palm.

(The pilot project in Kg. Tudan)

- In Tudan, they are introducing sustainable development as an approach for conservation. They are trying to increase economic level and conserve nature at the same time.
- The question is, if their economic income is comparable with other villages having oil palm or rubber plantation, if the sustainable development in Tudan would be economically as attractive as the destructive monoculture plantation.
- Rubber and oil palm plantation is subsidized much. Communities to develop plantation do not need to bear the preparation and planting cost at all.

- District Office is an implementer of the policy. The government lay down the program and policy, subsidizing everything to promote the policy. District Office is just implementing following them.
- The cabinet and KPLB (Ministry of Rural Development) could make a decision to subsidize more sustainable production methods rather than conventional monoculture of palm oil and rubber.
- Identification and indication of the boundary of CRBR is important. Once KPLB set a sustainable development policy in CRBR, we can try to provide assistance to the monoculture outside of the boundary while applying other scheme to promote environmentally sustainable development within the boundary.

Record of interview with the Keningau Assistant District Officer

(1) Date and time: 11:30-12:30, 11 Dec. 2014

(2) Interviewee
- Mr. Virus Malitam, Assistant District Officer, Keningau

(3) Venue
- Natural Resources Office (after the reporting meeting of the training in Japan)

(4) Questions: -
- Update of the socioeconomic and poverty status in Keningau (since the planning of CRBR management in 2011 under BBEC II)

(5) Facts and comments

- For accurate population of Keningau district, I need to refer to the statistics.
- Forestry is another economic activity in Keningau district and there were a number of timber mills operating in the district in 2011. Some mills have been closed since then because of no timber to cut and strict control by SFD.
- In the transition area, there are rubber and oil palm plantation, but they are mainly joint venture by SLDB (Sabah Land Development Board), FELDA (Federal Land Development Authority) and FELCRA (Federal Land Consolidation and Rehabilitation Authority) rather than those operated by small holders.
- Most of the villages in CRBR do poaching.
- The figures of poor households registered in e-Kasih in 2011 should be updated. We have an officer in charge of e-Kasih in Keningau District Office.
- We have a few more villages applying to Tagal for these three years (6 villages were covered by Tagal programme in 2011).
- In Keningau, MESEJ projects are in Kg. Bunan (oil palm) in Sook area and Kg. Lumili (oil palm) in Dalit area. Both of them are outside of CRBR.
- The Micro MESEJ in Bingkor in CRBR targeting to the 9 poor households has been completed.

Record of interview with the secretary of Water Resources Council, Natural Resources Office

(1) Date and time: 16:00-17:00, 11 Dec. 2014

(2) Interviewee
- Mr. Awang Shaminan, the secretary of water resources council, Natural Resources Office

(3) Venue
- Natural Resources Office (after the reporting meeting of the training in Japan)

(4) Questions: -
- Comments on application of PES for securing water supply service

(5) Facts and comments

- We are planning to propose gazetting of the water catchment of Babagon dam as Water Protection Area and Water Conservation Area in Jan. 2015.
- 78 water catchments have been identified in Sabah, but none of them has been gazetted under Water Resources Enactment. The gazetting of Babagon catchment is a pilot project for gazetting of the cathments.
- In Jan. 2015, the Water Reources Council will make decision on our proposal of gazetting the catchment. If they approve it based on the ability of Chief Minister, the chairman of the Council, it would be the first Water Protection and Conservation Areas applying the enactment.
- Establishment of Water Resources Department in in preparation to avoid duplication of authorities and responsibilities among concerning agencies. Water Conservation Areas should be controlled under the Council. At present, DID is acting Director of Water Resources.
- NRO, the secretary of the Council is under Chief Minister's Department and can control Sabah Forestry Department, Sabah Parks and all the concerning agencies under various ministries, while DID cannot do so as it is under Ministry of Environment, Tourism and Culture.

(6) Reference collected (as attached): -

- Presentation slides prepared by the interviewee for reporting of JICA training on Satoyama Initiative he attended, which includes the proposal of gazzeting Babagon cathment mentioned above

Record of interview with Papar District Office

(1) Date and time: 9:00-10:30, 12 Dec. 2014

(2) Interviewee
- Mr. William Ahlan, Assistant District Officer (Administration), Papar

(3) Venue
- Papar District Office

(4) Questions: -
- Update of the socioeconomic and poverty status in Papar (since the planning of CRBR management in 2011 under BBEC II)
- Comments on introduction of Payment for Ecosystem Services (PES) to CRBR

(5) Facts and comments

(Update of the socioeconomic and poverty status in Papar)

- Papar District Office doesn't have an officer from SDO (Sabah Development Office) in charge of e-Kasih.
- The MESEJ project nearby Kg. Kinosolodon is completed. 33 houses, electricity, water were completed. Last months I made final inspection. It soon will be transferred to the target people. It is a project to construct a new settlement of 33 houses and to develop rubber plantation for income generation. It is just outside of the boundary of CRP and is surely in CRBR. The site was selected by Assistant District Officer (Development). As the site was too hilly oil palm, rubber was selected for income generation.
- For poverty alleviation, under PPP (Projek Peninkatan Pendapatan) sheme, we assist 10 projects with funding from KKLW (Ministry of Rural and Regional Development, under the federal government).
- For 1Azam sheme, KPD, Department of Agriculture and Fisheries Department channel fund from SDO to poor households. We, District Office coordinate for fair distribution of assistance.
- For PKS (Program Kampung Sejahtera) scheme, we assist planting bananas in Kg. Kayau
- For PPES (localized economic improvement programme) scheme, target is not necessarily the households listed in e-Kasih. A project under the scheme is targeted to a village rather than households. A village prepare a proposal and DO assist it, e.g. a factory of shrimp past (belacan) in Kg. Laut), mushroom farming, etc.
- In Papar we have branch offices of Fisheries Department, Department of Agriculture and KPD. Fisheries Department applies Tagal Programme in Kg. Kinolosodon, Kaiduan, Bolotikon, etc. Department of Agriculture applying 1 Azam scheme for promoting cooking and tailoring. KPD is promoting bee keeping. There is no forest office. They have it in Kimanis.
- Monthly meeting of heads of the concerning departments for coordination of poverty alleviation and rural development is held in District Office. Assemblyman (Yang Berhormat/Y.B.) attends the meeting sometime.

(Information concerning water supply service)

- We have a water intake and water treatment plant in Kg. Kogopan along the KK-Papar old road. It produces 30,000 m^3/day of water for Kota Kinabalu.

Record of interview with Sabah Biodiversity Centre

(1) Date and time: 14:30-16:00, 12 Dec. 2014

(2) Interviewee
- Dr. Abdul Fatah Amir, Director, Sabah Biodiversity Centre
- Mr. George Gaing, Deputy Director, Sabah Biodiversity Centre
- Mr. Shahrin B. Samsir, Officer, Sabah Biodiversity Centre

(3) Venue
- Sabah Biodiversity Centre

(4) Questions: -
- A role of SaBC for introduction of PES to Sabah and management of CRBR, current status of ABS in Sabah

(5) Facts and comments

- Sabah Biodiversity Enactment will be amended in the first seating of the state assembly in April 2015. The rules and regulations on ABS following the amended Enactment will be tabled and approved by the state cabinet. The change in the Enactment is on the function of Sabah Biodiversity Centre. The bill and rules and regulations are now in Attorney General's Office.

- We are making much effort for public awareness of a lot of stakeholders. Mainstreaming of biodiversity conservation lacks, then awareness of corporate bodies, estates, government services, non-corporate communities are required. We are also a member of SEEN (Sabah Environmental Education Network). Public Awareness of the local government and plantation owners are also important. We contribute to the training courses for public officers organized by INSAN for mainstreaming biodiversity in the government services. Policy makers and planners are also targeted.

- Concerning PES for water supply service provided by forest in CRBR, they should also collaborate with UPEN (State Economic Planning Unit). The Director of UPEN is looking forward too see water problem in Sabah will be solved, including the issue on Kaiduan dam.

- Concerning the coordinator role of SaBC for the management committee of CRBR which was proposed three years ago, we suggested Sabah Biodiversity Council that such organizational arrangement is not efficient. Final decision relies on the Council. Recently, the Council assigned SaBC as a focal point for the State MAB Committee.

- The Council plans to revise Sabah Biodiversity Strategy recently approved by the Cabinet.

Record of interview with SEDIA

(1) Date and time: 10:00-11:30, 15 Dec. 2014

(2) Interviewee
- Datuk Dr. Mohd. Yaakub Hj Johari, President/Chief Executive, Sabah Economic Development and Investment Authority (SEDIA)
- Ms. Mary Shinto, SEDIA

(3) Venue
- Meeting room, SEDIA

(4) Questions: -
- Classification and strategy for development of the area overlapping with CRBR in Sabah Development Corridor Blueprint

(5) Facts and comments

(Comments on PES)

- We can consider the biodiversity and ecosystem services from CRBR as natural capital for development of the surrounding areas.
- We have project in Kimanis, Papar District to domesticate traditional medicinal plants. We have agro-based industrial facility, gene bank and heritage academy. The village people are acting as custodian of plants form the forest with indigenous knowledge. This approach is a different mode from the agropolitan approach.
- The zoning of the state in Sabah Develop Corridor (SDC) Blueprint only indicates a direction of development in each zone. CRBR is located in between the four zones, Sabah Industrial Zone, Toursim and Highland Agri Zone, Interior Agropolitan Zone and SME Agro-Food Zone, then it will provide essential services for the development of the zones as natural capital.
- Environmental awareness seems prerequisite for introduction of PES. We should be innovative when introducing PES.
- Under SDC, we are planning to assist construction a cable car for tourism development nearby the Inobon substation, homestay programme and establishment of gene bank.
- We are currently developing the plan of the gene bank project together with the university collage in Yayasan Sabah. ITBC, UMS is working with SaBC for information management of the biodiversity and TEK in Sabah but they are very slow. SEDIA has developed the an Herbal Medicine Knowledge Base (HMKB) applying semantic technology with funding from MOSTI. SaBC has been looking at the project for opportunity of their assistance.
- Pilot project of PES for water supply service of the Babagon watershed is appropriate. You can also consider collection of payment for watershed conservation through electricity bill.
- Kenyir dam in Terengganu is a multipurpose hydroelectric power and flood mitigation scheme constructed in 1985. They now recognize the value of the forest in its catchment for the dam.

Record of field visit to Tudan

(1) Date and time: 12:30-14:30, 15 Dec. 2014

(2) Respondent and companion during the field visit
- Mr. Moris Gayu, Vice-chairman, JKKK, Kg. Tudan
- Ms. Jocelyn Maluda, ERE Consulting

(3) Sites observed
- Kg. Tudan
- Vegetable farm with the hillside farming techniques in the village
- Sites of beekeeping in the village
- Site for compost making in the village

(4) Objectives: -
- Observation of the pilot activities for management of CRBR in the village
- To learn lessons for application of PES and other economic incentives in CRBR

(5) Facts

- Kg. Tudan was selected as a pilot site applying the selection criteria determined under SDBEC (as shown in Appendix). the village was considered as more appropriate as a pilot site than other villages in lower altitude.
- Kg. Tudan is located above 1,100m amsl. Rubber can still grow in this altitude but is not productive in this altitude. Palm oil plantation is not applicable here for the altitude and also the steep slope.
- Before the project, there was minimal assistance from the government for improvement of livelihood. Tagal programme by Fisheries Department is not applied as they only have narrow streams.
- For the beekeeping practiced in the village, they have been using box type wooden beehives for long time. They claimed they developed the design of the beehives. The villagers make beehives by themselves using timber. Bees are very sensitive for smoke and chemicals then the beehives should be located away from the houses. Under the project, Department of Agriculture introduced a “modern” design of beehives with some compartments in a box, but they didn’t work well for beekeeping here. In addition, it is easier to make their conventional beehives, then the villagers decided to keep using them. Department of Agriculture also provided training on beekeeping. It was not very new for the villagers, but it provided reference to the villagers they can compare their conventional method with.
- The respondent applies the hillside farming technology in his vegetable garden. He uses only manual labor without machinery. He plant bamboo around the garden for soil conservation.
- In the garden owned by chairman of JKKK, they make compost. The respondent (vice-chair) is the leader of the compost making. He compares growth of crops in three types of field, 1) without any inputs, 2) with chicken manure, and 3) with the compost prepared under the project.
- There are some families in the village whose children are getting some financial assistance from the Welfare Department, following their registration as poor households in e-Kasih. They could submit forms to Tuaran District Office for registration.
- Under the pilot project, Participatory 3D Modeling of the village and surrounding area is also implemented.

(6) Reference collected (as attached)

- Selection criteria of pilot site for CRBR management under SDBEC

Criteria to determine pilot projects in CRBK 2014/12/22

1-5 To pilot livelihood improvement for community-based conservation through agriculture improvement, sustainable landuse, ecotourism and private business participation in marketing in collaborations with local government units, NGOs and concerned agencies

To prepare detailed activity plan

To select 1 village as a pilot sites

(Selection Criteria of Pilot Sites)

Japanese side and Malaysian side agreed as follows.

- ✧Existence of threatened importance biodiversity / wildlife;
- ✧High potential for livelihood improvement;
- ✧Willingness to participate in the Project among local stakeholders and adequate local governments' commitments;
- ✧Relatively easy access and high display potential as a model; and
- ✧No similar major projects in the area.

Record of interview with Department of Agriculture

(1) Date and time: 9:00-10:30, 16 Dec. 2014

(2) Respondent
- Datin Elizabeth Malangkig, Assistant Director (Research), Department of Agriculture (012-8285538)

(3) Venue
- The office of the respondent, DoA

(4) Questions: -
- Progress of the pilot project in Kg. Tudang and status of rural development in CRBR
- View on the proposal introduction of PES and other economic incentives for conservation in CRBR

(5) Facts and comments

(Tudang and rural development in CRBR)

- ERE is a contractor for the study in Kg. Tudan as pilot site under SDBEC.
- DoA is looking at the guideline for agricultural development. unsuitable land for agriculture. The land to be alienated for agricultural purpose should fulfill the conditions stipulated in the guideline. Land with conditions inappropriate for agricultural development, such as shallow soil, steep slope are classified by DoA as non agriculture land following our criteria,.
- Any land application for agricultural use is commented by Datin Elizabeth, DoA before decision is made by LSD.
- Kg. Tudan, because of its steep slope and shallow soil, is considered as non-agricultural land. However they still have to live there. Then we assist their beekeeping and vegetable farm.
- According to our guildline, rubber plantation is applicable up to 600m amsl. Oil palm is up to 300m amsl. Though in Keningau they plant the crops above 700m amsl, we don't recommend to plant above the limit. Even if less production on the high elevation is compensated by the infracted prices of rubber or oil palm fruit bunch bear at the moment, there is a risk of drop in prices in future. Opportunity cost of such development should be considered too. LIGS does not recommend plantation above the limit either.
- In Sabah, consumers don't want to pay more for organic products. However, if farmers can produce organic fertilizer and the cost and price of the organic products is same as ordinary products, the consumers choose the organic products.
- Physical input we can provide to the farmers in Tudan is very minimal. For modern agriculture in lower elevation, we could provide high yielding paddy rice variety, but Kg. Tudan is hilly and they cannot have rice paddy there.
- Thus we provide training, fruit tree seedlings, etc. We have so-called 2L (*Lawatan dan Latihan*/ visit and training) programme by DoA. Kg. Tudan is covered by the programme.
- They form farmers group, then give them extension service, introduction of GAP (Good Agriculture Practices).
- Kg. Tudan is under Tuaran district. Before the study under SDBEC, there was no assistance by the government for agricultural development in Kg. Tudan.
- Kg. Tudan was selected as a pilot site because it is in a critical area on higher elevation. Methodology and technology we develop and examine in Kg. Tudan could be applicable to lower elevation.

(Comments on introduction of PES and other economic incentives)

- Oil palm and rubber has been economically more profitable than the other crops though rubber price recently dropped.
- Our question for the management of CBBR is how we can promote people not to choose monoculture of oil palm and rubber.

- We have guidelines for oil palm and rubber plantation which includes control of environmental impact. The Transition Area of CRBR in Beaufort district has been opened for oil palm. what we can do is just to make sure their operation properly comply the guideline. They may need to replant oil palms in next 10 years. there is guideline for replanting also. The plantations in Beaufort Maybe owned by small farmers.
- Development of oil palm plantation and rubber plantation by small farmers is heavily subsidized. MPOA has a scheme to provide financial assistance of RM9,000 per hectare for new plantation and replantation of oil palms up to 5ha, which is called TBSPK (*Skim Tanam Baru Sawit Pekebun kecil*/ New Planting Scheme for Palm Smallholders). MPOA targets to apply the scheme to 8,000 ha in total in Sabah. In Sabah issuance of land title is an essential condition for MPOA to approve application of TBSPK.
- LIGS may also give similar subsidy for rubber plantation also, which covers cost of seedlings, land preparation and plantation.
- Sabah Electricity Sdn. Bhd. (SESB) charges "Renewable Energy Fund" (*Kumpulan Wang Tenaga Boleh Baharu Penggenapan*) to each customer to promote the use of renewable energy.
- Branding of CRBR product is another feasible approach for economic incentive. Product from CRBR can be also branded by Heart of Borneo Programme. Immediate market of such product is the tourists visiting Sabah.

Record of interview with Environmental Protection Department

(1) Date and time: 14:30-16:00, 16 Dec. 2014

(2) Interviewee
- Ms. Daisy Aloysius, Head of Development Sector, EPD
- Mr. Ray Marvin Tann, Development Sector, EPD

(3) Venue
- EPD

(4) Questions: -
- Application of EIA to achieve sustainable development in CRBR
- Comments on introduction of PES and other economic incentives
- Environmental education as a tool of river basin management and PES

(5) Facts and comments

(EIA to achieve sustainable development in CRBR)

- At present MONRE is in process of formulating a national policy on PES.
- In the process of land development, EPD is involved.
- Eliminating monoculture from CRBR by regulating the subsidies to oil palm and rubber plantation is not possible, as the land owners have been spoiled (*manja*) by such subsidies. Total ban of subsidies is difficult. We can still achieve the land use of CRBR with conservation, partial monoculture, agroforestry with legumes, etc.
- Our enactment stipulating EIA cut across lands no matter what the title is.
- Environment Protection Enactment 2002 stipulates application of EIA to actions potentially degrading the values of environment. Section 13 of the Enactment states "the Director may require an environmental impact assessment report or a proposal for mitigation measures to be submitted by an applicant for any activity not prescribed under section 12 subsection (1) if the Director is of the opinion that such development activity has or is likely to have an adverse effect on the environment." And Section 14 states "Any governmental authority shall immediately notify the Director in writing, if a development activity under their jurisdiction is included in the list of prescribed development activities or if the governmental authority is of the opinion that an environmental impact assessment report or a proposal for mitigation measures is required." Sabah Parks could be the one who notify us any problematic activities in CRBR following Section 14.
- Because of lack of man power (14 staff members in EPD), we cannot always watch all development in Sabah by ourselves. We have only two offices in the state, one in KK and the other is in Sandakan.
- KPLB has own respective law on earthwork regulation. So does Ministry of local government and housing. Following the laws, any Development Plans must be approved by district authority before implementation. When Development Plan comes in the district authority, EPD also comes in to apply the EIA procedure.
- We have a lot of rock reserves for quarries (and even coal) in CRBR identified by Mineral and Geoscience Department Malaysia. Fore your reference, even Bukit Kukusan Forest Reserve has a quarry. Occupation Permit was issued by Sabah Forestry Department. As the vegetation there is not a forest, shrub on rock, they determined that it is more valuable for its rock resources.
- In the process of approval of development of a quarry, usually three conditions are applied, such as 1) survey plan, 2) geological survey approved by Mineral and Geoscience Department Malaysia, and 3) EIA report approved by EPD.

(PES and other economic incentives)

- No Net Loss policy, offsetting damage by quarry by rehabilitating degraded ecosystem in other areas in CRBR would be effective. Sabah Forestry Department is pushing this idea in their Forest Reserves. Such No Net Loss policy could be applicable not only quarry development but also other damaging

industries in CRBR such as oil palm plantation.

(Environmental education)

- As a secretariat of Sabah Environmental Education Network (SEEN), we can contribute to awareness raising of CRBR and can report back to UNESCO on the two issues of CRBR, enforcement of EIA and environmental education. We can utilize results of monitoring of SEEP (Sabah Environmental Education Policy) for such reporting.

Record of interview with Department of Fisheries

(1) Date and time: 9:00-10:00, 17 Dec. 2014

(2) Respondent
- Dr. Norasma Dacho, Section Head, Conservation and Environment Section, Department of Fisheries

(3) Venue
- SDBEC Office, NRO

(4) Questions: -
- Status of Tagal programme and feasibility of PES utilizing it

(5) Facts and comments

- Mr. Jephrin Wong, former Deputy Director (Marine) who had been in charge of Tagal program has retired.
- The community nearby Babagon dam is famous for its application of Tagal. They are one of the beginners of the Tagal programme. The communities in Tuaran are also the beginners.
- I will provide more information later answering your questions. Mr. Gopdfrey Kissey is now in charge of Tagal programme in the department (Ms. Joanna Kitingan married to him, godfrey.kissey@sabah.gov.my)

(6) Reference collected (as attached): -

- Updated numbers of villages and rivers covered by the Tagal programme
- Brochure of the Tagal progaramme

SISTEM TAGAL

Sistem Tagal adalah satu system perkongsian pintar di antara masyarakat tempatan dengan Jabatan Perikanan Sabah untuk memastikan sumber perikanan sungai di Sabah berjaya dilindungi, dipulihara dan dituai secara mapan.

Sehingga bulan September 2014, bilangan Sistem Tagal di negeri Sabah adalah sejumlah 531 melibatkan sebanyak 20 daerah secara keseluruhan dan 221 batang sungai.

BIL.	DAERAH	BILANGAN TAGAL (KAMPUNG)	BILANGAN SUNGAI TERLIBAT
1	Ranau	99	33
2	Tambunan	86	38
3	Tuaran	76	21
4	Kota Belud	48	31
5	Papar	36	5
8	Kota Marudu	30	10
7	Sook	28	14
6	Penampang	28	11
13	Sipitang	18	4
10	Nabawan	17	10
11	Pensiangan & Pagalungan	7	6
12	Tenom	16	7
9	Keningau	13	8
14	Tongod	10	8
15	Telupid	7	5
16	Beaufort	7	6
18	Kota Kinabalu	2	1
17	Beluran	1	1
19	Kuala Penyu	1	1
20	Putatan	1	1
21	Kinabatangan	-	-
JUMLAH		531 Kampung	221 Sungai

OBJECTIVE OF THE TAGAL SYSTEM

1. To promote co-operation amongst local communities with Department of Fisheries Sabah towards ensuring the sustainability of river resources.
2. To protect and conserve the river environment including the river ecosystem and fish habitats.
3. To protect and conserve depleted river resources.
4. To increase fish production, as one of the source of protein for rural communities.
5. To develop alternative sustainable livelihood for local communities by promoting ecotourism and sport fishing.

ROLE OF COMMUNITIES AND DOFS IN THE DEVELOPMENT OF THE TAGAL SYSTEM

Communities

1. Establish a tagal Committee at the respective village.
2. Protect and manage the river ecosystem and the river resource at the respective Tagal zone.
3. Harvest of fish in a sustainable manner:

RED ZONE	Cannot be harvested
YELLOW ZONE	2-3 times/year
GREEN ZONE	All year round

4. Work closely with Department of Fisheries Sabah in managing the Tagal System in the respective village.

Role Of Department Of Fisheries Sabah

1. Technical advisor for all Tagal committee.
2. Developed a Tagal model in Babagon, Penampang in 2002.
3. Promote the Tagal System to other districts.
4. Monitor the development of Tagal system in Sabah.
5. Enhance the current Tagal System through continuous research and development.
6. Build and enhance capacity of all Tagal Communities to effectively manage the Tagal System.
7. Encourage the establishment of Tagal System by providing support technically and financially.
8. Encourage the establishment of Tagal by promoting various activities at the Tagal System sites as a source of new income.

VISION OF THE TAGAL SYSTEM SABAH CONTEXT

CURRENT TAGAL

Environmental Friendly / Pro-Environment / Succesful & sustainable/ Non-commercial

FUTURE TAGAL

Environmental Friendly/ Succesful & sustainable / commercial

- Sport Fishing *(Catch & Release)*
- Homestay
- Fish feeding venture / fish massage
- Commercial activity

Department Of Fisheries Sabah
Wisma Pertanian Sabah,
Aras 4, Blok B, Jalan Tasik Luyang,
(Off Jalan Maktab Gaya)
88624 KOTA KINABALU, SABAH
No. Tel : 088-235966 Ext 117
No. Fax : 088-250321

http://www.fishdept.sabah.gov.my

IMPACT OF THE TAGAL SYSTEM IN SABAH

1. Degraded river ecosystem successfully revived.
2. Depleted river resources and fish extinction, successfully revived.
3. Improvement in fish landing.
4. Potential alternative livelihood for the local communities (Swim with the fish, fish massage, fish feeding venture).

STATUS OF TAGAL SYSTEM IN SABAH (01HB MARCH 2012)

NO	DISTRICT	NO. OF TAGAL (VILLAGE)	NO. OF RIVERS INVOLVED
1	Ranau	85	33
2	Tambunan	76	32
3	Tuaran	73	19
4	Kota Belud	45	31
5	Papar	31	4
6	Kota Marudu	26	10
7	Sook	25	14
8	Penampang	24	11
9	Keningau	14	8
10	Nabawan	15	10
11	Tenom	12	3
12	Sipitang	5	4
13	Tongod	4	4
14	Pensiangan	3	3
15	Telupid	2	2
16	Beaufort	2	3
17	Beluran	1	1
18	Kota Kinabalu	1	1
Total		444	193

JABATAN PERIKANAN SABAH

ACHIEVEMENT

SABAH FISHERIES DEVELOPMENT

CONSERVATION OF SABAH RIVER RESOURCE THROUGH CO-MANAGEMENT (TAGAL SYSTEM)

Introduction

The Tagal System is a smart partnership between local communities and government agency Department of Fisheries Sabah (DOFS) to protect, conserve & manage the river resources in Sabah.

Record of interview with Department of Irrigation and Drainage

(1) Date and time: 14:00-15:30:00, 22 Dec. 2014

(2) Respondent
- Yap Siew , Senior Assistant Director, Department of Irrigation and Drainage

(3) Venue
- Headquarters, DID

(4) Questions: -
- Feasibility of PES through water supply service in CRBR
- In particular, introduction of PES to the pilot project lead by NRO to gazette Babagon dam catchment

(5) Facts and comments

- I am doubting if amount of money collected from service users including those who are using a part of water in a river, can cover all the cost of conservation of the watershed by the service providers including the various government agencies.
- I still can support site specific PES introduction to the Babagon dam catchment, as the population of service providers (300 plus land owners in the catchment) is relatively small in comparison with the service users (less than half of 500,000, the population in Kota Kinabalu).
- Concerning the pilot project for Babagon dam catchment, the option to buy back the land and relocation of villagers in the catchment is impossible.
- DID has been preparing proposal of gazetting the Babagon catchment. We already studied and have a plan to control activities in the catchment. NRO is boosting the process of gazetting relying on information we provided.
- Introduction PES can be used for negotiation with the landowners for gazetting. We cannot simply declare Water Catchment/Conservation Areas on gazette without their consents.
- Furthermore, regulatory measures (detailed conditions for land use in the alienated land in Water Conservation Area according to the enactment) must be applied together with PES. It will take time to prepare regulations on land uses in Water Conservation Area, like we did in the Community Use Zone in Crocker Range Park under BBEC, regulations should be determined through discussion with the landowners and documented. Each of different land uses and crops we need to prepare such regulations, then it will take time.
- We can refer to the agreement process and institution for CUZ in CRP and CCA in Eco-Linc
- Director of DID was officially assigned as Director of Water Resources in black and white by Chief Minister. Thus he is officially Director of Water Resources, not an “acting” Director as someone considers based on speculation.

Appendix 2: Minutes of the Reporting Meeting of the Study to the Concerning Agencies (18 Dec. 2014)

Minutes of the Reporting Meeting of the Study on Payment for Ecosystem Services (PES) for SDBEC

(1) Date and time: 14:30-14:30, 18 Dec. 2014

(2) Venue
- NRO Meeting Room, Menara Tun Mustapha

(3) Participants
1. Mr. Gerald Jetony, NRO (Chairman)
2. Mr. Kazunobu Suzuki, JICA-SDBEC
3. Mr. Awang Shaminan, NRO
4. Mr. Lim Lam Beng, Water Department
5. Dr. Norasma Dacho, Department of Fisheries
6. Mr. Anthony Tinggi, Sabah Parks
7. Mr. Mohad. Sofian Alfian, Tuaran District Office
8. Mr. Meurel D. M., SEDIA
9. Mr. Humphrey Ginibun, Sabah Tourism Board
10. Mr. Thomas Logijin, Tambunan District Office
11. Md. Guntor Arif, Keningau District Office
12. Ms. Prica Thomas, Department of Irrigation and Drainage
13. Mr. Ray Marvin Tann, Environmental Protection Department
14. Mr. George Gaing, Sabah Biodiversity Centre
15. Mr. Roslan Abdillah, Sabah Forestry Department
16. Mr. Mohd. Amzari Mohd. Yusof, Sabah Forestry Department
17. Dr. Bakhtiar Yahiya, Institute for Tropical Biology and Conservation, UMS
18. Mr. Sadli Madarin, Kota Kinabalu City Hall
19. Mr. Mohd. Nor, Kota Kinabalu City Hall
20. Mr. Ryotaro Takano, JICA-SDBEC
21. Ms. Alessandra Markos, JICA-SDBEC
22. Dr. Jiro Iguchi, Consultant JICA-SDBEC

(4) Minutes

The meeting started approximately at 9:00 am with the opening remarks by the Chairman. He welcomed all the meeting participants and briefly explained the purpose of the meeting as well as the meeting agendas.

1. Reporting of the survey result including recommendations on PES by Dr. Jiro Iguchi, the JICA Consultant

1.1 Dr. Iguchi, a consultant for JICA-SDBEC gave 1 hour presentation of his findings and recommendations on PES and other economic incentives for river basin management of CRBR for SDBEC. The presentation slides are as attached.

2. Discussion on the findings and recommendations

2.1 Mr. Jetony, the chairman commented that CRBR has not much value for tourism but it is very important as a water tank.

2.2 Mr. Beng, Water Department informed that Babagon dam is one of the sources of water supply in Kota Kinabalu, which is providing less than a half of the total water supply to KK. They don't utilize all the water flow from the Babagon catchment, discharging 10,000m^3 to the river. He informed that they needs more water and commented that as a user of the river, the Department has to pay for the usage.

2.3 Mr. Beng, Water Department commented that Section 45.(2)(f) of Park Enactment, "to levy fees or to collect dues from persons utilizing the accommodations, amenities, facilities or services provided under this Enactment;" is not applicable to the water supply service. Water Resources Department can only charge the water supply service.

2.4 The chairman commented that economic incentive provided to the landowners of the catchment areas through PES could be a tool for convincing villagers for conservation.

2.5 The chairman commented that conservation of Babagon dam catchment can affect issues of flood in Penanpang and Kota Kinabalu. Mr. Beng, Water Department informed that the

cause of the flooding is not caused by current land use of the catchment.

2.6 Mr. Beng, Water Department supports the recommendation on introduction of PES for conservation of Babagon dam catchment by the consultant. He also commented that CRP feeds water to Tuaran, Kota Belud and other towns.

2.7 Mr. Logijin, District Officer of Tambunan commented the concept proposed by the consultant is ideal to give the villagers an economic incentive to conserve forest. He also commented that in Tambunan also MPOB and LIGS provides everything to villager to start plantation, and it would related to the current political situation in Sabah as the "fix deposit" to the ruling party.

2.8 The chairman discussed mainstreaming the proposed ideas in a state policy which will be formulated under the UNDP-GEF project.

2.9 Mr. Shaminan, NRO informed that they are trying to gazette the Babagon dam catchment hopefully by Jan. 2015 as a pilot project.

2.10 The chairman commented that they can apply the PES concept to the tourism and Tagal programme also. The service users downstream should consider to pay.

2.11 Mr. Beng, Water Department commented definition of what you are trying to do or conserve (land use) in the watershed is important. He added that the Federal government always tends to think about oil palm and rubber plantation and they hardly know how to utilize ecosystem service as it is.

2.12 Mr. Liew, Lands and Surveys Department and Mr. Beng, Water Department confirmed that Water Conservation Area gazetted under Water Resources Enactment still can be alienated, while regulation can be applied even after alianation.

2.13 Mr. Tann, Environmental Protection Department commented the study is comprehensive. However, he pointed out estimation of amount to pay (economic valuation of the ecosystem service) is missing.

2.14 The chairman commented that they don't limit discussion of PES to a certain service, and discussion on PES and REDD+ should be integrated.

2.15 Mr. Ginibun, Sabah Tourism Board informed Melaka state government imposes RM2/room-night as heritage tax to all hotels in the state as state regulation. In Sabah, KITA (Kinabatangan Tourism Association) voluntarily collect RM10/tourist for conservation of the area. They explain the tourists the purpose of the conservation fee and they are happy to pay, in particular Japanese tourists.

2.16 The chairman added that the service tax collected from the tourists goes to the federal treasury, while state could handle conservation charge for its own conservation effort.

2.17 Mr. Liew, Lands and Surveys Department requested to distribute all the participants of the meeting a paper on the study results. He also discussed there are two options for payment for ecosystems services between service providers and service users, such as 1) transaction among government agencies, and 2) direct transaction between providers and users.

2.18 Concerning economic valuation of ecosystem services, Mr. Liew, Lands and Surveys Department commented that every piece of land is unique and valuation requires consideration of the uniqueness. Such valuation must be done by a competent agency.

2.19 Mr. Liew, Lands and Surveys Department also commented that users' willingness to pay would be different for each situation. Tourists are willing to pay the conservation fees, while some water supply users would not be happy additional conservation charge to water bill.

2.20 Mr. Beng, Water Department responded to Mr. Liew that they could apply transaction between a government agency to another agency. Water Department can pay to Water Resources Department for the watershed service, once fund is allocated every year to run the mechanism.

Payment for Ecosystem Services (PES) for SDBEC

Its application to management of CRBR
18 Dec. 2014
Jiro Iguchi, Consultant for SDBEC

1

Topics

- Status and management of the Buffer Zone and Transition Area of CRBR
- What is PES?
- PES and economic incentives for biodiversity conservation in Sabah
- Proposal of PES and other economic incentives for CRBR

2

Status of the Buffer Zone and Transition Area of CRBR

3

Objectives of the management of CRBR (draft)

- Core Objective: To protect biodiversity, ecosystem and cultural diversity including genetic diversity.
- Means to achieve the Core Objective
  1. To improve ecosystem conservation in the Core Area
  2. To promote sustainable community livelihood in the Buffer Zone and Transition Area
  3. To promote research and education in CRBR

4

JKKK in CRBR

District	Number of villages
Penampang	44
Papar	73
Beaufort	24
Tenom	29
Keningau	92
Tambunan	57
Ranau	2
Tuaran	61
Kota Kinabalu	17
Total	399

5

POPULATIONS OF THE 8DISTRICTS AND KOTA KINABALU

	Area (km^2)		Population		
Administrative areas	CRBR (% in the area of the district/city)	Total area of District/ City	CRBR		Total population in the district (2010)
Penampang		466	16,162	(10.1%)	159,600
Papar		1,243	22,320	(20.0%)	111,400
Beaufort		1,735	2,053	(2.8%)	74,600
Tenom		2,409	4,645	(8.5%)	54,400
Keningau		3,533	28,404	(14.5%)	195,700
Tambunan		1,347	17,571	(51.7%)	34,000
Ranau		2,978	767	(0.9%)	88,800
Tuaran		1,166	7,179	(7.3%)	97,800
Subtotal of 8 Districts		14,877	99,101	(12.1%)	818,600
Kota Kinabalu		350			447,200
Total	3,505.78 (23%)	15,227	99,101	(7.9%)	1,254,700

6

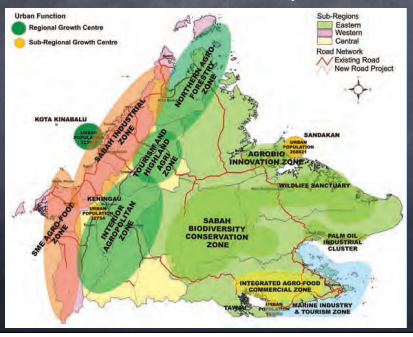
STATUS OF POVERTY IN CRBR

DISTRICT	PENAMPANG	PAPAR	BEAUFORT	TENOM	KENINGAU	TAMBUNAN	RANAU	TUARAN	KOTA KINABALU	TOTAL
Number of e-Kasih Registered households										
hardcore poor	34	22	1	15	73	148	0	1	2	296
poor	159	162	6	82	155	365	0	46	0	975
moderately poor	90	181	9	55	52	199	0	34	4	624
Total	283	365	16	152	280	712	0	81	6	1,895
Ratio in the all households in CRBR	8.8%	8.2%	3.9%	16.4%	4.9%	20.3%	0.0%	5.6%		9.6%

Source: Sabah Development Office, Department of Statistics Malaysia, Sabah (2009)

7

Sabah Development Corridor Blueprint



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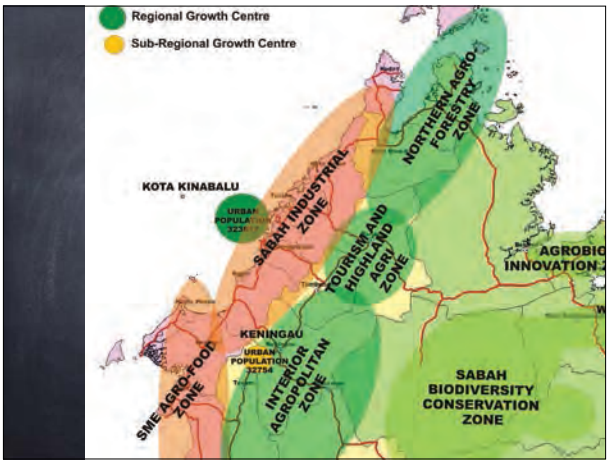

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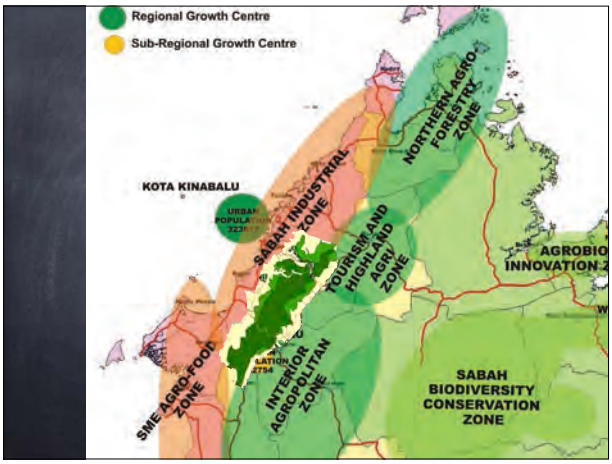

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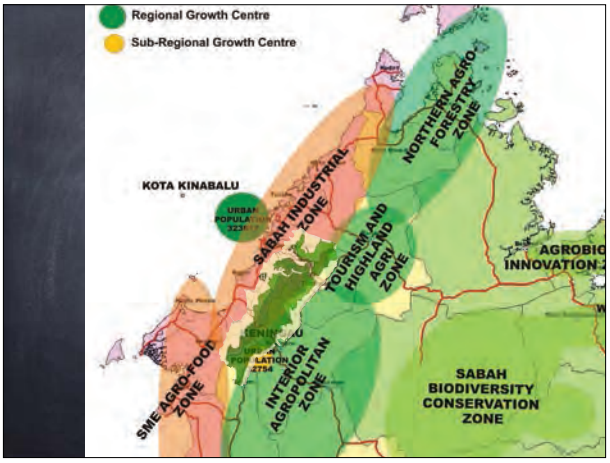


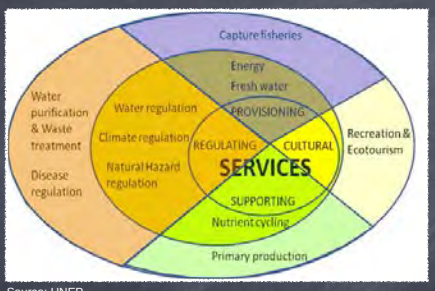
8-4

What is PES (Payment for Ecosystem Service)

9

- A voluntary transaction where
- a well-defined ecosystem service
- is being "bought" by a ecosystem service buyer
- from a ecosystem service provider
- if the ecosystem service provider secure provision of the service

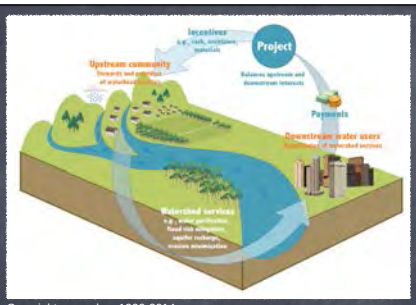
10



Source: UNEP

Ecosystem services

11



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Payment for water supply and flood controlling service

12

PES at the national level

- National Policy on Biological Diversity revised by 2015 with assistance of UNDP-GEF to meet national priorities and the Aichi targets.
- In preparation of the revised NBSAP, identification of potential means of capturing the ecosystem services including through policies such as payments for ecosystem services and other positive incentives.
- Early stage of exploring these mechanisms: the UNDP supported scoping study on PES (2012) that look into potential ecosystem services and its users (key sectors).

13

At national level

- PES is not explicitly incorporated in the laws of Malaysia, however, certain elements of PES do exist in a number of laws.
- Many economic valuation studies but few has been applied to PES mechanism.
- Economic valuation on marine ecosystems is less than that of terrestrial ecosystems.

14

PES and other financial mechanism at the state level

15

Biodiversity Conservation in Multiple-use Forest Landscapes in Sabah, Malaysia (the UNDP GEF Project)

- No.4 of 9 subcontracts: Development of state-level policy options, and pilot landscape level demonstration of, PES (scheduled for 4 years from Oct. 2015)

16

Bio-carbon funding including REDD + (Tradable permit and offset):

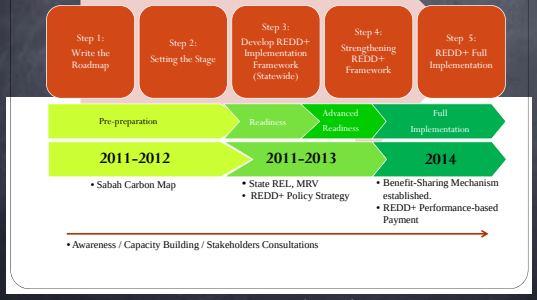
- Many related initiatives since 1990s lead by SFD
- Sabah's Roadmap on REDD+
- Ongoing EU REDD+ Project

17

Sabah REDD+ Roadmap

Strategy: Sub-national / nested approach

The milestones:



Source: Sabah Forestry Dept. (2012)

18

PES through tourism

- Entry fees to the protected areas
- The number of visitors to the Crocker Range Park (Headquarters Stations and substations) totalled 20,156 in 2010.
- KITA (Kinabatangan Tour Operators Association) applies voluntary conservation levy.

19

Summary of Visitor Arrivals To Sabah Places of Interest

No.	Places of Interest	2012	2013
1	Tunku Abdul Rahman Park	398,870	527,017
2	Kinabalu Park (Daily, Overnight & Climbers)	285,466	332,838
3	Mount Kinabalu Climbers	53,882	55,373
4	Poring Hot Springs	347,217	363,288
5	Turtle Islands Park	11,418	10,107
6	Tawau Hills Park	99,149	82,848
7	Pulau Tiga Park	4,487	12,800
8	Sabah Agriculture Park	23,306	20,983
9	K K City Bird Sanctuary	4,783	NA
10	Gomantong Cave	13,618	13,947
11	Sepilok Orang Utan Sanctuary	108,880	104,349
12	Lok Kawi Wildlife Park	136,061	125,798
13	Tabin Wildlife Reserve	2,060	1,731
14	Sukau, Kinabatangan	7,325	4,761

Source :Sabah Parks / Wildlife Department / Jabatan Perhutanan Daerah Tambunan / Sabah Agriculture Park/KK City Bird Sanctuary/

20

Water supply service

- To evaluate the ecosystem service of CRP, Sabah Parks estimated volume of water flowing out from CRP and reported it at the state cabinet in 2013.

21

Access and Benefit Sharing (ABS)

- Revised Sabah Biodiversity Enactment and its Rules and Regulation are in preparation

22

RSPO and palm oil certifications

- Value added green markets
- RSPO, MSPO

23

Other innovative financial mechanisms (mainly lead by SFD)

- Forest Certification
- Malua biobank
- PES Study by SFD: proposal of PES as licence condition
- Biodiversity offsets/ no net loss

24

Proposal of PES and other economic incentives for CRBR

25

Identified ecosystem services provided by CRBR

- Water supply (regular flow and quality)
- Flood control, disaster control
- Carbon sequestration
- Recreation (landscape, rare species, etc.)
- Genetic resources

26

Land use securing the ecosystem services

- Conservation of the forest
- Reforestation and enrichment planting
- Traditional shifting cultivation with a sufficient fallow period
- Wet paddy
- Tagal
- Alternative livelihood with ecosystem services maintained

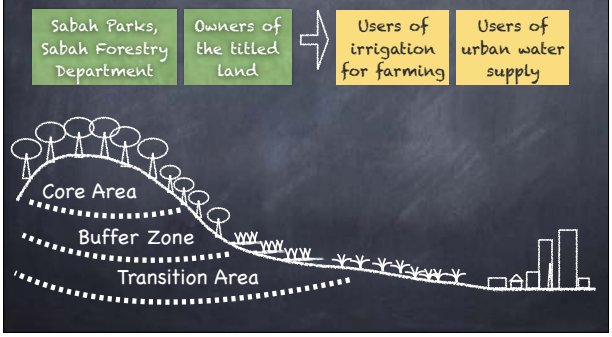
27

Ecosystem service: water resource and flood control

- Regular and clean water supply
- Flood control, regulating landslide
- Controlling siltation and salinity for coral and other marine ecosystems (?)

28

Payment for Watershed Protection



29

Payment for Watershed Protection: Legal Basis (Sabah Water Resources Enactment)

- Water Protection Area: No land shall thereafter be alienated, no person shall be authorised to erect a new structure, establish a new plantation or clear land.
- Water Conservation Area: The Water Resource Dept. may notify the owner or occupier of the land that specified types of activities are prohibited, or to be undertaken in a specified manner or in specified locations or prohibited.

30

Status of Water Protection/ Conservation Area in Sabah

- No Water Protection/Conservation Area has ever gazetted.
- The Buffer Zone of CRBR followed the proposed Water Protection/Conservation Areas by DID.
- The Water Protection Area should not be alienated.

31

Payment for Watershed Protection: Legal Basis (Sabah Water Resources Enactment)

The Director may levy water management fees and charges representing the cost of management activity on a person—

(a) holding a licence issued under Part IV;

(b) who owns or occupies land within a declared floodplain area;

(c) who is benefitted by a water protection area; and

(d) where the Minister has authorised such charges, a person who owns or occupies land within a water conservation area.

32

Payment for Watershed Protection: Legal Basis

- Sabah Park Enactment: -

42.(2)

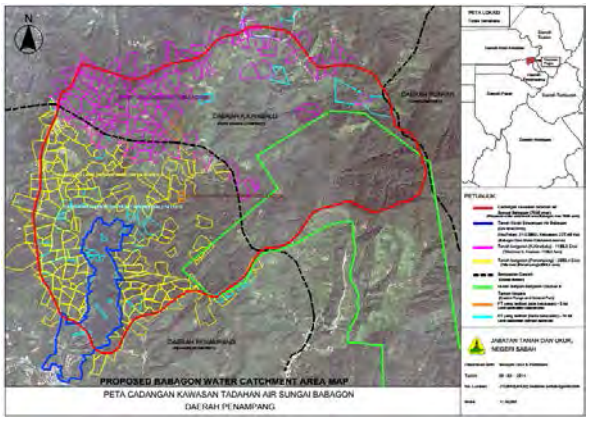
(f) to levy fees or to collect dues from persons utilizing the accommodations, amenities, facilities or services provided under this Enactment;

33

Proposed Pilot Project: Payment for Watershed Protection of Babagon dam

- Currently the Secretariat of Water Resources is discussing gazetting of water catchment area of Babagon dam (Action Plan was prepared as a result of JICA training Oct-Nov. 2014).
- PES would facilitate consent of landowners and other stakeholders on the gazetting.
- Gazetting of the Baboon Watershed could be a model for the other water protection/conservation areas

34



35

Summary of Land Status in Proposed Water Catchment Area at Babagon Moyog

1. Proposed Area Acreage : 3,114 ha (7,695 acre)
2. Number of land owner : 322
3. Total area of alienated land : 1,324 ha (3,271.7 acre)
4. Acreage of Dam Area : 155 ha (384 acre)
5. Area of the Forest Reserve : 705 ha (1,741 acre)
6. Approximate state land : 930 ha (2,300 acre)
7. Total number of land applications: 79 (5 approved) No title yet

36

Facts of the Babagon watershed

- The whole watershed of the Babagon dam is included in CRBR
- Part of the watershed is in the Core Area (Crocker Range Forest Reserve, not CRP), while the rest is in the Transition Area.
- According to the coordinate of the villages identified under BBEC II, the watershed may includes 4 villages with JKKK such as Kg. Kapur, Kg. Kintok, Kg. Tampasak and Kg. Kalasunan

37

Facts of Babagon dam watershed (continued)

- Sizeable land in the watershed except the Crocker Range Forest Reserve is already alienated (GIS data published by lands and surveys Dept.).
- Babagon dam is main source of water supply in Kota Kinabalu.
- Babagon dam is managed by JETAMA Sdn Bhd, the concessionaire by Water Dept.

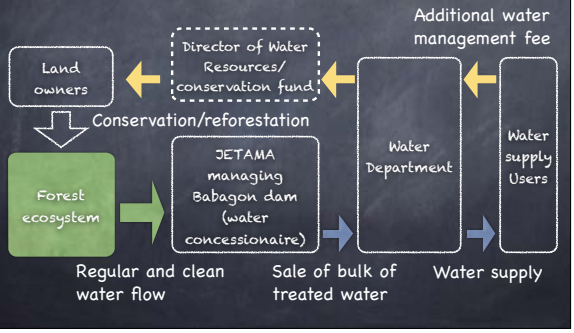
38

Payment mechanism: Stakeholders

- Director Water Resources (Director of Irrigation and Drainage)
- Water Resources Council
- Landowners of the watershed
- Water Dept.
- Water concessionaire (JETAMA)
- Lands and Surveys Department
- Sabah Forestry Department
- Sabah Parks
- NGOs assisting indigenous communities in Sabah

39

Mechanism of PES for Babagon dam watershed



40

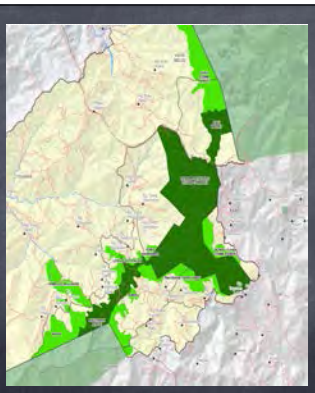
Application of REDD+

- Core area would be considered as no threat and no value in REDD+ framework
- Assessment of carbon at risk in the Buffer Zone and Transition Area in CRBR.
- Measurement of carbon value by forest conservation and sustainable management.
- Monitor and evaluate Eco-Linc Project (the pilot of EU REDD+ Project) in the context of CRBR management
- To be integrated in the Sabah REDD+ Roadmap

41

Kinabalu Ecolinc and CRBR

42-1

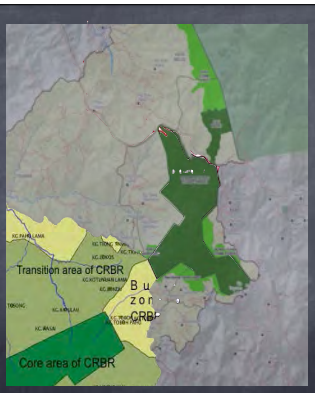


Kinabalu Ecolinc and CRBR

42-2

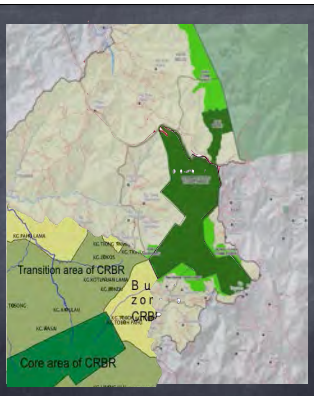
Kinabalu Ecolinc and CRBR

42-3



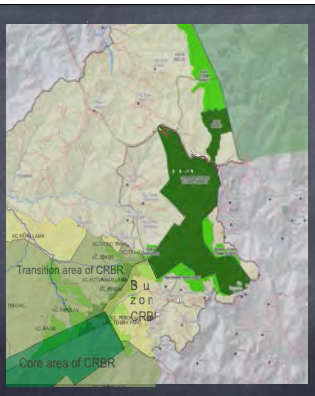
Kinabalu Ecolinc and CRBR

42-4



Kinabalu Ecolinc and CRBR

42-5



Kinabalu Ecolinc and CRBR

42-6

Control subsidy to maintain ecosystem services in rural development in CRBR

- Do the landowners want to develop monoculture plantation (oil palm and rubber) only because of their competitiveness in market?
- They are heavily subsidised by the government: positive incentive for poverty alleviation, but for ecosystem services?
- "Idle land" called in the rural development context includes the forest providing ecosystems services.
- "Agropolitan" scheme: mainstream of poverty alleviation

43

- Some MESEJ/Micro MESEJ projects by KPLB (settlement of poor households with rubber/ oil palm plantation) are in CRBR
- MPOA provides RM9,000/ha as subsidy (under TBSPK scheme) for small oil palm farmer.
- LIGS provides rubber seedlings and earthwork for planting.
- There are less established scheme to subsidise alternative livelihood with ecosystem services maintained/improved.

44

- The third option for poor households: -
  1. Monoculture for income generation
  2. No monoculture no income
  3. Conservation/rehabilitation/sustainable land use for PES and other economic incentives
- Economic incentives and subsidy for agropolitan and monoculture plantation in CRBR should be regulated.
- More economic incentive and subsidy for land use with ecosystem services maintained/improved (tagal, beekeeping, organic farming, agroforestry, fertigation of ginger, temperate vegetables, fruit trees, diversification of crops, handicraft, NTFP, etc.)

45

- Such direction of rural development in CRBR should be shared by the concerning agencies and their district branches, such as KPLB, District Offices, Fisheries Dept., KPD, Dept. of Agriculture, MPOA, LIGS, SLDB, etc. with their clear recognition of the Boundary of CRBR and the villages in it.

46

The pilot project in Kg. Tudang reviewed in the perspective

- Trial of alternative livelihood with ecosystem services maintained: bee keeping, hillside farming, organic farming, etc.
- In the high altitude (>1,000m amsl) rubber and oil palm cannot produce well, thus there is no competition between the monoculture and the alternative livelihood.

47

- Considering extension of the pilot project, how many of the 399 villages in CRBR are located in the high altitude like Kg. Tudang?
- In the majority of villages in CRBR on lower elevation, critical question is if the alternative livelihood would be economically comparable with the monoculture development.
- Do we have established scheme to subsidise the alternative livelihood to make it economically more comparable with the monoculture (KPD and DoA may have)?
- Can the proposed new pilot sites (Kg. Sintuong Tuong and Kg. Kiporing, Tambunan) answer the questions?

48

PES and other market based mechanism through tourism

- Promotion of collection of conservation fee at entry of specific ecotourism attractions in CRBR such as: -
  1. "One village one tourism attraction" in CRBR
  2. salt trails
  3. blooming rafflesias (in sustainable manner)
  4. other rare and exotic species
  5. Agrotourism (traditional farming, organic farming)
  6. Ethnotourism (Kadazandusun culture, TEK)
- Departure and hotel taxes (Kinabalu and Crocker Range areas)

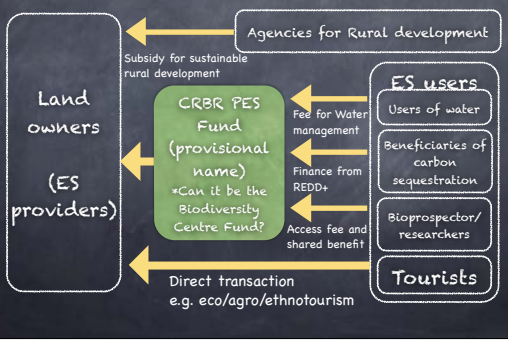
49

ABS and Bioprospecting

- The forest and villages in CRBR could be a pilot sites for enforcement of the revised Sabah Biodiversity Enactment and its rules and regulations on ABS (benefit sharing from genetic resources and associated TEK).

50

Establishment of CRBR PES Fund



51

Branding of CRBR product

- Branding of products from CRBR: honey, bottled water, organic crops, handicraft, etc.
- Eco-labelling by authority at national and/or state level

52

Quarries in CRBR

- When Sabah Parks defined the outer boundary of CRBR, existing quarries were excluded based on site observation.
- As Transition Area of CRBR is rich in rock reserves, there would be application of new quarries in future.
- In general the use of ecosystem services for quarrying includes the need for freshwater supplies for mineral processing, which can be very significant. > PES for watershed
- Quarries are also in general associated with adverse impact on biodiversity. > Biodiversity offset/ no net loss within CRBR as conditions for approval of quarries (experimental "no net loss" by Hap Seng in 2010)

53

Oil Palm plantation in CRBR (big planters)

- PES for watershed upstream
- Biodiversity offset within CRBR

54

Thank you.

55

Appendix 3: List of Poverty Eradication and Rural Development Schemes and their impacts on CRBR (as of July 2011)

Decsciption of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technologica sustainability (Is the scheme established?)
e-Kasih	Sabah Development Office (SDO), Implementation Coordination Unit, Prime Minister's Department: SDO is a federal agency located in Putra Jaya KK. It is successor of JPPS (Federal Department of Development Sabah) which was in charge of implementation and monitoring of the projects under the Malaysia Plan.	Identification and registration of hardcore poor and poor households and individuals for proper targeting of poverty eradication	-Malaysian government used to identify poverty based on household income. Applying the international standard introduced by UNDP, SDO is now using per capita income to identify and categorize poor in e-Kasih. The criteria are as follows: - *miskin tegar (hardcore poor): people with monthly income below RM540/family, or below RM110/capita * miskin(poor):peoplewithmonthlyincomeRM960-541/familyorRM200-111/capita *mudah miskin (vulnerable poor): people with monthly income RM1,500-961/family or RM300-201/capita - e-Kasih is accessable through the net, but password is changed everyday. KPLBS is allowed to access to e-Kasih in Sabah. Each District Office has access to e-Kasih of the district. - Hardcore poor and poor households registered to e-Kasih are first identified and proposed at District Office.		Every quarter Sabah state government has a meeting on poverty eradication chaired by Chief Minister, where SDO reports status of e-Kasih and other agencies report their effort for poverty eradication.	It helps efficient poverty eradication in CRBR. Impact to ecosystem and biodiversity is not considred in the process of the proverty eradication utilizing e-Kasih	Neutral (It depends on the shemes applied to the poor households registered in e-Kasih)	High	High
MESEJ (Programme Mini Estet Sejehtera)	- Implementation: District Offices - Coordination: Rural Economy Improvement Division, KPLBS	so-called "Agropolitan" scheme: conbination of development of farmland (rubber, oil pal, etc.) and houses provided to poor farmers migrating to the project site (new village).	- Minimum size of the project area is 250 acres (100ha), larger scale than PKS. - As essential part, it includes preparation of housing.	MESEJ is one of main devices by the state government to eradicate poverty.	Beaufort, Papar, Penampang, Tuaran, Ranau, Tambunan, Keningau, Tenom (List of the target villages is acquired)	Most of projects under MESEJ is preparation of plantation of oil palm or rubber with housing and other infrustructure. Development of the agropolitan site by such schemes in the buffer zone is not suggested	High	Mid.	High
Micro-MESEJ	KPLBS	Same as MESEJ except its smaller size (less than 250 acre).				Development of the agropolitan site by the scheme in Buffer is not suggested	High	Mid.	High
1 District 1 Product	KPLBS	Promotion of key product(s) in each district	KPLB request each District Office annually to identify target product(s) for the scheme in the year. Some District Offices list a few products, but some do none. The target products can be those of the primary industry or secondary industry. Different divisions under KPLB are in charge of the proposed projects, such as the projects for the primary product under the divitions of Mr. Rajibi and Mr. Najib and the secondary product under Mr. Sayuti's division. KPLB provide assistance to promote the target products by providing necessary inputs such as building, machinery, materials, training, etc.	Previously it was known as 1 village 1 industry product with the original approach introduced from Japan. Just after introduction of the scheme, there were too many (approx. 3,000) applications for the scheme. Many applications were based on misunderstanding that each of all villages should have own industry. There was also common misunderstanding that villages should have "Industry" especially the secondary industry, then there were some inappropriate projects, such as development of motor vehicle workshop in a village. On the other hand, District Officen was found to be capable to identify appropriate product for the district.	All the districts in Sabah, and Kota Kinabalu (its suburban division is KPLB's counterpart)	KPLB will provide the list of target products for the scheme in the 8 districts and KK for these 10 years.	Mid.	High	High

Decsciption of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technologica sustainability (Is the scheme established?)
PKS (Program Kampung Sejahtera)	- Implementation: District Offices - Coordination: Rural Economy Improvement Division, KPLBS	Financial and technical assistance to improve infrastructure and livelihood of a village	- Projects differ according to needs of villages, such as development of infrastructure, income generation through production, etc. - For income generation, KPLB appoint the other agencies as leading agency, SLDB, etc., FAMA. Budget from KPLB is chnneled to the leading agencies as "professional fees." - Construction of infrastructure will be open tender for contractors.		In 2010 it covered 140 villages in Ranau, Tambunan, Keningau, Tenom, Beaufort, Papar, Penampang, Tuaran. In 2011 the nuber of villages covered increases to 200. (List of the target villages is acquired)	KPLBS is implementing environmental training course to JKKK of 80 under PKS. Kg. Sejetra on how to manage and recycle the waste.	Mid.	Mid.	High
PPES (Program Peningkatan Ekonomi Sabah/ localized economic improvement programme)	KPLBS	Assitance to increase household income through economic activities. PPES provides financial support (seed money) and management services to carry out economic activities. (Similar to PPP)	Projects to be assisted can be aquaculture, agriculture, animal husbandary, etc. Most of essential inputs to initiate activities except the labour force by the target people themselves, are provided, such as land preparation, seeds, fertilizer, materials, etc. for agriculture. A project should be proposed by a group of people including at least 5 households. Registration to e-Kasih is not strict qualification to get this scheme, though priority is given to hardcore and poor households in this scheme too.				Mid.	Mid.	High
PPP (Projek Peningkatan Pendapatan/ Income Enhancement Project)	KKLW (Ministry of Rural and Regional Development, federal government)	PPP is implemented to help increase household income through economic activities. PPP provides financial support (seed money) and management services to carry out economic activities worth RM10, 000 per participant, as well as RM1, 500 for pre-project training (if necessary).					Mid.	Mid.	High
1AZAM	Ministry of Women, Family and Community Development, federal government	The ministry channels big additional funding (RM40 million) to the state agencies for poverty eradication.	1Azam have 4 different programms, such as 1Azam Tani (agriculture). 1Azam Kerja (employment). 1Azam Niaga (entrepreneurship). 1Azam Khidmat (service). They channel their money to Ministry of Agriculture and Food Industry, Sabah. Under 1Azam, temporary allowance (cash) to hardcore poor households is provided, with condition that the recipients must be in the 4 programme above for sustainable income generation. 1Azam channel money to YUM for additional credit to poor households.	Number of hardcore poor households once hit "0"(zero) in December 2011, as temporary allowance was provided to the hardcore poor households under 1Azam.	In the last quarterly meeting on poverty eradication chaired by the Chief Minister, detail of 1Azam was presented.		High	High	Low

Decsciption of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technologica sustainability (Is the scheme established?)
Tagal	Sabah Fisheries Dept.	Stakeholder-driven system of rehablitation, protection, and conservation of the river environments and the fisheries resources for its sustainable development.	At present the enforcement of the prohibitions is through the imposition of native customary laws that are backed by the Native Court and also Sabah Inland Fisheries Aquaculture Enactment. Sustainability is achieved by dividing the rivers of each Tagal System into three one-kilometre-long zones: the Green Zone where individual villagers are allowed to catch fish for own consumption at any time; the Orange Zone where harvesting and sharing of fish on a community basis is carried out at specific times decided by the local Tagal Committee; and the Red Zone where catching of fish is totally prohibited. The success and achievement of the Tagal System underlines the smart partnership forged between riparian river communities and the Sabah Fisheries Department. The Fisheries Department's roles are: - - acts as technical advisor to the Tagal Committees; - operation of a Tagal Model at the Fisheries Station, Babagon, Penampang; - promote the system to new areas; - carry out research to further improve the system, conduct training and public education; - materials assistances to the Tagal Committees such sign boards and fish fries; and - promote sport fishing onto the Tagal sites.	- Tagal was accepted by the villagers, as the villagers aware of decrease of fishes in the river and less benefit from them in the past. In Kota Belud, they have paddy field surrounded by many canals where there are many fishes (anabas). However, it was not the local people who finished the fishes, outsiders did. - Successful tagal and associated tourism (fish massage) is observed in Luanti Baru, Ranau. - Tagal utilize two laws to protect the river, such as native law and the state enactment (Inland Fisheries and Aquaculture Enactment. The native law solves cases quickly, while the enactment needs time. While the enactment stipulate fine of RM50,000, the native law is vague. However the department encourages the villagers to apply the native law at first. Everybody support to enforce the native law, including politicians, police, etc. When they cannot settle a case with the native law, they will apply the enactment. - Sarawak copied the Enactment then enacted Sarawak Inland Fisheries Ordinance. Now Sarawak has 50 plus tagals.	At the moment, the number of Tagal areas established in Sabah has multiplied to 212 involving 107 rivers in eleven districts.	The river environmental education programme can promote or can be promoted by tagal.	Low	High	High
Fish Culture	Sabah Fisheries Dept.	Promotion of fish culture	- Provision of juvenile tilapias, carps, cat fish and turtles - Provided 200 juveniles per person - Training on fishpond construction and management - Duration of training : 1 week (to be held 3 times per year)	- A cat fish (local species) is easier to culture/manage by farmers.	Fish Culture Centre, Federal Department of Fisheries, Keningau targets Nabawan, Sook, Tenom, Keningau, Tambnan	Land conversion is not needed. Tilapia is alien and invasive species.	Low	Mid	High
Rare Tropial Fruit	Department of Agriculture	Conservation and Use of Rare Tropial Fruit Species Diversity with Potential for Enhanced use in Malaysia							
Fruits Tree/vegetables	Department of Agriculture (Keningau office)	Promotion of fruit production (Durian and Papaya) Promotion of vegetable production (tomatoes, egg plants, green pepper)	- Provision of seedlings, fertilizer, chemicals, and other necessary equipment, including water harvesting tank and materials for small-scale irrigation. - Regular on-farm technical support by experts of Department of Agriculture. - Labor will be provided for establishment (plowing) of the farm.	- Each district office of Department of Agriculture might have different support schemes. - Department of Agriculture provide subsidies for rice cropping farmers as follows: ² Wet-rice farming: 100 RM/Acer provided twice per year for all farmers ² Dry-rice farming: fertilizer and agro-chemicals provided once per year based on application submitted to farmers	Keningau	Small scale orchard or vegetable farm is needed.	Low	Mid	High
Coffee	Department of Agriculture (Tenom)	Distribution of coffee seedlings	Provision of seedlings (Coffea robusta) - Regular on-farm technical support by experts of Department of Agriculture	- There are 3 species of coffee, named “Robusta”, “Liberica”, “Arabica” - “Robusta” and “Riberica” are suitable for low land, while “Arabica” grows at highlands (usually altitude more than 1,000m) - Robusta” and “Riberica” need enough sunshine, while “Arabica” grows under shades. - “Arabica” could grow at mountain slopes in USMB village.	At least in Tenom	Small scale coffee farm is needed.	Low	Mid	High

Decsciption of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technologica sustainability (Is the scheme established?)
Other Potential Products	Department of Agriculture (Tenom)	Nuts and Fruits production	- Provision of seedlings of “Pili Nuts” and “Paradise Nuts” - Provision of fruit tree seedlings		Tenom				
Beekeeping	Rural Development Corporation (KPD)	Improved Beekeeping Promotion	- Provision of equipment (20~40 hives including traditional/improved hives, protection veil, smoker and extractor) - Training and marketing support - Technical advise and backstopping by KPD experts through regular monitoring visit	- Beekeeping by improved hives requires regular monitoring and management practices. - Traditional hives require less management compared to improved ones.	Tambunan, Keningau, Tenom, Kemabong (Tenom District), Sook (Keningau district), Nabawan, Pensiangan (Nabawan district)	Conservation of flowering plants for sustainable honey production.	Low	High	High
Vanilla	Rural Development Corporation (KPD)	Vanilla Plant Project	- Supply of vanilla seeds to farmers (contract farming with project participants) - Technical advice on management of vanilla	KPD owns central nursery and plantation of vanilla in Lumadan with a demonstration farm.		It may not need so much farmland (?)	Low	Mid	High
Pomelo	Rural Development Corporation (KPD)	Pomelo Promotion Project	- Provision of seedlings of pomelo - Regular on-farm technical support		- As a pilot, farmers registered in E-KASIH in Tenom District are the target of the support - Currently 51 farmers in Tenom District have engaged in pomelo production. - In future, KPD plans to expand the area of pomelo farm to 123 Acre (50 Ha). - Though the current support is limited only for Temon district, the activity will be expanded to other	Small scale orchard is needed.	Low	Mid	High
Mushroom	Rural Development Corporation (KPD)	Mushroom Promotion Project	- Supply of seed fungi to farmers (contract farming with project participants) - Technical advice and marketing support		Tambunan, Moyog (Penampang), Kumdasan (Ranau District)	It may not need so much farmland (?)	Low	Mid	High
Home-stay	Ministry of Tourism, Culture and Environment					It doesn' t require exploitation of natural resuources and biodiveristy itself is its resources (in general).	Low	High	Unknown
Handicraft	Kraftangan Malaysia, (semi-governmental organisation under Ministry of Culture and Heritage, Federal government)		- designing: providing new design. how to coordinate production - technical assistance for production - marketing (providing chances to sell the products): almost every month promotion in various festivals. - assisting in providing raw material			It doesn' t require conversion of land and biodiveristy itself is its resources (in general).	Low	High	Unknown

Decsciption of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technologica sustainability (Is the scheme established?)
Direct Product Purchase by FAMA	Federal Agriculture Marketing Authority (FAMA)	Contract farm	Purchase products directly from farmers - Collects and disseminate marketing information for product promotion - Provide training courses on marketing • Collects and disseminate marketing information • Marketing promotion • Provide education and motivation to farmers • Provide infrastructure • Direct purchase agricultural produce - Kota Mardu in 2007: Training of farmers Buying ginger from the farmers and send to kk and they send them to peninsular and sarawak.		Target products that FAMA deals with product marketing differ according to areas and district such as; - Keningau : ginger, yam, avocado, pumpkin, coconut - Tenom: pomelo, papaya, banana - Ginger in Kota Mardu (in 2007)	Improvement of marketing. Small scale farmland is needed.	Low	Mid	High
Rubber	Malaysia Rubber Board	(1) Rubber Planting Program (establishment of new rubber plantation) (2) Rubber Re-Planting Program (rehabilitation of existing rubber plantation) (3) Re-Planting Support Program (conversion of rubber plantation to oil palm or fruits trees)	(1) and (2) : support for a group of farmers (more than 15 farmers in a group) - Provision of improved seedlings, fertilizer, chemicals, and other necessary equipment. - Regular on-farm technical support - Contract labor will be provided for establishment (plowing) of the farm. (3) : support for an individual farmer - Provision of oil palm or fruit tree (durian, mango) seedlings	- Improved rubber seedlings can be sold to individual farmers at a nursery of Rubber Board in Keningau (contact to Rubber Board Office in Keningau for details) - Price for an improved seedlings: 3.5 RM		Relatively small rubber plantation is needed. Conversion of natural or secondary vegetation to rubber plantation should be discussed.	Low	Mid	High
Cacao	Malaysian Cocoa Board (Tenom Office)	- PPTK2 (Cacao Promotion project)	- Organization of an introductory meeting /workshop for cacao promotion project at the village level as per the request - Provision of cacao seedlings (around 1,000 seedlings per ha) and fertilizer - Regular on-farm support including grafting	- There are 3 private cacao processing factories in Tenom where farmers ship dry and wet cacao beans. - Cocoa Board does not directly purchase cacao beans. - Cocoa Board implements “Community Entrepreneur Programme” for supporting practical farmers to be an entrepreneur as a cacao seedling provider or grafting expert. - Tenom office of Cocoa Board is in charge of districts in the Interior Division.		Small scale cacao farm is needed.	Low	Mid	High
Gaharu	Sabah Land Development Board	SLDB is conducting experimental planting of Gaharu in two trial plots in Lahad Datu (200 trees) and Sook, Keningau (2.5ha) to establish an appropriate production method of Gaharu.	The development of the gaharu production method is for legalizagion of production and marketing of gaharu and to conserve the native gaharu in natural forest.	The officers in charge of SLDB themselves commented that the technology for producing Gaharu is still in the process of development. As industry, it is still in the "infant stage" then they didn't recommend to apply it for income generation of rural communities.	Interview to the officer in charge in SLDB of promotion of Gaharu production on 21 July 2011.	Production technology of Gaharu is still in the "infant stage" as industry.	Unknown	Unknown	Low
Gaharu	Sudah Gaharu Sdn. Bhd (a private firm)	Joint Project with Community Group	- A group of farmers and Sudah Gaharu jointly carry out Gaharu planting. - Sudah Gaharu provides seedlings and technical support to a community group. - Group members plant Gaharu seedlings in their farms or rubber plantation (between rubber trees). - A group establishes a community Gaharu nursery to propagate seedlings, while Sudah Gaharu provides seeds collected from quality mother trees.	A field visit to the on-going Gaharu project site in Kuala Penyu will be arranged for an interested farmer group.	Kuala Penyu (at this moment)	Gaharu is native species. Gaharu plantation is needed. It is still in a stage of "venture business" of a private company.	Low	Mid	Low

Appendix 4: Presentation Slides by NRO on Proposal of Water Conservation/Protection Areas at Babagon Dam Catchment

JICA training for Promotion of SATOYAMA Initiative

13 October to 15 November 2014

- Brief on WHAT IS SATOYAMA/SATOUMI?
- Training method.
- What I learned

- **SATOYAMA /satoumi initiative training**
- **Emphasizes on to realise societies in harmony with nature. Satoyama Initiative is how to maintain/manage their land in sustainable ways. For example: The abandon land develop into agriculture land by the communities and manage it in sustainable ways.**

- **What WE learned**
- We are impressed by the mentality Japanese community and their culture in maintaining Satoyama for along period until now in sustainable manner.
- The high motivated and commitment and readiness mentality of Japan Satoyama Communities are the key contributing to the success of SATOYAMA/SATOUMI.
- Stressing on " **society in harmony with nature**" by maintaining and developing their land through the combinations of developing social, economic activities (agricultures, forest, and fishery) in sustainbale ways (without harming the soil and etc)

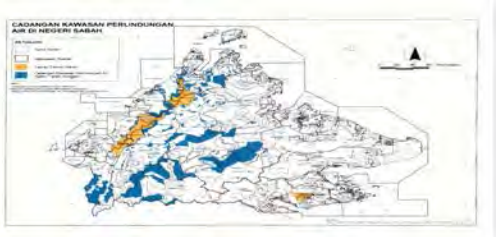
Briefing on Gazzettement Proposal of Water Catchment Area at Babagon, Moyog, Penampang District

By: Ag. Shahminan Ag. Sahari & Posin Mohd. Ali

Office of Natural Resources

11 December 2014

MAPE: LOCATION OF WATER CATCHMENT



No.	Catchment	District	STATE LAND	FOREST RESERVE	Sabah Park	FELDA	SLDB	Fishery Reserve	NORTH SABAH PULP	SAFODA	SSSB	WILDLIFE PARK	(HECTAR)
1	LAKUTAN	SIPITANG	/	Kelas VI	-	-	-	-	-	-	-	-	18,535
2	PADAS	TENOM	/	**Kelas II dan IV dan i**	/	/	-	-	-	-	-	-	773,600
3	MEMBAKUT/ BINSULUK	BEAUFORT	/		/	-	/	-	-	-	-	-	21,300
4	PAPAR (LIMBAHAU/ KOGOPON)	PAPAR	/	Kelas II/III	/	-	/	-	-	-	-	-	76,000
5	MOYOG	KASIGUI / BABAGON	/	**Kelas VI**	/	-	-	-	-	-	-	-	19,900
6	TUARAN	TUARAN	/	**Kelas VI/I**	/	-	-		-	-	-	-	91,400
7	KEDAMAIAN/ TEMPASUK	KOTA BELUD	/	-	/	-	-	/	-	-	-	-	79,300
8	TEGARAGANG	KUDAT	/	**Kelas III**		-	-	-	-	-	-	-	300
9	LANGKON/ BANDAU	KOTA MARUDU	/	**Kelas III**	/	-	-	-	-	-	-	-	22,900
10	BENGKOKA	PITAS	/	**Kelas II / I**		-	/	-	/	/	-	-	77,200
11	LABUK	RANAU	/	Kelas II	/	-	-	-	-	-	-	-	6,900
12	KOLOPIS/ MUANAD	BELURAN	/	**Kelas II/VI**	-	-	-	/					22,700
13	KINABATANGAN	KINABATANGAN/ TONGOD	/	Kelas II/I/**VI**	-	-	-	-	-	/	-	/	1,306,800
14	SEGAMA	LAHAD DATU	/	Kelas II/I/**VI**	-	-	/	-	-	-	-	-	267,800
15	TUNGKU	LAHAD DATU	/	Kelas I/**VII**	-	/	-	-	-	-	-	-	15,300
16	SEPAGAYA	LAHAD DATU	/	**Kelas VI**	-	-	-	-	-	-	-	-	2,400
17	KALUMPANG	SEMPORNA	/	**Kelas I/VI**	/	-	-	/	-	-	-	-	81,800
18	TAWAU	TAWAU	/	**Kelas I/III**	/	-	-	-	-	-	-	-	10,500
19	MEROTAI	TAWAU	/	**Kelas I**	/	-	/	-	-	-	/	-	21,000
20	SAPULUT	TIBOW	/	Kelas II	-	-	-	-	-	-	-	-	5,600
	TOTAL	**78**	**20**	**32**	**11**	**2**	**5**	**3**	**1**	**2**	**1**	**1**	2,921,235

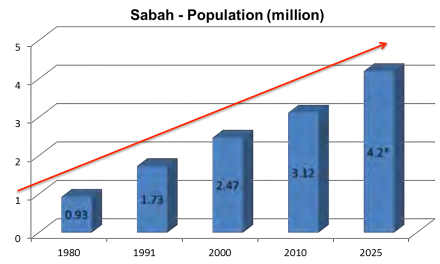
SUMMARY : LIST OF WATERCATCHMENT

- 78 water catchments are identified in Sabah so far
- Acreage Two Million Nine Hundred Twenty One Thousand and Two Hundred Thirty Five **hacter)2,921,235**
- 20 Area - State Land
- 32 – Forest Reserve
- 11 – Sabah Parks
- 2 -Felda
- 5 - Sabah Land Development Board (SLDB)
- 3 – Agriculture
- 1- Wild Life and others

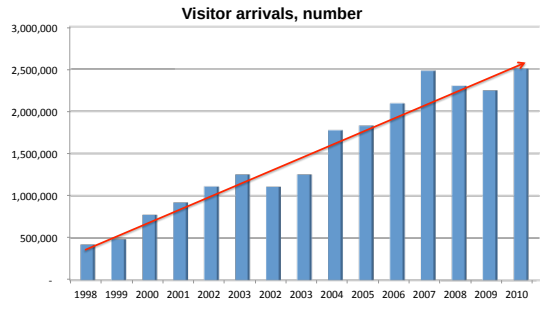
- ***Why, BABAGON WATERCATCHMENT NEED IMMEDIATE GAZZETEMENT ???????***

1. The population increase
2. Water quantity decreasing (survey showed by 2020 , Kota Kinabalu might have not enough water supply

Population rise



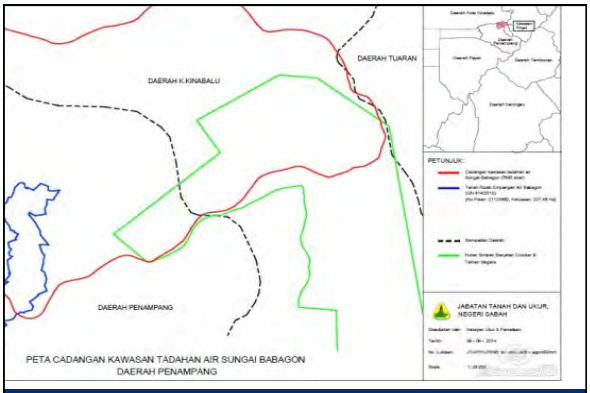
- Visitors to Sabah expected to increased. It might affect tourism industry



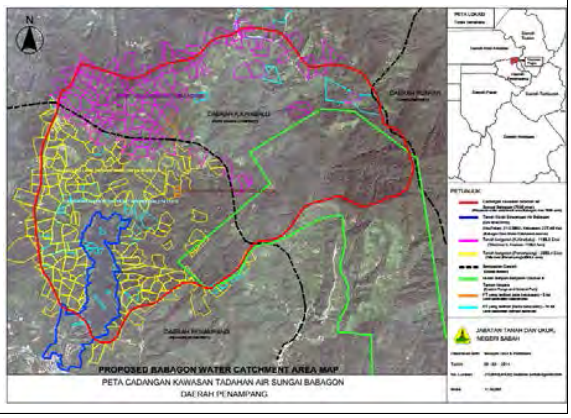
Source: Sabah Tourism Board, various years

PURPOSE OF BRIEFING

To update the land status and issues for the proposed water catchment area at Babagon Moyog , Penampang District



Proposed Water Catchment Area at Babagon Moyog , Penampang



Summary of **Land Status in Proposed Water Catchment Area at Babagon Moyog**

1. **Proposed Area Acreage** : **3,114 Hectare (7,695 acre)**
2. **Number of land owner** : **322**
3. **Total area of alienated land** : **1,324 hectare (3,271.7 acre)**
4. **Acreage of Dam Area** : **155 hec (384 acre)**
5. **Area of Sabah Park** : **705 hec (1741 acre)**
6. **Approximate state land** : **930 hec (2,300 acre)**
7. **Total of land applications** :**79 (5 approved) No Title yet**

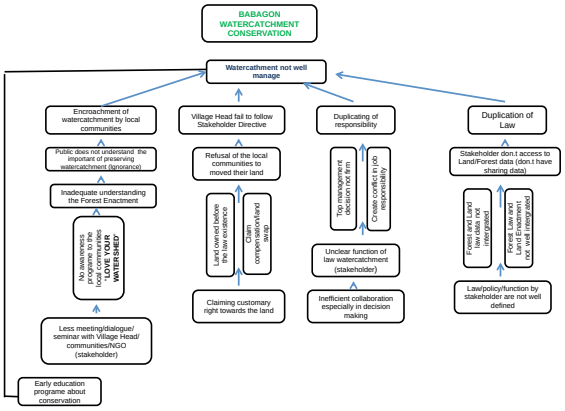
Steps of formulation Action Plan: Analyze issues and problems in Babagon Watercatchment area

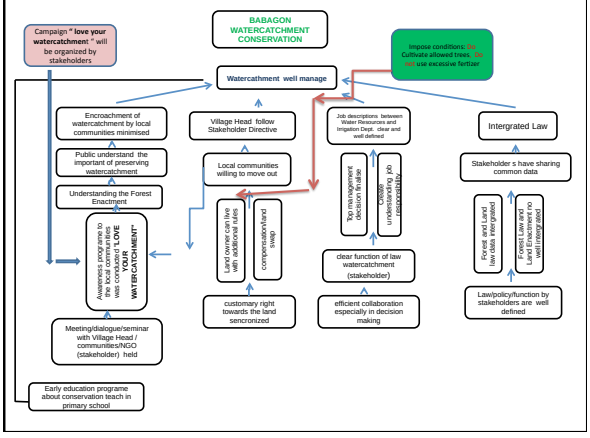
1. Identify Stakeholders / Issues & problems

	INSIDE (STAKEHOLDERS)	OUT SIDE (STAKEHOLDERS) Beneficiaries
	1. Director of Forestry Department 2. Director of Land and Survey Department 3. Director of Environment Departmernt 4. Director of Sabah Park 5 Director of Drainage and Irrigation Department 6 Director Wild Life Department	1. Community Leaders - Local people (JKKK/KK) - Farmers 2. Oil Palm Company 3. Timber company 4. NGO/Volunteer 5. Politicians

Primary Finding							
	a	b	c	d	e	f	g
1	Duplications Responsibilities	Unclear directive functions between water resources and the roles of Drainage & Irrigation Department (DID) as user and agency and regulator of water resources in Sabah.	Inefficient collobaration especially in decision making	Creates conflicts of jobs responsibilities	Definition of functions between Water Resources and Irrigation Department must be well define decisions	**Meeting between Stakeholders**: 1. Attorney General Office 2.Natural Resources Office 3.Irrigation Department	**Integrated approach:** Top management decision (State secretary)
2	Land Data and Forestry not integrated	District Land Boundary differ from Forest District area Customary Right	Create lope-hole opportunity for illegal logging, cultivation and settlers	Inadequate sharing land / forest data	Relevant law is not harmonized	**Coordination meeting** Stakeholders (Land Survey, Forestry and Native Council)	**Decision Making** State Attorney General decision

	a	b	c	d	e	f	g
3	Water Catchment Areas not gazetted	Agreeable watershed areas are not fully endorse by the stakeholders	Unofficial list of water catchment	list of watershed not recognise either by stackeholders	Sharing information, and challenges facing the watershed areas	**Integrated approach**: Exchange information with each other to manage watershed areas	Meeting: Meeting to endorse agreeable " **MASTERTLIST WATERCATCHMENT** AREAS) Councill to endorse and gazzete
4	Local people do not follow Land used zoning	30 % land used for Agriculture, 15% housing (residential), 55% Forest	Lands are owned before the existence of Forest Enactment and Land Ordinance	Local People refuse to move out from their customary land (customma ry right)	Create conflict between communities and relevant authoritiy (Land Survey and Forestry Department)	**Strategy-land use practices**; Individual land uses and community group to change their land use practice (do and don't) **Do**-type of allowed trees/paddy field, **Don't**-to avoid land degradation (use excessive fertilizer) Compensation – Move from a critical land livelihood activities that are sustainable development – enforce rule under Land Ordinance Cap.68 and Water Resources Enactment	**Capacity Building** To encourage the land owner/land occupiers to changes some of their traditional practice and quantity of soil being lost from thier land **" HARMONY WITH NATURE"**





Project Name: PILOT PROJECT GAZZETTEMENT OF BABAGON WATERCATHMENT AREA Duration: 6 months-1 year
Date: 11/11/2014
Target Area: Babagon , Penampang District_ Target Group: LOCAL COMMUNITY (LAND OWNER IN WATERCATCHMENT AREAS)

Summary of the Project Framework	Verifiable Indicator of Achievement	Means of Verifiable Indicator	Assumptions/Risks
Overall Goal Gazzettement of Babagon Water catchment Area	- Increase water usage - Increase tourism		Local people do not want to move out from their l Andintegrated watershed management plan prepared and executed
Project Goal **Urgent** : Effective watershed management Implementation	Complete land used Statistic of catchment areas: Proposed Area Acreage : 3,114 Hectare 7,695 acre),	Total area of alienated land : 1,324 hectare (3,271.7 acre)Acreage of Dam Area: 155 hec (384 acre), Area of Sabah Park: 705 hec (1741 acre), Approximate state land: 930 hectare (2,300 acre)	Local people do not want to move out form their land

Outputs			
1. Encroachment of watercatchment by local communities minimised 2. Village Head follow Stakeholder Directive 3. Job descriptions between Water Resources and Irrigation Dept. clear and well defined 4. Intergrated Law		1.1. awareness Program to be schedule 1.2. guidelines are ready 2.1 Existence of law that are applicable to their land 2.2 Guidelines are ready 3.1 Job description list are ready and well-defined 3.2 Terms of reference are ready 4.1. Conflict laws have been identified	stakeholders willing to use Catchment list as references Stakeholdres willing to share information on e.g. Boundary of FD and L&S

Activities	Inputs	Pre-conditions
1.1. Drawing Competition for children 1.2. collecting garbage near the riverbanks areas 1.3. February 2015, April 2015 Explanation of allowable trees that can be planted in their land and inform bad implication if they plant prohibited trees by the Stakeholders (Land and Survey, Forestry Department, Environment Protection Dept & Sabah Parks)	NGO / JICA / JKKK / KK Cooperation by JKKK/KK to increase community awareness LS/FD an d EIA	The Water Resources Council takes positive initiative for watershed declaration by organizing programme and availabe budget to be used in meeting/ dialogues andt etc
1.4. Land Survey will organize meeting to finalize the total of local population who want to move out from their land, and remain, end March 2015 **Design program/campaign**: 1.5 "**Love your watercatchment** " program with community, **every 6 months**	1.Health officer to explain the bad implication of contaminated water 2. Officer from Environment / Health Dept. office explain the importance of protecting water catchment	

Activities	Inputs	Pre-conditions
3.1. By January 2015, NRO organize pre-meeting between stakeholders to finalise the job descriptions : Water Resources and Irrigation Department 3.2 Middle January 2015, Second meeting to follow up **2nd drafted job description** 3.3 . Final meeting end January : **Job descriptions are final** ready to be announced for implementations. 3.4. **State Secretary will announce** the final job description between Water Resources Div/Irrigation Dept. **end February 2015**		

Activities	Inputs	Pre-conditions
2.1. **15 March 2015**, Explanation of legislation for nature conservation to the villages / discussion with the villages head/ Chief security committees about status of their land (customary right) by collaboration between stakeholders (land Office, NGO) : purpose is to explain that their lands are falls in water catchment areas (protected areas) Make campaign in local media about penalties for illegal activities 2.2. 30 March 2015, dialogue abut rules and regulation to local people if they decide to remain in their land, or if they opt to move out 2.2.1 awareness program with local people as well as school children will be schedules consistently 2.2.2 Dialogue with Head Village, Chairman of village security committee 2.2.3 Campaign "Love your Water catchment **WILL BE PUT IN ANNUAL CALENDAR**	EIA / LAND SURVEY / FD/ SABAH PARKS	The Water Resources Council takes positive initiative for watershed declaration and programme and budget approved and released in time by the stakeholders

Activities	Inputs	Pre-conditions
4.1. Meeting between stakeholders with Director of Natural Resources to **coordinate the amendment conflict t law** (Land Ordinance & Forest Enactment) 13 & 20 February 2015, 13 & 20 Mac 2015		Integrated watershed management plan prepared and executed
4.2. **State Attorney General** will make final announcement law that agreeable to stakeholders 4.3. Third week April to table to cabinet meeting for approval **Design program/campaign**: 3.1. "**Love your water cathcmnent** " program with community, **every 6 months**		

Gazzettement Option

Option 1 - Gazzettement Under Section 36

- **All alienated land would be acquired and compensated;**
- **Approved land application and not approved land application would be revoked;**
- **All the native customary rights land would be compensated.**

Gazzettement Option

Option 2 - Gazzettement Under Section 38

- **Control development of alienated land;**
- **Purpose of control alienating land.**

Option 3 – Gazzettement Under Section 36 & 38

- **Alienated land gazzettement Under Section 38;**
- **State land and Sabah Park area gazzettement Under Section 36.**

FOR REFERENCE ONLY (August 2010)

STATE OF SABAH

Assent,

TUN DATUK SERI PANGLIMA HAJI SAKARAN BIN DANDAI,
Yang di-Pertua Negeri

30TH SEPTEMBER, 1998.

No. 8 of 1998

An Enactment to provide for the sustainable management of the water resources of the State of Sabah, so as to promote the orderly, equitable and efficient use of water and to maximise its economic, social and environmental benefits for the future, and for other matters connected therewith and incidental thereto.

ENACTED by the Legislature of the State of Sabah as follows:

PART I
PRELIMINARY

Short title and commencement.

1. This Enactment may be cited as the Sabah Water Resources Enactment 1998 and shall come into force on such date as the Minister may, by notification in the Gazette, appoint.

Interpretation.

2. (1) In this Enactment, unless the context otherwise requires—

"statutory person" means a person designated in writing by the Director to be

Arigato Gozaimasu ,Thank You , terima kasih