

Mongolia  
Climate Change Research and Cooperation Center

Mongolia  
The Project for capacity development to  
establish a national GHG inventory cycle of  
continuous improvement  
Project Completion Report

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Japan International Cooperation Agency  
Mitsubishi UFJ Research and Consulting Co., Ltd.

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## Abbreviations

ADB	Asian Development Bank
AFOLU	Agriculture, Forestry and. Other Land Use
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
BTR	Biennial Transparency Report
BUR	Biennial Update Report
CBIT	Capacity Building Initiative for Transparency
CCPIU	Climate Change Project Implementation Unit
CCRCC	Climate Change Research Cooperation Center
DAC	Development Assistance Committee
ECF	Environment and Climate Fund
ETF	Enhanced transparency framework
ERC	Energy Regulatory Commission
FAQ	Frequently asked questions
FSV	Facilitative Sharing of Views
GCF	Green Climate Fund
GEF	Global Environment Facility
GGGI	Global Green Growth Institute
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICA	International Consultation and Analysis
IEA	International Energy Agency
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Product Use
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
LULUCF	Land Use, Land-Use Change and Forestry
MCAA	Civil Aviation Authority of Mongolia
MEEI	Mongolian Energy Economics Institute
MET	Ministry of Environment and Tourism
MoU	Memorandum of Understanding
MRPAM	Mineral Resources and Petroleum Authority
MRV	Measurable, Reportable, Verifiable
MUST	Mongolian University of Science and Technology
MURC	Mitsubishi UFJ Research and Consulting Co., Ltd.
NAMA	Nationally Appropriate Mitigate Action
NC	National Communication
NDC	Nationally Determined Contribution
NIR	National Inventory Report
NSO	National Statistics Office of Mongolia
OECC	Overseas Environmental Cooperation Center
OECD	Organisation for Economic Co-operation and Development
PDM	Project Design Matrix
PO	Plan of Operation
QA/QC	Quality Assurance / Quality Control
RAC	Refrigeration and air conditioning
R/D	Record of Discussion
REDD+	Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SDC	Swiss Agency for Development and Cooperation
TACCC	Transparency, Accuracy, Completeness, Comparability, Consistency
ToR	Terms of Reference
TTE	Team of technical experts
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

UN-REDD	United Nations collaborative programme on Reducing Emissions from Deforestation and forest Degradation <sup>46</sup>
WG	Working Group

## Chapter 1. Project overview

### 1. Country

Mongolia

### 2. Title of the Project

The Project for capacity development to establish a national GHG inventory cycle of continuous improvement

### 3. Duration of the Project

The duration of the Project was originally planned for four years from November 1, 2017 to October 31, 2021 but was later revised to November 1, 2017 to February 28, 2022 in response to the delay in the work due to stakeholders being infected by COVID19 and lockdowns in response to the pandemic.

### 4. Background of the Project

Based on the Copenhagen Accord, the government of Mongolia has submitted Nationally Appropriate Mitigation Action (NAMA) in January 2010. In October 2015, Mongolia submitted its Intended Nationally Determined Contribution (INDC), which was approved as the country's Nationally Determined Contribution (NDC) in September 2016. Even though the level of greenhouse gas (GHG) emissions remains significantly low in Mongolia, the carbon intensity is particularly high compared to its neighboring developed countries such as Japan and Korea, and mitigation policy in the energy sector is especially important. Therefore, continuous preparation and improvement of the GHG inventory is expected to contribute to the promotion of appropriate mitigation.

Between 1990 and 2014, Mongolia prepared GHG inventories four times, including their first/second National Communications prepared under the United Nations Framework Convention on Climate Change. However, preparations were carried out as individual projects, and the responsible organization changed every time, therefore Mongolia lacks institutional capacity to prepare the GHG inventory on a regular basis. The Environment and Climate Fund (ECF) under the Ministry of Environment and Tourism (MET) is in process of preparing the inventory for the Third National Communication as well as the first Biennial Update Report (BUR).

Since preparation of the GHG inventory is required on a regular basis under the UNFCCC, for the current implementation institution to continuously and stably prepare and improve inventory, the need for strengthening inventory systems in Mongolia, including capacity development of the responsible institution, is recognized. Based on such background, the government of Mongolia requested JICA for technical assistance in July 2014.

Japan International Cooperation Agency (JICA) conducted the First survey for detailed planning in January to February 2016 followed by the Second survey in April 2017. As a result, it was analyzed that there is a need for strengthening the capacity to plan and implement the countermeasures for cross-sectoral

issues and sectoral issues on the preparation of GHG inventories. With regards to the sectoral issues, since reduction of GHG emissions from energy sector and development of research methods for GHG emissions and removals from grassland were referred in relation to GHG inventory in the draft Action Plan for Implementation of Green Development Policy of Mongolia (2016-2030) led by MET, the energy sector and the Land Use, Land-Use Change and Forestry (LULUCF) sector were selected as the target area for the support.

The project aims to develop the capacity of Mongolia to establish a national GHG inventory cycle of continuous improvement. The Record of Discussion (R/D) of the project was signed between JICA, MET and ECF on June 27th, 2017.

5. Overall Goal and Project Purpose

Overall Goal

Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.

Project Purpose

The GHG inventory is regularly improved with the cooperation of relevant institutions.

Outputs and activities

Table 1 Project Outputs and activities

<p>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened.</p>	<p>1-1 : Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.          1-2 : Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues.          1-3 : Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.          1-4 : Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.          1-5 : Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.          1-6 : Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.          1-7 : Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.          1-8 : Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.          1-9 : Compile the results of improvement in 1-8 into a report.          1-10 : Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle.          1-11 : Revise and develop new Memorandum of Understanding (MOU) between MET/ [ECF] and data providers used in previous inventory preparation as</p>
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	<p>needed.</p> <p>1-12 : Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement.</p> <p>1-13 : Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>
<p>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</p>	<p>2-1 : Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>2-2 : Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>2-3 : Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into improvement guidance for priority issues of the Energy sector.</p> <p>2-4 : Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>2-5 : Analyze and compile the data collected in Activity 2-4 and organize them in an inventory format based on the improvement guidance.</p> <p>2-6 : Compile the results of improvements into a report.</p> <p>2-7 : Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p>
<p>Output 3: Capacity to organize the issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.</p>	<p>3-1 : Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.</p> <p>3-2 : Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.</p> <p>3-3 : Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.</p> <p>3-4 : Consider the research method/procedure, and compile into improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3.</p> <p>3-5 : Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.</p> <p>3-6 : Hold Working Group meetings to consider the technical aspect of research method, the results, and ways to use the research results to develop parameters and activity data.</p> <p>3-7 : Estimate emissions and removals based on the results of Activity 3-5.</p> <p>3-8 : Compile the results of the improvement into a report.</p> <p>3-9 : Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement.</p> <p>3-10 : Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance.(Combined with Activity 1-12.)</p>

## 6. Implementing structure

### Implementing structure of the Project

The implementation structure is shown in Figure 1. The agency that prepared the GHG inventory in Mongolia, which prepared NC3 and BUR1, is ECF. At the beginning of the project, ECF was the counterpart of the project (hereinafter referred to as C/P). However, in May 2020, there was a change in the organizational structure in Mongolia, and the CCPIU staff of the ECF changed their affiliation to the Climate Change Research Cooperation Center (CCRCC). Therefore, the project activities were carried out with CCRCC as the C/P from then on.

For the preparation of the GHG inventory, the ECF/CCRCC needs support and data from the Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE), the National Statistics Office of Mongolia (NSO), the Ministry of Mining and Heavy Industry, the Ministry of Energy, the Ministry of Road and Transport Development of Mongolia, the Geodesy and Mapping Department/Ministry of Land, Construction and Urban Planning, the Ministry of Food, Agriculture and Light Industry, the City of Ulaanbaatar, and other relevant stakeholders and these organizations were selected as the members of the Joint Coordinating Committee (JCC).

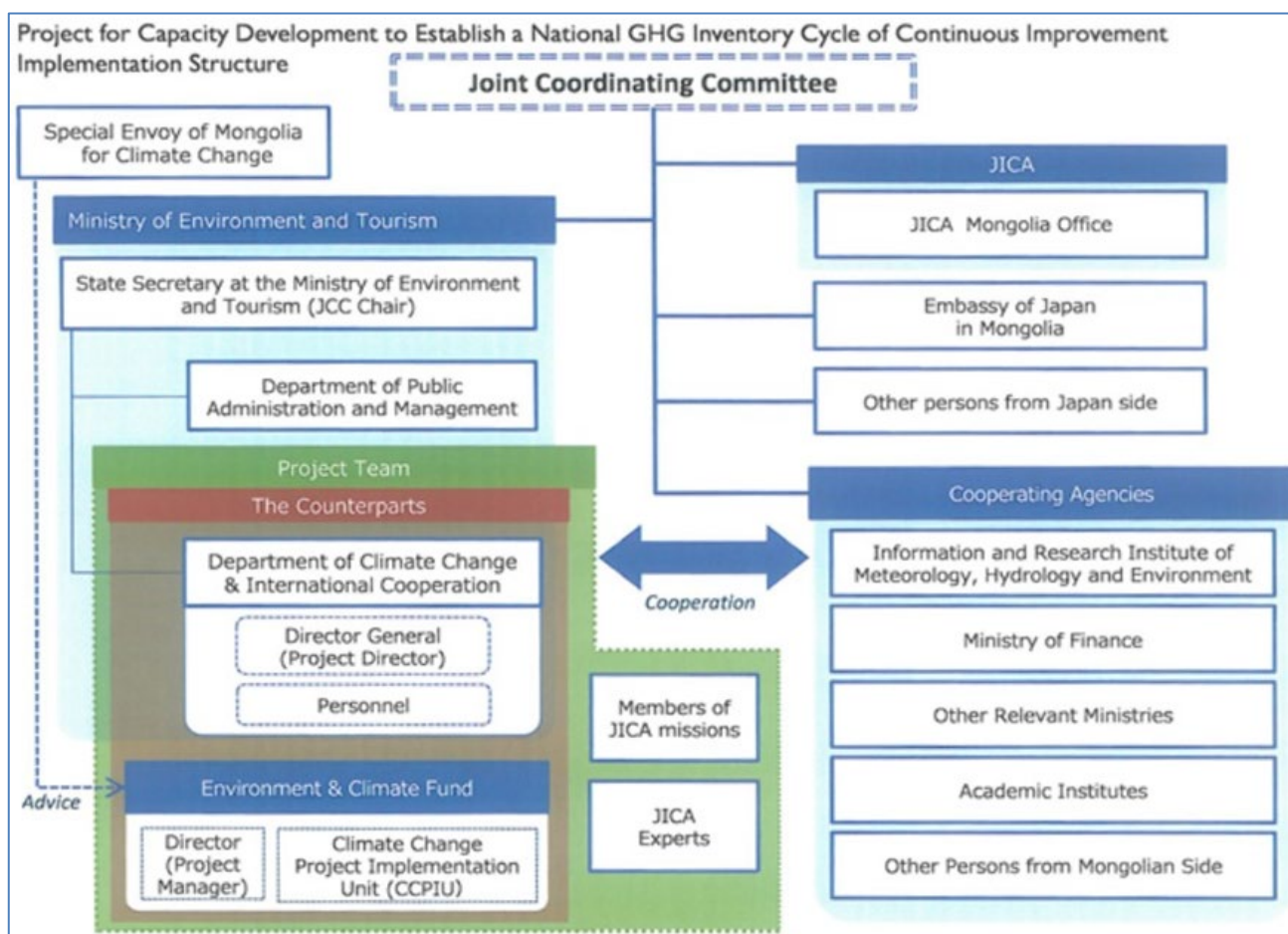


Figure 1 Implementing structure of the Project

Source: Record of Discussions of the Project, 2017

### Project counterpart members

The members of the main counterparts are shown in Table 1.

Table 1 Counterpart members

#	Name	Position	Organization
1	Batjargal Khandjav (~2020) Enkhbat Altangerel (2020~2022)	General Director, Climate Change Department	MET
2	Khurelbaatar Ganbaatar (~2020) Yeruult Bayart (2020~2022)	Director	CCRCC
3	Saruul Dolgorsuren (~2019)	Manager	CCRCC
4	Chuluunkhuu Baatar (~2020)	Manager	CCRCC
5	Undarmaa Khurelbaatar (2020~)	Manager	CCRCC
6	Tegshjargal Bumtsend	Energy sector, IPPU sector	CCRCC
7	Davaasambuu Davaa (2021~)	IPPU sector	CCRCC
8	Sanaa Enkhtaivah (~2018)	LULUCF sector	CCRCC
9	Dorjoo (2018~2019)	LULUCF sector	CCRCC
10	Khongor Tsogt (2018~2021)	LULUCF sector	CCRCC
11	Dr. Bujidmaa (2022)	LULUCF sector	CCRCC
12	Gerelmaa Shaariibuu	Waste sector	CCRCC

## JICA Project experts

The JICA Project experts are as shown in Table 2 . In addition, a long-term expert was dispatched to this project from March 2018 to March 2020, and the JICA project expert team implemented the project activities in collaboration with the long-term expert.

Table 2 JICA Project experts

#	Name	Position	Organization
1	Takeshi Enoki	Project leader/institutional arrangement	MURC
2	Hiroyuki Ueda (- August 2021) Akihiro Tamai (September 2021 ~ )	Energy sector	MURC OECC
3	Tomoki Takahashi (- April 2020) Maya Fukuda (April 2020~)	Energy sector	MURC
4	Atsushi Sato	Agriculture, LULUCF sector	MURC
5	Haruko Chikaraishi (- June 2018) Marie Iwadare (June 2018 - June 2020)	Agriculture, LULUCF sector	MURC
6	Satoshi Kawanishi	Agriculture, LULUCF sector	MURC
7	Keiichi Igarashi	Agriculture, LULUCF sector	MURC
8	Yui Ogawa	Work coordination/training	MURC

## Joint Coordination Committee (JCC) member agencies

The JCC member agencies are as follows:

### (1) Chair

Ministry of Environment and Tourism Secretary of State

### (2) Project team

#### 1) Project director

Ministry of Environment and Tourism Climate Change/International Cooperation director  
(current position: climate change director)

#### 2) Project manager

CCRCC Environment/climate fund director

#### 3) JICA mission members

#### 4) JICA experts

#### 5) Ministry of Environment and Tourism staff

#### 6) Environment/climate fund CCRCC staff

#### 7) Other parties agreed between counterpart and JICA

### (3) Other members in Mongolian side

#### 1) Cooperation partners

- Ministry of Finance



- Information and Research Institute of Meteorology, Hydrology and Environment (IRIMHE)
- National Statistical Office
- Ministry of Mining and Heavy Industry
- Ministry of Energy
- Ministry of Road and Transport Development of Mongolia
- Geodesy and Mapping Department/Ministry of Land, Construction and Urban Planning
- Ministry of Food, Agriculture and Light Industry
- City of Ulaanbaatar

## 7. Implementation approach and points to note

### 7.1 Cooperation based on collaboration with long-term experts (directly managed)

The project's long-term expert (March 2018 to March 2020) stationed at the C/P office and worked closely with the JICA project expert to implement the project activities. For the cross-cutting issues of Outcome 1, technology transfer was carried out efficiently in collaboration with the project' leader/in charge of institutional arrangements. In addition, the long-term experts conducted a fact-finding survey on unestimated source categories in the IPPU sector, which was identified as one of the priorities under Outcome 1 and contributed to improving the transparency and accuracy of the IPPU sector in Mongolia.

In addition to the activities of this project, the long-term expert also conducted technical inquiries and additional work for CCRCC staff and MET. For example, a recommendation paper was prepared for the MET on how to strengthen the MRV system, and a recommendation paper on the content of the UNFCCC resolution documents and establishing a cycle for developing, monitoring and updating mitigation actions in Mongolia was prepared with the Project leader/in charge of institutional arrangements staff, and policy recommendations from the project were also made.

### 7.2 The operation of the Project based on Project Design Matrix (PDM) and Plan of Operation (PO)

The operation of the Project was based on collaboration with C/P (counterpart) in line with PDM and PO, but the project period was extended by four months due to delays in work caused by the spread of coronaviruses.

### 7.3 Ensuring flexibility of the Project

The Project was initially designed to improve the GHG inventory system and the energy and LULUCF sectors, but at the request of ECF, it was decided to carry out improvement work also in the IPPU and waste areas where possible. Activities 1-1 to 1-6 included all sectors in the review, and the improvement plan also included the IPPU, agriculture, and waste sectors to allow for flexibility. The surveys and activities planned in other fields were difficult to realize due to lack of manpower on the part of CCRCC. However, in the IPPU sector, long-term experts conducted their own surveys and confirmed the actual status of emissions in unestimated source categories, which improved the transparency and accuracy of the sector.

Due to the spread of the new coronavirus and the resulting travel restrictions, the JICA project expert team

was not able to travel to Mongolia from March 2020 until the end of the cooperation period. As a result, the activities that were originally planned to be conducted in Mongolia were conducted remotely from outside Mongolia for about a year and a half, and the hearings, trainings, and meetings that were planned to be carried out in cooperation with C/P were switched to online meeting tools.

#### 7.4 Enhancing C/P ownership

In order to foster ownership of C/P members, the C/P continued to be front of the meeting and give presentations and address Q&A during conferences and workshops. Consequently, C/P ownership of the Project improved, and C/P can now express their will and participate in discussions at the meetings.

#### 7.5 Publicity

In carrying out the Project, in order to ensure that the public of Japan and Mongolia understand the significance, activities and results of this cooperation correctly, the Project members supported the drafting of the Project website, Facebook, the creation of Project summary, Project brief, and presentations by C/P at international conferences such as COP24.

#### 7.6 Coordination with support provided by other donors

In Mongolia, several climate change related projects by other donors were underway. The major projects of other donors related to this project are listed in Table 4. JICA experts followed up on the progress of these projects and considered collaboration with other donors to facilitate the improvement of GHG inventories in Mongolia, as needed.

As a result, although there was no active collaboration, we were able to obtain reference information that can be used as a clue to improve the inventory in the energy and waste sectors through interviews with other donors. Particularly in the energy sector, the data collected by the NSO and ADB energy account projects were used in the activities of Outcome 2, and useful use of results from other donor projects was possible.

Table 2 List of other Project of other donors

	Related sector	Project title	Donor	実施機関	Project purpose	Relation with GHG inventory	Coordination with JICA's project
1	Energy	ENEV3+	GIZ	Ministry of Energy Energy Regulation Committee	Promote/improve Mongolia's energy policy	GIZ advises the Energy Institute to contact the IEA to develop an energy balance	No need for close coordination, but Mr. Tssetsgee Sereejav has experience and networks with domestic energy experts that may be useful for the project.
2	Energy	Energy Efficient Building Rehabilitation in Ulaanbaatar	GIZ SDC BMZ	City of Ulaanbaatar	Introduce governance-related procedures and innovative technical knowledge developed under PIE 1 to the ger areas in the peri-urban belt of the capital Ulaanbaatar	Same as above	Same as above
3	Energy	Creation of energy account	ADB	NSO	Maintenance of energy accounts and other data for 2015 and 2016.	Original data used in project can be used in energy balance	Should ask NSO to share data on energy account project and consider using it in this project
4	Energy	Working group for energy balance table development	GIZ, IEA	The Mongolian Energy Economics Institute (MEEI)	Creating a national energy balance table	Energy balance table is used for activities in the energy sector for GHG inventory	JICA experts will provide technical and financial assistance to MEEI under the MoU.
5	Agriculture	Agriculture	GEF, CBIT	ECF	Reduce high uncertainty of activity data on mitigation actions / GHG inventories in the agricultural sector	May collect data on livestock as well as fertilizer fuel use for the energy sector	If the livestock population data collected is more accurate than international statistics, it can contribute to reducing uncertainty. The MRV Helpdesk may refer to the methodology for GHG inventory. Or they may be able to suggest improved methodologies for GHG inventories in the future
6	Cross- sectoral/industry/waste	MRV	GGGI	ECF	Development of sector MRV guidelines (incl. greenhouse gas inventories) for the industrial and waste sectors	Data collection for IPPU and waste sector; or may improve energy consumption in the industrial sector	Abolish the national MRV system structure, according to Anand, energy data in the industry may be input for MEEI's energy balance tables
7	Urban inventory	Promoting low-carbon development in planned cities for Central Asian regional economic cooperation	ADB	City of Ulaanbaatar	Aims to assist participating cities (China and Central Asia) to strengthen their climate change planning and implementation capacity	Not as extensive as state-level inventory	Propose an urban planning estimate of their inventory.
8	Energy	NAMA in the construction sector in Mongolia	UNDP	Ministry of Construction		Coal consumption data (stayed?) Can be collected through the project	Coal consumption data may be integrated within energy balance tables
9	Forestry	REDD+ National Forest Inventory in Mongolia	UN- REDD, GIZ	MET / MOFALI	Develop a methodology for the National Forestry Inventory (NFI)	For forest inventory, provides forest accumulation data based on the total estimated carbon concentration in the forest	The project will be completed in November 2018.
10	Energy	GCF preparation at the Hypoxic Region Global Warming Organization	UNEP, GCF	MET / Ministry of Energy	Preparation of a GCF funding proposal for the Ger district heating system project	None in particular	None in particular
11	Transparency	Information issue	GIZ	MET	MRV promotion	MRV and F-gas training workshop was held	None in particular
12	Waste	Waste and climate change	The Asian Foundation	MET/ City of Ulaanbaatar	Getting climate finance in the waste sector	Waste composition surveys will be conducted in Sept (summer) and Nov (winter) 2018	Waste composition data will be useful for estimating in the waste sector

## Chapter 2. Results of the Project

### 1. Results of the Project

Input by the Japanese side

#### A. Amount of input on the Japanese side

Operation cost by year is as shown in the table below.

Table 3 Operating cost by year

year	Local operation cost
2017	¥152,760
2018	¥3,702,743
2019	¥4,072,222
2020	¥5,468,508
2021/2022	¥11,281,106

#### B. Team of experts

The JICA Project expert team consisting eleven experts (short-term) were dispatched to Ulaanbaatar approximately four times a year to implement the Project activities. However, due to the spread of new coronavirus infection and the global travel restrictions, the JICA Project experts were not able to travel to Mongolia from February 2020 onward, until the end of the cooperation period. So, work originally planned in Mongolia were carried out remotely from outside Mongolia for approximately a year and a half. The MM invested in Mongolia was lower than originally planned. By the end of September 2021, the MM for the research conducted by JICA Project experts was 14.13 in Mongolia and 32.90 outside of Mongolia (remotely).

Table 4 shows MM for JICA Project experts and Table 55 shows travel results

Table 4 JICA Project experts' MM

Name	Expertise	Plan	Result
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	11.13	11.18
Hiroyuki Ueda (- August 2021)	GHG inventory (energy)	3.38	3.38
Akihiro Tamai (September 2021- )		1.05	1.05
Tomoki Takahashi (- April 2020)	GHG inventory (energy) / work coordination	4.13	4.13
Maya Fukuda (April 2020-)		4.20	4.30
Atsushi Sato	GHG inventory (LULUCF 1)	6.77	6.87
Haruko Chikaraishi (- June 2018)	GHG inventory (LULUCF 2)	0.97	0.97
Marie Iwadare (June 2018 - June 2020)		5.37	5.37
Satoshi Kawanishi	GHG inventory (LULUCF 3)	4.82	4.77
Keiichi Igarashi (June 2019 - January 2022)	GHG inventory (LULUCF 4)	1.43	1.18
Yui Ogawa		3.93	3.83

Table 5 JICA Project experts' missions

Name	Expertise	Rank	Mission duration <sup>1</sup>		Overview
			Start	End	
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2017/11/19	2017/11/29	Kickoff
Yui Ogawa	Work coordination / Training	6	2017/11/19	2017/11/29	Kickoff
Takeshi Enoki	General /GHG inventory (Institutional arrangements)	2	2018/1/10	2018/1/19	1 <sup>st</sup> JCC and workshop
Tomoki Takahashi	GHG inventory (Energy2)	5	2018/1/10	2018/1/17	1 <sup>st</sup> JCC and workshop
Atsushi Sato	GHG inventory (LULUCF1)	3	2018/1/10	2018/1/17	1 <sup>st</sup> JCC and workshop
Haruko Chikaraishi	GHG inventory (LULUCF2)	4	2018/1/10	2018/1/17	1 <sup>st</sup> JCC and workshop
Satoshi Kawanishi	GHG inventory (LULUCF3)	6	2018/1/11	2018/1/17	1 <sup>st</sup> JCC and workshop
Yui Ogawa	Work coordination / Training	6	2018/1/10	2018/1/19	1 <sup>st</sup> JCC and workshop
Tomoki Takahashi	GHG inventory (Energy 2)	5	2018/3/21	2018/3/28	Output2 research
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2018/3/26	2018/4/4	Output1 activities
Haruko Chikaraishi	GHG inventory (LULUCF2)	4	2018/3/29	2018/4/6	Sample survey prep
Atsushi Sato	GHG inventory (LULUCF1)	3	2018/4/1	2018/4/6	Output3 research
Satoshi Kawanishi	GHG inventory (LULUCF3)	6	2018/5/28	2018/6/1	Output1 (waste)
Atsushi Sato	GHG inventory (LULUCF1)	3	2018/5/29	2018/6/1	Output3 research
Atsushi Sato	GHG inventory (LULUCF1)	3	2018/6/11	2018/6/16	Output3 research
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2018/6/17	2018/6/22	Output1 activities
Yui Ogawa	Work coordination / Training	6	2018/6/17	2018/6/22	Output1 (data)
Tomoki Takahashi	GHG inventory (Energy 2)	5	2018/6/18	2018/6/22	Output2 research
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2018/8/19	2018/8/25	Output1 activities
Tomoki Takahashi	GHG inventory (Energy2)	5	2018/8/19	2018/8/25	Output2 research
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2018/8/30	2018/9/8	Output1 activities
Yui Ogawa	Work coordination / Training	6	2018/9/2	2018/9/8	Output1 (data)
Satoshi Kawanishi	GHG inventory (LULUCF3)	6	2018/9/2	2018/9/8	Sample survey prep
Marie Iwadare	GHG inventory (LULUCF2)	4	2018/9/2	2018/9/8	Sample survey prep
Atsushi Sato	GHG inventory (LULUCF1)	3	2018/11/5	2018/11/9	Output3 research
Yui Ogawa	Work coordination / Training	6	2018/11/11	2018/11/17	2 <sup>nd</sup> workshop
Hiroyuki Ueda	GHG inventory (Energy1)	3	2018/11/14	2018/11/17	2 <sup>nd</sup> workshop
Tomoki Takahashi	GHG inventory (Energy2)	5	2018/11/14	2018/11/23	2 <sup>nd</sup> workshop
Marie Iwadare	GHG inventory (LULUCF2)	4	2018/11/14	2018/11/23	2 <sup>nd</sup> workshop
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2018/11/14	2018/11/23	2 <sup>nd</sup> workshop
Atsushi Sato	GHG inventory (LULUCF1)	3	2018/11/15	2018/11/17	2 <sup>nd</sup> workshop
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2019/1/27	2019/2/2	Output1 activities
Atsushi Sato	GHG inventory (LULUCF1)	3	2019/2/25	2019/3/1	Output3 research

Marie Iwadare	GHG inventory (LULUCF2)	4	2019/3/13	2019/3/20	Sample survey prep
Yui Ogawa	Work coordination / Training	6	2019/4/7	2019/4/13	Output1 (data)
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2019/4/10	2019/4/20	Output1 activities
Tomoki Takahashi	GHG inventory (Energy2)	5	2019/4/14	2019/4/20	Output2 research
Atsushi Sato	GHG inventory (LULUCF1)	3	2019/4/15	2019/4/20	Output3 research
Satoshi Kawanishi	GHG inventory (LULUCF3)	6	2019/4/17	2019/4/23	Sample survey prep
Marie Iwadare	GHG inventory (LULUCF2)	4	2019/4/18	2019/4/23	Sample survey prep
Marie Iwadare	GHG inventory (LULUCF2)	4	2019/6/13	2019/6/22	Soil, biomass survey
Satoshi Kawanishi	GHG inventory (LULUCF3)	6	2019/6/13	2019/6/22	Soil, biomass survey
Marie Iwadare	GHG inventory (LULUCF2)	4	2019/8/11	2019/8/21	Biomass survey
Satoshi Kawanishi	GHG inventory (LULUCF3)	6	2019/8/11	2019/8/21	Biomass survey
Atsushi Sato	GHG inventory (LULUCF1)	3	2019/8/20	2019/8/28	Output3 research
Marie Iwadare	GHG inventory (LULUCF2)	4	2019/8/30	2019/9/11	Biomass survey
Keiichi Igarashi	GHG inventory (LULUCF4)	6	2019/8/30	2019/9/11	Biomass survey
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2019/9/11	2019/9/21	2 <sup>nd</sup> JCC
Tomoki Takahashi	GHG inventory (Energy2)	5	2019/9/18	2019/9/27	2 <sup>nd</sup> JCC
Yui Ogawa	Work coordination / Training	6	2019/9/18	2019/9/24	2 <sup>nd</sup> JCC
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2019/11/13	2019/11/20	Output1, 2
Atsushi Sato	GHG inventory (LULUCF1)	3	2019/11/10	2019/11/16	Output3 research
Takeshi Enoki	General/GHG inventory (Institutional arrangements)	2	2020/2/5	2020/2/12	Output1 activities
Atsushi Sato	GHG inventory (LULUCF1)	3	-	-	
Marie Iwadare	GHG inventory (LULUCF2)	4	-	-	

### C. Equipment

The following equipment was purchased and used for conducting Project activities as originally planned. These were handed over to the counterpart after the Project completion.

Table 6 Purchased and used equipment

Equipment	Quantity
Laptop computer	2
Printer	1
Windows software	1
Multifunction machine	1

Inputs by the Mongolian side

#### A. Experts

As described in section 0 of Chapter 1, eleven people were assigned as C/P members of the Project.

#### B. Working environment

The C/P provided access to working space and conference rooms with necessary equipment for JICA

Project experts.

C. Project expenses

The C/P provided personnel expenses for the C/P members.

Project activities

A. For “Output 1: Capacity to periodically and systematically collect and compile the data needed for national GHG inventories including implementation of QA/QC procedures is enhanced,” it is shown in Figure 2.

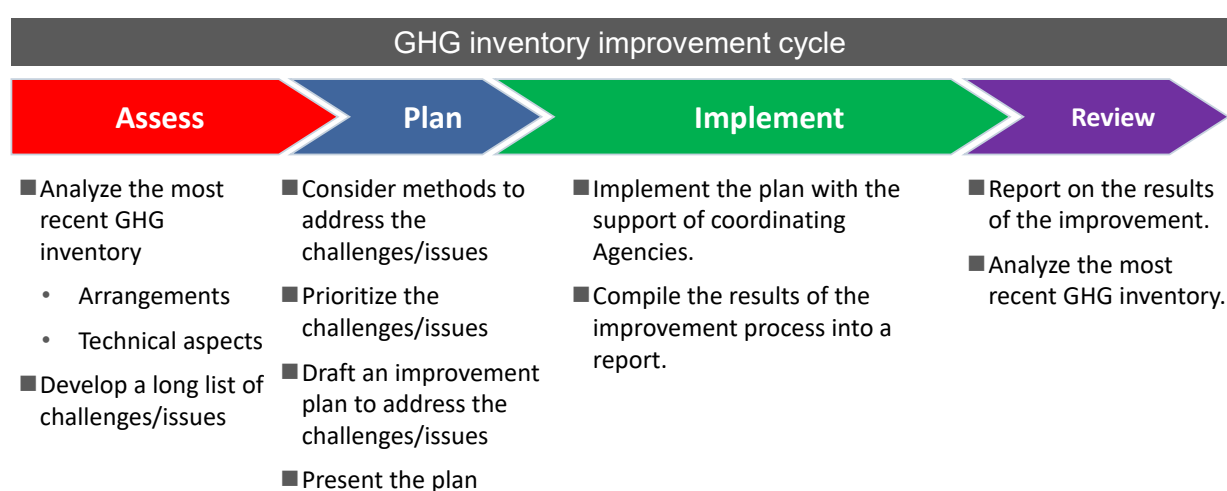


Figure 2 Flow of Output 1 activities

**The first cycle (2017 - 2019)**

Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.
Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues.
Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.
Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.
Activity 1-5: Determine the high priority issues from the long list developed in Activity1-4 that can be addressed through the Project.

Achieved

During the analysis phase of Activities 1-1 through 1-5, in addition to cross-cutting GHG inventory issues, BUR1 reviews were conducted for five GHG inventory sectors: energy, IPPU (industrial process and product use), agriculture, LULUCF, and waste. Initially, the technical review of Activity 1-2 was envisaged to be limited

to the energy and LULUCF sectors, which are the focus areas of the project, but in response to ECF's request for a detailed review of the industrial process, agriculture, and waste sectors, it was decided to conduct a technical review of all sectors. As a result, the review period, which was originally planned to be three months, took about nine months. The review was conducted by filling in the results of the review on a checklist prepared for each theme in each field. At the beginning of the project, it was planned to use 9 checklists to conduct the cross-cutting issues, energy sector, and LULUCF sector review, but as it turned out, 32 checklists were used, which required more time than originally expected.

All issues and potential problems identified in the technical review were compiled into a long list and prioritized, considering the importance of the GHG inventory category, the effect of increasing or decreasing emissions associated with improving the GHG inventory, and the time and cost required for improvement. Consequently, high-priority issues and potential problems to be addressed in the 2017-2019 GHG inventory were identified, and a short list (draft) was developed. In October 2018, for each of the short list issues/potential issues, JICA experts and ECF prepared a paper describing the overview of the issue/problem, steps to improve the issue/problem, relevant stakeholders and timeline for improvement, and compiled a draft GHG inventory improvement plan for all priority issues to be addressed in the first cycle for the GHG inventory improvement cycle.

Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.
Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.

Achieved

On November 16, 2018, JICA experts, in collaboration with MET and ECF, held a workshop for relevant institutions in the preparation of GHG inventory in Mongolia, which falls under Activity 1-6 (the second workshop of the Project). The purpose of the workshop was to share the contents of the improvement plan developed to solve the issues/problems identified in Activity 1-5, and to build cooperative relationships with related organizations for the implementation of the improvement plan. The results of the technical review conducted in activities 1-1 through 1-5, the long list, the short list, and the proposed improvement plan to resolve the issues/problems identified in the review were shared. Workshop participants showed a particularly high level of interest in the methods and results of prioritizing issues, and as a result of the discussions, the proposed improvement plan was accepted, and the improvement plan was finalized.

Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.
Activity 1-9: Compile the results of improvement in 1-8 into a report.

Achieved

Since the second workshop, JICA experts and ECF have conducted surveys and data collection according to the improvement plan. The main issues of the first cycle for GHG inventory improvement cycle are shown in Table 7.



Table 7 List of issues

Sector	Issue	Results of 1st cycle
Cross-sectoral	Mongolia does not have a plan or guideline which outlines the steps to prepare the inventory including quality control/quality assurance checks.	A Quality assurance/Quality control (QA/QC) plan in accordance with the IPCC Guidelines has been drafted.
	Archiving is not systematically carried out in Mongolia and previous files are not centrally stored or managed.	An archiving manual was drafted and is currently being tested.
	There has been insufficient public awareness of the climate change issue.	The JICA Project website and Facebook pages have been updated. ECF will update its website as soon as it has the necessary financial and human resources.
	The inventory report of Mongolia does not follow a consistent structure in each sector and lacks sufficient explanation of calculation methods and results.	A template for GHG inventory report was created.
Energy	See Output 2	
IPPU	Many emission sources in the IPPU sector have not been calculated or notation keys have not been reported due to lack of information.	A survey was conducted on whether GHG are being emitted from sources in the IPPU sector.
	HFC emissions of BUR1 inventory are calculated based on the project report by MET but MET project activities have been completed and no future data collection is planned.	Not yet started.
Agriculture	Some of emission sources in the agriculture sector have not been calculated or notation keys have not been reported due to lack of information.	It was confirmed that there is no need to report emissions (NO: Not Occurring) from rice cultivation.
Waste	Emissions from solid waste disposal sites (SWDS) in urban areas other than Ulaanbaatar and the rural areas have not been estimated.	Interviews were conducted, but the waste generation amount was not estimated during the reporting period.
	Emissions from sewage sludge and industrial solid waste (ISW) are not included in the current inventory.	Not yet started.

The most time-consuming part of this process was the drafting of the Quality Assurance/Quality Control (QA/QC) plan based on the IPCC guidelines.

ECF did not have a plan or guidelines to outline the procedures for preparing the inventory, and when preparing the GHG inventory for BUR1 and NC3, data collection and calculation were conducted without explaining the schedule for preparing the inventory and the expected roles to the relevant organizations, resulting in insufficient coordination with the related organizations.

The QA/QC plan is a document recommended in the IPCC Guidelines to be developed and updated as a tool to continuously develop and improve the GHG inventory, and includes the GHG inventory development system, procedures, work arrangements, QA/QC check procedures. By preparing this document, sharing it with relevant organizations, and positioning it as a consensus document, it is expected that the collaboration between

the ECF and relevant organizations will be strengthened, and the understanding of each stakeholder on inventory preparation will be deepened by documenting the inventory preparation procedure. Therefore, JICA experts and ECF jointly developed a draft QA/QC plan based on the IPCC guidelines.

Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle.

Achieved (limited)

The "National Manual on Procedures for Preparing GHG Inventories in Mongolia" was intended to be a comprehensive document on how to prepare GHG inventories in Mongolia, which was initiated more than a decade ago and has been in existence without being managed or updated. However, in discussions with the C/P institutions, it turned out that no one was able to capture the vision of the completed document, and the purpose of its creation was also not in a state to be confirmed. In addition, the international situation surrounding the climate issue is changing rapidly, and the document has already become outdated. Given these circumstances, it was determined that updating the document was not reasonable.

On the other hand, "lack of a plan or guideline to outline the procedure for creating an inventory," which was presumably the reason for creating the manual, had already been identified as one of the issues in Activity 1-5, and the development of a QA/QC plan had been agreed upon as an improvement plan for the same issue.

In addition, the preparation of BUR2 was scheduled during this project period, and NIR was also planned to be created as an annex to the BUR2. NIR covers the technical information and processes involved in compiling an inventory, including GHG emissions and sinks, data required for calculation, calculation methods, and emission factors. Therefore, after the completion of BUR2, it was considered possible to integrate and compile the QA/QC plan and NIR to create a manual that encompasses institutional and technical information for inventory preparation in Mongolia.

Considering the above, the JICA expert team and the C/P shared the understanding that the development of the QA/QC plan and the preparation of the BUR2 would replace activity 1-10 and agreed to have another discussion after the completion of the BUR2. However, BUR2 was not actually completed during the project period, and this activity was terminated with the completion of the QA/QC plan.

The main issues of the QA/QC plan are as follows:

- Legal basis for GHG inventory preparation
- Purpose of the QA/QC plan
- Roles and responsibilities of each stakeholder
- Inventory cycle
- QC checklist

**【Legal basis for GHG inventory preparation】**

According to Article 24 of the Atmosphere Law, the Mongolian Ministry of Environment and Tourism (MET) is responsible for the development, update and implementation of climate-related policies and is the body responsible for the preparation of national reports (NC), biennial update reports (BUR) and GHG inventories submitted to the UNFCCC. In 2015, the Climate Change Project Implementation Unit (CCPIU) was established

within the Nature Conservation Fund (currently CCRCC), which is responsible for UNFCCC-related work under MET's leadership. In 2019, the MET established the National Climate Committee (NCC), a cross-agency body to consider national adaptation and mitigation measures. The NCC is responsible for reviewing national climate change measures and approving documents and reports to be submitted to the UNFCCC and will act as the final approving body for the GHG inventory.

**【Purpose of the QA/QC plan】**

By complying with and regularly updating the QA/QC plan, the inventory agency can ensure the GHG inventory principles of Transparency, Accuracy, chronological Consistency, Comparability and Completeness (TACCC) are met. In addition, the introduction of the PDCA cycle into this plan will achieve the project's goal of continuous improvement of the inventory.

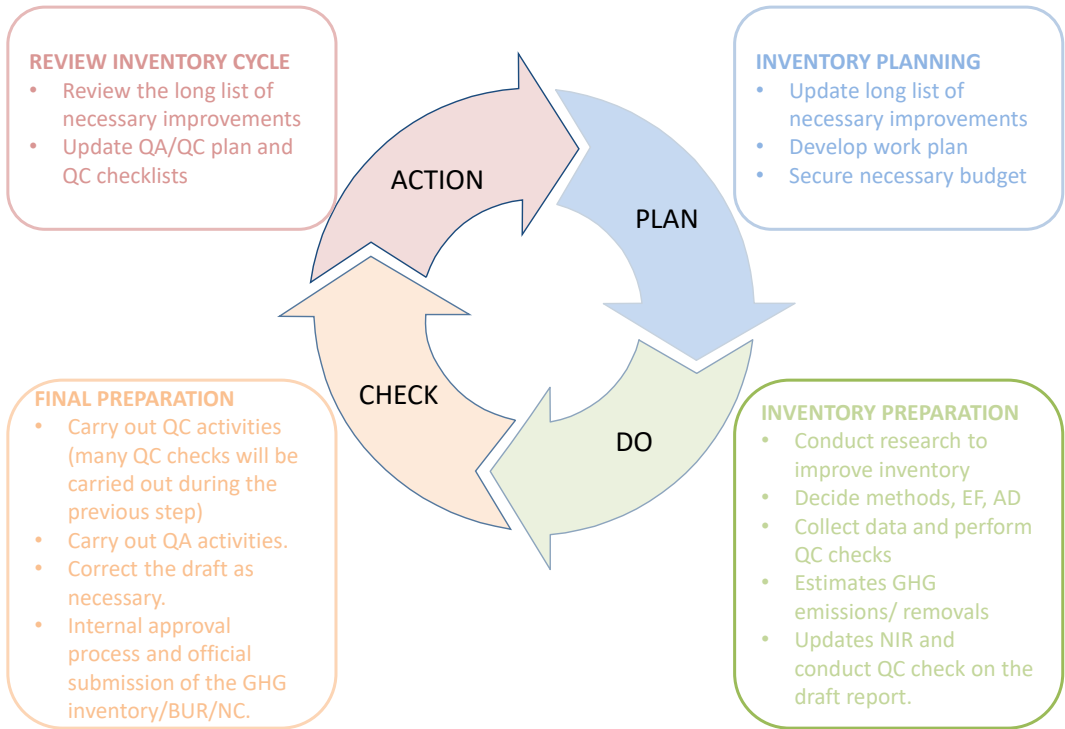


Figure 3 PDCA cycle for GHG inventory

**【Roles and responsibilities of each stakeholder】**

The MET is the agency responsible for the GHG inventory preparation, and the CCPIU within the ECF is the operational unit which collects data from related ministries, databases and local governments and estimates GHG emissions and sinks. In addition, the ECF will establish an expert working group to review and approve inventory improvement items and address highly specialized issues as needed. In such a case, the ECF will act as the secretariat of the expert working group and request the participation of external experts who are familiar with the issues under consideration. The working group members will provide technical consultation, guidance, support, and data to the MET/ECF, and will also review and approve the improvement proposals made by the MET/ECF. A diagram of the inventory preparation system and an overview of the roles of the expert working group are shown in Figure 4 and Figure 5.

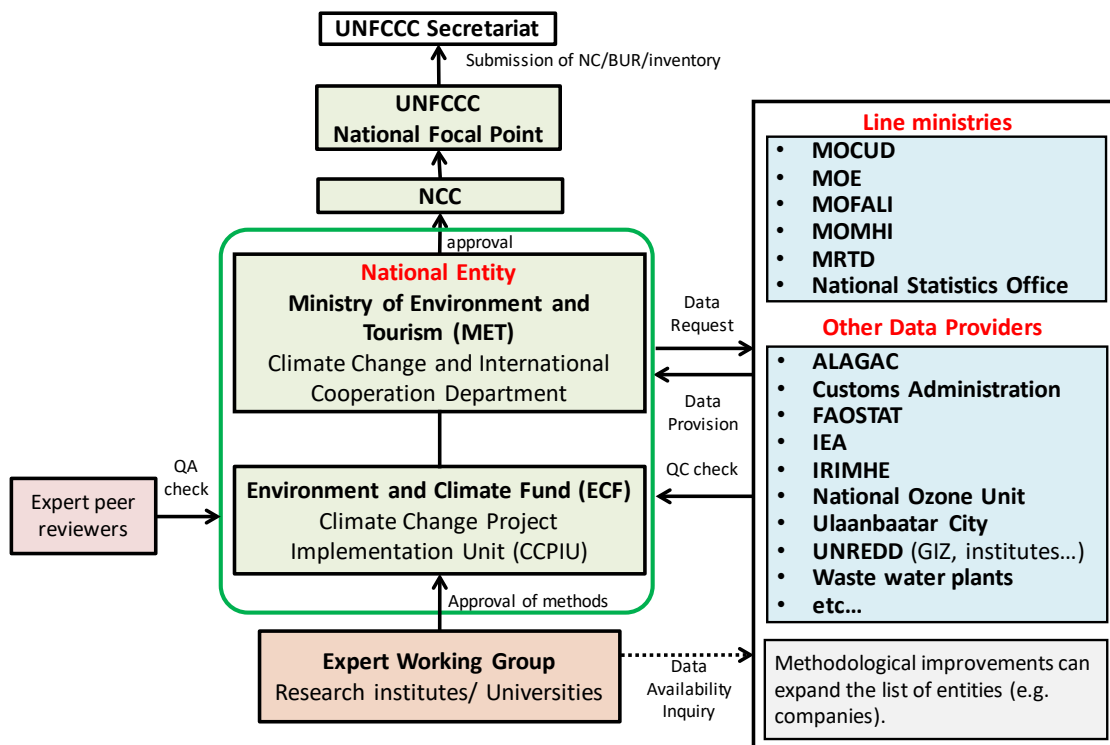


Figure 4 GHG inventory preparation system

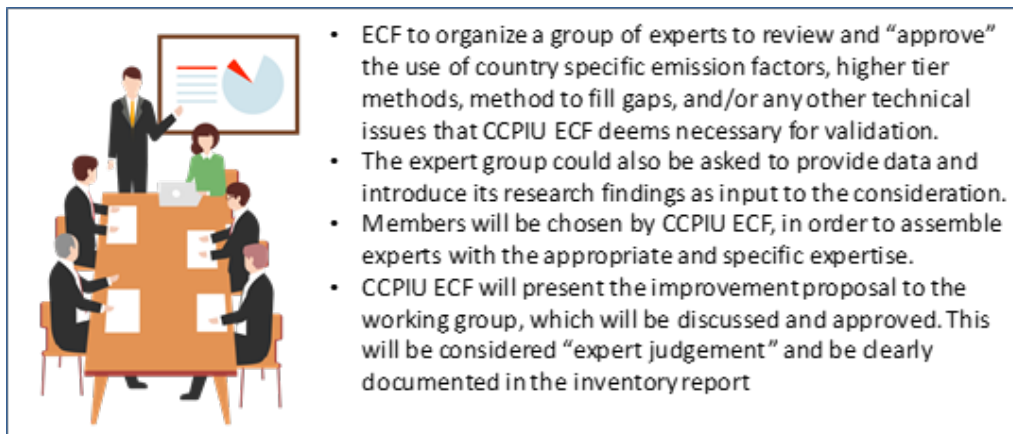


Figure 5 Overview of the roles of the expert working group

**【Inventory cycle】**

A GHG inventory preparation schedule in line with the BUR submission was discussed with the ECF and a timeline was developed to visualize the process of preparing the GHG inventory and the level of stakeholder involvement. The purpose of including the inventory preparation schedule in the QA/QC plan is to show each stakeholder what activities will occur at what point in the inventory preparation cycle, and to ensure that the inventory is prepared in a planned manner.

Table 8 Schedule table

	Stakeholder					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	ECF	MET	data providers	Expert working group	external expert																								
<b>INVENTORY PLANNING</b>																													
Review the previous inventory	●					→	→																						
Update the list of necessary improvements	●					→	→	→														→	→						
Developing work plan	●	⊙				→	→	→	→																				
Hold inception workshop	●	⊙	○	○	○						★																		
<b>INVENTORY PREPARATION</b>																													
Short term improvement activities	●		○	⊙					→	→	→	→	→	→	→	→													
Long-term Research/improvement activity	●		○	⊙					→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
<b>Data collection</b>																													
Prepare request format	●											→	→		→	→													
Dispatch letter	●											→			→														
Fill and send back			●										→	→	→	→	→	→											
Data QC	●																	→	→										
<b>Compilation</b>																													
Prepare DB	●														→	→	→	→	→	→	→	→	→	→					
GHG estimation	●																→	→	→	→	→	→	→	→					
Draft NIR	●																				→	→	→	→					
Report QC	●																					→	→						
<b>FINAL PREPARATION</b>																													
Carry out final QC activities	●																					→	→						
Review workshop	●		○	○	○																		★						
QA	⊙				●																	→	→	→	→				
Circulate draft for review			●																			→			→				
Modification	●																							→	→				
Validation workshop	●	⊙																											
Submission	●																											★	▲
<b>REVIEW INVENOTRY CYCLE</b>																													
Update the list of necessary improvements	●																												→
Update QA/QC Plan	●																												→

●: lead stakeholder, ⊙: sub lead stakeholder, ○ participants

**【QC Checklist】**

A collection of simple QC checklists was prepared based on the 2006 IPCC guidelines. Each CCPIU member will fill in each checklist in the process of preparing calculation files and reports.

Table 9 List of personnel in charge of preparing the GHG inventory

QC PERSONNEL LIST			
Year of submission:			
Title	QC Responsibility	Name	Contact Information
Inventory Lead	All aspects of the inventory programme, cross cutting QC and implementing overall QA/QC plan		
Sector Leads	Implementing QC procedures for each sector		
	Energy sector		
	IPPU sector		
	Agriculture sector		
	LULUCF sector		
	Waste sector		
Archive/IT	Maintaining hard copy archive and file server		

Table 10 QC management checklist

QC MANAGEMENT CHECKLIST		
Year of submission:		
Activities	Task Completed	
	Name	Date
Update QC checklists as appropriate		
Clarify and communicate QC responsibilities and deadlines to inventory team members.		
Distribute QC checklist to appropriate inventory team members and set deadline for completion.		
Fill the list of recalculation/improvement.		
Collect completed QC checklists and forms.		
Crosscutting		
Inventory Report		
Energy		
IPPU		
Agriculture		
LULUCF		
Waste		
Endorsement		
Review completed QC checklists and forms for completeness and accuracy.		

Table 11 Inventory report format checklist

INVENTORY REPORT FORMAT CHECKLIST		
Year of submission:		
Activities	Individual (first initial, last name)	Date
<b>Front Section (For inventory lead or the person in charge of the section)</b>		
Cover page has correct date, title, and contact address		
Confirm that there is no error indication in field codes (e.g. table of contents, figure/table/reference/footnote numbers).		
Check the field code of the final pages/tables/figures of each chapter matches with indexes.		
The Executive Summary and Introduction are updated with appropriate years and discussion of trends		
<b>Tables and Figures (For inventory lead)</b>		
All numbers in tables match numbers in spreadsheets		
Check that all tables have correct number of significant digits (e.g. down to 2 decimal places for CO <sub>2</sub> equivalent)		
Check that table formatting is consistent		
Check that all figures are updated with new data and referenced in the text		
Check table and figure titles for accuracy and consistency with content		
<b>References (For inventory lead or archive)</b>		
Check consistency of references, and that in text citations and references match		
Check if cited webpages are available online and a copy is archived.		
<b>General Format (For inventory lead)</b>		
Use "find" command on MSWord to find spelled-out acronyms to confirm that all acronyms are spelled out first time and not subsequent times throughout each chapter		
All fonts in text, headings, titles, and subheadings are consistent		
All highlighting, notes, and comments are removed from document		
Size, style, and indenting of bullets are consistent		
Spell check is complete		
<b>Other Issues (Anybody)</b>		
Check that each section is updated with current year		

Activity 1-11: Revise and develop new Memorandum of Understanding (MOU) between MET/ [ECF] and data providers used in previous inventory preparation as needed.

Not applicable

ECF signed a MoU with MET and relevant stakeholders at the time of preparation of BUR1, so revision and new preparation was not necessary. Under Outcome 2, MoU has been signed between this Project and Mongolian Energy Economics Institute (MEEI), which is a stakeholder in energy sector, and National Statistics Office (NSO) of Mongolia, to establish a cooperative framework for data sharing and energy balance table preparation.

Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement.

Unachieved

Due partly to the spread of the coronavirus, no meetings were held with many stakeholders. However, the results of the first cycle of cross-cutting issues, energy sector and LULUCF sector were confirmed by JICA project experts and CCRCC staff.

Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.

Achieved

The JICA experts and the ECF have prepared an archiving manual based on the 2006 IPCC Guidelines. We have organized the calculation files and reference information, guidance on file names, use of network servers, and archiving checklists, and tested this manual and checklists in the BUR2 creation process. The manual is made up of four components, namely, 1. The meaning of archiving, 2. Files to be archived, 3. Archiving method, and 4. Archiving checklist. Excerpts from this manual are provided below.

## 2. List of items for archiving and archiving method

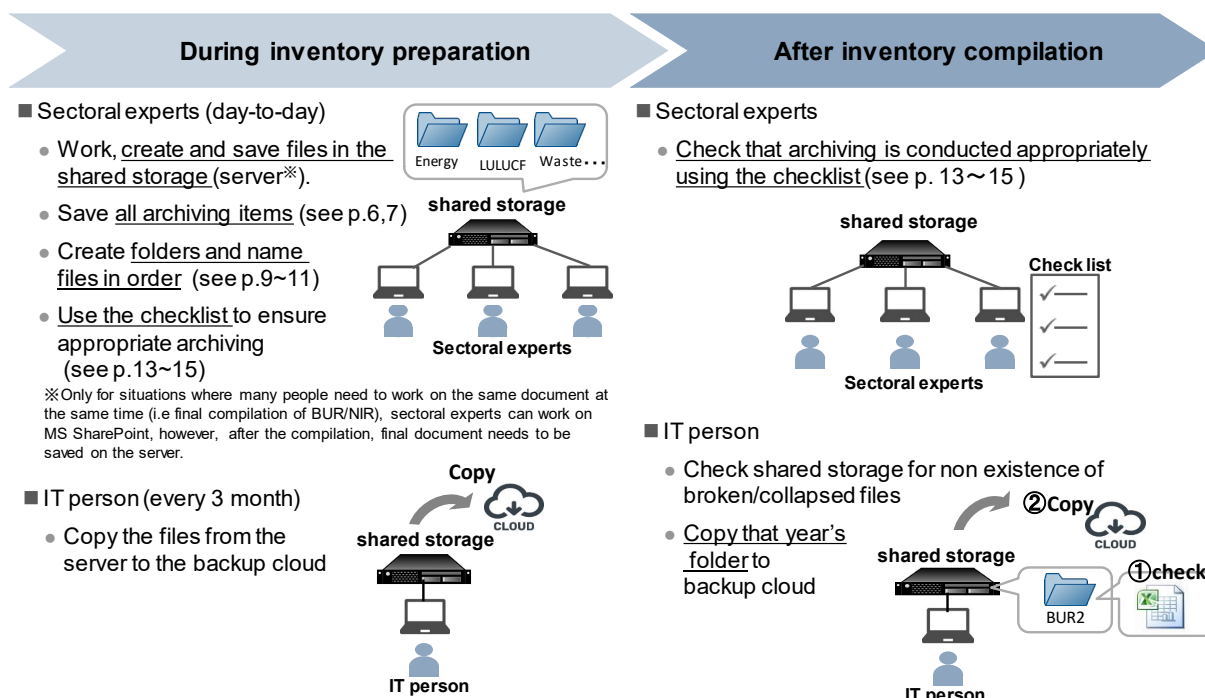
- Items included in NIR: archive NIR
- Items not included in NIR: additional documents need to be archived

Theme	Item	Archiving methods	
		NIR	Additional document
Institutional Arrangements	Institutional Arrangements	✓	Not needed
	Responsibilities		
	Procedures for planning, preparation, and management of the inventory process		
Emission Factors, Activity Data and other parameters	EFs, AD and other parameters for the reported time series	✓	✓
	Assumptions and criteria for the selection of EFs and AD	✓	✓
	The methods for generation and aggregation	✓	Not needed
	Reference source incl. IPCC default factors	✓	Not needed
Uncertainties	Uncertainty associated with AD and EFs	✓	Not needed
Methods	Methods used (incl. methods for uncertainty estimates and recalculations)	✓	✓
	The rationale for choice of methods	✓	✓



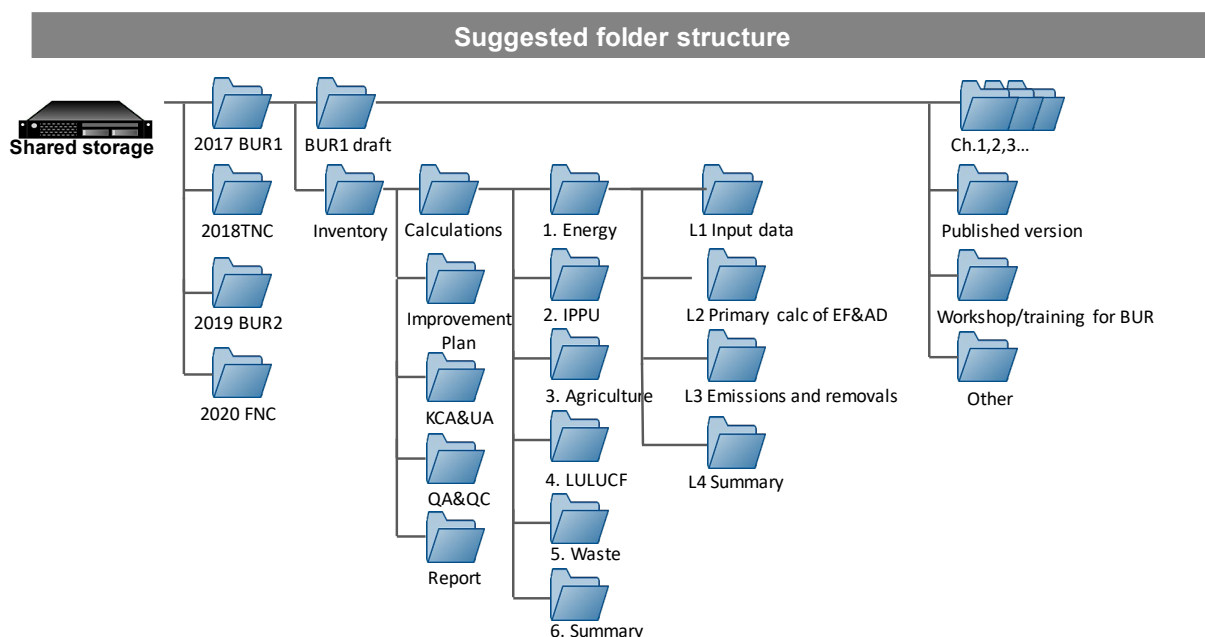
Theme	Item	Archiving methods	
		NIR	Additional document
Expert judgement	Individuals providing expert judgement for uncertainty estimates	NA	✓
	Their qualifications for the judgement		
Recalculations	Changes in data inputs or methods from previous inventories	NA	✓
Key Category Analysis	Key Category Analysis	✓	Not needed
Trend analysis	Any analysis of trends from previous years	✓	✓
QA/QC activities	QA/QC plan	NA	✓
	Outcomes of QA/QC procedures	NA	✓
Planned improvement	Planned improvement	✓	✓
Results of ICA	Results of ICA (documentation of TA, FSV)	NA	✓
Calculation worksheets	Worksheets and interim calculations for category estimates	NA	✓
	Aggregated estimates and any recalculations of previous estimates	NA	✓
Complete datasets	complete datasets that are used in inventory development	NA	✓
Electronic data bases and software	Electronic databases or software used in the production of the inventory	NA	✓

### 3.a. Documentation and archiving procedure: electronic data



### 3.b. Folder structure

- Create folders in a way that is easy for everyone in the team to access necessary data and archive important items.



### 4. Archiving checklist

- Below checklist should be used by **all sectoral experts** and **by IT person** to check whether archiving is conducted appropriately.

#### Check list for sectoral experts

1. **At the end of every month:** Check the following checkpoints and **tick the box**.

Check Point	Jan	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>Electronic data</b>												
Are you <b>working and saving files on the server</b> ?												
Are <b>the items listed in the Archiving manual</b> saved as you progress with the compilation?												
Are saved <b>files named according to the rule</b> ?												
Are <b>files saved according to the agreed folder structure</b> ?												
<b>Paper data</b>												
Have you <b>scanned and saved important paper documents on the server</b> ?												
Have you <b>stored paper documents in your cabinet</b> ?												

## The second cycle (2020 - 2022)

Activity 1-1: Review the current institutional, procedural, and legal arrangements of the national GHG inventory and develop a list of issues.
Activity 1-2: Conduct a technical review of the previous inventory (calculation methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issue.
Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.
Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.
Activity 1-5: Determine the high priority issues from the long list developed in Activity1-4 that can be addressed through the Project.
Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.

Achieved

The second improvement cycle of GHG inventory review was for the BUR2 GHG inventory, which was due to be submitted during 2019; no new review was conducted because the BUR2 GHG inventory was not completed due to delays in applying to the GEF to create a BUR. Reviewed the long list and the list of priority issues created in the first cycle, and discussed and selected the priority issues with the CCRCC, resulting in the decision to address the improvement of the IPPU sector as a priority issue in the second cycle,

Mongolia's BUR1 included a GHG inventory for 2014, which included emissions of HFCs, a type of GHG. However, this relied on one-time data prepared by an international cooperation project to support the ratification of the Kigali amendment to the Montreal Protocol, and its continued production and improvement could not be expected. In addition, for the entire IPPU sector, including HFC emissions, issues arose, such as the data used up to BUR1 no longer being updated, and additional discussions were necessary for continued preparation and improvement.

In the second cycle, we 1) verified whether the data from the Kigali Amendment Ratification Support Project and the data newly collected in this project by the local consultants involved in the project can be used for GHG inventory calculation, and if necessary, process the data to make it available for calculation, and transfer the method to CCRCC; 2) supported the preparation of a manual to enable the CCRCC and other Mongolian government agencies to follow the data collection methods of the local consultants; 3) developed proposed methodological improvements for other IPPU sectors and drafted guidelines for further improvements. In addition, since there are many cross-cutting issues with the energy sector in the IPPU sector, such as the use of coal and other materials in steelmaking and the use of lubricating oil, we also examined the avoidance of double counting with the energy sector.

Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters)
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based on the GHG inventory improvement plan developed in Activity 1-7.

Activity 1-9: Compile the results of improvement in 1-8 into a report.

Achieved

Annual import volume of HFC is important as an activity volume for calculating emissions. In the Kigali Amendment Ratification Support Project, it surveyed the import volume of bulk refrigerants by refrigerant type and the average refrigerant capacity per unit of pre-charged (pre-infused at the time of manufacture) refrigerants for equipment by model and refrigerant type from 2012 to 2015 and combined these data with customs records of equipment imports to calculate the import volume of pre-charged refrigerants. Applying the method at this time, data from 2016 to 2020 was prepared in this project. Furthermore, a manual for CCRCC to continuously monitor bulk refrigerant imports and estimate pre-charge import volumes was prepared in cooperation with local consultants.

In addition, for GHG emissions from cement manufacturing and steelmaking, we reviewed the proposal for improvement of the calculation method, updated the information on unestimated source categories, and prepared a report with the details of HFC calculations in the NIR template created in the first cycle.

Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement

Unachieved

Due partly to the spread of the coronavirus, no meetings were held with many stakeholders. However, as in the first cycle, results of the improvements in the IPPU sector were confirmed by JICA project experts and CCRCC staff.

## B. Output 2

For "Output 2 : Capacity to facilitate understanding of GHG inventory is strengthened", it is shown in Figure 6.

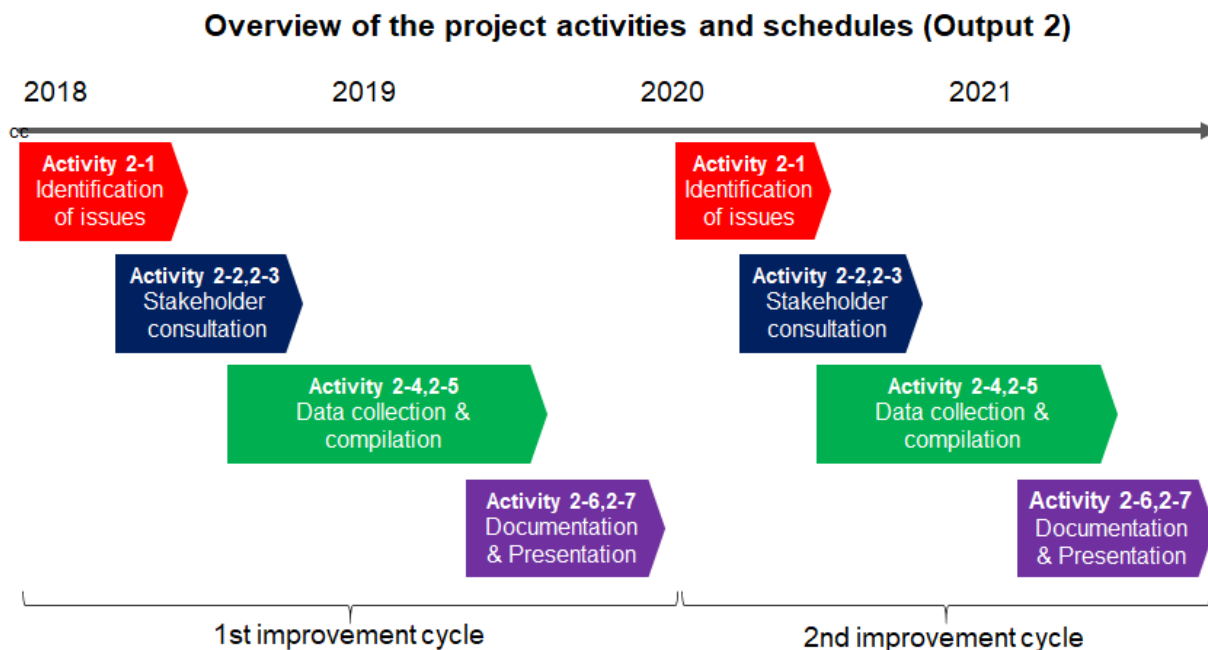


Figure 6 Flow of Output 2 activities

**【The first cycle】**

Activity 2-1 : Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2

Achieved

A review of the energy sector was conducted and the following issues were identified as high priority: (1) preparation of a national energy balance table, (2) collection of industrial energy consumption data by major industries, (3) improvement of the methodology for calculating GHG emissions from international aviation bunkers, (4) investigation of the causes of differences between the sectoral and reference approaches, and (5) fact-finding survey of the unestimated category of leakage from fuels.

Activity 2-2 : Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.

After getting information that the Mongolian Energy Economics Institute (MEEI) was planning to work on the development of an energy balance table for Mongolia, JICA Project experts decided to strengthen the capacity of the MEEI to develop an energy balance table, instead of providing energy survey support to the CCRCC as originally intended, in order to avoid duplication of work with the MEEI. As a result of discussions with CCRCC and MEEI, JICA experts and MEEI agreed on the details of JICA support and signed an MoU on effective collaboration to establish the national institutions necessary for MEEI to develop an energy balance table in a continuous and sustainable manner.

Meanwhile, the NSO is planning to prepare an energy balance table based on its experience in developing energy accounts with the Asian Development Bank, and after a series of consultations with the NSO, JICA

experts agreed on a MoU with the NSO on technical cooperation for the preparation of a national energy balance table in February 2019. The content of the MoU is almost the same as the MoU concluded with MEEI. The two organizations had been working on separate initiatives for the preparation of the energy balance table, but under this Project, both organizations have decided to jointly review and work on the issue.

Activity 2-3 : Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into improvement guidance for priority issues of the Energy sector.

Regarding the preparation of the energy balance table, it was decided that the measures to resolve the issues would be implemented under the Working Group (WG) of MEEI, and that this Project would confirm the progress of the WG activities and provide partial support. However, as a result, MEEI never held a WG.

On November 21, 2018, JICA experts and ECF held a technical seminar on energy balance tables for MEEI staff to share Japan's experience in preparing national energy balance tables and the results of analysis of Mongolia's current national energy balance tables conducted by JICA experts. The technical seminar was successful in providing MEEI staff with technical information on energy balance development. MEEI staff actively participated in technical discussions with JICA experts and ECF, and through these discussions, MEEI recognized that a great deal of effort is needed to develop a national energy balance, especially from the planning stage.

On April 17, 2019, JICA experts and CCRCC conducted a technical seminar on energy balance tables for NSO, which was like the one conducted for MEEI. JICA experts and the NSO, through discussions during the seminar and post-seminar meetings, agreed to begin filling in the International Energy Agency (IEA) template of the energy balance table with the data currently being collected by the NSO to identify gaps.

Activity 2-4 : Collect data identified in Activity 2-3 based on the improvement guidance.

A draft energy balance table jointly prepared by MEEI and NSO was submitted in September 2019, and JICA Project experts continuously discussed and explained how to prepare the NSO/MEEI energy balance table and technical issues and modifications to improve it. They also discussed the system for preparing the energy balance table and JICA's support for NSO and MEEI and provided input on the need for continuous preparation of the energy balance table and created explanatory materials for budget acquisition.

Activity 2-5 : Analyze and compile the data collected in Activity 2-4 and organize them in an inventory format based on the improvement guidance.

In the first cycle, the energy balance table for 2015 and 2016 were not finalized, so a usable format for the GHG inventory was not created.

Activity 2-6 : Compile the results of improvements into a report.

Activity 2-7 : Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)

The third workshop of this Project (Output 2) was held to communicate the results of the first cycle and to explain the proposed activity plan for the second cycle. The workshop participants also agreed to establish a working group for the energy balance table under the Project and agreed on the action plan for the second improvement cycle.

A draft energy balance table was completed in 2019, but both NSO and MEEI confirmed that their plans including securing the budget for post-2020 activities are unclear. In order to secure the budget within each institution, JICA experts prepared materials on the significance of continuous preparation of the energy balance table and provided them to both institutions, supported their work to secure the budget for the preparation of the energy balance table. An excerpt of the materials is indicated below.

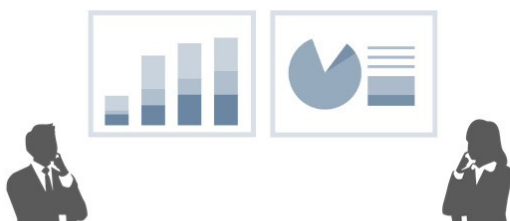
## The Energy Balance table is the basis for energy/climate change policy

- The energy balance table is used to understand the current energy production/consumption in addition to forecast these into the future
- This analysis is the foundation for a country's national energy/climate change policy

### Energy/climate change policy development process

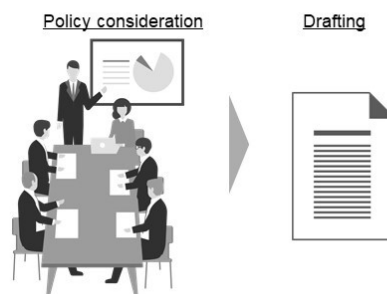
#### Analysis of energy production/consumption

- Analysis of current and future energy production/consumption
  - Can domestic production cover the future forecasted energy consumption? What are the import/export potential?
  - What are the fuels/flows that are consuming the most in the country? In the future?/etc.



#### Energy climate change policy consideration

- Based on the analysis, the country can plan effective energy and climate change policies
  - If imports are necessary, where are the potential countries that can supply?
  - Where are the largest potential for CO<sub>2</sub> emission reduction,
- This then can be monitored by analyzing the energy balance table regularly



## EBT is a secondary statistic, primary statistics needed

- The EBT is a secondary statistic, which is compiled using many government statistics
- The EBT compiler needs to collate and compile energy data from several government agencies and private sector bodies (in some cases, estimation is necessary)
- Energy supply and consumption are taken from different statistics and may not match. Therefore, some estimation is necessary to balance the data.

### Statistics used in Japan's EBT

Sector	Examples of base data
<b>Energy Transformation &amp; Own Use</b>	<ul style="list-style-type: none"> <li>■ Profile of Supply and Demand for Electric Power (ANRE)</li> <li>■ Statistical Survey on Gas Utility Industry (ANRE)</li> </ul>
<b>Industry</b>	<ul style="list-style-type: none"> <li>■ Yearbook of the Current Survey of Energy Consumption (METI)</li> <li>■ Energy Consumption Census (ANRE)</li> </ul>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>■ Statistical Yearbook of Motor Vehicle Fuel Consumption (MLIT)</li> <li>■ Statistical Survey on Coastwise Vessel Transport (MLIT)</li> <li>■ Statistical Yearbook of Air Transport (MLIT)</li> <li>■ Energy consumption and CO<sub>2</sub> emissions from motorcycles (MOE)</li> </ul>
<b>Commercial</b>	<ul style="list-style-type: none"> <li>■ Energy Consumption Census (ANRE)</li> </ul>
<b>Residential</b>	<ul style="list-style-type: none"> <li>■ Annual Report on the Family Income and Expenditure Survey (MIC)</li> </ul>

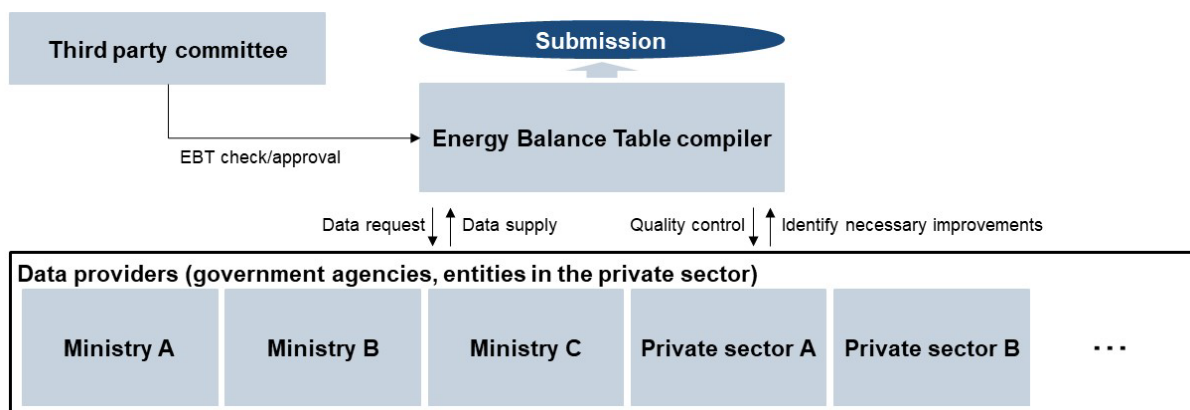
Source: Kainou (2015) Development of 2013FY version of "General Energy Statistics of Japan", Kainou (2012) Description of the General Energy Statistics



## Institutional arrangements are necessary for the development of the EBT

- As previously described, data needs to be collected from different stakeholders. Therefore, institutional arrangements are necessary for the collaboration and data collection.

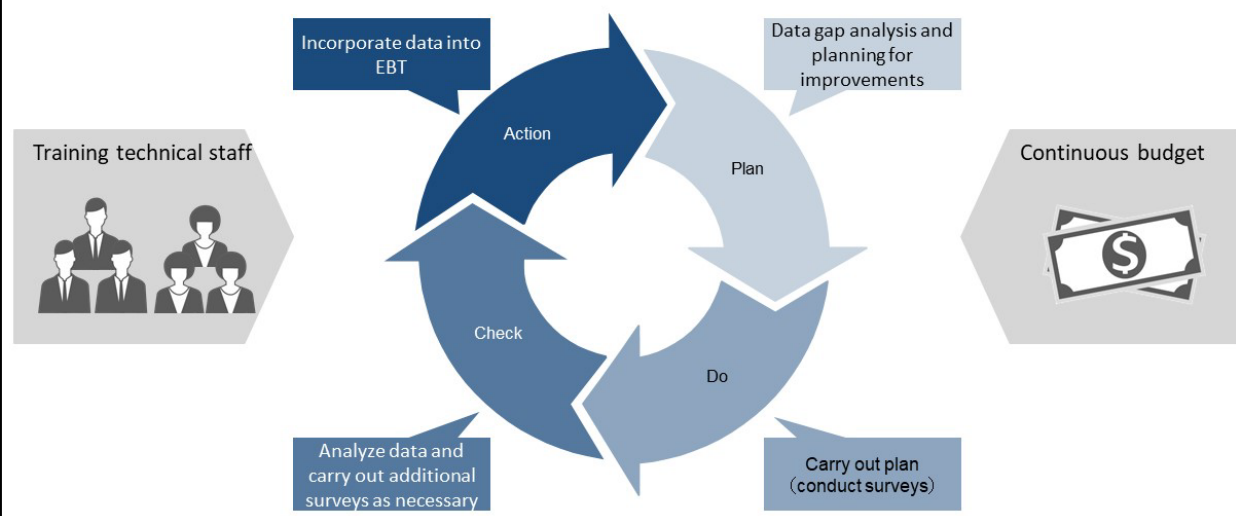
### A typical organizational setup for energy balance table preparation



## Continuous improvement is necessary for the EBT

- It is impossible to develop a perfect EBT in a short period of time. The first step should be to use all available data, and develop a plan to improve in steps.
- A sustainable program to train technical staff and continuous budget is critical.

### The improvement cycle of the EBT



### 【The second cycle】

Activity 2-1 : Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2.

Achieved

Extracted priority issues that could not be resolved in the first cycle and identified three priority issues to be addressed in the second cycle: (1) Establishing a system for periodic preparation of energy balance table as the basis for activity data in the energy sector, (2) Determining the causes of differences between the sectoral approach and the reference approach and (3) Improving the methodology of international bunkers.

Activity 2-2 : Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.

Achieved

The organizations involved in resolving the three priority issues identified in Activity 2-1 were the same as those identified in the first cycle.

Activity 2-2 : Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into improvement guidance for priority issues of the Energy sector.

Achieved

Regarding priority issue (1), the "Working Group on Preparation of Energy Balance Table for GHG Inventory under JICA Project" was launched at the third workshop in June 2020. The Working Group consists of six organizations: NSO, MEEI, Mongolian University of Science and Technology (MUST), Energy Regulatory Commission (ERC), Civil Aviation Authority of Mongolia (MCAA), and CCRCC. At the same workshop, the Working Group agreed on the improvement guidance developed based on the results of the first cycle. For priority issues (2) and (3), the improvement guidance developed in the first cycle continued to be effective.

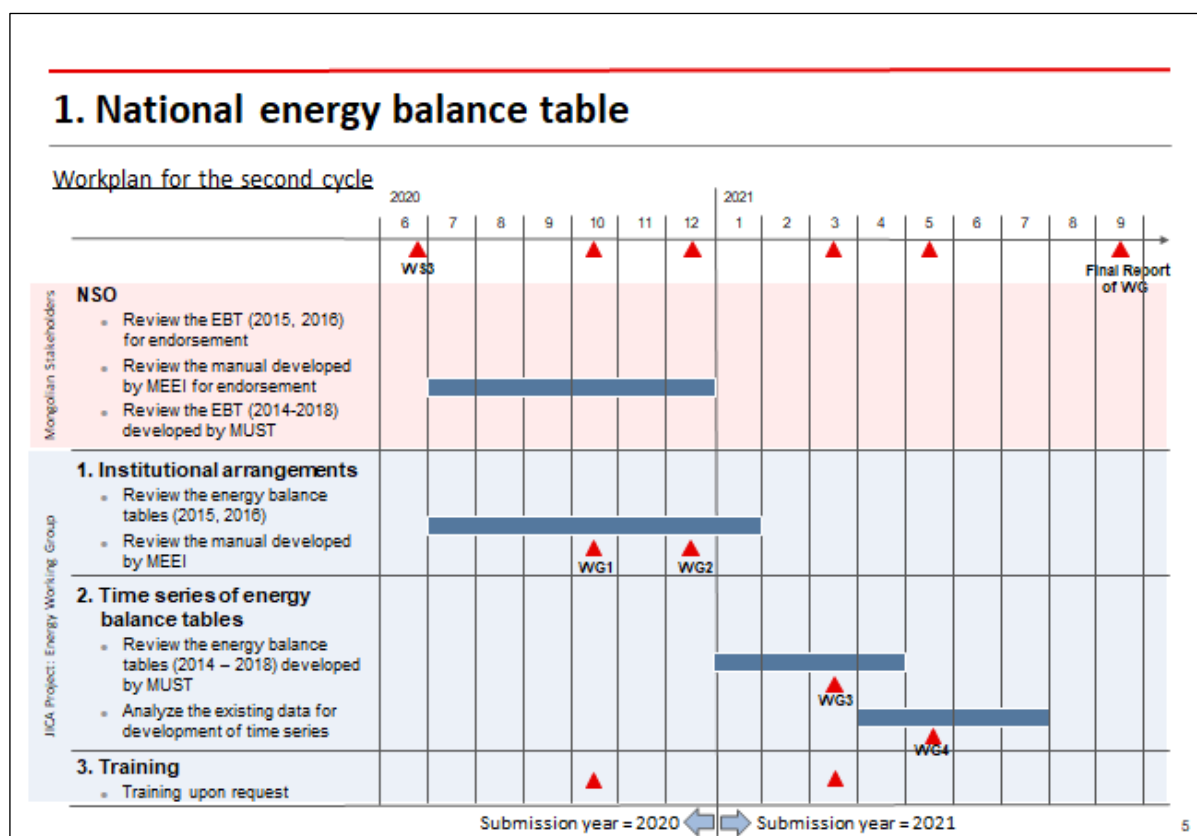


Figure 7 Improvement guidance for priority (1) (excerpt)

Activity 2-4 : Collect data identified in Activity 2-3 based on the improvement guidance.

Achieved

For priority issue (1), we collected data on Mongolia's Fuel Energy Balance (1990, 1995, 2000, 2005) developed in the past, research reports on energy balance in Mongolia and Russia, and supply / consumption data of each fuel type and energy from the National Statistics Office (NSO), Mineral Resources and Petroleum Agency of Mongolia (MRPAM), Energy Regulatory Commission (ERC), Customs Department, etc. At the first meeting of the Working Group for the energy balance table held on August 20, 2021, information was shared on the energy data collected, and we reached the conclusion that we need to conduct a stocktaking of the data collected by each of the three organizations (NSO, CCRCC, and MEEI) and see which data is missing. On August 27, 2021, a meeting was held between the above three organizations and JICA, and inventory changes of each fuel type, final consumption of petroleum products, etc. were identified as missing data. It was decided to issue a letter to MRPAM, which is most likely to have the information, from JICA requesting them to provide the data. Data has already been obtained from MRPAM, to the extent that it could handle it.

For priority issue (2), the original data of GHG inventory for BUR1, which is necessary for the difference analysis between the two approaches, was obtained from CCRCC.

For priority issue (3), the Civil Aviation Authority of Mongolia (MCAA) was identified as a relevant organization, and several attempts were made to contact them, but it was unsuccessful in obtaining the necessary data on fuel consumption by domestic and international flights. Instead, we obtained, through

CCRCC, data on jet fuel consumption by domestic and international flights for 2018 and 2019 from UNDP's SCP project.

Activity 2-5 : Analyze and compile the data collected in Activity 2-4 and organize them in an inventory format based on the improvement guidance.

Achieved

For priority issue (1), we analyzed and processed the data collected in Activity 2-4 and organized it into an energy balance table for the period 1990-2019. The first step in this process was to analyze and improve the energy balance tables for 2015 and 2016, which had been prepared jointly by MEEI and NSO, and then finalize them by aligning them with the IEA's energy balance table, which is an international standard. Using this energy balance table as a base format, we created energy balance tables for other years. For 1990, 1995, 2000, and 2005, we used existing energy and fuel balance tables as a basis. For other years, we created the energy balance table using the collected statistical data and interpolated the missing data. We also created a manual detailing the process and method of creating the energy balance table. In addition, information such as the data used, calculation formulas and assumptions for the estimation are incorporated in the Excel file of the energy balance table itself, making the data highly transparent. For priority issue (2), the data obtained in Activity 2-4 was analyzed to identify the causes of the differences between the two approaches. For priority issue (3), based on the data obtained in activity 2-4, we estimated jet fuel consumption data for domestic and international flights based on the average of the ratio of jet fuel consumption for domestic and international flights in 2018 and 2019 and the amount of jet fuel imported since 1990.

Activity 2-6 : Compile the results of improvements into a report.

Achieved

For each priority issue, the results of the improvements were compiled in a report.

Activity 2-7 : Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)

Unachieved

Due to the impact of the new coronavirus, the work progress was significantly delayed from the schedule, so the fourth workshop to report the results of the second cycle activities could not be held.

C. Output 3

For “Output 3 : Capacity to technically assess GHG inventories and to improve each sector (energy, industrial processes, agriculture, land use, land use change and forestry, waste) will be strengthened”, see figure 9.

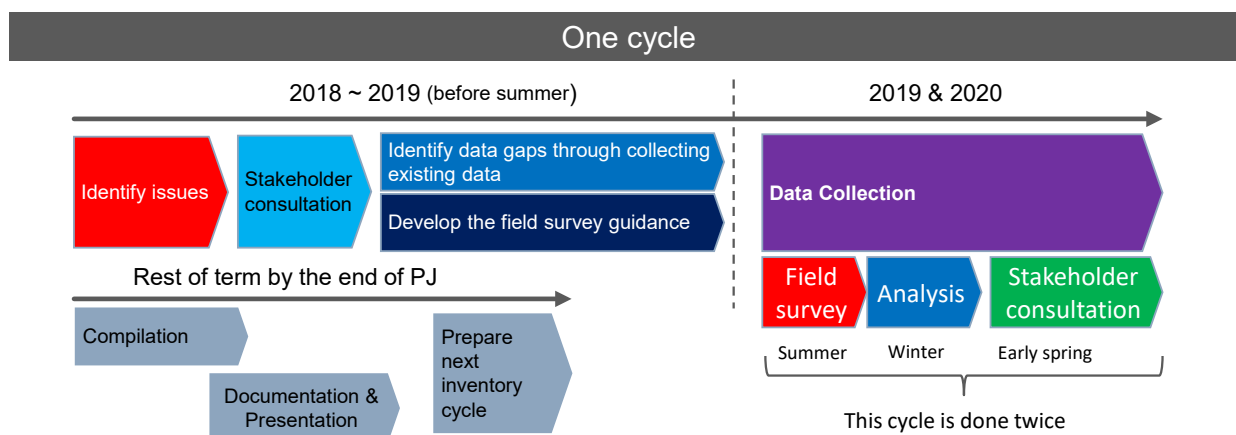


Figure 8 Activity flow for Output 3

Activity 3-1 : Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Achieved

An exhaustive review of the LULUCF sector was conducted, also based on the calculation methodologies implemented in BUR1, and the need to improve grassland calculation was identified as a high priority theme. Regarding the improvement of grassland calculation, it was decided to proceed with this Project with external experts as well.

In addition to the above, when submitting the GHG inventory for the next BUR, it is necessary to reflect the land use matrix using the Collect Earth Analysis developed for REDD+ calculation, set up six sub-categories of land use according to the presence or absence of land conversion, calculate land conversion for entire time series, add an explanation of information by carbon pool in the NIR, and standardize logging data between the calculation of forests and timber harvested under BUR1. We will work with our counterpart in Mongolian side on this issue.

Activity 3-2 : Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Achieved

Relevant institutions and persons involved are identified as shown in the list below.

Institution	Name	Title
Institute of Geography and GeoEcology	Dr. Ochirbat Batkhishig	
Institute of Geography and GeoEcology	Dr. Kh. Zoljargal	Head of Soil laboratory
IRIMHE	Ms. Baasandai Erdenetsetseg	Head, Agrometeorology section
MULS	Dr. Jamsran UNDARMAA	Professor
MULS	Dr. Altansuvd Javkhantuya	Head of soil, Agro-chemistry laboratory
NUM	Dr. Ariuntsetseg Lkhagva	Professor
NUM	Dr.Munkhtsetseg	Professor, Meteorology, Hydrology and Climatology programs Department of Applied Mathematics School of Applied Sciences and Engineering National

		University of Mongolia
WCS	Dr. Avirmed Otgonsuren	
Institute of General and Experimental Biology	Dr. Indree Tuvshintogtokh	Head of Vegetation Ecology and Plant Resource Laboratory

Activity 3-3 : Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Achieved

A Working Group meeting was held on April 3, 2018, and it was agreed to first proceed with the survey of existing data and to begin developing field survey guidance. Also, it was agreed that the following technical items should be considered when proceeding with the calculation of grasslands, and information on which institutions may have the data was organized.

○ Items agreed upon as technical matters

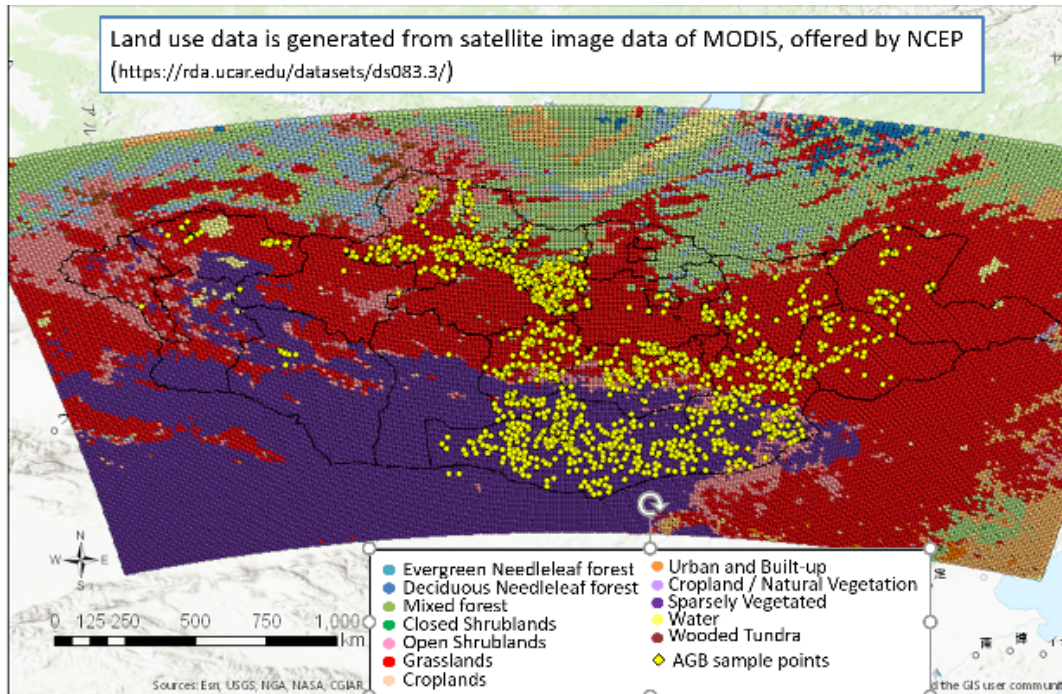
- Use ecological system classification (eco region) as the most basic classification for grassland calculation.
- All grasslands in Mongolia are treated as managed land, and all grasslands are included in the calculation of GHG inventories.
- In the calculation of grassland, both carbon pools of biomass and soil should be considered.
- The relationship between above-ground biomass, below-ground biomass and the degree of degradation of grassland is not necessarily clear at present, and should be considered again after conducting a survey.
- Soil carbon content in grasslands has changed over time, but the situation varies from region to region. The central area subject to anthropogenic involvement is more variable, while the eastern typical grassland is not so much.
- Soil carbon content (SOC) has been determined in some existing soil surveys, but there is no information on the percentage of crushed gravel or bulk density, and many of them cannot be converted to SOC. Since 2005, location information has been taken relatively accurately. Soil surveys have been conducted with the support of Russia since around 1970. Currently, the survey is mainly conducted by IGG and MULS.

Activity 3-4 : Consider the research method/procedure, and compile into improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3.

Achieved

Based on the review of Activity 3-3, a survey on existing data on grassland biomass and soils was commissioned to IGG, NUM, and MULS, and the analysis of the survey results was completed by February 2019.

Location of sampled data: SOC (only for georeferenced data)



### Summary of current status

- The data set can provide averaged biomass amount in each eco-region, but the relationship between the amount of biomass and the status of degradation/management is not so clear enough. One reason of this is that the classification and data of degraded status is not well obtained
- The amount of grass production for feeding is very important for grazing, while amount of annual carbon accumulation on land is important in terms of GHG inventory. If carbon sequestered in grass land biomass is finally released to atmosphere by decomposition and then carbon accumulation is zero, degraded status is not important very much.
- Whether the current data of the ratio of above ground biomass and below ground biomass is enough or not need to be considered.
- How and what activity data (area of grassland data) is used need to be considered. For example, the biomass amount of parameters will be established based on the current monitoring scheme of grassland vegetation.
- The expected option of the methods to apply for biomass C calculation is almost similar to those introduced in the soil part. Maybe one difference of biomass is that there is an experience of CENTURY model application.

### Summary of current status

- The standard categorization of soil type can be mineral soil and organic soil which is also suggested by the IPCC guidelines.
- Mineral soil groups can be basically integrated into one HAC (High Activity Clay) soil group, although there are few soil types (such as Podzol) other than HAC soil.
- In terms of number of data, in eco-region level, high mountain area data is quite limited but others seem to have kind of numbers samples. In terms of location of data, some areas have a few data such as western part of Mongolia.
- Generally speaking, the SOC data shows the relationship of mountain forest step > steppe > desert steppe > desert. The statistical assessments also show that these values are identical.
- Regarding the effect of degradation status, the assessments show the differenced between “high degraded” and “middle or low degraded” in mountain forest steppe and desert steppe. On the other hand, there were statistically no meaningful differences among degradation status in other eco-regions. There are some problems of data about degradation, including the limited number of available “high-degraded” and the classifications of degradation status in each study were not standardized.
- Time series dependency of data was not clearly observed. The data around 1980’s is relatively available more than those in recent years (ex. Mountain forest steppe).
- The current data set gives the averaged SOC over years in each eco-region level. The differences of time-series and degradation status are hard to obtain.

Figure 9 Analysis of literature survey results of existing data

In parallel, we worked on the development of improvement guidance that compiled the implementation methods for field surveys, and prepared improvement guidance for each of the issues identified in Activity 3-1.

Activity 3-5 : Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.

Achieved

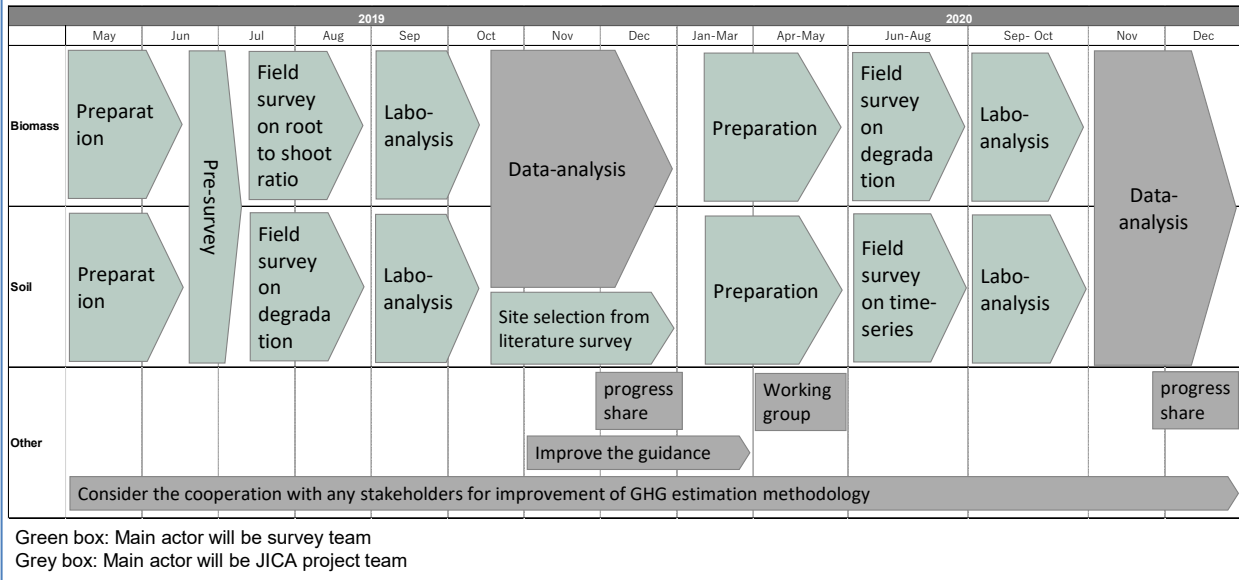
Based on the results of the literature survey, a field survey was conducted in the summer of 2019 and 2020 to collect data. The collected data was statistically processed and compiled into a format that can be used for GHG inventory.



# Field survey schedule

## ■ Standard survey schedule in 2019 and 2020

- It is recommended to conduct the pre-survey in 2019 to modify the improvement guidance and share the common understanding among JICA project and survey team
- Survey teams will be selected fairly based on survey implementation ability and proposal



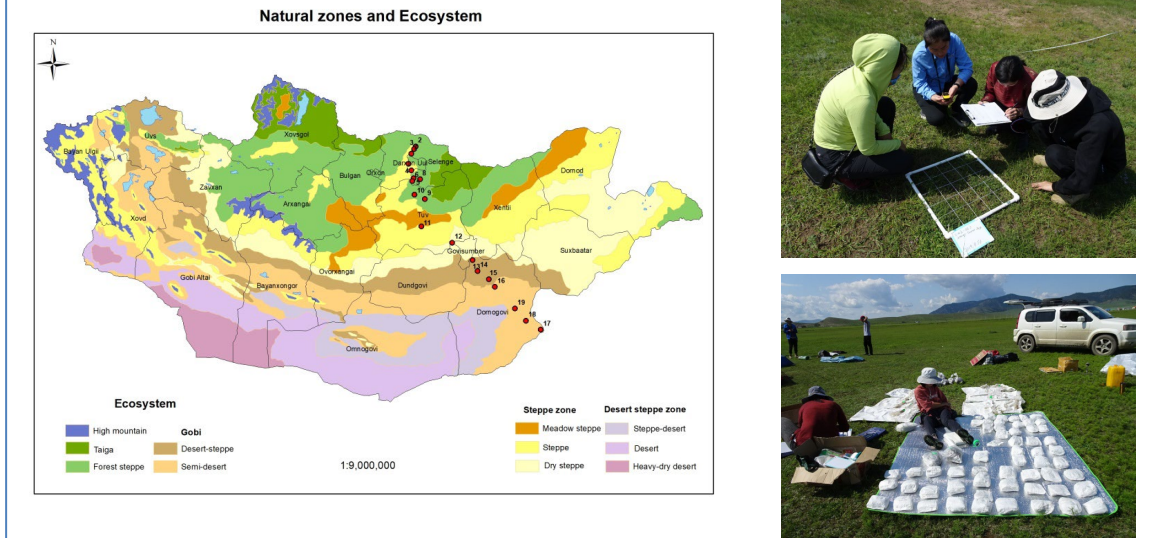
The first year's field survey was commissioned to NUM for biomass survey and to IGG for soil survey. Prior to conducting the survey, pre-surveys on biomass and soil were conducted with both institutions on June 16-17, 2019 and June 20-21, 2019, respectively, both outside of Ulaanbaatar, and the results were used to finalize guidance for field-oriented outdoor surveys. The biomass survey was conducted from August 13 to September 3, 2019, across Mongolia from north to south, with about 500 samples collected from nearly 20 survey sites. Soil survey was conducted from September 1-20, 2019, mainly in Khentii in northern Mongolia.

The 2020 field survey was requested during the same period as the 2019 survey for both the biomass and soil surveys. The biomass survey was conducted from July 13 to August 5, 2020 to collect data in the high mountain region, which had been a blank area with little data in previous surveys. The survey covered the provinces of Uvs, Bayan-Ulgii, Hovd, and Gobi-Altai.

Soil surveys were conducted at 24 sites where soil surveys had been conducted in 1981-1984 to identify changes in sites where surveys had been conducted in the past. Of these, 12 sites were selected from the Forest Steppe zone and the remaining 12 sites were selected from the Steppe zone. The provinces surveyed were Hovsgol, Bulgan, and Uvurkhangai.

## Achievement of Biomass Survey

- More than 500 samples were collected.
- Some sampling sites are overlapped with IRIMHE's monitoring site.



## Achievement of Soil Survey

- Some sampling sites are overlapped with IRIMHE's monitoring site.

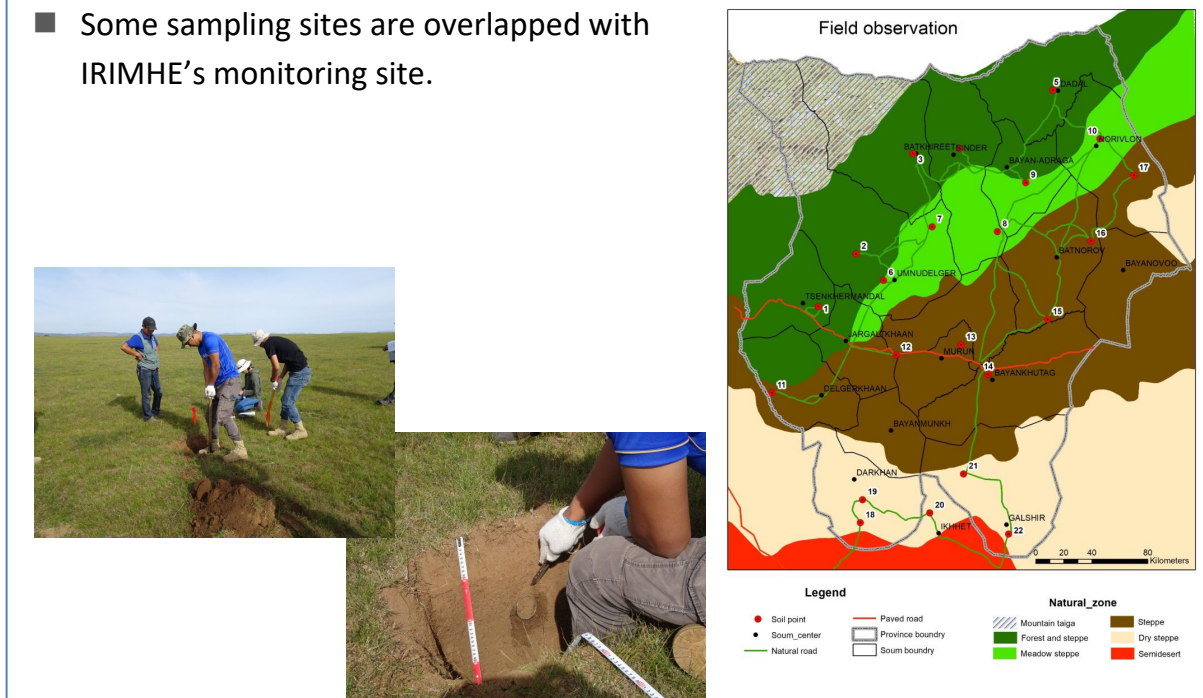


Figure 10 Outline of biomass survey and soil survey conducted in 2019

Activity 3-6 : Hold Working Group meetings to consider the technical aspect of research method, the results, and ways to use the research results to develop parameters and activity data.

Achieved

Working Group meetings were held on April 2, 2019 and June 4, 2020, respectively. The 2019 working group meeting discussed the results of the literature review, the survey methodology based on the field survey results, and the coefficient setting based on the survey results.

Activity 3-7 : Estimate emissions and removals based on the results of Activity 3-5.

Unachieved

Although coefficients for grassland calculation were prepared and compiled, time series calculation could not be carried out due to the inability to obtain the initially assumed activity data from external institutions. In addition, Mongolia's overall policy is to use the IPCC's GHG inventory software, and since the LULUCF sector of the software does not support the calculation of GHGs above Tier 2, the improved results will not be reflected in the next BUR inventory submission. Moreover, the C/P changed twice during the period, which made it difficult to accumulate knowledge on an ongoing basis, and there was a total of more than one year of absence of the CCRCC LULUCF expert from leave/retirement to the arrival of the new C/P, which hindered the smooth implementation of activities. In addition, a lot of time had to be spent on the follow-up of the calculation methods based on the IPCC guidelines, and support for the development of higher-level calculation methods in cooperation with the Mongolian side had to be reduced.

Activity 3-8 : Compile the results of the improvement into a report

Achieved

For each priority issue, the results of the improvement are summarized in a report.

Activity 3-9 : Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement.

Achieved

The future challenges are summarized in a report.

Activity 3-10 : Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance.(Combined with Activity 1-12.)

Unachieved

Due to the impact of the new coronavirus and the reduction of actual working hours caused by the translation of a huge amount of Mongolian data, the progress of the work has been significantly delayed from the schedule, and the LULUCF WG meeting to report the results of the activities has not been held.

### A. Joint Coordination Committee meetings

The JCC meetings were held during the Project duration as shown in table below.

Table 12 Overview of JCC meetings

Meeting	Date	Participating Agency	Key Agenda
1 <sup>st</sup> JCC	January 2018	MET, CCRCC, IRIMHE, MCUD, MFA, MoTRD, NSO, ERC, MEEI, Ulaanbaatar city	<ul style="list-style-type: none"> <li>The work plan, including specific project activities and schedule, was discussed and the work plan was approved.</li> </ul>
2 <sup>nd</sup> JCC	September 2019	MET, CCRCC, MCUD, Ulaanbaatar city	<ul style="list-style-type: none"> <li>The progress of the Project and plans were explained, and the fundamental issue of Mongolia's national system was discussed.</li> <li>It was reported that the members of the CCPIU in ECF (C/P) will be transferred to the new organization (CCSRCC).</li> </ul>
3 <sup>rd</sup> JCC	February 2021	MET, CCRCC, IRIMHE, ERC, MoMHI, MCUD, MoRTD, MOE, MEEI, NUM, WCS, IGG	<ul style="list-style-type: none"> <li>Project progress and plans were explained by outcome, and the work plan for 2021 was discussed.</li> <li>Agreed to consider extending the project, as work has been delayed due to the impact of the spread of the coronavirus.</li> </ul>
4 <sup>th</sup> JCC	February 2022	MET, CCRCC, MEEI	<ul style="list-style-type: none"> <li>Overview of activities from 2020 onward explained</li> <li>Project achievements and challenges</li> <li>Recommendations for CCRCC to sustain the outcomes of the Project</li> </ul>

### B. Training in Japan

Initially, it was planned that the CCRCC and relevant stakeholders would visit relevant Japanese ministries and agencies to learn about the GHG inventory process and institutional development, and that training would be conducted in Japan. However, since the request to the GEF for the BUR2 project was delayed, which also led to delays in this Project activity, it was agreed to prioritize the BUR2 GHG inventory.

### C. Training in third country

The BURs submitted by developing countries to the UNFCCC are subject to a process called International Consultation and Analysis (ICA), which includes an open presentation and question and answer session called Facilitative Sharing of Views (FSV). Responding to FSV is also related to improving the quality of GHG inventories, which will contribute to achieving the project's results. Therefore, instead of the original plan to conduct training in a third country in one of the countries where JICA has implemented the GHG inventory capacity building project (Vietnam), it was decided to send CCRCC inventory staff to the FSV to make a presentation on the GHG inventory, emission reduction actions, and support needs as indicated in BUR1. The change of plan for third country training was agreed with this project manager and confirmed in the minutes.

In December 2018, ECF staff were sent to represent Mongolia at the 24th Conference of the Parties (COP24) to the United Nations Framework Convention on Climate Change (UNFCCC) in Poland. ECF staff gave a

presentation at COP24 on their experiences and challenges in preparing BUR1 at the FSV, as well as following up on the negotiating agenda on the enhanced transparency framework under the Paris Agreement. ECF staff gave an overview of BUR1 at the FSV and answered questions from workshop participants. This experience has given ECF staff a better understanding of the key elements of the BUR and the content of the enhanced transparency framework under the Paris Agreement.

2. Achievement of the Project Purpose

Outcome and indicators

A. Output 1

The indicators and means of verification for Output 1 are indicated below.

Indicator	Means of verification
1-1) A long list of GHG inventory issues (including institutional and technical ones) and proposed policies to address each issue are prepared. (twice) 1-2) A list of priorities for the GHG inventory is created. (twice) 1-3) Methods and procedures for improving GHG inventory priority issues agreed upon by relevant organizations are compiled into a GHG inventory improvement plan. (twice) 1-4) Improvement reports on priority issues are prepared. (twice) 1-5) The final draft of “National Manual of procedures for preparation of GHG inventories for Mongolia” is submitted to the Science and Technology Committee of MET.	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee

1-1) Achieved

Reviewed Mongolia's latest GHG inventory and developed a long list of issues. Since the inventory for BUR2 was not completed, a new long list has not been created, but issues such as QA/QC plan and NIR templates have been addressed.

1-2) Achieved

Prioritization was assessed by considering the importance of the GHG inventory category, the effect of increasing or decreasing emissions associated with improving the GHG inventory, and the time and cost required to improve the inventory. For the second cycle, the calculation of HFC emissions in the IPPU sector was identified as a priority issue.

1-3) Achieved

A draft of how to address the short list of issues was prepared and approved at the second workshop of this Project.

1-4) Achieved

Report prepared on priority issues.

1-5) Achieved (limited)

The QA/QC plan that is to be part of the "National Manual of procedures for preparation of GHG inventories for Mongolia" has been prepared, but the report including the technical calculation method has not been prepared because the GHG inventory for BUR2 has not been completed. However, for the IPPU sector, information on calculation methods, usage data, emission results, and improvements are prepared according to the template for NIR.

## B. Output 2

The indicators and means of verification for Output 2 are indicated below.

Indicator	Means of verification
2-1) A list of priority issues is created for high priority Energy sector theme.(twice)	2-1) List of priority issues
2-2) Improvement methods and procedures for priority issues in the energy sector agreed upon by relevant institutions are compiled into improvement guidance.(twice)	2-2) Improvement guidance
2-3) A report on improvements in the energy sector priority issues is prepared.(twice)	2-3) Report on improvement in priority issues
2-4) Priority issues in the energy sector are addressed through the implementation of improvement guidance.(*Verifiable indicators are reviewed in the Working Group meetings after the issues are identified.) (twice)	2-4) Report on improvement in priority issues

2-1) Achieved

Extracted priority issues that could not be resolved in the first cycle and identified three priority issues to be addressed in the second cycle. (1) Establishment of a system for periodic preparation of energy balance table to serve as the basis for activity data in the energy sector (2) Determining the causes of differences between the sectoral approach and the reference approach (3) Improving the methodology of international bunkers.

2-2) Achieved

Regarding priority issue (1), the "Working Group on the Preparation of Energy Balance Table for GHG Inventories under the JICA Project" was launched at the third workshop in June 2020, where it agreed on the improvement guidance prepared considering the results of the first cycle. For priority issues (2) and (3), the improvement guidance developed in the first cycle continues to be effective.

2-3) Achieved

A report on improvements to the three priorities of the second cycle was prepared.

2-4) Achieved (limited)

For priority issue (1), we compiled data in the form of an energy balance table for the period 1990-2019, and prepared a manual detailing the original data and the process of compilation, thereby addressing the foundation

for building a sustainable energy balance table creation structure. During the project period, we had discussions with the main stakeholders, NSO and MEEI, on the system for preparing the energy balance table, but we were not able to reach the establishment of the system. It is expected that the energy balance table and the manual will be used as a basis for the periodic preparation of energy balance tables, approval as a national statistic, arrangements with related organizations for data acquisition, and acquisition of the missing data revealed this time. The CCRCC needs to continue to work on the importance of the energy balance table in terms of inventory development and the need to create it on a regular basis.

For priority issue (2), If the causes of the differences identified between the two approaches are removed in the BUR2 GHG inventory being prepared by the CCRCC, it is expected that the unnatural differences observed in BUR1 will be eliminated in BUR2.

For priority issue (3), Applying the ratio of jet fuel consumption by domestic and international flights for 2018 and 2019 retroactively improved the calculation method in BUR1 (distributing fuel consumption to domestic and international flights as a percentage of the number of flights). However, the number of international flights in the past has been less than 20% of all flights prior to 1996, so emissions from international flights during that period are likely to be overestimated. The CCRCC should continue to work closely with the MCAA and other relevant stakeholders to obtain missing or alternative data such as historical fuel consumption by domestic and international flights and the number of flights since 2015.

C. Output 3

The indicators and means of verification for Output 3 are indicated below.

Indicator	Means of verification
3-1) A list of priority research issues is developed for high priority research themes in the LULUCF sector.(twice)	3-1) List of priority research issues
3-2) Research methods and procedures for priority issues in the LULUCF sector are compiled into improvement guidance based on the research framework agreed by relevant institutions. (once)	3-2) Improvement guidance
3-3) Research report on improvement of priority issues in the LULUCF sector is prepared.(once)	3-3) Research report on improvement of priority issues
3-4) Priority research issues in the area of LULUCF are addressed through the implementation of improvement guidance.(* Verifiable indicators are considered in the Working Group meetings after the issues are identified.(once)	3-4) Research report on improvement of priority issues

3-1) Achieved

Prepared a list of priority research issues at the beginning and at the end of the project.

3-2) Achieved

We have prepared a guidance document that outlines the process from field survey to analysis for new soil carbon and biomass carbon surveys in the future. The first version was prepared before the 2019 survey, and an updated version based on the experience of the 2019 survey was created before the 2020 survey and agreed on the contents with relevant organizations at the Working Group meeting.

3-3) Achieved



Prepared a survey report summarizing the results of grassland-related surveys, a priority issue.

### 3-4) Unachieved

Regarding the results of the grassland survey, which is a priority issue, parameters were developed, but time series calculations were not completed due to the delay in obtaining activity data. In addition, the methodologies that can be input into the software used to compile the GHG inventory are limited, so the calculation results produced this time could not be reflected in the GHG inventory. Therefore, given the ultimate goal of reflecting GHG inventory, it is difficult to conclude that sufficient action has been taken.

### Project Purpose and Indicators

The following five objectively verifiable indicators were established for the project goals.

Indicators	Means of verification
1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issue 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues

Regarding GHG inventory improvement plans and reports on improvements to priority issues, it is mentioned in section A above. As for the National Manual, it summarizes the QA/QC plan and the calculation method of emission sources in the IPPU sector, data used, results, etc. As already mentioned in section B above for the report on improvement guidance and improvement to priority issues in the energy sector, and in section C for the report on improvement guidance and improvement to priority issues in the LULUCF sector.

As the verifiable indicators for the three outputs have been achieved, we believe that the goals of this Project have been achieved. However, as already mentioned in A, B, and C above, the level of achievement is limited because some activities have not been achieved or have not yielded the initially expected results. For example, in Outcome 1, "National Manual of Procedures for preparation of GHG inventories for Mongolia," only the QA/QC plan and IPPU sector have been completed, and the other four sectors are expected to be developed when CCRCC prepares GHG inventories, and the documents will be integrated and edited. As for Outcome 2 and 3, although the parameters were refined, the time series data of GHG emissions were not sufficiently compiled.

### 3. History of Project Design Matrix (PDM) and PO Modification

The PDM remains unchanged, but the Project period has been extended and activities from October 2021 to February 2022 have been added to the PO. See attached document for details.



## Chapter 3. Results of Joint Review

### 1. Results of Review based on Development Assistance Committee (DAC) Evaluation Criteria

The JICA Project experts and CCRCC conducted joint review on the results of the Project, applying DAC evaluation criteria, which was prepared by DAC of the Organization for Economic Co-operation and Development (OECD).

These criteria contain five perspectives, namely relevance, effectiveness, efficiency, impact and sustainability as shown in table13. For each criterion, the project was evaluated on a scale of “very high”, “high”, “average”, and “low”.

Table 13 DAC criteria

Relevance	Relevance is reviewed by the validity of the Project Purpose and Overall Goal in connection with the government’s development policy and the needs of the target group and/or ultimate beneficiaries in Mongolia.
Effectiveness	Effectiveness is assessed in terms of the extent the Project has achieved its Project Purpose, clarifying the relationship between Project Purpose and Outputs.
Efficiency	Efficiency of project implementation is analyzed with emphasis on the relationship between Outputs and Inputs in terms of timing, quality, and quantity.
Impact	Impact of the Project is assessed in terms of positive/negative and intended/unintended influence it caused.
Sustainability	Sustainability of the Project is assessed in terms of (1) policy and institutional, (2) organizational, (3) financial, and (4) technical aspects by examining the extent to which the achievements of the Project will be sustained after the Project is completed.

#### 1.1 Relevance

The JICA Project experts and CCRCC agreed that relevance is very high.

The objective of the project is "to ensure that the national GHG inventory is regularly improved based on cooperation with relevant institutions."

GHG inventory is a policy tool used in climate change policy and the UNFCCC, and the core component of the national communications and the BURs. They allow policymakers to assess the GHG emission/removal trend of the country to plan mitigation actions and monitor those actions. This is the reason the GHG inventories are again a core reporting element of the Biennial Transparency Report (BTR), to be submitted by all Parties to the Paris Agreement, from 2024. Under the ETF, the submitted GHG inventories will undergo a review by international experts to assess the TACCC of the GHG inventory. Continuous improvement is a key principle under the Enhanced transparency framework (ETF) and the Project purpose was to establish a PDCA cycle for GHG inventory and to improve each cycle in order to meet not only the current reporting requirements under the UNFCCC but also the future reporting requirements under the ETF.

Mongolia has experienced creation of GHG inventory four times in the past, but each one was done on a per-project basis and did not consider the relationship with and improvement of previous inventories. This Project is consistent with Mongolia's need to improve its system and capacity to respond to the ETF by establishing a PDCA cycle: reviewing past GHG inventories, creating and updating a list of issues, identifying and investigating priority issues, and reflecting the results in the GHG inventory.

The use of accurate GHG inventory data to estimate future GHG emissions and develop NDCs and mitigation actions is required under the Paris Agreement, and the consistency between the GHG inventory and the emission trends of the mitigation actions included in the NDCs will be confirmed in the ETF review, so the Project purpose and overall goal are highly relevant.

### 1.2 Effectiveness

The JICA Project experts and CCRCC agreed that effectiveness was high.

As described in Section 2 of Chapter 2, the outcome indicators and project results were achieved, but the technical aspects were somewhat inadequate compared to the originally expected output. Two improvement cycles have been implemented for Outcome 1 and Outcome 2, and the indicators for each outcome have been achieved, and gradual improvement in the GHG inventory is expected, but because the GHG inventory for BUR2 has not been completed, the proposed improvements are not actually reflected in the GHG inventory, and the results are not visible. Furthermore, only a part of the National Manual was prepared, and support for sustainability of the energy balance table and preparation system was limited. As for Outcome 3, although the indicators of the results were achieved, the results of the calculation of GHG emissions and sinks in grasslands, which were initially assumed, could not be determined and remained at the estimated values. As a result, although the results and project targets were achieved, some technical aspects were insufficient.

### 1.3 Efficiency

The JICA Project experts and CCRCC agreed that efficiency was average.

Non-Annex I countries are required to submit applications for NC/BUR preparation projects to the GEF through the implementing agencies (UNDP, UNEP, World Bank) in order to receive funding for NC/BUR preparation. Mongolia submitted its BUR1 in August 2017 and would have been able to obtain stable and continuous funding from the GEF by submitting a request to the GEF to prepare a BUR2 before or immediately after the submission, but it took more than a year to submit the request. Furthermore, there was a time lag before the funds from the GEF to the Government of Mongolia could be utilized in the ECF budget, and the ECF remained underfunded from late 2018 to mid-2019, reducing the efficiency and availability of the C/P and affecting the Project. At the same time, the person in charge of the LULUCF sector retired, but the organization was unable to fill the position, making it difficult to carry out technology transfer efficiently. In addition, the expert who oversaw the LULUCF sector at the CCRCC from 2019 functioned as a point of contact between the JICA Project experts and the LULUCF experts in Mongolia, but when the expert retired in 2021, the project lost its coordinator and the work efficiency of Outcome 3 deteriorated further. The JICA Project experts had to take the initiative without the CCRCC staff, but they could not visit the site and all communication required translation and interpretation, making it difficult to promote the activities efficiently.

In addition, the activities from the end of the first cycle to the second cycle were not carried out as expected due to the local lockdown caused by the spread of the new coronavirus infection and the inability of JICA Project experts to travel to Mongolia. All the activities in the first cycle were conducted in deep collaboration with CCRCC staff, with planning, implementation and follow-up meetings. However, as for the approach to the second cycle, JICA Project experts took the approach of dealing directly with local consultants and relevant stakeholders for improvement activities and meeting with CCRCC when there are results, reports and

communications, and the efficiency of technology transfer deteriorated as they were no longer working jointly and collaboratively with CCRCC staff before the coronavirus pandemic. In the first cycle, the long-term experts were stationed at the CCRCC office, which served as a facilitating function for communication between the short-term experts and the CCRCC/MET, but the Project became less efficient when the long-term experts returned to their home countries and furthermore, the impact of the spread of coronavirus was compounded.

Due to the impossibility of travel, the coordination, data exchange and revision between JICA Project experts and each stakeholder was done via e-mail, which caused a time lag. In addition, it took a great deal of time to explain the emission calculation method, questions and answer session, and check, revise and confirm each value in the energy balance table. While simple decision-making with the C/P could be done quickly through SNS and other means, technical work, meetings with multiple stakeholders, and workshops/seminars could not be carried out, resulting in inefficient conditions that required several weeks to complete tasks that could be handled in a few days if JICA Project experts were on site.

#### 1.4 Impact

The JICA Project experts and CCRCC agreed that impact was high.

The improved calculation method proposed in this project will be reflected in Mongolia's GHG inventory in the future, and the data will serve as the basis for the NDCs. The GHG inventory is an important policy tool because changes in the time series of emissions and sinks will change the estimates of future emissions, which will affect the effectiveness of reduction actions and the NDC itself.

In Outcome 2 and 3, we worked in close collaboration with MEEI, NSO, IGG, NUM, and other research institutions, which contributed to improving the understanding and awareness of GHG inventories among GHG inventory stakeholders. Experts and researchers who have been closely involved with the Project have deepened their understanding of GHG inventories and have come to recognize that there are results and activities that can be used for GHG inventories in their own research. We look forward to continuing to expand the network of researchers and academia strengthened by this Project at CCRCC.

#### 1.5 Sustainability

The JICA Project experts and CCRCC agreed that sustainability was average.

The sustainability of project results was examined from policy and institutional, implementing agency structure, financial, and technical perspectives to determine whether project results can be sustained after Project completion.

##### Policy and institutional aspect

As described in section 1.1 of this chapter, the GHG inventory and the BTR will need to continue to be compiled and submitted to the UNFCCC under the Paris Agreement. This international agreement will continue and Mongolia's commitment to the UNFCCC requirements is expected to continue in the future. Under the ETF of Paris Agreement, Mongolia's national structure is expected to be sustained if the cycle of submission of updated NDCs, monitoring of BTR progress, and global stock take continues (see figure below for NDC cycle).

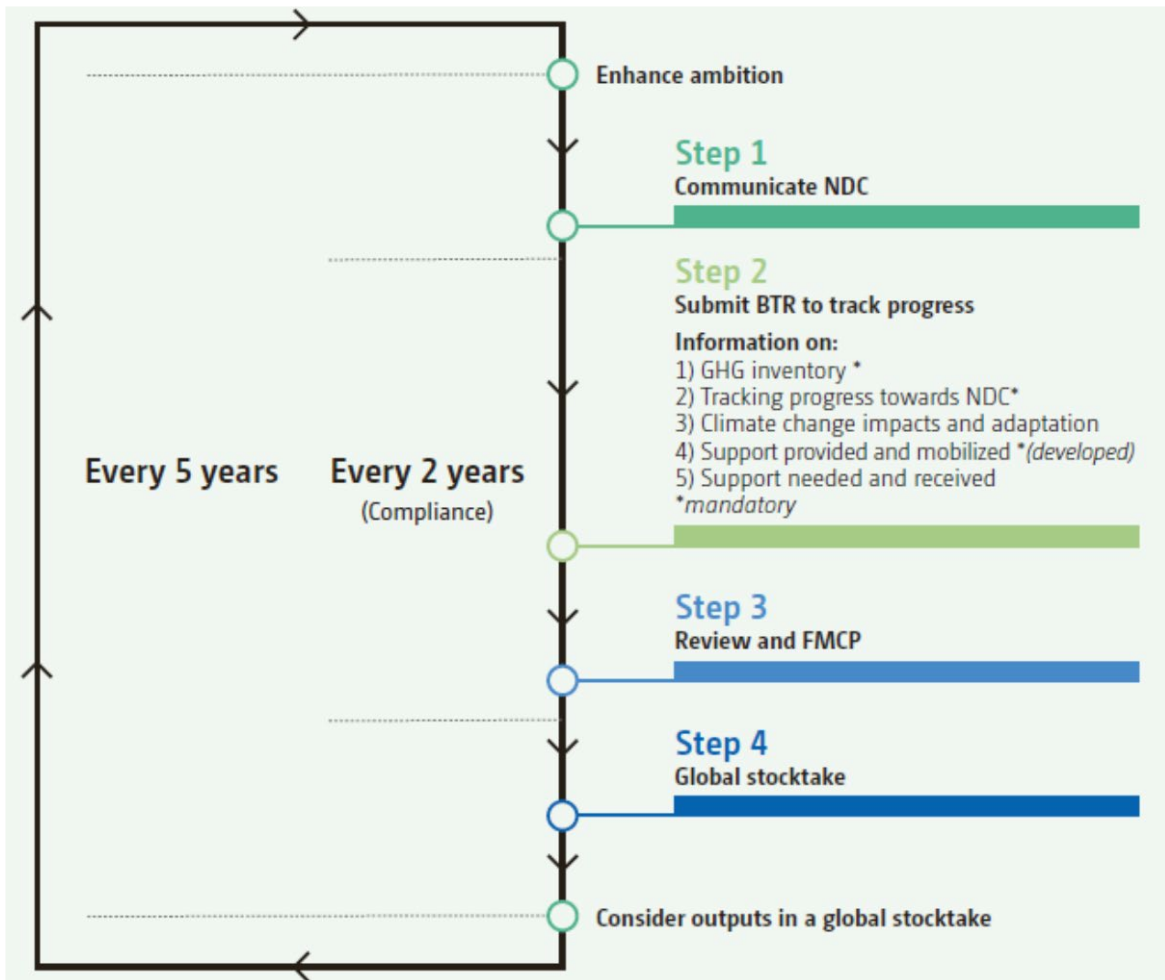


Figure 11 NDC cycle

Source : Reference Manual for the Enhanced Transparency Framework under the Paris Agreement, UNFCCC, 2020

In October 2020, Mongolia submitted an updated NDC to the UNFCCC, which was also approved by Government Decree No. 407, committing to GHG reductions as a government. As a party to the Paris Agreement, the country is also obligated to submit the BTR every two years, and it will continuously implement the PDCA cycle, including NDCs every five years and BTRs every two years. NDC implementation support from UNDP and NDC-related support from other donors is underway, and policy and institutional sustainability is considered "very high".

#### Structure of the implementing agency

The CCPIU of the CCRCC has one or two managers and two or three staff members who work in the area of GHG inventories, which is more than what is often seen in developing countries, where "one or two staff members in the organization are responsible for creating and managing the GHG inventory process." However, during the Project period, the manager was replaced twice and the person in charge of the LULUCF sector was replaced three times, without sufficient handover, and the posts were vacant for several months at a time, so the

system did not allow for sufficient accumulation of project management skills and expertise. Because managers are not able to prepare work plans for CCRCC CCPIU staff and check the progress of each staff member, there are cases where BURs are not prepared and submitted on time and work does not proceed as planned. The personnel in charge of the energy and waste sectors remain unchanged, and their expertise has improved, so the results of technology transfer in this Project are expected.

#### Financial aspects

The budget of the CCRCC depends on the financial support of the GEF for the preparation of NCs/BURs, and if that funding is stable, work will proceed normally, but if the timing BUR/NC requests are approved after the submission of BURs and NCs, and the budget is not secured by the CCRCC, there is a risk that the CCRCC will stop functioning, as it did in 2018-2019 in this Project. The GEF's financial support for the preparation of NCs, BURs, and BTRs will continue under the Paris Agreement, so financial security is guaranteed, and financial continuity is "high," but the issue is whether the CCRCC will be able to secure these funds on a stable basis. CCRCC works under the MET supervision, but its source of funding is from contracts/projects with government agencies, non-government agencies, partners and there is no secure funding from the government.

#### Technical aspects

Through the capacity building of CCRCC staff, they were able to understand the process of improving the GHG inventory. Through the establishment of a Working Group on stakeholder engagement methods and priority issues, and the work of the secretariat in promoting and coordinating the study, the CCRCC was able to experience the process of GHG inventory improvement, and it is expected that the CCRCC will take the lead in promoting inventory improvement activities in the future.

However, in the energy sector, the energy balance table is a basic statistic, and it is a prerequisite that the MEEI continues to produce it with the cooperation of NSOs and other energy stakeholders. Although the MEEI is responsible for the preparation of the energy balance table, it is not stipulated that the table be prepared and provided on a regular basis as a national statistic, and it is difficult to secure a reliable budget for its preparation every year. Although the basic parts of a sustainable preparation system were developed from a technical perspective in this Project, and explanatory materials for securing a budget were prepared for MEEI and NSO, and input was provided for the continuity of the preparation of the energy balance table, issues remain in terms of sustainability in terms of securing a budget.

In the LULUCF sector, the Project has been able to propose improvements in the calculation of GHG emissions and sinks. However, Mongolia uses IPCC guideline software for calculation and when calculating emissions/absorptions using parameters other than those required by the software, the software will not be able to be used without modification.

## 2. Key Factors Affecting Implementation and Outcomes

Prior to the start of this Project, the following three points were set as external conditions for achieving the outcomes and project goals, all of which occurred during the project period and affected the project's progress.

2.1 It should not take more than six months after the submission of the BUR for the United Nations Environment Programme (UNEP)/Global Environment Facility (GEF) to start supporting the preparation of the GHG inventory.

Non-Annex I countries are required to submit applications for NC/BUR preparation projects to the GEF through the implementing agencies (UNDP, UNEP, World Bank) in order to receive funding for NC/BUR preparation. Mongolia submitted its BUR1 in August 2017 and would have been able to obtain stable and continuous funding from the GEF by submitting a request to the GEF to prepare a BUR2 before or immediately after the submission, but it took more than a year to submit the request. Furthermore, there was a time lag between the GEF's contribution to the Government of Mongolia and the funds being available for the ECF's budget, and the ECF remained underfunded from late 2018 to mid-2019, unable to fill the gap when people retired (the person in charge of the LULUCF sector retired).

At the time of the detailed planning study, it was confirmed in discussions with the Mongolian side that the personnel costs of the C/P are paid from the budgets of other donors' projects implemented by the CCPIU, but the employment contract is with the Director of the MET Administration, and even if there is an interval in donor funding, the personnel costs will be secured by government funds. Therefore, it was expected that the C/P would continue to be in place. However, the actual situation is still being funded by donor funds, so the operating level of C/P has decreased.

At the start of the Project, it was assumed that the ECF would complete the GHG inventory for BUR2 by the end of 2019, but due to delays in the preparation and submission of the BUR project request to the GEF by the ECF, as well as delays in the data collection process, the planned submission date has been pushed back several times, and at this stage, the completion of the GHG inventory for BUR2 is expected in the first half of 2022. Although the Mongolia's BUR and GHG inventory development cycle no longer coincides with the improvement cycle of this Project.

Reasons for the delay in preparing the BUR project request include a series of retirements in the ECF and the ECF's inability to effectively manage and coordinate multiple tasks.

## 2.2 No retirement of a large number of counterparts (C/P) whose capacity has been enhanced by the Project

As shown in Table 3, the CCRCC manager and the LULUCF sector personnel were replaced several times during the project period, and each time the knowledge and experience accumulated during the Project was lost and the Project plan had to be re-explained. The main person in charge of Outcome 1 and Outcome 3 was replaced during the project period, and it must be said that capacity building for C/P was limited.

## 2.3 No political unrest/economic crisis that would affect inventory activities

Due to the global outbreak of the new coronavirus, Japanese experts were unable to work in Mongolia after March 2020, which seriously affected the implementation of the Project. C/Ps, stakeholders, local consultants, and assistants were also infected with coronavirus, and operations were sometimes suspended due to hospitalization, etc., which reduced the efficiency of capacity building and collaboration with stakeholders. Communicating and meeting via remote tools also resulted in a lot of time spent on checking and correcting Excel files. In addition, it was difficult to adjust the schedule for meetings and interviews with multiple

stakeholders, making it almost impossible to hold these meetings.

Due to problems with the Internet connection and changes in the meeting schedule, the density of communication has decreased, resulting in a decrease in work efficiency, but we are working to improve the quality of meetings by increasing the amount of information in meeting materials and sharing it in advance.

### 3. Evaluation on the results of the Project Risk Management

#### 3.1 It should not take more than six months after the submission of the BUR for GEF to start supporting the preparation of the GHG inventory.

As mentioned above, at this stage, the GHG inventory for BUR2 is expected to be completed in the first half of 2022. Mongolia's BUR and GHG inventory development cycle no longer matched the improvement cycle of this Project, therefore, in the second GHG inventory improvement cycle, the JICA Project experts based their plan based on the long list developed in the first cycle instead of reviewing the BUR2 inventory. As a result, the activities of this Project have been implemented as per the P/O, with two cycles of inventory improvement activities.

In addition, when making a law regarding establishment of CCRCC, the long-term expert hired a local consultant to support MET in drafting the legal documents, and JICA has provided input to simplify the process for financial support access from the GEF and other donors and for requesting projects to donors.

#### 3.2 No retirement of a large number of counterparts (C/P) whose capacity has been enhanced by the Project

JICA Mongolia Office requested a meeting and expressed its concern to ECF in April 2019 to address the issue of the leaving of workplace by the LULUCF sector officer of CCRCC. In response, the ECF assigned a replacement expert. The replaced person left in the same year, but the LULUCF sector personnel who oversaw another project within CCRCC was assigned to oversee Output 3 of this Project. That expert also left in August 2021, and the fourth person in the LULUCF sector started in January 2022. The activities of Outcome 3 are mainly carried out in collaboration with JICA Project experts and LULUCF experts in Mongolia, and the role of CCRCC is to manage the process of inventory improvement study and to calculate GHG emissions and sinks using the results of analysis of monitoring data in 2019 and 2020 and land data in the country, and his retirement during 2021 affected the progress of the Project. The JICA Project experts, who lost the contact point for requesting provision of data to the LULUCF stakeholders, approached the stakeholders with their assistants, etc., but they were not able to provide data, resulting in inaccurate calculations.

Likewise, the project manager of the CCRCC has been replaced twice. Since the target of Output 1 is the improvement of the GHG inventory system, which is cross-cutting in many areas, the work was carried out in consultation with all CCRCC staff in charge of the sector, even in the absence of the manager. In some respects, this has led to increased ownership and management skills for all CCRCC personnel, but it has also placed a burden on the sector personnel.

#### 3.3 No political unrest/economic crisis that would affect inventory activities

After February 2020, JICA experts were unable to travel to Mongolia, and in order to ensure the continuation

of Project activities, the scheduled meetings were switched to a system using online meeting tools. Online meetings sometimes facilitated decision-making, but in general, meetings through online meeting tools could not replace face-to-face interactions that took place in the field. In particular, checking and correcting database data and calculation formulas is inefficient even in face-to-face discussions through an interpreter, but it is even less efficient in online meetings and email-based discussions, which require an enormous amount of time to discuss technical improvements.

#### 4. Challenges, innovations, and lessons learned in project implementation and management (business implementation methods, management system, etc.)

##### 4.1 Fostering ownership

In order to improve C/P's understanding and foster ownership of the process of improving the GHG inventory, all CCRCC staff members met to discuss how to manage the GHG inventory and even cross-cutting topics and prepared the Output 1 in consultation with all staff members. As a result, C/P's understanding of the inventory improvement process, the inventory improvement system, and progress management has deepened, and we believe that the C/P staff has become more aware of the issues involved.

##### 4.2 Responding to new coronavirus

The Project was affected by the spread of the new coronavirus, and in the latter half of the Project period, it was not possible to travel to the site, and the schedule of meetings with stakeholders, workshops, etc. had to be drastically changed. The implementation period of the joint and collaborative work was only half of the planned period, and the technology transfer regarding the calculation method of the HFC emission inventory investigated in the second half of Outcome 1, as well as the improvement process of the energy balance table in Output 2, and the sharing of parameter analysis results and consideration of calculation methods in Output 3, was limited.

In order to continue the Project under these circumstances, the CCRCC and JICA project experts were forced to conduct online capacity building activities using remote meeting tools and social networking sites, which posed significant challenges in maintaining and revising the database, preparing for meetings, and conducting meetings and interviews with stakeholders. On the other hand, when decisions needed to be made urgently, the advantage of the online platform was effective in some respects, allowing for timely responses and decision-making.

##### 4.3 Planning for future changes

In the UNFCCC context, the Paris Agreement was adopted in 2015 and entered into force in 2016. Negotiations by the UNFCCC continued during the Project period, with ongoing discussions on GHG inventory reporting requirements. The modalities, procedures and guidelines for the ETF was agreed in December 2018.

JICA Project experts were aware of the general concepts of the ETF before the Project began and were also able to consider the prospective reporting requirements for the GHG inventory tools (QA/QC plans, NIR templates, archiving) that will be developed in the Project. The JICA project experts made every effort to comply with the expected reporting requirements and to suggest necessary improvements. The JICA Project



is timely and designed to be flexible enough to accommodate any future changes in reporting rules under the UNFCCC. This is particularly noteworthy in order to enhance the sustainability of the results achieved by this Project.

5. Other issues of note/consideration that are related to or affect the project/impact on the project

None

## Chapter 4. For the Achievement of Overall Goal after the Project Completion

### 1. Prospects to achieve Overall Goal

The overall goal of the Project is to utilize regularly improved GHG inventories in the development and monitoring of mitigation actions, as assessed by the indicator "The latest GHG inventories are used in the development of NDCs". The NDC submitted in October 2020 is based on GHG inventory data for BUR1, the latest inventory, indicating that Mongolia is utilizing the GHG inventory as a tool for policy development.

It is expected that the CCRCC will continue to develop and implement the "GHG Inventory Improvement Plan for each GHG inventory cycle", which is the indicator for the Project goal, and the "Guidance for improvement of priority issues" for specific sectors and follow the PDCA cycle. By improving the GHG inventory and understanding the accurate GHG emissions and sinks, the reduction potential of mitigation actions to be set in the NDC will be clarified, and Mongolia will be able to provide feedback for the consideration of cost-effective policies and measures based on the data. The improvement of GHG inventories may require the development and maintenance of new data and parameters, as well as the cooperation of stakeholders, etc., so the issues may not always be resolved as planned. It is necessary to pay attention to the significance of recording the process of improvement activities and using it for future GHG inventory cycle.

Although there are some concerns about the sustainability of the Project's results from the perspective of the implementation structure and technology, it is highly likely that the Project will continue to achieve its overall goals.

### 2. Plan of operation and implementation structure of the Mongolian side to achieve overall goal

As described in section 1 of Chapter 3, as a party to the Paris Agreement, Mongolia is obligated to submit NDCs and BTRs, and the updated NDC submitted to the UNFCCC in 2020 was approved by Government Decree No. 407, and the government is committed to the NDC.

In terms of finance, these institutional arrangements will continue after the completion of the Project, and the agency in charge of the Mongolian GHG inventory will continue its GHG inventory improvement activities, provided with information and data from relevant stakeholders.

### 3. Recommendations for the Mongolian side

The followings are the recommendations to be made to the Mongolian side in order to ensure the achievement of the Project's overall goal.

#### Long term vision/planning

Rather than approaching GHG inventory and BUR/NC/BTR creation and improvement on a project basis, the manager should create a plan for each GHG inventory cycle and manage the progress and take responsibility across the team, based on a long-term vision. GHG inventories should be prepared and improved after developing shorter-cycle biennial business plans based on long-term improvement plans.

### Exercising leadership to ensure effective collaboration

CCRCC has a network of stakeholders and academia related to the GHG inventory, enabling it to identify relevant stakeholders and academia by sector and priority for the GHG inventory. As indicated in the QA/QC plan, the CCRCC, as the leader and secretariat, needs to convene relevant stakeholders to establish and run Working Groups on issues for consideration. Showing leadership and teamwork, the CCRCC is encouraged to run improvement Working Groups. Depending on the theme of the technical issue/challenge, CCRCC may co host the Working Group with a research institution or any other expert institution. Considering the structure of CCRCC and the limited funding, looking for partners to improve the GHG inventory is a realistic approach.

### Need for further research

Although some of the data necessary for the refinement of the calculations in the energy and LULUCF sectors have been developed through the research and improvement activities in Output 2 and Output 3 of this Project, further research is still needed after the completion of the project.

Among the priority issues addressed in Output 2, the one that has the greatest impact on emissions from the energy sector is the energy balance table for 1990-2019, which was developed for the first time using domestic data. The energy balance table has a significant impact on the calculation of emissions from the energy sector because it covers activity data for emission estimates for almost all categories of the energy sector. The Energy Balance Table is produced by integrating primary statistics on energy, especially in recent years (2015 onwards), which provide more detailed data on final consumption of each fuel type and coal, contributing to the refinement of emission estimates, especially from fuel combustion. It is imperative that MEEI, NSO, and CCRCC continue to work closely with each other to improve the energy balance table and produce it on a regular basis, and to address the areas that need improvement that were identified in the process of preparing the time series of the energy balance table.

Regarding GHG emissions and sinks from grasslands, the data show a relationship between the degree of grassland degradation and carbon content in typical grasslands (steppe) in Mongolia. Because of the secular trend of increasing degraded grasslands, emissions from grasslands were calculated to be dominant, suggesting that conservation and restoration of degradation can be mutually beneficial between pure ecosystem conservation and GHG emission control.

From the perspective of climate change countermeasures, it is important to understand both the amount of emission and absorption as gas fluxes (obtained from GOSAT observations and model calculations) and the amount of emission and absorption due to anthropogenic effects, such as the calculation linked to the degree of degradation that we are aiming to develop.

The GHG calculation for grassland is a subject that requires continuous improvement because the area of the grassland has a large impact and a small change in parameters can change the calculation results significantly.

#### 4. Monitoring Plan from the completion of the Project to Ex-post Evaluation

Based on the international standard, DAC evaluation criteria, JICA assesses each Project in terms of relevance, effectiveness, efficiency, impact, and sustainability. While the assessment results are summarized in this report, the Project will be evaluated again as an ex-post evaluation. In general, the ex-post evaluation will be conducted three years after the Project.

# Annexes

Annex 1 : PDM

Annex 2 : Flow of activities

Annex 3 : Personnel

Annex 4 : Training

Annex 5 : Certificate of Handover (draft)

Annex 6 : JCC Minutes

Annex 7 : Project R/D

Annex 8 : Monitoring sheets

Annex 9 : List of products produced by the Project

## Project Design Matrix #1

**Project Title:** Project for capacity development to establish a national GHG inventory cycle of continuous improvement

**Implementing Agency:** MET (Ministry of Environment and Tourism), CCRCC (Climate Change Research and Cooperation Centre)

**Target Group:** CCRCC (Climate Change Research and Cooperation Centre)

**Period of Project:** November, 2017~October, 2019

**Project Site:** Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
<p><b>Overall Goal</b></p> <p>Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.</p>	<p>The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)</p>	<p>• National Inventory Report and NDC</p>	
<p><b>Project Purpose</b></p> <p>The GHG inventory is regularly improved with the cooperation of relevant institutions</p>	<p>1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle            2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET            3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent            4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle            5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented</p>	<p>1) GHG improvement plan and report on improvement of priority issues            2) National Manual approved by MET            3) National manual and MoU between MET/[ECF] and data providers            4) Improvement guidance and report on improvement of priority issues            5) Improvement guidance and research report on improvement of priority issues</p>	<p>A: C/Ps trained through the Project do not leave the office in large number            B: Political instability/economic crisis that affect the inventory activities do not occur            C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21</p>
<p><b>Outputs</b></p> <p>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</p> <p>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</p> <p>Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.</p>	<p>1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice)            1-2) List of priority issues of GHG inventory is developed (twice)            1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice)            1-4) Report on improvement of priority issues is developed (twice)            1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET</p> <p>2-1) List of priority issues for highly priority theme in Energy sector is developed (twice)            2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice)            2-3) Report on improvement of priority issues in Energy sector is developed (twice)            2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)</p> <p>3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice)            3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once)            3-3) Research report on improvement of priority issues in LULUCF sector is developed (once)            3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)</p>	<p>1-1) Long list of issues            1-2) List of priority issues of GHG inventory            1-3) GHG inventory improvement plan            1-4) Report on improvement of priority issues            1-5) Final draft submitted to Technical and Science Committee</p> <p>2-1) List of priority issues            2-2) Improvement guidance            2-3) Report on improvement of priority issues            2-4) Report on improvement of priority issues</p> <p>3-1) List of priority research issues            3-2) Improvement guidance            3-3) Research report on improvement of priority issues            3-4) Research report on improvement of priority issues</p>	

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert • GHG inventory (General)</p> <p>2) Short term experts • GHG inventory (Institutional Arrangements) • GHG inventory (Energy) • GHG inventory (Land use, Land use change and Forestry) • Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment • PC for data management • Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p>			<p><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p>

Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector

Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.

Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.

Activity 2-6: Compile the results of improvements into a report.

Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)

Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.

Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)

B: The first BUR is submitted according to the schedule (in June 2017)



**<Issues and countermeasures>**



## Project Design Matrix #2

**Project Title:** Project for capacity development to establish a national GHG inventory cycle of continuous improvement

**Implementing Agency:** MET (Ministry of Environment and Tourism), CCRCC (Climate Change Research and Cooperation Centre)

**Target Group:** CCRCC (Climate Change Research and Cooperation Centre)

**Period of Project:** November, 2017~February 2022

**Project Site:** Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
<b>Overall Goal</b>			
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	• National Inventory Report and NDC	
<b>Project Purpose</b>	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21
<b>Outputs</b>			
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues	
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues	

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert • GHG inventory (General)</p> <p>2) Short term experts • GHG inventory (Institutional Arrangements) • GHG inventory (Energy) • GHG inventory (Land use, Land use change and Forestry) • Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment • PC for data management • Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p>			<p><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p>

Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector

Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.

Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.

Activity 2-6: Compile the results of improvements into a report.

Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)

Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.

Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)

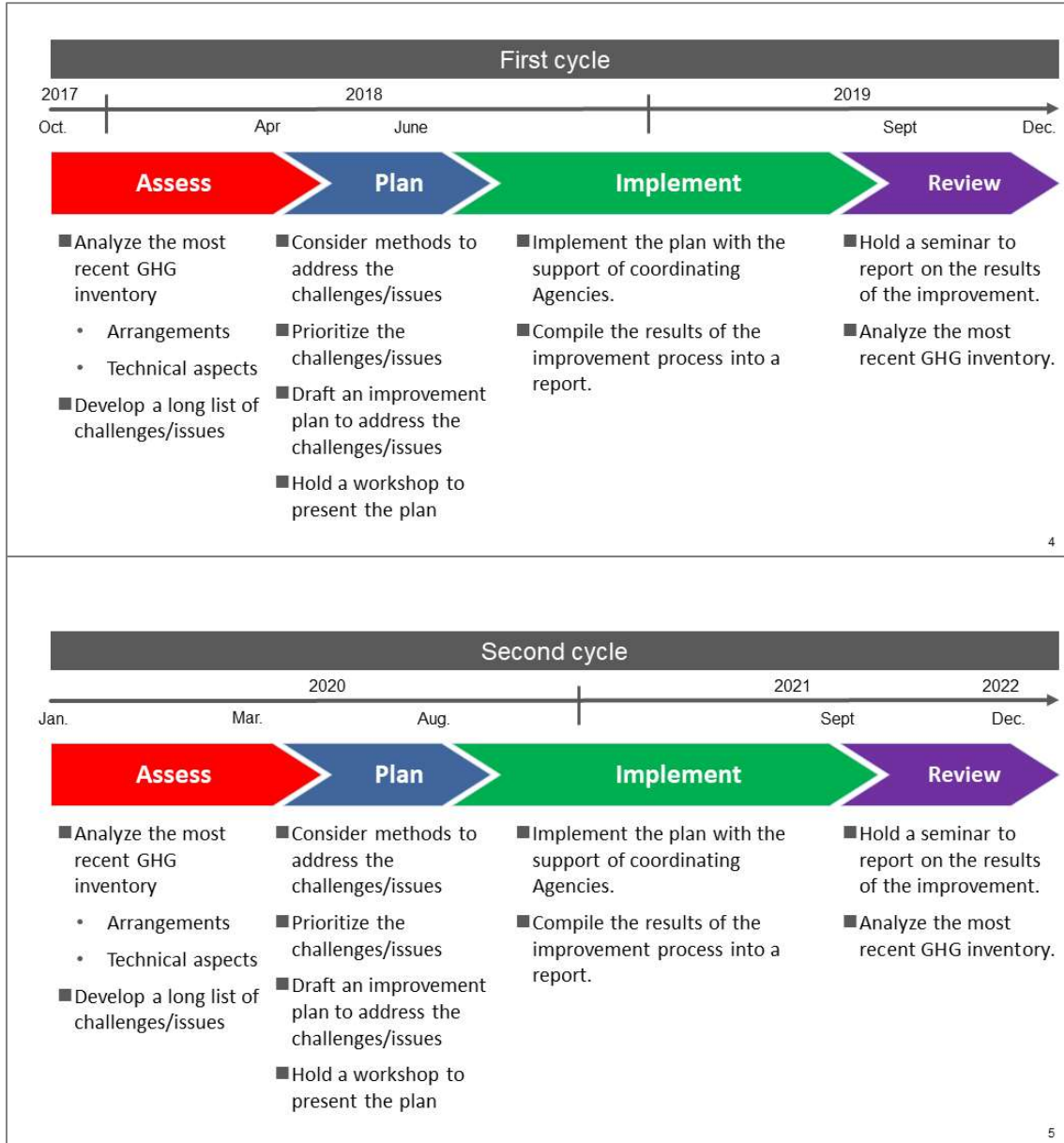
B: The first BUR is submitted according to the schedule (in June 2017)



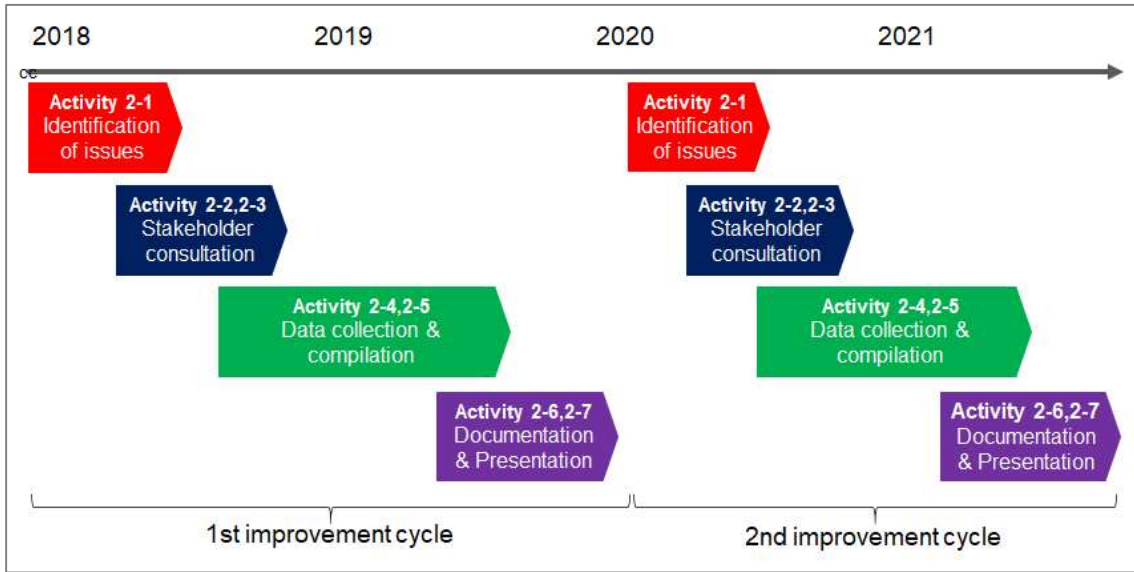
**<Issues and countermeasures>**

## Annex 2: Flow of activities

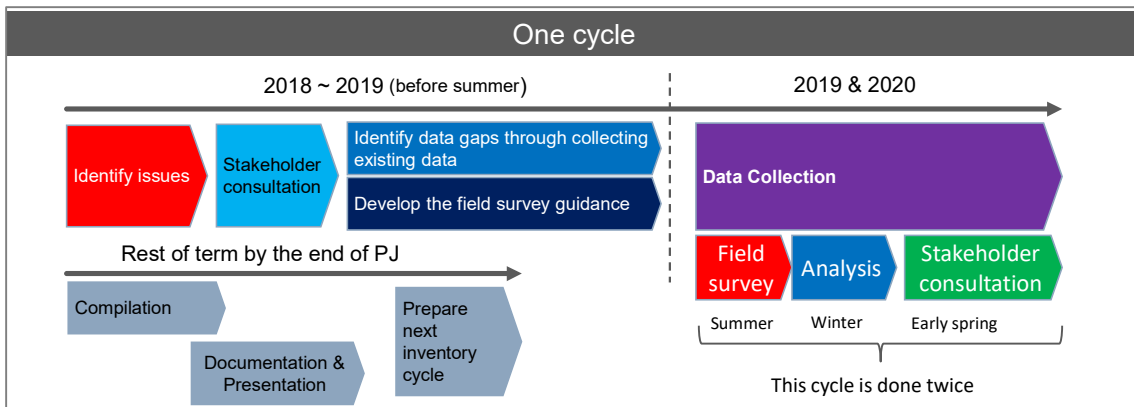
### Overview of Project Activities for Output 1



### Overview of the Project activities and schedules (Output 2)



### Overview of the Project activities and schedules (Output 3)







**MINUTES OF MEETING**  
**ON**  
**THE 3<sup>rd</sup> COUNTRY TRAINING**  
**UNDER**  
**THE PROJECT FOR CAPACITY DEVELOPMENT TO ESTABLISH A NATIONAL**  
**GHG INVENTORY CYCLE OF CONTINUOUS IMPROVEMENT**  
**IN MONGOLIA**

The Ministry of Environment and Tourism (hereinafter referred to as “MET”) and the Japan International Cooperation Agency (hereinafter referred to as “JICA”) for the Project For Capacity Development To Establish A National GHG Inventory Cycle Of Continuous Improvement (hereinafter referred to as “the Project”) held a meeting today.

In the course of the meeting, both Mongolian side and Japanese side discussed about the arrangement of the 3<sup>rd</sup> country training of the Project as attached hereto.

Ulaanbaatar, November 30<sup>th</sup>, 2018



**Mr. Akihiro Tamai**

**Mr. Khandjav Batjargal**

Sub-Chief Technical Advisor

Director General

The Project

Climate Change and International Cooperation

Japan International Cooperation Agency

Department

JAPAN

Ministry of Environment and Tourism

MONGOLIA



## THE ATTACHED DOCUMENT

### I. Objective of the meeting

To agree on arrangement of the 3<sup>rd</sup> country training under the project

### II. Content of Discussions

- The Project is planning to provide support for Ms. Dolgosuren Saruul to participate in the 24<sup>th</sup> Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (hereinafter referred to as “UNFCCC”). The objective of the business trip is to enhance knowledge and experience in Transparency Framework under the Paris Agreement of UNFCCC. She will make a presentation on the first Biennial Update Report (hereinafter referred to as “BUR”) of Mongolia during the session of Facilitative Sharing of Views which is mandatory for each BUR submitted by the party.
- Both ECF and JICA agreed that this business trip is considered as the 3<sup>rd</sup> country training as specified in the Record of Discussions signed between the MET of Mongolia and JICA for the Project on June 27, 2017.
- In the spirit of cost-sharing for the Project, both sides agreed to cost coverage on the participant as below.

Covered by JICA	<ul style="list-style-type: none"><li>➤ Round trip air fair between Ulaanbaatar and Katowice</li><li>➤ Ground transportation expenses from/to airports</li><li>➤ Per Diem in accordance with regulation of Mongolian Government</li><li>➤ Travel insurance fee</li></ul>
Covered by ECF	<ul style="list-style-type: none"><li>➤ Accommodation fee in Poland</li></ul>

Annex:

Third Country Training using UNFCCC COP/FSV

Provisional Daily Program for the 3<sup>rd</sup> country training

## ANNEX

**Provisional Daily Program for the 3<sup>rd</sup> country training**

12/2 (Sun)	AM	SU4011 7:55-9:45 (Ulaanbaatar-Moscow)		
	PM	SU2000 12:05-12:15 (Moscow-Warsaw) LO3885 16:50-17:40 (Warsaw-Katowice) Check in to accommodation		
3(Mon)	AM	Registration		
	PM	15:00 – 18:00	Observing Facilitative Sharing of Views	
4(Tue)	AM			
	PM	15:00 – 18:00	SBSTA-IPCC special event: Unpacking the new scientific knowledge and key findings in the IPCC Special Report on Global Warming of 1.5°C	
		18:30 – 20:00	Country experiences with the development of enhanced transparency frameworks (Room 1)	
5(Wed)	AM	10:30 – 13:00	Pre-2020 stocktake: technical part	
	PM	13:15 – 14:45	Update on ICA process MRV framework for non-Annex I Parties (Room 6)	
		15:00 – 16:30	How to maximize the leverage out of the design of the NDC and implementation of the transparency framework (Japan Pavilion)	
		17:00 – 18:30	Operationalising flexibility under the Paris Agreement's enhanced transparency framework (Japan Pavilion)	
6(Thu)	AM	10:30 – 12:00	Talanoa Dialogue: wrap-up meeting of the preparatory phase	
	PM	18:30 – 20:00	Technology needs assessments and action plans for implementing the Paris Agreement (Room 4)	
7(Fri)	AM	10:30 – 13:00	Presentation at Facilitative Sharing of Views	
	PM	18:30 – 20:00	2019 Refinement, SLCF Expert Meeting and other IPCC activities (Room 1)	
8(Sat)	AM	10:30-12:00	Recommendations based on JICA's Support for National GHG Inventory in non-Annex I Parties, towards Enhanced Transparency Framework under the Paris Agreement (Japan Pavilion)	
	PM		LO3886 18:15-19:10 (Katowice-Warsaw)	
9(Sun)	AM			
	PM	SU3701 10:45-14:50 (Warsaw-Moscow)		
10 (Mon)	AM	SU4010 19:00-6:15 (Moscow-Ulaanbaatar)		

Note: Unscheduled negotiation on transparency under SBI, SBSTA, APA may be prioritized except for Wednesday afternoon and Friday morning.

JICA Project for Capacity Development to  
Establish a national GHG Inventory Cycle of Continuous Improvement  
November 2018

Third Country Training using UNFCCC COP/FSV

Objectives of the 3<sup>rd</sup>-country training

National GHG inventory compiler teams in developing countries have to get familiarized with the current international MRV practices. This will help the country adopting to the Transparency Framework under the Paris Agreement which will be built upon the existing system.

Furthermore, capacity to follow/watch these agenda items can be a key to predict and adopt to future possible modification on reporting requirements. COP24 is a suitable occasion since the work of the Ad hoc Working Group on the Paris Agreement on the common modalities, procedures and guidelines for the transparency will be concluded in this session.

Schedule

See the attached schedule

For the objectives above, the participant to this 3<sup>rd</sup> country training will:

- experience the Facilitative Sharing of Views (FSV) against the BUR1 of Mongolia
- participate in international negotiation process on transparency.

Through this mission, the participant is expected to learn:

- Major interests of party groups and parties on Transparency
- Interpretation of the new reporting guidelines
- Direction of future guidelines (strictness, key reporting items···)

After the trip, the participant is required to:

- submit a business trip report on FSV and inventory-related activities
- share experience and findings to ECF members (e.g. internal meeting and/or manual)
- report back to JICA Mongolia office

During project formulation, a 3<sup>rd</sup>-country training under the project is planned to provide opportunity on exchanging experience on GHG inventory with other countries. Participation to FSV suits this intention.

# Training Report

## НҮБ-ЫН УУР АМЬСГАЛЫН ӨӨРЧЛӨЛТИЙН СУУРЬ КОНВЕНЦ (НҮБУАӨСК)-ИЙН ТАЛУУДЫН 24 ДҮГЭЭР БАГА ХУРЛЫН ТАЛААРХ ТАЙЛАН



НҮБ-ын Уур амьсгалын өөрчлөлтийн суурь конвенцийн талуудын 24 дүгээр бага хурал (COP24), Киотогийн протоколд оролцогч талуудын 14 дүгээр бага хурал (CMP14), Парисын хэлэлцээрт оролцогч талуудын анхдугаар бага хурлын 3 дугаар хэсэг (CMA1-3), Шинжлэх ухаан технологийн туслах байгууллагын 49 дэхь хурал (SBSTA49), Хэрэгжилтийг хангах туслах байгууллагын 49 дэхь хурал (SBI49), Парисын хэлэлцээрийн ажлын хэсгийн 1-7 дугаар хуралдаанууд (APA1-7) тус тус 2018 оны 12 дугаар сарын 2–14-ний өдрүүдэд БНПУ-ын Катовице хотноо зохион байгуулагдав.

Энэ удаагийн ээлжит хуралдааны үндсэн гол зорилго Парисын хэлэлцээрийг хэрэгжүүлэх Дүрмийн номыг батлахад оршиж байв.

Энэ жилийн бага хуралд нийт 196 улсын 11090 албаны төлөөлөл, 11 ажиглагч тал, 216 НҮБ-ын нарийн бичгийн газар болон харьяа байгууллагын төлөөлөл, 271 мэргэжлийн байгууллага болон бусад холбогдох байгууллагын төлөөлөл, 652 засгийн газар хоорондын байгууллагын төлөөлөл, 5054 төрийн бус байгууллагын төлөөлөл буюу нийт 18420 хүн оролцов.

Монгол Улсаас тус арга хэмжээнд оролцсон албан төлөөлөл:

1. Уур амьсгалын өөрчлөлтийн асуудал хариуцсан Тусгай элч З.Батжаргал /2018.11.29-12.15/
2. БНПУ-д суугаа онц бөгөөд бүрэн эрхт Элчин сайд Н.Батаа /2018.12.11-13/
3. БНПУ-д суугаа онц бөгөөд бүрэн эрхт Элчин сайдын зөвлөх Н.Мөнхтуяа /2018.12.10-13/
4. БОАЖЯ-ны Уур амьсгалын өөрчлөлт, гадаад хамтын ажиллагааны газрын дарга Х.Батжаргал /2018.12.08-14/
5. ГХЯ-ны Олон талт хамтын ажиллагааны газрын 2-р нарийн бичгийн дарга Ц.Анхбаяр /2018.12.10-15/
6. Нийслэлийн Байгаль орчны газрын дарга Э.Баттулга /2018.12.07-11/

7. Эрчим хүчний зохицуулах хорооны Зах зээлийн судалгаа, хамтын ажиллагааны хэлтсийн дарга Л.Жамбаа /2018.12.10-15/
8. БОАЖЯ-ны Уур амьсгалын өөрчлөлт, гадаад хамтын ажиллагааны газрын мэргэжилтэн Ц.Ананд /2018.11.29-12.15/
9. Байгаль орчин, уур амьсгалын сангийн Уур амьсгалын өөрчлөлтийн төсөл хэрэгжүүлэх нэгжийн Уур амьсгалын санхүүжилт хариуцсан мэргэжилтэн Д.Саруул /2018.12.02-07/
10. Байгаль орчин, уур амьсгалын сангийн Уур амьсгалын өөрчлөлтийн төсөл хэрэгжүүлэх нэгжийн Хүлэмжийн хийн тооллогын мэргэжилтэн Б.Тэгшжаргал /2018.12.06-15/
11. Үндэсний оруулах хувь нэмрийг хэрэгжүүлэх олон улсын түншлэл (NDC Partnership) байгууллагын Монгол дахь зохицуулагч Д.Дагвадорж /2018.12.03-13/

## ҮНДСЭН ХУРАЛ/ХЭЛЭЛЦҮҮЛЭГ

Эхний 7 хоног: 2018 оны 12 дугаар сарын 2– 8-ны өдөр

**12 дугаар сарын 2-ны өдөр:** Дараах хурлуудын албан ёсны нээлтийн арга хэмжээнүүд болов. Үүнд:

- COP – анхдугаар нэгдсэн хуралдаан
- CMP – анхдугаар нэгдсэн хуралдаан
- CMA – 21 дүгээр нэгдсэн хуралдаан
- SBSTA – анхдугаар нэгдсэн хуралдаан
- SBI – анхдугаар нэгдсэн хуралдаан
- APA – 20 дугаар нэгдсэн хуралдаан

Нээлтийн хуралдаануудын үеэр талууд холбогдох хөтөлбөрүүдийг хэлэлцэж, батлав. Үүний хажуугаар, Монгол Улс гишүүн нь болох G77+Хятад бүлгийн хаалттай хуралдаан үдээс хойш болж З.Батжаргал, Ц.Ананд нар оролцов. Хөгжиж буй орнууд энэ удаагийн хэлэлцээрт ямар байр суурь баримталж оролцох, талаар санал солилцож хөтөлбөрийн төслүүд, тогтвортой санхүүгийн механизмыг бүрдүүлэх, өндөр хөгжилтэй орнуудын хүлээх үүргийг ялгаатай тогтоох, Дохагийн нэмэлт өөрчлөлтийг хэрэгжүүлэх зэрэг асуудлуудын талаар онцгойлон хэлэлцэж, саналаа нэгтгэв.

**12 дугаар сарын 3-ны өдөр:** Бага хурлын албан ёсны нээлтийн ажиллагаа мөн өндөр дээд хэмжээний хурлын үйл ажиллагаа болж өнгөрөв. Хурлын нээлтийн арга хэмжээнд COP24/CMP14/CMA1-3 хурлуудын ерөнхийлөгчөөр сонгогдсон Микал Куртика, COP23 хурлын ерөнхийлөгч асан Фрэнк Баинимарама, Польшийн

ерөнхийлөгч Андрей Дуда, НҮБ-ын Ерөнхий нарийн бичгийн дарга Антонио Гутеррес, НҮБ-ын Ерөнхий чуулганы ерөнхийлөгч хатагтай Мариа Фернанда Эспиноса Гарсие болон НҮБУАӨСК-ийн Гүйцэтгэх нарийн бичгийн дарга хатагтай Патрисиа Эспиноса зэрэг удирдах түвшний төлөөллүүд нээлтийн арга хэмжээнд үг хэлэв. Хэлсэн үгнүүдээс онцолбол:

Польш Улсын ерөнхийлөгч Андрей Дуда хэлсэн үгэндээ Польш Улсын хүлэмжийн хийн ялгарал 1988 оны түвшинтэй харьцуулахад 30% буурсан ба ингэхдээ эдийн засаг өссөн. Үүнд мөн үр бүтээлтэй нүүрсний технологийн хувь нэмэр байгааг онцлон дурьдав.

НҮБ-ын Ерөнхий нарийн бичгийн дарга Антонио Гутеррес “бид маш том уур амьсгалын өөрчлөлтийн асуудалд ороод байна” хэмээгээд 4 зүйлийг онцлов. Үүнд:

- Уур амьсгалын өөрчлөлтийг сааруулахад илүү зоригтой арга хэмжээ авах шаардлагатай байгааг шинжлэх ухаан шаардаж байна.
- Парисын хэлэлцээр нь шилжилт хийх үндсэн тогтолцоог бий болгох нөхцлийг бүрдүүлэх бөгөөд үүнийг Катовицед бид хүчин төгөлдөр болгох хэрэгтэй
- Харанга дэлдээд байгаа “даян дэлхийн уур амьсгалын сүйрэл”-д бүгд хөрөнгө оруулах үүрэг хүлээх ёстой.
- Уур амьсгалын өөрчлөлтийг сааруулах чиглэлийн арга хэмжээ нь итгэл төрүүлсэн шилжилтийн замын зураглалыг зурж байгаа ч, бидэнд улс төрийн дэмжлэг болоод алсыг харсан удирдлага хэрэгтэй байна.

Дэлхийн банкны гүйцэтгэх захирал Кристалина Жоржиева тус банк уур амьсгалын санхүүжилтээ 5 жилийн хугацаанд хоёр дахин нэмэгдүүлэх буюу 200 тэрбум ам.долларт хүргэх ба үүний 50 тэрбум ам.долларыг дасан зохицох, даван туулах чиглэлийн арга хэмжээнд зориулах болсон талаар мэдэгдэв. Мөн тус банк нь бодлогын түвшинд нүүрстөрөгчийн ялгарал багатай бодлогыг дэмжиж, эдийн засгийн үнэлгээг нүүрстөрөгчийн үнэ өртгийн тусгалаар үнэлэх болсноо илэрхийлэв.

Бага хурлын ерөнхийлөгч Андрей Куртика Шудрага шилжилтийн тунхаг бичгийг санал болгож байгаагаа зарлаад энэ нь олон нийт, олон талын оролцоог хангасан, нийгмийн асуудлыг орхигдуулалгүй тусгасан, Парисын хэлэлцээрийг дэмжсэн, нэмэлт уриалга бүхий баримт бичиг болох талаар талуудад мэдэгдэв.

Өндөр түвшний мэдэгдэл хийх арга хэмжээнд нийт 25 улсын, үүнд Швейцар, Испани, Австри, Финлянд, Люксембург, Непал, Болгар зэрэг улсын ерөнхийлөгчид, Европын Комиссын (European Commission)-ны дэд ерөнхийлөгч зэрэг төлөөлөл

оролцсон дотор 16 ерөнхийлөгч, 8 ерөнхий сайдын болон бусад төрийн өндөрлөгийн түвшний төлөөллүүд мэдэгдэл хийв.

**12 дугаар сарын 4-ний өдөр:** Уур амьсгалын өөрчлөлтийг сааруулах даян дэлхийн арга хэмжээ (Global Climate Action)-ний өндөр түвшний арга хэмжээ зохион байгуулагдаж, тус арга хэмжээнд Польшийн ерөнхий сайд болон НҮБ-ын Ерөнхий нарийн бичгийн дарга үг хэлж, бусад өндөр түвшний төлөөллүүд оролцов. Тус арга хэмжээг Марракешийн Түншлэлийн хүрээнд зохион байгуулсан бөгөөд уур амьсгалын өөрчлөлттэй тэмцэх зорилгоор авч хэрэгжүүлж буй үйл ажиллагаа, бодлого төлөвлөлт, сөрөг нөлөөлөл, тэдгээрийн эсрэг гаргаж буй хүчин чармайлтын талаар өндөр түвшинд санал солилцох боломж олгох зорилготой байв.

Уг өдрийн бас нэг чухал арга хэмжээ “Өөрчлөлтийг хамтдаа хийцгээе”-Цахилгаанжуулсан хөдөлгөөний түншлэл”-ийн тухай тунхаг бичгийг танилцуулсан нэгдсэн хуралдаан байв. Энэхүү тунхаг уриа нь Англи болон Польш Улсын хамтарсан шинэ санаачлага бөгөөд үндсэн зорилго нь цахилгаан тээврийн хэрэгслийг нэмэгдүүлэх замаар тээврийн салбарын хүлэмжийн хийн ялгарлыг бууруулахад оршино. Арга хэмжээнд НҮБ-ын Ерөнхий нарийн бичгийн дарга Антонио Гутеррес, Польшийн ерөнхий сайд Матеус Моравиецки нар оролцож үг хэлэв. Тус тунхаг бичигт зөвхөн төрийн төлөөллүүд оролцоод зогсохгүй мөн төрийн бус болоод орон нутгийн гэх мэт олон тал нэгдэхболомжтойгоороо онцлог юм.

Уг өдөр болсон бас нэг онцлох арга хэмжээ SBSTA ба IPCC (Засгийн газар хоорондын мэргэжилтнүүдийн хороо) хамтран зохион байгуулсан 1.5 градусын дэлхийн дулаарал тайлангийн талаар танилцуулга хийх хурал байв.

**12 дугаар сарын 5-ны өдөр:** Энэ өдрийн гол хуралдаан 2020 оноос өмнө авч хэрэгжүүлсэн арга хэмжээнүүдийн тайланг сонсох нэгдсэн хуралдаан байв. Уг хуралдааны үйл ажиллагаа 2 хэсгээс бүрдэж байсан нь: техникийн уулзалт, хэлэлцүүлэг буюу энэ өдөр болсон нэгдсэн хуралдаан, хоёр дахь хэсэг нь 12 дугаар сарын 10-ны өдөр зохион байгуулсан өндөр түвшний хурал байв. Нэгдсэн тайланд санхүүгийн болон хэрэгжүүлэгч механизмууд тайлан ирүүлсэн дотор Дасан зохицох сан, Уур амьсгалын ногоон сан, Уур амьсгалын технологийн төв ба сүлжээ, Даян дэлхийн байгаль орчны сан болон бусад хэрэгжүүлэгч, мэргэжлийн хороод орсон. Энэ өдөр болсон дараачийн онцлох арга хэмжээ бол Найробигийн үйл ажиллагааны хөтөлбөрийн үндэсний зохицуулагч нарын 12 дугаар чуулган. Уг арга хэмжээний үеэр эдийн засаг, амьжиргаа тэтгэсэн үйл ажиллагааг солонгоруулах нь хэрхэн уур амьсгалын өөрчлөлтөнд нөлөө үзүүлэх талаар авч хэлэлцэв. Үүнд SBSTA болон тодорхой улсууд уур амьсгалын өөрчлөлтийг сааруулах, дасан зохицох бодлого, төлөвлөлтийн талаар туршлагаасаа хуваалцав.



COP24-ийн ерөнхийлөгч энэ өдөр төрийн болон төрийн бус талуудтай, уугууль иргэд, нутгийн иргэдтэй нээлттэй яриа, хэлэлцүүлэг өрнүүлэв.

**12 дугаар сарын 6-7-ны өдрүүд:** Талуудын 23 дугаар бага хурлаар санаачлан эхлүүлсэн Таланоа буюу талуудын тэгш, шудрага оролцоог хангасан хэлэлцээрийг дүгнэх анхны хуралдаан болж өнгөрөв. Таланоа-гийн бүсчилсэн хэлэлцүүлэгт Монголын төлөөлөгчид оролцож байр сууриа илэрхийлэв. Монгол улс хэдийгээр Хүлэмжийн хийн ялгаралт (ХХЯ)-ын хувьд том нөлөөлөгч биш боловч, олон улсын хамтын нийгэмлэгийн хүчин чармайлтыг дэмжих чиглэлээр тодорхой үйл ажиллагаа явуулж байгааг дурьдаж, Талуудын бага хурал (COP)-ын хэлэлцүүлгийг үндсэн асуудал дээрээ төвлөрүүлж цаг хугацаа, хөрөнгө хүч хэмнэх бололцоо байгааг тэмдэглэв.

SBI байгууллагаас санаачлан зохион байгуулсан Хавсралт 1-ийн бус улс орнуудыг оролцуулсан “6 дахь үзэл санаагаа хуваалцах семинар”-т оролцов.

Түүнчлэн 12 дугаар сарын 3 болон 7-ны өдрүүдэд SBI байгууллагын 49-р хуралдаанаар хөгжиж буй Хавсралт 1-ийн бус 11 орон өөрсдийн 2 жил тутмын тайлан илтгэлийг “Олон улсын дүн шинжилгээ ба зөвлөлгөөнд” (ОУДЗ/ICA) танилцуулж, хэлэлцүүлэв. Талуудын 13-р бага хурлаас гарсан Балигийн үйл ажиллагааны төлөвлөгөөгөөр хөгжиж буй орнууд хэмжих, тайлагнах, нотлох зарчмыг илүү боловсронгуй болгох, хэрэгжүүлэх талаар тохиролцсоны дагуу хөгжиж буй орнууд 2 жил тутмын хүлэмжийн хийн тооллого болон сааруулах арга хэмжээний талаарх тайланг (BUR) Конвенцийн газар хүргүүлдэг болсон. Олон улсын дүн шинжилгээ ба зөвлөлгөө нь энэхүү 2 жил тутмын тайлан илтгэлд мэргэжлийн дүн шинжилгээ хийх зорилготой. Монгол улс тус 49-р хуралдаанд оролцож 2 жил тутмын анхдугаар тайлан илтгэлийг шалгуулж хэлэлцүүлэв.

**12 дугаар сарын 8-ны өдөр:** Эхний долоо хоногийн сүүлийн өдөр хэлэлцүүлгүүдийн явцыг дүгнэсэн дараах нэгдсэн хуралдаанууд болов.

- SBSTA – 3 дугаар нэгдсэн хуралдаан
- SBI – 3 дугаар нэгдсэн хуралдаан
- APA – 22 дугаар нэгдсэн хуралдаан
- SBSTA, SBI мөн APA-ийн хамтарсан хуралдаан
- COP – 4 дүгээр нэгдсэн хуралдаан

**SBI-ийн хурлаар хэлэлцсэн асуудал:** Парисын хэлэлцээрийн 4.12 дугаар заалтын Үндэсний тодорхойлсон хувь нэмэр (NDC)-ийг бүртгүүлэх тухай: Талууд бүртгэлийг ямар зарчмын дагуу хийх талаар хэлэлцсэн бөгөөд хөгжиж буй орнууд “хоёр хэсгээг бүрдсэн нэг бүртгэл” байх саналыг тавив: нэг нь Үндэсний тодорхойлсон хувь нэмэр

(ҮТХН), нөгөө нь дасан зохицох харилцааг зохицуулсан хэсэг. Гэвч, өндөр хөгжилтэй орнууд албан бус хэлэлцээрийг үргэлжлүүлж, дараа дахин авч хэлэлцэх санал тавив.

#### **SBSTA-ийн хурлаар хэлэлцсэн асуудал:**

Парисын хэлэлцээрийн 6-р бүлэг (Хамтын ажиллагааны арга зам). Үүнд зах зээлийн бус арга хэрэгслийг тодорхойлох, Цэвэр технологийн механизм, давхар тооцолтоос зайлсхийх, хариу арга хэмжээ зэрэг асуудлуудын талаар хэлэлцэв.

Уугууль иргэд, бүлгийн платформ байгуулах асуудал дээр талууд санал нэгдэж SBSTA-ийн нэгдсэн хуралдаанд өргөн барихаар болов.

Хөдөө аж ахуй: тус салбарт авч хэрэгжүүлж буй арга хэмжээг хэрхэн бүртгэж, мэдээлэх үүнд жижиг фермерчид, хүнсний аюулгүй байдал, хүйсийн эрх тэгш байдал зэрэг асуудлуудыг хэрхэн тусгах талаар хэлэлцэн нэгдсэн шийдвэрт хүрч SBI, SBSTA-д өргөн барихаар тогтов.

#### **АРА-ийн хурлаар хэлэлцсэн асуудал:**

Уур амьсгалын өөрчлөлтийг сааруулах чиглэлийн арга хэмжээний талаарх шийдвэр 1/CP.21: Хөгжиж буй орнууд Үндэсний Тодорхойлсон Хувь нэмэр (ҮТХН), ил тод байдлын хувьд өөр өөр гараанаас эхлэх болон улс орны нөхцөл байдлыг харгалзан үзэж тодорхойлох, мөн чадавхи бэхжүүлэх шаардлагыг дэмжиж, өндөр хөгжилтэй болон хөгжиж буй орнууд ялгаатай нөхцөлтэй байх саналыг тавьж байв. Цаашлаад, дасан зохицох чиглэлийн тайлан, бүртгэл, ил тод байдлын тогтолцоо, дэлхий нийтийн нэгдсэн тооллого зэрэг асуудлын талаар хэлэлцэв.

**Эхний долоо хоног** Конвенцийн Шинжлэх ухаан, технологийн байгууллага (SBSTA), Хэрэгжилтийг хангах байгууллага (SBI) болон Парисын хэлэлцээрийн Онц ажлын хэсгийн (АРА) хурлууд тус бүр хариуцсан асуудлуудын хүрээнд үр дүнтэй хуралдсан боловч, SBSTA-ийн хүрээнд “Судалгаа ба системтэй ажиглалт”-тай холбоотой асуудлаар саналын зөрөлдөөн гарч, шийдвэрт хүрч чадаагүй. Гол шалтгаан нь энэ оны 10 дугаар сард Засгийн газар хоорондын мэргэжилтүүдийн хорооноос (IPCC) гаргасан “1.5 градусын дэлхийн дулаарал” тайлан буюу 1.5 градусын дулаарал ямар сөрөг үр дагавар дагуулах талаарх тайлангийн баримт нотолгоо байв. Өөрөөр хэлбэл, дийлэнх орнууд шинжлэх ухааны уг судалгааны үр дүнг хүлээн зөвшөөрч, яаралтай арга хэмжээ авах тал дээр санал нэгдсэн боловч, газрын тосны ашиг сонирхол бүхий АНУ, Саудын Араб, ОХУ, Кувейт зэрэг орнууд санал нийлэхгүй байснаас уг асуудлыг дараагийн хуралдаанаар хэлэлцэхээр хойшлуулах шийдвэр гарсан.

## Санхүү

Парисын хэлэлцээрийг хэрэгжүүлэх зорилтын хүрээнд өндөр хөгжилтэй орнууд 2020 он гэхэд 100 тэрбум ам.долларын санхүүжилтийг босгох зорилго тавьсан боловч бодит байдал дээр хэрэгжилт удаан байгаад хөгжингүй орнууд бухимдаж байсан бөгөөд санхүүгийн асуудлыг зөвхөн хувийн хэвшлийн нуруун дээр үүрүүлэх гэж оролдох нь буруу гэсэн байр суурьтай байв. Одоогоор Уур амьсгалын ногоон санд 7 тэрбум ам.доллар төвлөрсөнөөс төсөл, хөтөлбөрийн хэрэгжилтэнд хуваарилалт хийж, 2 тэрбум ам.доллар үлдсэн нь улс орнуудын хөгжлийн чиг хандлагыг бүрэн өөрчилж, тулгамдаж буй дэлхийн дулаарлыг сааруулахад огт хангалтгүй гэж хөгжиж буй орнууд үзэж байв. Иймд, олон улсын түвшинд тогтвортой санхүүжилтийг баталгаажуулах, өндөр хөгжсөн орнууд тодорхойлсон санхүүгийн зорилтоо биелүүлэх, санхүүгийн хүртээмжийг сайжруулах, хувийн хэвшлийн түншлэлийг нэмэгдүүлэх, үндэсний түвшинд санхүүгийн салбарыг шинэчлэн ногоон, тогтвортой хөгжлийг дэмжсэн механизмыг яаралтай бий болгох шаардлагатай зэрэг асуудлуудын талаар талууд санал солилцов. Тодорхой үр дүнтэй шийдэл, шийдвэр гараагүй ч, 2 дахь долоо хоногийн сайд нарын хэлэлцээрээс тодорхой үр дүн гарна гэсэн хүлээлттэй эхний долоо хоног өндөрлөв.

Талуудын 23 дугаар бага хуралтай харьцуулахад энэ удаагийн хурлын үеэр санхүүгийн дэмжлэг үзүүлэх тал дээр цөөн тал саналаа илэрхийлсэн дотор

- Дэлхийн банк 2020 он хүртэл 100 тэрбум ам.долларыг төвлөрүүлнэ гэж байсан ба дараагийн 5 жилийн хугацаанд буюу 2021-2025 онд уур амьсгалын санхүүжилтээ 200 тэрбум ам.доллар хүртэл хоёр дахин нэмэгдүүлэхээ мэдэгдэв. Дэлхийн банк, Олон улсын санхүүгийн корпораци, Олон талын хөрөнгө оруулалтын баталгаажуулалтын агентлаг зэргээс уур амьсгалын чиглэлээр босгох санхүүгийн 50%-ийг дасан зохицох хүчин чармайлтанд зарцуулахаа мэдэгдэв.
- Дасан зохицох санд Германы Засгийн газар 70 сая евро, Франц, Швед, Итали, Европын холбоо тус бүр хэмжээ их биш боловч, жил бүр нийт 129 сая ам.долларын санхүүгийн дэмжлэг оруулахаа мэдэгдэв.
- Герман улс Уур амьсгалын ногоон санд яг ямар хэмжээний хувь нэмэр оруулахаа тодорхой мэдэгдсэн анхны улс болов. Тус улс Уур амьсгалын ногоон санд 1.5 тэрбум евро буюу өмнө нь 2014 онд олгосон хэмжээнээсээ даруй хоёр дахин ихийг оруулах болсноо мэдэгдэв.
- Норвеги улс Уур амьсгалын ногоон санд 516 сая ам.доллар өгөхөө мэдэгдсэн
- Тус санд Япон улс мөн оруулах санхүүгээ 2019 оноос нэмэгдүүлэхээ мэдэгдэв.

- ING, BBVA, BNP Paribas, Société Générale болон Standard Chartered гэсэн 5 банк 2.4 их наяд евро бүхий зээлийн нэгдсэн санг уур амьсгалын өөрчлөлтийг сааруулах үйл ажиллагаанд зориулах болсноо мэдэгдэв.
- Англи улс Африкийн Сахарын цөлийн бүс нутагт сэргээгдэх эрчим хүчний төслүүдэд зориулсан сангаа 100 сая фаундаар нэмэгдүүлж, 2040 он гэхэд Английн хүнд үйлдвэрийн салбарын кластерын хүлэмжийн хийн ялгарлыг тэглэхэд зориулж 170 сая фунт зарцуулна хэмээн мэдэгдэв.
- Эцэст нь хувийн хэвшлийн салбараас бизнесийн олон төлөөлөл ногоон чиглэлд арга хэмжээ авах талаар мэдэгдэл хийснээс онцолбол Маерск, дэлхийн хамгийн том усан тээврийн компани, 2050 он гэхэд нүүрстөрөгчийн ялгарлаа тэглэх зорилт тавьснаа мэдэгдэв.

### **2020 оноос өмнөх арга хэмжээ**

Өндөр хөгжилтэй орнуудын хүлэмжийн хийн ялгарлыг бууруулах үүргийг тодорхойлсон Киотогийн Протоколын 2 дугаар үүрэгт хугацаа (2013-2020)-ны арга хэмжээ Дохагийн нэмэлт өөрчлөлтийн хүрээнд хэрэгжих учиртай боловч шаардлагатай тооны талууд уг баримт бичгийг соёрхон батлаагүйгээс хүчин төгөлдөр болж хэрэгжиж эхлэхгүй байгаа нь хөгжиж буй орнуудын хувьд хөгжилтэй орнуудад Талуудын хурлын үеэр тавьж буй чухал асуудлын нэг байв. Нийт 144 улс баталснаар хүчин төгөлдөр болох Дохагийн нэмэлт өөрчлөлтийгулс баталснаар хүчин төгөлдөр болох (Монгол Улс 2018 оны 11 сарын 28-ны өдөр уг баримт бичгийг Засгийн газрын тогтоолоор баталсан.)

Хэдийгээр тус баримт бичиг нь хүчин төгөлдөр хэрэгжиж эхлээгүй ч тодорхой өндөр хөгжилтэй улс орон уур амьсгалын өөрчлөлтийг сааруулах, хүлэмжийн хийн ялгарлыг бууруулах чиглэлд авч хэрэгжүүлж буй хүчин чармайлтаа дурьдсаны дотор Норвег, Герман улсууд одоогийн санхүүгийн дэмжлэгээ хоёр дахин нэмэгдүүлэх, Финлянд улс чадавхи бэхжүүлэх, бэлэн байдлыг дэмжих чиглэлээр тууштай хүчин чармайлт гаргах, Япон улс Уур амьсгалын ногоон санг дэмжих одоогийн хүчин чармайлтаа нэмэгдүүлэх, Европын холбоо мөн тодорхойлсон санхүүгийн дэмжлэгээ бататгаж, хэрэгжүүлэхээр зорьж байгаагаа тус тус илэрхийлэв.

Хоёр дахь 7 хоног: 2018 оны 12 дугаар сарын 10–14-ний өдөр

**12 дугаар сарын 10-ны өдөр:** 2020 оноос өмнөх бэлтгэл ажлыг тайлагнах үйл ажиллагааны өндөр түвшний арга хэмжээ болж өнгөрөв. Тус арга хэмжээний үеэр 2 хэсгээс бүрдсэн сайд нарын түвшний хэлэлцүүлгүүд зохион байгуулсан бөгөөд арга хэмжээг COP24-ийн ерөнхийлөгч нээж үг хэлэв. Польш, Гренада, Австрали, Хятад, Бразил, Этиоп, Финлянд, Япон зэрэг улс орнуудын сайд нар 2020 оноос өмнө

ямар бодлого баримталж, арга хэмжээ авч байгаа талаараа илтгэл тавив. Илтгэлүүдээс онцолж дурьдвал:

Польш Улсын Байгаль орчны сайд Хенрик Ковалчик цохон тэмдэглэхдээ цэвэр агаар, олон нийтийн тээврийн салбар дахь хөрөнгө оруулалт, уур амьсгалын өөрчлөлтөд хот суурин газрын дасан зохицох чадамжийг нэмэгдүүлэх чиглэлд авч хэрэгжүүлсэн бодлогын үр дүнд тус улсын хүлэмжийн хийн ялгарал 1988 онтой харьцуулахад буурсан ба ингэхдээ эдийн засгийн өсөлт нэмэгдсэн талаар онцлов.

Гренадагийн Уур амьсгал, байгаль орчин, ой, загас агнуур, гамшгийн удирдлага ба мэдээллийн яамны сайд Саймон Стиелл хэлэхдээ тус улс нь эрчим хүчний салбарыг либералчилах замаар сэргээгдэх эрчим хүчний чиглэлд хөрөнгө оруулалтыг дэмжиж, газрын дулааныг ашиглах салбарт бүсийн хамтын ажиллагааг хөхиүлэн дэмжих бодлого баримталж байна гэв.

Европын Комиссын(European Commission) Уур амьсгалын арга хэмжээ ба эрчим хүчний элч Мигуэль Ариас Канете хэлэхдээ Европын холбоо нь 2016 оны байдлаар нийт хүлэмжийн хийн ялгарлаа 1990 оны түвшинтэй харьцуулахад 23% бууруулсан. Мөн Европын холбооны гишүүн улсууд нь дэлхийн уур амьсгалын санхүүжилтэд хамгийн их хувь нэмэр оруулдаг болохыг онцлон тэмдэглэв.

Хятадын Уур амьсгалын өөрчлөлтийн асуудал хариуцсан Тусгай төлөөлөгч Сие Женхуа илтгэлдээ 2020 оноос өмнө үүрэг хүлээж, арга хэмжээ авах асуудал сул байгаа нь 2020 оноос хойш хөгжиж буй улс орнуудад дарамт болох вий гэдгээс болгоомжилж байгаагаа илэрхийлэв.

Австралийн Байгаль орчны сайд Мелисса Прайс өөрийн орны зүгээс 2020 оноос өмнө авч хэрэгжүүлж буй арга хэмжээний талаар дурьдсан ба үүнд хүлэмжийн хийн ялгарлыгХХЯ- бууруулах сан байгуулсан талаар мэдээлэл өгөв.

Энэ өдөр мөн Уур амьсгалын санхүүгийн талаар өндөр түвшний сайд нарын 3 дугаар яриа хэлэлцээр зохион байгуулагдав. Уг арга хэмжээний үеэр:

СОР24-ийн ерөнхийлөгч Куртика хэдийгээр сорилт их, нөхцөл байдал ярвигтай байгаа ч, бидний зорилго хэвээр буюу уур амьсгалын санхүүжилтийг босгох ажлыг аль болох хурдасгах нь шаардлагатай байна гэв.

Уур амьсгалын өөрчлөлт, байгаль орчны чиглэлийн Грантам судалгааны хүрээлэнгийн Лорд Николя Стерн хэлэхдээ ирэх хорин жилд дэлхийн эдийн засаг хоёр дахин нэмэгдэх хандлагатай ч, бид 30% -иар хүлэмжийн хийн ялгарлыг

бууруулах шаардлагатай байгаа. Үүнд дараах таван салбар буюу эрчим хүч, хүнс ба газар ашиглалт, ус, аж үйлдвэр гэсэн салбаруудад тогтвортой хөгжлийг цогцлоох замаар шинэ ажлын байр, ашгийг бий болгох боломжтой гэв.

Санхүүгийн байнгын хорооны Сейни Нафо тус байгууллагын 2018 оны Хоёр жил тутмын үнэлгээ ба уур амьсгалын санхүүгийн урсгалын тайлангийн гол ололтын талаар онцлон дурьдсан ба тайланд 2013-2014 онтой харьцуулахад 2015-2016 онд уур амьсгалын санхүүгийн урсгал 17% нэмэгдсэн ба 67 тэрбум ам.долларт хүрсэн. Гэхдээ энэ нь нийт дэлхийн санхүүгийн урсгалтай харьцуулахад багаахан хэсэг хэвээр байгааг тэмдэглэв.

Эцэст нь оролцогчид одоо байгаа санхүүгийн тогтолцоог шинэчлэх замаар Парисын хэлэлцээрийг хэрэгжүүлэхэд гол дутагдаад байгаа энэ чухал асуудлыг шийдвэрлэх зайлшгүй шаардлагатай талаар санал нэгдэв.

**12 дугаар сарын 11-ний өдөр:** Үдээс өмнө Таланоа хэлэлцээрийн нээлтийн арга хэмжээ болж, үдээс хойш өндөр дээд түвшний хуралдааны үргэлжлэлийн нээлтийн арга хэмжээ болов. Хоёрдугаар хэсгийн хуралдаанаар мэдэгдэл хийгээгүй улс орнууд хуваарийн дагуу мэдэгдэл хийв. Мэдэгдлүүдээс хөгжиж буй орнууд өндөр хөгжилтэй орнуудыг санхүүгийн үүрэг амлалтаа нэн яаралтай гүйцэтгэхийг уриалж, дасан зохицох, техник, технологи, чадавхи бэхжүүлэх чиглэлээр дэмжлэг хэрэгтэй байгаа талаар тэмдэглэж байв. Өндөр хөгжилтэй орнуудаас Шведийн шадар сайд бөгөөд Уур амьсгал, олон улсын хөгжлийн хамтын ажиллагааны сайд “Бохир түлшгүй Швед” санаачлагыг эхлүүлсэн талаар онцлон дурьдсан бөгөөд тус санаачлагын хүрээнд салбарууд “бохир түлшгүй хөгжлийн” төлөө зорилт тавин, өрсөлдөж байгаа талаар дурьдав.

Түүнчлэн, өндөр дээд түвшний мэдэгдлүүдээс Уур амьсгалын өөрчлөлтөд эмзэг улсуудын чуулган (CVF)-ыг төлөөлж Маршалын Арлуудын Байгаль орчны сайд, CVF-ийн ерөнхийлөгчийн туслах-сайд ноён Дэвид Пол үг хэлэв. хэлсэн үгэндээ CVF нь 2018 оны 11-р сарын 22-ны өдөр дэлхийн анхны засгийн газрууд хоорондын цахим хуралдааныг зохион байгуулсан бөгөөд арга хэмжээний үр дүнд “Жиммемей тунхаг”-ийг баталсан билээ. Дэвид Пол хэлсэн үгэндээ бид онцгой соргог буюу Маршалын Арлуудын хэлээр “жиммемей” байх цаг ирээд байгааг онцлов. COP24-ийн шийдвэр нь өндөр хөгжилтэй орнуудын зүгээс 2020 оноос өмнө нэн яаралтай санхүү, технологи, чадавхи бэхжүүлэх чиглэлээр хөгжиж буй орнуудад дэмжлэг үзүүлэх замаар илүү зоримог, том зорилго тавихыг уриалж байна. Энэ нь ирэх хоёр жилд уур амьсгалын үйл ажиллагааг эрс нэмэгдүүлэх дэлхийн хүчин чармайлтанд шийдвэрлэх үүрэг гүйцэтгэх бөгөөд CVF нь өөрийн гишүүн улс орнуудын зүгээс ҮТХН-үүддээ тусгасан зорилтуудаа ахиулахад дэмжлэг үзүүлэхэд хүчин чармайлтаа бүрэн дайчилхаа мэдэгдэв. Монгол Улс энэхүү санаачлагыг эхнээс нь

идэвхитэй дэмжиж ирсэн бөгөөд 11 сарын 22-ны өдөр зохион байгуулагдсан өндөр түвшний цахим хуралд Монгол Улсыг төлөөлж Байгаль орчин, аялал жуулчлалын сайд Н.Цэрэнбат видео мэдэгдэл хийж оролцсон юм.

**12 дугаар сарын 12-ны өдөр:** Уур амьсгалын хямрал ба шийдлүүд сэдэвт нэгдсэн хуралдаанд АНУ-гийн дэд ерөнхийлөгч асан Уур амьсгалын бодит байдал төслийн тэргүүн Эл Гор илтгэл тавив. Тэрээр дэлхий нийт олон мянган жилийн аюултай нүүр тулаад байна. Бид хурдаа нэмэх хэрэгтэй. Бид ёс зүйн үүрэг хүлээж байгаа бөгөөд бидэнд өөрчлөлтийг хийх арга зам бий гээд АНУ, ОХУ, Саудын Араб зэрэг орнууд уур амьсгалын өөрчлөлтийн талаарх 1.5 градусын талаар тайланг хүлээн зөвшөөрөхгүй байгааг шүүмжлэв. “Ирээдүйгээ аврахыг эсэргүүцэж байгаа нь ямар шалтгаантайг ойлгох нь нэн чухал” хэмээн талуудыг нэгдмэл хүчээр, яаралтай арга хэмжээ авахыг уриалав.

Энэ өдөр өндөр дээд хэмжээний хурал үргэлжилсэн бөгөөд хуваарийн дагуу үдээс хойш Монгол Улсыг төлөөлж, Байгаль орчин, аялал жуулчлалын сайд Н.Цэрэнбатын нэрийн өмнөөс Төлөөлөгчдийн дэд тэргүүн, Уур амьсгалын өөрчлөлтийн асуудал хариуцсан Тусгай элч З.Батжаргал мэдэгдэл хийв. Тэрээр хэлсэн үгэндээ Монгол Улс уур амьсгалын өөрчлөлтөд нэн эмзэг улсын тоонд ордог бөгөөд уур амьсгалын өөрчлөлтөөс үүдэлтэй сөрөг нөлөөллийг бууруулах, дасан зохицох чиглэлээр олон талт болон хоёр талын хамтын ажиллагааны механизмын хүрээнд, ялангуяа Япон, Герман зэрэг улсуудтай идэвхитэй хамтран ажиллаж байгаа талаар дурьдав.

Түүнчлэн, Монгол Улс нь Парисын хэлэлцээр батлагдахаас өмнө тодорхойлсон Үндэсний зорилтот хувь нэмэр (INDC)-т үндэсний хүлэмжийн хийн ялгарлыг 2030 он гэхэд 14 хувиар бууруулах зорилго тавьсан ба энэ зорилгоо ахиулан Үндэсний тодорхойлсон хувь нэмэр (NDC) баримт бичгийг боловсруулж, 2020 он гэхэд өргөн барихаар төлөвлөж байгааг мэдэгдэв. Түүнчлэн, энэ оны 11 дүгээр сарын 28-нд Киотогийн протоколын Дохагийн нэмэлт өөрчлөлтийг Монгол Улсын Засгийн газрын тогтоолоор баталсан бөгөөд үүгээрээ Конвенцийг хэрэгжүүлэх олон улсын хүчин чармайлтад хир хэмжээний хувь нэмэр оруулах эрмэлзэл төгөлдөр байгаагаа илэрхийлэв. Монгол Улс цаашид Парисын хэлэлцээрийн хэрэгжилтийг дэмжиж ажиллахаа илэрхийлэхийн ялдамд энэ оны 10 дугаар сард Засгийн газар хоорондын мэргэжилтний хороо (IPCC)-ноос гаргасан 1.5 градус тайланг бүрэн дэмжиж, хөгжиж буй орнуудын бүлгийн гишүүний хувьд, тус бүлгээс дэвшүүлж буй саналууд болох уур амьсгалын өөрчлөлтийн чиглэлийн олон улсын хамтын ажиллагааны шинэ хөшүүрэг болох Уур амьсгалын ногоон сан (GCF/УАНС)-ийн хөрөнгө санхүүг хугацаа алдахгүй зузаатгах, өнөө хүртэл амжилттай ажиллаж байгаа Дэлхийн байгаль хамгаалах сан (GEF), Дасан зохицох

сан (АҮ)-г дэмжихийг нийт улс үндэстэн, түүний дотор өндөр хөгжилтэй улс орнуудад хандаж уриалав. /Мэдэгдлийн бүрэн эх: Хавсралт 1./

Уг өдөр Таланоа яриа хэлэлцээрийн улс төрийн буюу сайд нарын түвшний бүлэглэсэн хэлэлцээрийн хаалтын арга хэмжээний үеэр Монгол Улсыг төлөөлж З.Батжаргал оролцон, Монгол Улсад баримтлан хэрэгжүүлж буй бодлого, арга хэмжээний талаар танилцуулга хийж, байр сууриа илэрхийлэв.

**12 дугаар сарын 13-14-ний өдрүүд:** СОР-ын 7, 8 дугаар, СМР-ийн 6, 7 дугаар нэгдсэн хаалтын хурлууд тус тус зохион байгуулагдав. Хурлуудын үеэр хөтөлбөрт тусгагдсан асуудлуудтай холбоотой шийдвэрүүдийг хэлэлцсэн бөгөөд талууд тодорхой саналууд дээр нэгдсэн зөвшилцөлд хүрээгүй, нөгөө талаар цаг хугацаа давчуу, хэлэлцэх асуудал их байсан зэрэг нөхцөл байдлаас үүдэн 14-нд хаах байсан хурлын үйл ажиллагаа хойшлогдож, 15-ны өдөр хаав.

Ерөнхийд нь авч үзвэл, маргаантай гол асуудлууд өндөр хөгжилтэй болон хөгжиж буй орнууд нэгэн ижил зарчмаар Парисын хэлэлцээрийг хэрэгжүүлэх хэрэгтэй эсэх, Үндэсний хувь нэмрийг тодорхойлох шалгуур үзүүлэлт, хэрэгжүүлж эхлэх хугацаа, биелэлтийг тайлагнах хугацаа, арга зам, дэмжлэг үүний дотор урт хугацааны санхүүгийн тогтолцоог бий болгох, зарцуулалт, хэрэгжилтийг дүгнэх г.м зарчмын асуудлууд байв. Өмнөх талуудын хуралдааны үеэр өндөр хөгжилтэй, хөгжиж буй орнуудаас бүрдсэн бүлгүүд хоорондын сонирхлын зөрчил давамгайлдаг байсан бол энэ удаагийн хурлаар АНУ, Саудын Араб, Кувейт, ОХУ гэсэн газрын тосны ашиг сонирхол бүхий улсууд болон нийт бусад талуудын хооронд саналын зөрөлдөөн гарч байснаараа онцлог байв. Энэ удаад Хятад, Бразил, Өмнөд Африк, Энэтхэг гэсэн хөгжиж буй орнууд зарим асуудлаар, тухайлбал, хөгжиж байгаа улс орнууд нь өндөр хөгжилтэй улс орнуудаас ялгаатай үүрэг хүлээх мөн өндөр хөгжилтэй орнууд санхүүгийн үүрэг хүлээх ёстой гэсэн асуудал дээр санал нэгдэж, хэлэлцээрт оролцов.

Талуудыг нэгдсэн зөвшилцөлд хүрэхийг уриалж, НҮБ-ын Ерөнхий нарийн бичгийн дарга Антонио Гутеррес, Талуудын 24 дүгээр бага хурлын Ерөнхийлөгч Микал Куртика, Фижи улсын ерөнхий сайд болоод Талуудын 23 дугаар бага хурлын ерөнхийлөгч Фрэнк Баинимара зэрэг төлөөллүүд "...бидэнд өөр боломж байхгүй. Хэрэв энэ удаад бид амжилтанд хүрч чадахгүй бол Парисын хэлэлцээр хэрэгжиж чадахгүй. Энэ удаад амжилтанд хүрэхгүй байх нь "ёс зүйгүй" бөгөөд "амиа хорлосон" хэрэг болно..." хэмээн анхааруулж, талуудыг нэн яаралтай нэгдсэн зөвшилцөлд хүрэхийг шахаж шаардаж байв.

Урт удаан ч, итгэл зүтгэлтэй олон удаагийн албан болон албан бус хэлэлцээрийн үр дүнд Парисын хэлэлцээрийг хэрэгжүүлэх Дүрмийн номыг баталсан явдал нь энэ удаагийн талуудын бага хурлын гол амжилт бөгөөд энэ нь хүн төрөлхтөнд өөрчлөлт, шинэчлэлтийг авчирах түүхэн үйл явдал болон тэмдэглэгдэв.



## ХАВСАРСАН АРГА ХЭМЖЭЭНҮҮД

Огноо	Арга хэмжээний нэр	Нэмэлт мэдээлэл	Оролцсон
2018.12.02	Дэлхийн фермерчдийн байгууллага	Дэлхийн өнцөг булан бүрийн хөдөө аж ахуйн салбарын холбогдох талуудын хүлээн авалтын тус арга хэмжээний үеэр Польшийн Байгаль орчин болон Хөдөө аж ахуйн сайд нар үг хэлж, арга хэмжээнд оролцов. Тус хүлээн авалтанд хөдөө аж ахуйн салбарын төлөөллүүдтэй санал солилцож, мэдээлэл авав.	З.Батжаргал Ц.Ананд
2018.12.04	ҮТХН болон Тогтвортой хөгжлийн зорилтуудын уялдаатай хэрэгжилтийг хангах дэмжлэгийг нэмэгдүүлэх семинар	Франц, Уганда, Нидерланд Засгийн газруудын хамтын дэмжлэгтэйгээр NDC Partnership-ийн зохион байгуулсан тус арга хэмжээний гол зорилго гишүүн орнууддаа үзүүлэх дэмжлэгээ нэмэгдүүлэхэд оршиж байв. Арга хэмжээнд Монголын албаны төлөөллүүд (цаашид албаны төлөөллүүд гэх) оролцов.	З.Батжаргал Д.Дагвадорж
	УАНС-ийн Бэлэн байдлын хөтөлбөр	Бэлэн байдлын хүрээнд хэрэгжүүлэх/хэрэгжүүлж буй төсөл хөтөлбөрийн талаар хийгдсэн танилцуулга, хэлэлцүүлэгт албаны төлөөллүүд оролцов.	З.Батжаргал Д.Саруул
	Парисын хэлэлцээр, ТХЗууд болон Гамшгийн эрсдлийг бууруулах Сендайн үйл ажилагааны хүрээ баримт бичгүүдэд дасан зохицох чиглэлээр туссан арга хэмжээнүүдийн хамтын хүчин чармайлтын уялдааг дүгнэх нь	Японы Байгаль орчны яам НУБУАӨСК-ийн газартай хамтран мэргэжилтнүүдийн түвшинд дасан зохицох арга хэмжээнүүдийг үнэлэх зорилготой зохион байгуулагдсан арга хэмжээ. Уг арга хэмжээнд албаны төлөөлөл оролцож, мэдээлэл авав.	Д.Дагвадорж
	SBSTA технологийн үйл ажиллагааны хүрээ	Албан бус зөвлөлгөөн: Цэвэр хөгжлийн механизм ба бусад механизмууд, тайлан, биелэлтийн	Ц.Ананд

2018.12.05		шалгуур үзүүлэлтүүдийн талаар хэлэлцэв. Арга хэмжээнд албаны төлөөлөл оролцож мэдээлэл авав.	
	Үнэлгээний талаарх хэлэлцүүлэг	УАНС-аас зохион байгуулсан арга хэмжээнд төлөөлөгчид оролцож мэдээлэл авав	3.Батжаргал Д.Саруул
	Уур амьсгалын шинжлэх ухааны талаар хэлэлцүүлэг	Дэлхийн цаг уурын байгууллага, IPCC, НУББОХ-ийн хамтран зохион байгуулсан тус арга хэмжээнд албаны төлөөлүүд оролцож мэдээлэл авав.	3.Батжаргал Д.Дагвадорж
	ҮТХН-ийг хэрхэн тодорхойлох, ил тод байдлын тогтолцоог бий болгох дэмжлэгийг хэрхэн нэмэгдүүлэх – Сайн чадавхи бэхжүүлэх хөтөлбөрийн гол хүчин зүйлүүд	Японы талаас зохион байгуулсан энэ арга хэмжээнд албаны төлөөлүүд оролцож, мэдээлэл авав.	3.Батжаргал Д.Дагвадорж
	Парисын хэлэлцээрийн ил тод байдлын тогтолцоог уян хатан хэрэгжүүлэх	Японы талаас зохион байгуулсан арга хэмжээнд албаны төлөөлүүд оролцож, мэдээлэл авав.	Д.Саруул
	Технологийн механизм: Парисын хэлэлцээрийг хэрэгжүүлэхэд уур амьсгалын технологийг ашиглахуй	НУБУАӨСК-ийн Технологийн механизмын хүрээнд 2018 гарсан гол ололт амжилтын талаар жич хэлэлцүүлэг болов. Түүнчлэн Технологийн механизм болоод УАНС хэрхэн хамтран ажиллаж байгаа талаар мэдээлэл авав.	Ц.Ананд
	Дэлхийн дасан зохицох чиглэлийн шинжлэх ухааны хөтөлбөр	Шинээр гаргахаар зэхэж буй хөтөлбөрийн үзэл баримтлал, зарчмыг танилцуулсан энэ арга хэмжээнд орлцож мэдээлэл авав.	Д.Дагвадорж
2018.12.06	Даян дэлхийн АБВ Барилгын салбарын үйл ажиллагааны талаар симпозиум ба Ногоон шийдэл шагнал гардуулах ёслолын арга хэмжээ	Барилгын салбарын тогтвортой хөгжил, хүлэмжийн хийн ялгарлыг бууруулах чиглэлээр авч хэрэгжүүлж буй арга хэмжээнүүдийн талаар илтгэл, хэлэлцүүлэг болж өнгөрөв. Тус арга хэмжээнд 3.Батжаргал “ Уур амьсгалын өөрчлөлт	3.Батжаргал Д.Дагвадорж Ц.Ананд

	<p>ба барилга, хот байгууламж Монголд” сэдвээр илтгэл тавив.</p>		
<p>Шинэлэг, бүтээлч, хуулбарлаж болохуйц, өргөн цар хүрээг хамрах боломж олгосон дасан зохицох чиглэлийн арга хэмжээнүүд</p>	<p>Дасан зохицох сангаас зохион байгуулсан тус арга хэмжээнд албаны төлөөлөл оролцож мэдээлэл авав.</p>		<p>Д.Дагвадорж</p>
<p>Маргаашийн хот: Олон талт байгууллагууд хэрхэн ялгарал багатай хотын хөгжилд хувь нэмэр оруулах талаар</p>	<p>Азийн хөгжлийн банкнаас зохион байгуулсан тус арга хэмжээнд улс орнууд өөрсдийн туршлагаасаа хуваалцаж, мэдээлэл солилцов. Уг арга хэмжээнд Д.Саруул Монгол Улсын ҮТХН-ийн хэрэгжилтэд Улаанбаатар хотын үүрэг, оролцоо, хувь нэмрийн талаар илтгэл тавьж оролцов.</p> <p>Арга хэмжээний үеэр олон улсын тогтвортой хот, орон нутгийн сүлжээний ICLEI байгууллагын төлөөллүүд тухалбал Марике Стаден-Карбон төвийн захирал, Бага нүүрстөрөгч бүхий хот хөтөлбөрийн менежер Улаанбаатар хоттой хамтран ажиллах сонирхотой байгаагаа илэрхийлсэн. ICLEI байгууллагын хэрэгжүүлж байгаа TAP хөтөлбөрийн хүрээнд хот, орон нутаг, бүс нутгийн түвшиний уур амьсгалын төслийн саналыг боловсруулж хөгжүүлэхэд дэмжлэг үзүүлдэг. Улаанбаатар хот энэхүү хөтөлбөртэй болон бусад арга хэмжээнд оролцон хамтран ажиллах бүрэн боломжтой. Хөтөлбөрт хэрхэн хамрагдах талаарх дэлгэрэнгүй мэдээллийг <a href="https://iclei.org/en/TAP.html">https://iclei.org/en/TAP.html</a> -аас харна уу.</p>		<p>Д.Саруул</p>
<p>Хамтарсан кредит олгох механизм Тогтвортой хөгжил</p>	<p>Японы Байгаль орчны яамнаас зохион байгуулсан тус арга хэмжээнд улс орнууд Хамтарсан кредит олгох механизм хүрээнд</p>		<p>Ц.Ананд</p>

	болон ҮТХН-ийн хэрэгжилтэнд гүйцэтгэх үүрэг	хэрэгжүүлсэн үйл ажиллагааны талаар танилцуулга хийж, хэлэлцэв. Тус арга хэмжээний үеэр Монгол Улсын талаар онцлон оролцогчидод видео танилцуулгыг үзүүлж, Ц.Ананд “Монгол Улсад эрчим хүчний салбарын болон ҮЗХН-ийн зорилтыг хэрэгжүүлэхэд Хамтарсан кредит олгох механизмын оруулж буй хувь нэмэр” сэдэвт илтгэл тавив.	
2018.12.07	Дасан зохицох чиглэлийн хүчин чармайлтыг нэмэгдүүлэх – ҮТХН болон Үндэсний дасан зохицох хөтөлбөрийн уялдааг сайжруулахуй	НҮБХХ болон НҮББОХ-ийн хамтран зохион байгуулсан тус арга хэмжээнд дасан зохицох чиглэлээр авч хэрэгжүүлж буй арга хэмжээний талаар улс орнууд мэдлэг, мэдээллээ солилцов. Монгол Улсаас 3.Батжаргал илтгэл тавьж, хэлэлцүүлэгт оролцов.	3.Батжаргал
	Хүлэрт намгийн тунхаг бичгийн төлөө хамтдаа: Хүлэрт намгийн доройлтыг бууруулах	Даян дэлхийн хүлэрт намгийн санаачлага, НҮББОХ, Олон улсын хүлэрт намгийн чиглэлийн байгууллагын хамтран зохион байгуулсан тус арга хэмжээ нь хамтарсан тунхаг бичиг боловсруулах замаар хүлэрт намгийг хамгаалж, сэргээх чиглэлээр хамтын ажиллагааг өргөжүүлэх зорилготой зохион байгуулагдав. Тус арга хэмжээнд Д.Дагвадорж Азийн хөгжлийн банктай хамтран хэрэгжүүлсэн хүлэрт намгийг хамгаалах төлөвлөгөө боловсруулах төслийн талаар танилцуулга хийж, хэлэлцүүлэгт оролцов.	Д.Дагвадорж
	Уур амьсгалын өөрчлөлтийн санхүүжилтэд хувийн хэвшлийн оролцоо	УАНС(GCF) –аас зохион байгуулсан энэ арга хэмжээнд EBRD, IFC зэрэг банк санхүүгийн байгууллагын төлөөлөл оролцож санал бодлоо илэрхийлэхдээ Монголын жишээ, ялангуяа төр-хувийн хэвшлийн хамтын ажиллагааны үр дүнг онцлон тэмдэглэж байв. Албаны төлөөлөл оролцов.	3.Батжаргал

	<p>NDC Partnership-ээс зохион байгуулсан уг арга хэмжээнд 3.Батжаргал ҮЗХН-ийг хэрэгжүүлэх чиглэлээр авч хэрэгжүүлж буй арга хэмжээний талаар илтгэл тавьж, хэлэлцүүлэгт оров. Мөн ҮЗХН-ийг хэрэгжүүлэх ажлын хүрээнд салбар хоорондын уялдаа, оролцоог сайжруулах зорилгоор NDC Partnership байгууллагын дэмжлэгтэйгээр байгуулсан шинэ зохицуулах онлайн платформын зорилго, бүтэц, агуулагдаж буй мэдээллийн талаар Ц.Ананд танилцуулав.</p>	<p>3.Батжаргал Д.Дагвадорж Э.Баттулга Ц.Ананд Б.Тэгшжаргал</p>
<p>SBI байгууллагын 49-р хуралдаан: 2 жил тутмын тайлан илтгэлийг “Олон улсын дүн шинжилгээ ба зөвлөлгөөнд” (ОУДЗ/ICA) танилцуулж, дүгнүүлэх арга хэмжээ</p>	<p>НҮБ/УАӨСК-ийн шаардлагын дагуу улс орнуудын бэлтгэн хүргүүлсэн хоёр жил тутмын тайлан илтгэлийг хэлэлцүүлэх уг арга хэмжээнд Д.Саруул, Б.Тэгшжаргал нар Монгол Улсын анхны хоёр жил тутмын тайлан илтгэлийн талаар илтгэл хийж хэлэлцүүлэв. Хэлэлцүүлгийн явцад дараах асуултанд хариулав: Европын холбоо: Хүлэйджийн хийн тооллогыг хийхдээ хамтран ажиллах санамж бичгийг байгууллагуудтай зурсан байна. Энэ санамж бичигт ялгарлын фактор эсвэл бусад суурь мэдээллийг солилцох талаар туссан зүйл байгаа юу? ИБУИНВУ: Эрчим хүчний балансын хүснэгтийг хөгжүүлэхэд учирч байсан хамгийн том бэрхшээл юу байсан бэ? Герман: Ялгарлыг бууруулах зорилт болон сааруулах үйл ажиллагааны үр нөлөөг тоон хэлбэрээр илэрхийлэхэд тулгарсан гол бэрхшээл юу байсан бэ? Япон: Хамтран ажиллах санамж бичгийн хүрээнд дата цуглуулахад учирсан гол бэрхшээл; үйл ажиллагааны өгөгдөлд чанарын магадлагаа хийсэн үү?</p>	<p>Д.Саруул Б.Тэгшжаргал</p>

	АНУ: ХАА салбарын хүлэмжийн хийн тооллого, төсөөлөл, сааруулах арга хэмжээг тоон утгаар илэрхийлэхэд тулгарсан бэрхшээл саад юу байсан Шинэ Зеланд: Тооцоо хийгдээгүй байгаа категориудыг сайжруулах төлөвлөгөө чинь юу вэ? Энэтхэг: Сааруулах тодорхой тоон утгууд нь боломжит юм уу эсвэл жинхэнэ утга юм уу/ CSEF нь нүүрсний цахилгаан станцийн ялгаралд туссан уу? БНСУ: Хог хаягдлын салбарт сааруулах арга хэмжээг хэрэгжүүлэх төлөвлөгөө байгаа юу?	
Санал бодол хуваалцах семинар: Хоёр жил тутмын тайлан илтгэлийг олон улсын оролцоотой үнэлж дүгнэх арга хэмжээ	НҮБ/УАӨСК-ийн шаардлагын дагуу улс орнуудын бэлтгэн хүргүүлсэн хоёр жил тутмын тайлан илтгэлийг хэлэлцүүлэх уг арга хэмжээнд Д.Саруул, Б.Тэгшжаргал нар Монгол Улсын анхны “хоёр жил тутмын тайлан илтгэлийн” талаар танилцуулга/илтгэл хийж, асуулт хариултад хариулан оролцов.	Д.Дагвадорж Д.Саруул Б.Тэгшжаргал
Хүлэмжийн хийн ялгарлын тооллогын талаар заавар	IPCC-ээс зохион байгуулж буй тус арга хэмжээнд шинэчлэгдэж байгаа IPCC-ийн заавар, гарын авлагын талаар мэдээлэл хийв. Тус арга хэмжээнд албаны төлөөлөл оролцож мэдээлэл авав.	Б.Тэгшжаргал
Парисын хэлэлцээрийн Ил тод байдлын тогтолцооны хүрээнд Хавсралт 1-ийн бус талуудын Үндэсний хүлэмжийн хийн ялгарлын тооллогын чиглэлийн чадавхийг бэхжүүлэхэд ЖАЙКА-аас үзүүлж буй дэмжлэг, зөвлөмж семинар	ЖАЙКА-тай хамтран хэрэгжүүлж буй Хүлэмжийн хийн тооллогын чиглэлээр чадавхи бэхжүүлэх төслийн хэрэгжилтийн талаар Б.Тэгшжаргал илтгэл хийв.	З.Батжаргал Д.Дагвадорж Б.Тэгшжаргал Ц.Ананд, Д.Саруул
2018.12.08		

2018.12.09	NDC Partnership-ийн гишүүдийн ээлжит чуулган	NDC Partnership-ийн Үндэсний зохицуулагч нарын дугуй ширээний хэлэлцээрийн үеэр гишүүн улсууд мэдлэг, мэдээлэл, туршлагаасаа хуваалцав. Тус арга хэмжээнд Үндэсний зохицуулагч Х.Батжаргал болон З.Батжаргал нар оролцов.	З.Батжаргал Х.Батжаргал
2018.12.10	Европын холбооны өндөр дээд түвшний хүлээн авалтын арга хэмжээ Дасан зохицох төлөвлөгөөний талаар албан бус яриа хэлэлцээр	Монгол Улсыг төлөөлж Элчин сайд Н.Батаа, БОАЖЯамны газрын дарга Х.Батжаргал нар оролцов. NDC Partnership-ийн хүрээнд Дасан зохицох чиглэлийн ажлын хэсэг байгуулахаар төлөвлөж байгаатай холбогдуулан зохион байгуулагдсан уг арга хэмжээнд тодорхой мэдлэгийн эх сурвалж бүхий байгууллагууд оролцож, мэдээлэл хуваалцав. Үндэсний дасан зохицох хөтөлбөр-Даян дэлхийн сүлжээ болон Дэлхийн эх сурвалжийн хүрээлэн энэхүү санаачлагыг дэмжихээ мэдэгдэв. Албаны төлөөлөл оролцож, мэдээлэл авав.	Н.Батаа, Х.Батжаргал Д.Дагвадорж
Цэвэр агаар ба уур амьсгалын хүрээнд олон талын үр ашгийг нэмэгдүүлэхүй: Нигерийн Үндэсний уур амьсгалын богино наст бохирдуулагчийн талаарх төлөвлөгөө	Уур амьсгал ба цэвэр агаарын холбооноос зохион явуулсан тус арга хэмжээнд Д.Дагвадорж оролцож, цаашид хамтран ажиллах боломж бололцооны талаар мэдээлэл солилцов.	Уур амьсгал ба цэвэр агаарын холбооноос зохион явуулсан тус арга хэмжээнд Д.Дагвадорж оролцож, цаашид хамтран ажиллах боломж бололцооны талаар мэдээлэл солилцов.	Д.Дагвадорж
Уур амьсгалыг сааруулах үйл ажиллагааны давхар үр ашиг: Гариг дэлхий болон хүн төрлөхтний төлөө Парисын хэлэлцээрийг амжилттай хэрэгжүүлэх нь	ECN/TNO&NCI&IASS байгууллагуудын хамтран зохион байгуулсан тус арга хэмжээнд сэргээгдэх эрчим хүч болон бусад уур амьсгалын өөрчлөлтийг сааруулах, дасан зохицох арга хэмжээний талаар хэлэлцэв. Албаны төлөөлөл оролцож, мэдээлэл авав.	ECN/TNO&NCI&IASS байгууллагуудын хамтран зохион байгуулсан тус арга хэмжээнд сэргээгдэх эрчим хүч болон бусад уур амьсгалын өөрчлөлтийг сааруулах, дасан зохицох арга хэмжээний талаар хэлэлцэв. Албаны төлөөлөл оролцож, мэдээлэл авав.	Б.Тэгшжаргал

<p>Уур амьсгалын технологийн төв ба сүлжээний (СТСН) 5 жилийн ойн арга хэмжээ</p>	<p>НҮБ/УАӨСК-ийн өндөр түвшний төлөөллүүд болон Талуудын бага хурлын ерөнхийлөгч тус арга хэмжээг нээж үг хэлэв. Уг технологийн механизм нь 5 жилийн хугацаанд хэрэгжүүлсэн төсөл хөтөлбөр, ололт амжилтаа хуваалцаж, танилцуулга хийв. Цаашид мөн талуудтай техникийн туслалцаа үзүүлэх, технологийн дэмжлэг авахад нягт хамтран ажиллахаа илэрхийлж байв. Албаны төлөөлөл оролцож, оролцогчидтой санал солилцож, мэдээлэл авав.</p>	<p>Ц.Ананд</p>
<p>10 дахь REDD+ хөтөлбөрийн ойн хүлээн авалтын арга хэмжээ</p>	<p>Өндөр түвшний уг арга хэмжээнд REDD Хөтөлбөр, Ойн нүүрстөрөгчийн түншлэлийн байгууллага (FCPF) болон Уур амьсгалын хөрөнгө оруулалтын сангийн Ойн хөрөнгө оруулалтын хөтөлбөр гэсэн 3 хөтөлбөрийн гишүүн орнуудын сайд нар оролцов. Арга хэмжээнд НҮБ-ын Ерөнхий нарийн бичгийн дарга, Дэлхийн банкны бүлгийн ахлах албан тушаалтан, 3 хөтөлбөрийн дарга нар болон бусад дээд хэмжээний төлөөллүүд үг хэлэв. Арга хэмжээнд албаны төлөөллүүд оролцов.</p>	<p>З.Батжаргал Д.Дагвадорж</p>
<p>Уур амьсгалын өөрчлөлтийг сааруулах/дасан зохицох арга хэмжээнд усны үүрэг, оролцоо</p>	<p>Даян дэлхийн усны түншлэлээс зохион байгуулсан тус арга хэмжээний үеэр 80 гаруй хөгжиж буй орны УТХН-ийн судалгаанаас олж тодорхойлсон үр дүнгийн талаар танилцуулснаас гадна усны чиглэлийн SDG6 үйл ажиллагааны хэрэгжилтийн талаар тайлагнав. Панел хэлэлцүүлгийг УАНС-г төлөөлж С.Оюун дарга удирдан явуулав.</p>	<p>З.Батжаргал Д.Дагвадорж Ц.Анхбаяр Л.Жамбаа Ц.Ананд Б.Тэгшжаргал</p>
<p>Дэлхийн Эрчим хүчний холболтын хөгжил хамтын ажиллагааны байгууллага</p>	<p>БНХАУ-ын дэмжлэгтэй байгуулагдсан Дэлхийн Эрчим хүчний холболтын хөгжил, хамтын ажиллагааны байгууллагын зүгээс өөрсдийн</p>	<p>Л.Жамбаа</p>



	(GEIDCO)-ын сүүлд гаргасан тайлангийн танилцуулга	дэвшүүлээд буй Сэргээгдэх эрчим хүчин дээр суурилсан Дэлхийн эрчим хүчний сүлжээний талаар сүүлийн тайлангаа танилцуулав. Монгол Улсын хувьд энэ эрчим хүчний нэгдсэн систем байгуулах санаачлагад оролцдог бөгөөд Парисын хэлэлцээрийг хэрэгжүүлэхэд сэргээгдэх эрчим хүчний ашиглалтыг дэмжих нь томоохон ач холбогдолтой юм.	
2018.12.11	Хамтарсан кредит олгох механизмын 6 дугаар өндөр түвшний уулзалт	Японы Байгаль орчны сайд болон бусад өндөр түвшний төлөөллүүд оролцсон тус арга хэмжээнд Монгол Улсыг төлөөлж З.Батжаргал, Х.Батжаргал нар оролцож, Японы Байгаль орчны сайдтай уулзаж ХКОМ Монголд амжилттай хэрэгжиж байгаа талаар мэдээлэв.	З.Батжаргал Х.Батжаргал
	Польш Улсын Ерөнхийлөгчийн нэрэмжит өндөр дээд түвшний хүлээн авалтын арга хэмжээ	Монгол Улсыг төлөөлж Элчин сайд Н.Батаа оролцов.	Н.Батаа
	Ази тивийн бүс нутагт ҮТХН-ийг дэмжин санхүүжүүлэх нь	АХБ (ADB) –аас зохион байгуулсан энэ арга хэмжээнд З.Батжаргал илтгэгчээр оролцож АХБ-аас бусад түншүүдтэй хамтран хэрэгжүүлж байгаа төслүүдийн зорилго, үр дүнгийн талаар мэдээлэл өгөв.	З.Батжаргал Ц. Ананд
	Уур амьсгалын санхүүгийн хүртээмжийг нэмэгдүүлэх: УАНС-ийн дэмжлэг хүссэн усны төслүүдийн уур амьсгалын өөрчлөлттэй холбоотой уялдаа холбоо	Хөгжиж буй орнуудын хувьд дасан зохицох чиглэлд санхүүгийн дэмжлэг авах асуудал хүндрэлтэй байдаг бөгөөд үүнд уур амьсгалын өөрчлөлтийн асуудалтай хэрхэн уялдаж буй үндэслэлийг зөв гаргах нь чухал байдаг. Уг арга хэмжээнд Африк, Азийн бүсийн усны асуудал хариуцсан сайд нар болон УАНС-гийн итгэмжлэгдсэн байгууллагуудын төлөөллүүд оролцож мэдлэг, туршлагаасаа хуваалцав. Арга хэмжээг мөн УАНС-ийн дарга С.Оюун удирдав. Албаны төлөөллүүд оролцож, мэдээлэл авав.	З.Батжаргал Н.Батаа Н.Мөнхтуяа Д.Дагвадорж Ц.Анхбаяр Ц.Ананд

2018.12.12	<p>ҮТХН-ийн зорилтыг ахиулах зорилгоор Уур амьсгал ба цэвэр агаарын чиглэлийн арга хэмжээг нэгтгэж олон талын үр өгөөжийг нэмэгдүүлэх</p> <p>NDC Partnership-ийн өндө дээд түвшний сайд, тэргүүнүүдийн түвшний баярын арга хэмжээ</p>	<p>LEAP-ийн талаас зохион байгуулж, танилцуулга хийсэн тус арга хэмжээнд Д.Дагвадорж оролцож мэдээлэл солилцов.</p> <p>Албаны төлөөллүүд оролцож Монгол улс энэхүү түншлэлд анхнаас эь идэвхтэй оролцож буй улсын хувьд туршлага хуваалцаж мэдээлэл солилцов.</p>	<p>Д.Дагвадорж</p> <p>3.Батжаргал Д.Дагвадорж</p>
2018.12.13	<p>Уур амьсгалын технологийн хамтын ажиллагааны талаарх мэдлэг, туршлага</p> <p>ТХЗууд болон Уур амьсгалын өөрчлөлт: Далайд гарцгүй хөгжиж буй орнуудтай тулгарч буй сорилтууд болон боломжууд</p> <p>Уур амьсгалд эмзэг улсуудын чуулган (CVF)-ы хэвлэлийн арга хэмжээ</p>	<p>СТСН-ийн хүрээнд авч хэрэгжүүлж буй арга хэмжээ, Солонгосын хамтын ажиллагааны талаар танилцуулга бүхий арга хэмжээнд албаны төлөөлөл оролцож мэдээлэл авав.</p> <p>Далайд гарцгүй 32 хөгжиж буй орны төлөөллүүдээс бүрдсэн тус санаачлагын хүрээнд гишүүн улс орнууд тулгарч буй саад бэрхшээл, боломж бололцооны талаар мэдлэг, туршлагаа хуваалцав. Уг арга хэмжээнд 3.Батжаргал илтгэгчээр оролцож, Монгол Улсын нөхцөл байдал, санал санаачлага, Монголын санаачилсан Тинк Танкийн талаар танилцуулга хийв.</p> <p>CVF-ийг төлөөлж Маршалын арлуудаас санаачлан зохион байгуулсан уг арга хэмжээ нь дэлхийн хамгийн анхны засгийн газар хоорондын цахим хурлын үр дүнд бий болсон "Жиммемей тунхаг"-ийн талаар өндөр дээд түвшний сайд нар мэдэгдэл хийсэн бөгөөд Монгол Улсыг төлөөлж 3.Батжаргал хийсэн мэдэгдэлдээ Монгол улс 1.5 градусыг санаачлагчдын нэг учир энэ талын бүхий л хүчин чармайлтыг дэмжинэ гэв.</p>	<p>Ц.Ананд</p> <p>3.Батжаргал Ц.Анхбаяр Ц.Ананд Б.Тэгшжаргал</p> <p>3.Батжаргал Ц.Анхбаяр</p>

## CERTIFICATE OF HANDOVER

To: JICA Mongolia Office

Re: Project for Capacity Development to Establish a National Greenhouse Gas Inventory Cycle of Continuous Improvement

This certificate of handover is to certify that the equipment in the attached list, which had been utilized for the Project for Capacity Development to Establish a National Greenhouse Gas Inventory Cycle of Continuous Improvement have been handed over properly from Takeshi Enoki, Team Leader of the Project to Mr. Yeruult Bayart, Director of Climate Change Research and Cooperation Centre as of February 28<sup>th</sup>, 2022.

Attached: List of Equipment

February 28<sup>th</sup>, 2022

Handed over by

Received by

(Signature)

Takeshi Enoki

JICA short term expert

Mitsubishi UFJ Research and Consulting

(Signature)

Mr. Yeruult Bayart

Director

Climate Change Research and Cooperation Centre

For witness

(Signature)

Ms. ERIKO TAMURA

Chief Representative

Japan International Cooperation Agency



**MINUTES OF MEETING**  
**ON**  
**THE FIRST JOINT COORDINATION COMMITTEE**  
**OF**  
**THE PROJECT FOR CAPACITY DEVELOPMENT TO ESTABLISH A NATIONAL GHG**  
**INVENTORY CYCLE OF CONTINUOUS IMPROVEMENT**

Ulaanbaatar, 16 January, 2018



Mr. Tsengel Tsegmid  
State Secretary  
Ministry of Environment and Tourism  
JCC Chair



Mr. Ganbaatar Khurelbaatar  
Director  
Environment and Climate Fund



Mr. Dorjsembed Batsengee  
Director General  
Development Financing Department  
Ministry of Finance



Mr. Mutsumi Sato  
Chief Representative  
Japan International Cooperation Agency  
Mongolia Office



Mr. Takeshi Enoki  
**Team Leader, GHG Inventory (Institutional Arrangements)**  
The Project for Capacity Development to Establish a  
National GHG Inventory Cycle of Continuous  
Improvement

The first Joint Coordination Committee (hereinafter referred to as the “JCC”) of the Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement (hereinafter referred to as the “Project”) was held on January 16, 2018 at Blue Sky Hotel in Ulaanbaatar.

The Ministry of Environment and Tourism (hereinafter referred to as “MET”), the Environment and Climate Fund (hereinafter referred to as “ECF”), Japan International Cooperation Agency (hereinafter referred to as “JICA”) and relevant parties of the Project joined the JCC, chaired by Mr. Tsengel Tsegmid, State Secretary of the MET. The list of participants is shown in Appendix 1.

The opening address was delivered by the JCC chair and Mr. Mutsumi Sato, Chief Representative of JICA Mongolia Office.

The meeting was moderated by Mr. Enkhbat A., Director of the Environment Assessment and Auditing Division, MET.

Ms. Anand Tsog, a climate change officer of the Climate Change and International Cooperation Department, MET, gave the first presentation of the meeting on climate change policy in Mongolia and highlighted the importance of mitigation and adaptation policies in Mongolia.

Mr. Takeshi Enoki, team leader of the Project, delivered a presentation providing an overview of reporting requirements under the United Nations Framework Convention on Climate Change (hereinafter referred to as “UNFCCC”), providing the international context to the GHG inventories and the national reports submitted to the UNFCCC.

Ms. Sanaa Enkhtaivan, technical officer of ECF, provided the domestic context to the GHG inventories and pointed out some challenges Mongolia faces in regularly preparing and improving the GHG inventory.

Mr. Takeshi Enoki provided an overview to the Project and the Work Plan, which was finalized during the first mission to Mongolia in November 2017 in consultation with ECF. The following items were presented and confirmed:

1. The overall goal of the Project is that regularly improved GHG inventory is used for the development of mitigation actions planning and monitoring. To this end, the purpose of the Project is that GHG inventory is regularly improved with the cooperation of relevant institutions.
2. There are three outputs to the Project. The first output focuses on cross cutting and organizational issues, the second on activity data for the Energy sector, and the third, on developing parameters in the Land Use, Land Use and Forestry sector.
3. As the Project is an on the job training project, all Project activities will be carried out by the ECF experts and JICA experts together.
4. The JICA experts will directly work on Project activities with the counterpart agencies, MET and

ECF. However, the cooperation of other government agencies, academic institutions, NGOs, and others are crucial in enhancing the inventory cycle of continuous improvement. As such, the participants agreed to cooperate in providing necessary technical and data input to the Project members, as needed.

The members of the JCC agreed on the Work Plan. The JCC members noted the following:

1. Data on GHG inventories are important not only for reporting to the UNFCCC, but also for domestic purposes such as the development and monitoring of mitigation policies and actions.
2. Municipals like Ulaanbaatar are carrying out climate change initiatives including adaptation and mitigation actions. The Project members should take advantage of opportunities for synergy with the municipal level.
3. JCC members are willing to contribute to the Project when opportunities arise. For this, terms of reference for JCC members could be useful. Project members should keep the JCC members informed of its progress in between JCC meetings.
4. The JCC members expect the Project to carry out capacity development at the individual level as well as the technical level, for example, by developing manuals or standards for GHG inventory preparation and improvement.
5. The Project members should be mindful of the sustainability of the achievements of the Project, to ensure that the improvements in inventories will continue after the completion of the Project.
6. All JCC members and Project members should be mindful of the potential environmental impacts and climate change impacts of human activities. Climate change actions such as renewable energy targets are important policies in Mongolia that all parties should strive to achieve.

Mr. Enkhbat A. informed the members that the next JCC meeting will be held in 2019. The main objective of the Second JCC will be to confirm the progress of the Project activities. Any challenges/issues would be shared at the JCC if any, and necessary guidance would be provided to the Project members to facilitate the progress of the Project, as needed.

Appendix 1: List of participants

Appendix 2: Agenda of the 1<sup>st</sup> JCC

<b>Mongolian side</b>		<b>Japan side</b>	
<b>Ministry of Environment and Tourism (MET)</b>		<b>JICA Mongolia Office</b>	
Tsengel Ts.	State Secretary & JCC Chair	Mutsumi Sato	Chief Representative
Enkhbat A.	Director, Environment Assessment and Auditing Division, MET	Satomi Yoshino	Project Formulation Adviser
Anand Tsog	Climate change officer, Climate Change and International Cooperation Department	Munkhmanlai Chinbat	Program Officer
<b>Environment and Climate Fund (ECF)</b>		<b>JICA Expert team</b>	
Batjargal Z.	Special Envoy on Climate change	Takeshi Enoki	Team leader/GHG Inventory (Institutional arrangements)
Saruul D.	BUR Project Manager	Tomoki Takahashi	GHG Inventory (Energy 2)
Chuluunkhuu B.	TNC Project Manager	Atsushi Sato	GHG Inventory (LULUCF 1)
<b>Information and Research Institute of Meteorology, Hydrology</b>		Haruko Chikaraishi	GHG Inventory (LULUCF 2)
Sarantuya G.	Director	Satoshi Kawanishi	GHG Inventory (LULUCF 3)
<b>Ministry of Construction and Urban Development</b>		Yui Ogawa	workshop coordinator
Ganbaatar in place of Lkhagvatseden O.	Director		
<b>Ministry of Foreign Affairs</b>			
Enkhbaatar E.	Third Secretary, Department of Asia and Pacific countries		
<b>Ministry of Road and Transport Development</b>			
Mungunjiguur in place of Munkhnasan S.	Director of Air Transport Policy Coordination Division		
Sereeter J.	Head of Standards and Norms Division, Policy and Planning department		
<b>National Statistics Office</b>			
Erdenesan E.	Director of Macro Economic Department		
<b>Energy Regulatory Commission</b>			
Enkhjargal in place of Atarjargal Ts.	Director of Energy Conversation Department		
<b>Energy Economic Institute</b>			
Enkhtuvshin R.	Scientific secretary		
<b>The Governor's office of the Capital city</b>			
Zolzaya Enkhtur	Senior officer, UB Environment Department		
<b>Coal Research Institute NGO</b>			
Erdenetsetseg B.	Senior consultant		



The First Joint Coordinating Committee (JCC) Meeting  
for  
The Project for Capacity Development to Establish a National GHG  
Inventory Cycle of Continuous Improvement

January 16, 2018  
Blue Sky Hotel, Ulaanbaatar, Mongolia

Agenda

Time	Agenda	Speaker
Moderator: Mr. Enkhbat Altangerel, Director of Environmental Evaluation and Auditing Division		
9:00 ~ 9:30	Registration/coffee	
9:30 ~ 9:50	Opening address from MET	State Secretary, Ministry of Environment and Tourism (MET)
9:50 ~ 10:00	Opening address from JICA	Mr. Mutsumi Sato, Chief Representative, JICA Mongolia Office
10:00 ~ 10:05	Self-introduction by participants	
10:05 ~ 10:15	Overview of climate change policy in Mongolia	Ms. Anand Tsog, Climate change officer, Climate Change and International Cooperation Department, MET
10:15 ~ 10:30	Overview of MRV framework for developing countries under the UNFCCC	Mr. Takeshi Enoki, Team leader, JICA expert
10:30 ~ 10:50	The Mongolian experience with GHG inventories	Tegshjargal, Sanaa, Gerelmaa, Environment and Climate Fund
10:50 ~ 11:20	Overview of the Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement	Mr. Takeshi Enoki, Team leader, JICA expert
11:20 ~ 11:50	Discussion and Confirmation on the Work Plan of the project	Participants
11:50 ~ 12:00	Closing Address	
12:00 ~ 13:00	Lunch	

**MINUTES OF MEETING**  
**ON**  
**THE SECOND JOINT COORDINATION COMMITTEE**  
**OF**  
**THE PROJECT FOR CAPACITY DEVELOPMENT TO ESTABLISH A NATIONAL GHG**  
**INVENTORY CYCLE OF CONTINUOUS IMPROVEMENT**

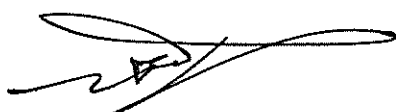
Ulaanbaatar, 19 September 2019



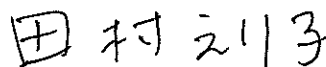
Mr. Tsengel Tsegmid  
State Secretary  
Ministry of Environment and Tourism  
JCC Chair



Mr. Ganbaatar Khurelbaatar  
Director  
Environment and Climate Fund



Mr. Batkhuu Idesh  
Director General  
Development Financing Department  
Ministry of Finance



Ms. Eriko Tamura  
Chief Representative  
Japan International Cooperation Agency  
Mongolia Office



Mr. Takeshi Enoki  
Team Leader, GHG Inventory (Institutional  
Arrangements)  
The Project for Capacity Development to Establish a  
National GHG Inventory Cycle of Continuous  
Improvement

The second Joint Coordination Committee (hereinafter referred to as the “JCC”) of the Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement (hereinafter referred to as the “Project”) was held on September 19, 2019 at the Ministry of Environment and Tourism of Mongolia.

The Ministry of Environment and Tourism (hereinafter referred to as “MET”), the Environment and Climate Fund (hereinafter referred to as “ECF”), Japan International Cooperation Agency (hereinafter referred to as “JICA”) and relevant parties of the Project joined the JCC, chaired by Mr. Batjargal Khandjav, Director of the Climate Change and International Cooperation Department of the MET and acting chair of the JCC. The list of participants is shown in Appendix 1.

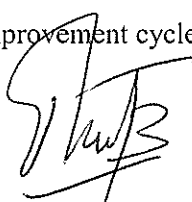
The opening address was delivered by the JCC acting chair and Ms. Eriko Tamura, Chief Representative of JICA Mongolia Office. Mr. Batjargal Khandjav, provided a brief update on domestic situation of Mongolia, and explained that MET lacks human resources and budget for the preparation of GHG inventory, and the work on the update of NDC is ongoing and planned to be completed in 2019. Ms. Eriko Tamura noted that JICA is aware of the situation of ECF and hope to address the issues through the Project, and also highlighted the importance of publicity activities for raising awareness of GHG inventory and climate change issues.

Ms. Tegshjargal Bumtsend, a specialist for GHG Inventory of ECF, gave the first presentation of the meeting on the progress of the Project activities and explained that while there are some challenges for output 1 and output 2, in general Project activities are being implemented as scheduled.

Mr. Takeshi Enoki, team leader of the Project, delivered a presentation on the national GHG inventory arrangements in Mongolia. The following items were presented.

1. Development of sustainable and efficient national GHG inventory arrangements in Mongolia are necessary for the continuous preparation of Biennial Update Reports (BUR) every two years.
2. One of the challenges of current national GHG inventory arrangements in Mongolia is the absence of the institutional/legal setup that mandates ECF to prepare BUR every two years and ensure timely data provision to ECF.
3. The Project will support the enhancement of national GHG inventory arrangements in Mongolia through tools such as development of Quality Assurance/Quality Control (QA/QC) Plan, revision of National Manual of Procedures for preparation of GHG inventories, and Memorandum of Understanding (MoU) if necessary. However, these are not sufficient for the enhancement of Mongolia’s national GHG inventory arrangements.
4. Therefore, questions on how to enhance the mandate and budget for the GHG inventory, and coordination among ministries and agencies, need to be considered and addressed by Mongolia.

Ms. Yui Ogawa, JICA short term expert, gave presentation on the Project’s next steps, and informed the members that the next JCC will be held in 2020, and the objective will be to report the results of the Project first improvement cycle and the progress of the second improvement cycle.



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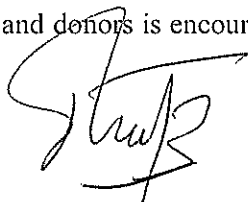
During the discussion, following points were reported by Mr. Batjargal Khandjav, and Ms. Anand Tsog, climate change officer of the Climate Change and International Cooperation Department of the MET.

1. MET is currently planning to rearrange the structure of the Climate Change Project Implementing Unit of ECF (hereinafter referred to as “CCPIU”) under the MET, in order to ensure the sustainability and sufficient budget for the CCPIU operation. Once CCPIU is structured under the MET, it will have a clear responsibility and independent budget from the central government and funds from donors. MET is currently preparing the document for the government’s approval and it is expected to be approved by the end of 2019.
2. MET is currently considering to mandate National Statistical Office of Mongolia to collect data necessary for GHG inventory preparation. Under NSO’s leadership role, it is expected that institutional coordination can be strengthened to certain degree.
3. The government of Mongolia established the National Climate Committee (hereinafter referred to as the “NCC”) in June 2019. The Committee is chaired by the minister of MET and vice ministers from relevant ministries are the members. A technical council is also planned to be established under the NCC, where international organizations such as JICA could participate as observers. It is expected that through NCC and the technical council, MET can initiate better coordination between relevant ministries and agencies.
4. The government of Mongolia is currently developing an online NDC platform, which could serve as a communication platform between government agencies and stakeholders, including international agencies such as JICA. In this line, as a launch event “NDC High-level Forum”, including all stakeholders from both national and international community, has planned to take place.
5. For the ministerial coordination of projects between MET, Ministry of Finance and Ministry of Foreign Affairs, and the Ministry of Finance, MET would like to receive information about project budget from JICA.

Mr. Takeshi Enoki noted the following points:

1. JICA team is encouraged to hear about these domestic initiatives for the enhancement of GHG inventory arrangements and more broadly the enhancement of climate change policy in Mongolia.
2. Since some initiatives may overlap with the Project activities, further information exchange between MET and JICA team would be desirable, and JICA experts can provide support by sharing experiences if useful.

Ms. Eriko Tamura addressed that project is halfway through its span and some concrete outcomes have been observed at each outputs. Additionally, she noted that project is on track regardless some human resource issues. In terms of strengthening institutional arrangements, JICA’s other on-going projects have some successful examples such as establishing MOU between related stakeholders-thus could encourage to fully utilize these good practices on this project as well. JICA will continuously communicate closely and work together with MET for the further improvement of GHG inventory in Mongolia. Closer communication between government and donors is encouraged thus JICA will be glad to be invited for consultative platforms on GHG matter. Ms.



MS

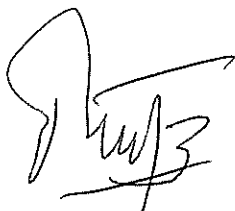


Eriko Tamura agreed that JICA will provide rough budget of the Project to MET.

Mr. Batjargal Khandjav, acting chair of the JCC closed the meeting.

Appendix 1: List of participants

Appendix 2: Agenda of the 2<sup>nd</sup> JCC



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Mongolian side

**Ministry of Environment and Tourism (MET)**

Batjargal Khandjav	Director, Climate Change and International Cooperation Department
Anand Tsog	Climate Change Officer, Climate Change and International Cooperation Department
A. Narangaravuu	Officer, Climate Change & International Cooperation Department

**Environment and Climate Fund (ECF)**

Ganbaatar Khurelbaatar	Director of Environment & Climate Fund & Project manager
Gerelmaa Shaariibuu	Specialist for GHG Inventory, Climate Change Project Implementing Unit
Tegshjargal Bumtsend	Specialist for GHG Inventory, Climate Change Project Implementing Unit
Khongor Tsogt	Specialist for GHG Inventory, Climate Change Project Implementing Unit

**Ministry of Construction and Urban Development**

Lkhagvatseden Orosoo	Director
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**The Governor's office of the Capital city**

Sanchirbayar D.	Department of Air Pollution Reduction
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Japanese side

**JICA Mongolia Office**

Eriko Tamura	Chief Representative
Makiko Inamori	Project Formulation Adviser
Munkhmanlai Chinbat	Program Officer

**JICA Expert team**

Takeshi Enoki	Team Leader/GHG Inventory (Institutional arrangements)
Tomoki Takahashi	GHG Inventory (Energy 2)
Yui Ogawa	Workshop Coordinator
Akihiro Tamai	Long-Term Expert
Anar Bayarsaikhan	Project Assistant



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БАЙГАЛЬ ОРЧИН,  
АЯЛАЛ ЖУУЛЧЛАЛЫН ЯАМ



БАЙГАЛЬ ОРЧИН  
УУР АМЬСГАЛЫН САН



Japan International  
Cooperation Agency

**“Хүлэмжийн хийн тооллого хийх чадавхийг бэхжүүлэх замаар үндэсний хүлэмжийн хийн тооллогын мөчлөгийг тасралтгүй сайжруулах нь төсөл” –ийн 2 дахь удаагийн Удирдах хороо (ТУХ)-ны хурлын урилга**

2019 оны 9-р сарын 19

Хурал зохион байгуулах газар:

Байгаль орчин, аялал жуулчлалын яам 2 давхар Хаан танхим

Хурлын агуулга

Цаг	Агуулга	Удирдагч
Хурлын удирдагч: БОАЖЯ-ны Төрийн нармйн бичгийн дарга, ТУХ-ны дарга Ц. Цэнгэл Moderator: Mr. Tsengel Ts., MET State Secretary, JCC Chair		
9:00~9:30	Бүртгэл	
9:30~9:40	Нээлтийн үг БОАЖЯ Opening address from MET	БОАЖЯ-ны Төрийн нармйн бичгийн дарга, ТУХ-ны дарга Ц. Цэнгэл Chair of JCC, State Secretary, Ministry of Environment and Tourism (MET)
9:40~9:50	Нээлтийн үг ЖАЙКА ОУБ Opening address from JICA	ЖАЙКА ОУБ-ын Монгол дахь төлөөлөгчийн газрын дарга Тамура Эрико Ms. Eriko Tamura, Chief Representative, JICA Mongolia Office
9:50~10:15	Төслийн үйл ажиллагааны явц Progress of Project Activities	БОУАГийн мэргэжилтэн Б. Тэгшжаргал ECF- CCPIU B. Tegshjargal
10:15~10:30	Асуулт хариулт Question and Answer	
10:30~10:40	Үндэсний тогтвортой зохион байгуулалтыг сайжруулах талаар Enhancing sustainable national arrangements in Mongolia	ХүХ-н тооллого төслийн ахлагч, богино хугацааны мэргэжилтэн Эноки Такэши Mr. Takeshi Enoki, Team leader, JICA expert
10:40~10:50	Асуулт хариулт Question and Answer	
10:50~11:00	Дараагийн алхам Next steps	ХүХ-н тооллого төслийн богино хугацааны мэргэжилтэн Огава Юүи Ms. Ogawa Yui JICA short term expert
11:00~11:05	Any other business	
11:05~11:10	Хаалт Closing Address	

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**MINUTES OF MEETING**  
**ON**  
**THE THIRD JOINT COORDINATION COMMITTEE**  
**OF**  
**THE PROJECT FOR CAPACITY DEVELOPMENT TO ESTABLISH A**  
**NATIONAL GHG**  
**INVENTORY CYCLE OF CONTINUOUS IMPROVEMENT**

Ulaanbaatar, 25 February 2021



Enkhbat Altangerel  
Director General  
Ministry of Environment and Tourism  
Acting JCC Chair



Mr. Yeruult Bayart  
Director  
Climate Change Research and Cooperation Center



Mr. Batkhoo Idesh  
Director General  
Development Financing Department  
Ministry of Finance



Ms. Eriko Tamura  
Chief Representative  
Japan International Cooperation Agency  
Mongolia Office



The third Joint Coordination Committee (hereinafter referred to as the “JCC”) of the Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement (hereinafter referred to as the “Project”) was held online on February 25, 2021.

The Ministry of Environment and Tourism (hereinafter referred to as “MET”), the Climate Change Research and Cooperation Center (hereinafter referred to as “CCRCC”), Japan International Cooperation Agency (hereinafter referred to as “JICA”) and relevant parties of the Project joined the JCC, chaired by Mr. Enkhbat Altangerel, Director General of the Climate Change Department of the MET and acting chair of the JCC. The list of participants is shown in Appendix 1.

The opening address was delivered by Mr. Takeshi Enoki, the Project Leader and Mr. Tokuji Yoshimura, Senior Representative of the JICA Mongolia Office.

Mr. Takeshi Enoki presented the background and an overview of the Project progress, followed by presentations on the progress and plan for 2021 for each of the three outputs by Ms. Undarmaa Khurelbaatar, Ms. Tegshjargal B., and Mr. Khongor Tsogt.

The following is a summary of the discussions following the presentations.

#### 1. Project progress and plan for 2021

JCC members welcomed the progress made by the JICA Project members, despite the restrictions and challenges posed by COVID-19 pandemic. The JCC members noted some of the concerns with regards to the progress and remaining activities until the end of the project period of October 2021. The JCC members acknowledged that since early 2020, the JICA Project experts have not been on the ground to directly communicate with the concerned Project members and other key stakeholders, resulting in decreased efficiencies and productivity. This has especially posed challenges in holding group meetings with several stakeholders, which is fundamental in inventory preparation which require cooperation from a wide range of actors.

For Output 1, while the QA/QC Plan, improvement list template, inventory report template, archiving manual, etc. have been developed to enhance the GHG inventory system of Mongolia, they have not been tested through actual GHG inventory cycles. The CCRCC is now preparing the BUR2 inventory, and JCC members noted that the tools/materials developed in Output 1 should be used during the BUR2 cycle and revised after the submission for continued use for BUR3 and beyond.

For Output 2, the Energy balance for GHG inventory Working Group under the Project was established in June 2020 but has yet to meet due to COVID-19 lockdowns. Although the Project

members are consulting Energy WG members such as MEEI and NSO, this communication approach is taking more time than expected. The JCC members noted that the Project is five months behind schedule and that there is a possibility that the energy data for 1990 to 2014 may not be completed during the Project duration. The MEEI has developed the EBTs for 2015, 2016 and 2019, and are now working on the development of the 2020 EBT. The JCC members agreed that the Project members and members of the WG, in particular MEEI and NSO, should have regular online meetings to enhance the work. The JCC members also agreed that CCRCC will need to continue to support the JICA Project experts to engage the energy stakeholders.

For Output 3, the literature research/sampling activities has concluded as scheduled. However, the JCC members noted that there are some delays of grassland monitoring data provision from IRIMHE, and depending on the completeness of the IRIMHE data, additional work may be required. To ensure the data collection, Project counterparts would need to continue to support the JICA Project expert to strengthen cooperation. Furthermore, the estimation will be made in consultation with LULUCF WG members, and results discussed/approved by LULUCF WG members. Assuming COVID restrictions are still in place, the consultation/discussion process will take more time than expected. The JCC members agreed that additional meetings may be necessary to carry out technical discussions with LULUCF stakeholders.

## 2. Extension of the Project duration

Given the concerns described above, the JCC members agreed that there is a need to consider an extension of the Project. Mr. Erdenebat from MEEI introduced their work plan for 2021, which includes development of energy balance table (EBT) for 2020 and time series of EBT. He explained that the GHG inventory cycle for BUR2 would be good chance to use the time series of EBT and noted that an extension would be beneficial to the JICA project. Mr. Enkhbat Altangerel noted the need for the JICA Project members to enhance coordination, while acknowledging the challenges such as the structural changes in counterparts and the delays due to COVID-19 which is common across all projects. Mr. Enkhbat, on behalf of the Government of Mongolia, also officially requested JICA to extend the term of the Project in order to achieve the technical improvements as planned. The JCC members agreed that the Project members discuss and produce a plan for the extension to ensure that technical improvements will be made as planned, describing the necessary work for Project members.

## 3. Revision of Project Director and Project Manager

The JCC members noted that the Ministry of Environment and Tourism has undergone structural changes. The JCC members also noted that the Climate Change Project Implementation Unit was moved from ECF to the newly established CCRCC. The JCC members agreed that the Director and Manager of the JICA Project should reflect these changes and acknowledged their respective

responsibilities.

	Old	New
Project Director	Director General, Department of Climate Change and International Cooperation, Ministry of Environment and Tourism	Director General, Department of Climate Change, Ministry of Environment and Tourism
Project Manager	Director, Environment and Climate Fund	Director, Climate Change Research and Cooperation Center
Counterparts	CCPIU, Environment and Climate Fund	NC/BUR unit members, Climate Change Research and Cooperation Center

#### 4. Other comments

- Ms. Sarantuya from IRIMHE expressed concern regarding how the Project plans to use the monitoring data collected by IRIMHE and the need to build capacity of all relevant stakeholders.
- Mr. Erdenebat from the MEEI stressed the importance of the EBT not only for the GHG inventory but for energy policy planning and development.
- Participants asked the Project to share some of the Project outputs such as the improvement reports and the QA/QC plans developed.

Mr. Takeshi Enoki closed the meeting after reiterating the importance of improved communication between stakeholders to enhance the activities of the Project and requested for continued support from the JCC members.

Appendix 1: list of participants

Appendix 2: agenda of the JCC

## list of participants

	Name	Organization
1	Enkhbat Altangerel	MET, Climate change Department
2	Narangaravuu Altangerel	MET, Climate change Department
3	Yeruult Bayart	CCRCC
4	Batjargal Zamba	CCRCC
5	Undarmaa Khurelbaatar	CCRCC
6	Aminzul Shijir	CCRCC
7	Davaasambuul Ulzii-Orshikh	CCRCC
8	Gerelmaa Shaariibuu	CCRCC
9	Khongor Tsogt	CCRCC
10	Tegshjargal Bumtsend	CCRCC
11	Amartuya Batbold	CCRCC
12	Ganjuur Sarantuya	IRIMHE, MET
13	Atarjargal Tserendoo	ERC
14	Ankhubayar Boldbaatar	MoMHI
15	Davaabayar Davaakhuu	MMHI
16	Altaibaatar Batsaikhan	MCUD
17	Sereeter Jigje	MoRTD
18	Ganzorig Shagdarsuren	MOE
19	Enkhtuvshin Renchindorj	MEEI
20	Erdenebat Dorj	MEEI
21	Ariuntsetseg Lkhagva	NUM
22	Otgonsuren Avirmed	WCS
23	Ochirbat Batkhishig	IGG
24	Takeshi Enoki	JICA Project expert
25	Maya Fukuda	JICA Project expert
26	Atsushi Sato	JICA Project expert
27	Satoshi Kawanishi	JICA Project expert
28	Keiichi Igarashi	JICA Project expert
29	Yui Ogawa	JICA Project expert
30	Eriko Tamura	JICA Mongolia Office
31	Tokuji Yoshimura	JICA Mongolia Office
32	Munkhmanlai Chinbat	JICA Mongolia Office
33	Junko Morizane	JICA Headquarters
34	Odtsetseg Ganbold	JICA support
35	Purevsuren Byambasaikhan	translator



БАЙГАЛЬ ОРЧИН,  
АЯЛАЛ ЖУУЛЧЛАЛЫН ЯАМ



Japan International  
Cooperation Agency

## The Third Joint Coordinating Committee (JCC) Meeting for The Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement

February 25, 2021

Online Meeting

### Agenda

Time	Agenda	Speaker
Moderator: Mr. A. Enkhbat, Director of Department of Climate Change		
9:30 ~ 9:35	Opening address from MET	Mr. A. Enkhbat, Director of Department of Climate Change, Ministry of Environment and Tourism (MET)
9:35 ~ 9:40	Opening address from JICA	Ms. Eriko Tamura, Chief Representative, JICA Mongolia Office
9:40 ~ 9:50	Background and overall progress of the Project	Mr. Takeshi Enoki, Team leader, JICA expert
9:50 ~ 10:20	Progress and Plan for 2021 by output	Output1: Ms. Undarmaa Khurelbaatar, Climate Change Research and Cooperation Center (CCRCC) Output 2: Ms. Tegshjargal B., CCRCC Output 3: Mr. Khongor Tsogt, CCRCC
10:20 ~ 10:35	Discussion and Confirmation on work ahead	Participants
10:35 ~ 10:40	Confirming the Minutes	Participants
10:40 ~ 10:40	Closing Address	

# DRAFT

## MINUTES OF MEETING

ON

THE FOURTH JOINT COORDINATION COMMITTEE

OF

THE PROJECT FOR CAPACITY DEVELOPMENT TO ESTABLISH A  
NATIONAL GHG

INVENTORY CYCLE OF CONTINUOUS IMPROVEMENT

Ulaanbaatar, 28 February 2022

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Ms. Tserendulam Sh.  
Director General  
Ministry of Environment and Tourism  
Acting JCC Chair

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Mr. Yeruult Bayart  
Director  
Climate Change Research and Cooperation Center

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Mr. Batkhuu Idesh  
Director General  
Development Financing Department  
Ministry of Finance

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Ms. Eriko Tamura  
Chief Representative  
Japan International Cooperation Agency  
Mongolia Office

# DRAFT

The fourth Joint Coordination Committee (hereinafter referred to as the “JCC”) of the Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement (hereinafter referred to as the “Project”) was held online on February 28, 2022.

The Ministry of Environment and Tourism (hereinafter referred to as “MET”), the Climate Change Research and Cooperation Center (hereinafter referred to as “CCRCC”), Japan International Cooperation Agency (hereinafter referred to as “JICA”) and relevant parties of the Project joined the JCC, chaired by Mr. Yeruult Bayart, Director of the Climate Change Research and Cooperation Center.

The opening address was delivered by Ms. Tserendulam Sh., Director General of the Climate Change Department of the MET and Mr. Hideaki Matsuoka, Director of the Global Environment Department, JICA.

Ms. Undarmaa presented the background and an overview of the Project progress, explaining the Project purpose, the three outputs, implementation structure, and Project timelines.

Ms. Tegshjargal B., and Mr. Khongor Tsogt followed with the presentation on the outcomes of the Project activities, highlighting the HFC emissions, time series energy balance table data, and development of parameters for GHG emissions/removals estimation from grassland. A preliminary estimate of the BUR2 GHG inventory was also presented, with an overview of the JICA Project improvements that were reflected into the BUR2 GHG inventory.

Mr. Takeshi Enoki presented an overall summary of the achievements of the Project. For output 1, a variety of tools, such as the QA/QC plan, national inventory report template, archiving manuals were developed in addition to the technical training, data development, and an establishment of technical working groups. For output 2, a comprehensive review of all national energy balance tables in Mongolia was carried out, and a time series of energy balance tables were developed based on previous tables. In addition, a manual for energy balance table preparation was prepared, which will facilitate the sustainability of the task. In output 3, parameter data for biomass and soil organic carbon based on comprehensive literature research and two field surveys. Three challenges were presented on sustainable funding, retention of staff, and the coronavirus pandemic. Mr. Enoki noted that the CCRCC is a new entity and that procurement procedures may be improved than before, which could have positive implications for staff

# DRAFT

retention as well.

The final presentation was on recommendations from the JICA Project team to the CCRCC. As the GHG inventory gains use in the international and domestic arena, strong leadership is needed to plan improvements for the long, medium, and short term. Also, as the GHG inventory grows more complex, the stakeholders will grow as well, which needs to be led by a champion within CCRCC who can take lead in coordinating the GHG inventory preparation and improvement process.

JCC members confirmed the status of the BUR 2 GHG inventory and noted that it will be submitted to the UNFCCC in April 2022. Mongolia plans to submit its first Biennial Transparency Report to the UNFCCC in 2024, and CCRCC explained that it is already planning the work with the support of UNEP.

Ms. Eriko Tamura, Chief Representative of JICA Mongolia Office delivered final remarks and Mr. Yeruult closed the meeting after expressing appreciation to JICA for the support of the GHG inventory work in Mongolia.

Appendix 1: list of participants

Appendix 2: agenda of the JCC



## Appendix 1

## list of participants

	Name	Organization
1	Tserendulam Sh.	MET, Climate change Department
2	Narangaravuu Altangerel	MET, Climate change Department
3	Yeruult Bayart	CCRCC
4	Undarmaa Khurelbaatar	CCRCC
5	Davaasambuu Ulzii-Orshikh	CCRCC
6	Gerelmaa Shaariibuu	CCRCC
7	Tegshjargal Bumtsend	CCRCC
8	Bujidmaa Borkhuu	CCRCC
9	Erdenebat Dorj	MEEI
10	Takeshi Enoki	JICA Project expert
11	Akihiko Tamai	JICA Project expert
12	Maya Fukuda	JICA Project expert
13	Atsushi Sato	JICA Project expert
14	Eriko Tamura	JICA Mongolia Office
15	Atsuki Takeda	JICA Mongolia Office
16	Munkhmanlai Chinbat	JICA Mongolia Office
17	Hideaki Matsuoka	JICA Headquarters
18	Junko Morizane	JICA Headquarters
19	Odtsetseg Ganbold	JICA support
20	Sergelen Munkhuu	LULUCF expert
21	Khongor Tsogt	LULUCF expert
22	Anar Erdene	LULUCF expert



MINISTRY OF ENVIRONMENT  
AND TOURISM



CLIMATE CHANGE RESEARCH AND  
COOPERATION CENTRE



Japan International  
Cooperation Agency

## Fourth Joint Coordinating Committee meeting for “The Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement”

February 28, 2022

### Agenda

Time	Agenda (moderator: Mr. Yuurult, Director of CCRCC)	Speaker
14:45~15:00	Registration	
15:00~15:05	Opening remarks	Ms. Tserendulam Sh., Director General of Climate Change Department, MET, JCC Chair
15:05~15:10	Welcome remarks	Mr. Hideaki Matsuoka, Director, Global Environment Department, JICA
15:10~15:20	Introduction to the GHG inventory and the JICA Project	Undarmaa Kh., CCRCC NC BUR coordinator
15:20~15:30	Overview of activities in 2021/2022	Tegshjargal B., CCRCC GHG inventory expert
15:30~15:45	Question and Answer	
15:45~15:55	Achievements and Challenges of the Project	Mr. Takeshi Enoki, JICA Project expert
15:55~16:05	Recommendations for the future	Mr. Takeshi Enoki, JICA Project expert
16:05~16:25	Discussion	
16:25~16:30	Final Remarks	Ms. Eriko Tamura, Chief Representative of JICA Mongolia office
16:30~16:35	Closing	Mr. Yeruult B., Director of CCRCC

**RECORD OF DISCUSSIONS**

**FOR**

**PROJECT FOR CAPACITY DEVELOPMENT TO ESTABLISH  
A NATIONAL GHG INVENTORY CYCLE OF CONTINUOUS  
IMPROVEMENT**

**AGREED UPON AMONG**

**MINISTRY OF ENVIRONMENT AND TOURISM**

**AND**

**ENVIRONMENT AND CLIMATE FUND**

**OF**

**MONGOLIA**

**AND**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

**Dated June 27, 2017**

Based on the minutes of meetings on the Detailed Planning Survey for the Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement (hereinafter referred to as "the Project") signed on April 19, 2017 among the Ministry of Environment and Tourism, and Environment and Climate Fund of Mongolia (hereinafter referred to as "the Counterparts") and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with the Counterparts and relevant organizations to develop a detailed plan of the Project.

The purpose of this record of discussions (hereinafter referred to as "the R/D") is to establish a mutual agreement for its implementation by both parties and to agree on the detailed plan of the Project as described in the followings and the Annexes, which will be implemented within the framework of the Agreement on Technical Cooperation signed on December 5, 2003 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on May 5, 2017 between the Government of Japan and the Government of Mongolia.


The Counterparts will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of Mongolia.

Both parties also agreed that the Project will be implemented in accordance with the "Basic Principles for Technical Cooperation" published in December 2016 (hereinafter referred to as "the BP"), unless other arrangements are agreed in the R/D.

The R/D is delivered at Ulaanbaatar as of the day and year first above written. The R/D may be amended by a minutes of meetings between both parties, except the plan of operation to be modified in monitoring sheets. The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the R/D.

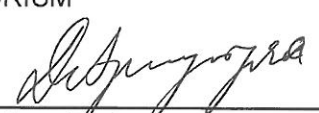
For

JAPAN INTERNATIONAL  
COOPERATION AGENCY

  
Mutsumi Sato  
Chief Representative  
JICA Mongolia Office


For

MINISTRY OF ENVIRONMENT AND  
TOURISM

  
Ariuntuya Dorjsuren  
Acting Director General  
Department of Climate Change and  
International Cooperation  
Ministry of Environment and Tourism


For

MINISTRY OF FINANCE

  
Batsengee Dorjsembed  
Director General  
Development Financial Department  
Ministry of Finance

For

ENVIRONMENT AND CLIMATE FUND

  
Ganbaatar Khurelbaatar  
Director  
Environment and Climate Fund

- Annex 1 Main Points Discussed
- Annex 2 Project Design Matrix (PDM)
- Annex 3 Plan of Operation (PO)
- Annex 4 Implementation Structure
- Annex 5 List of Proposed Members of Joint Coordinating Committee



## Main Points Discussed

### 1. Environmental and Social Considerations

With regard to the Section 10.1 of the BP, the Project is likely to have minimal adverse impact on the environment and society under the 'JICA Guidelines for Environmental and Social Considerations (April 2010)'.

### 2. Scope of the Project

Both parties confirmed that the focus of this Project will be on improvement of the existing inventory system. Both sides agreed the Project includes the resolution of sector specific issues in the Energy and LULUCF sectors in addition to cross-sectoral issues.

### 3. Implementing structure

- i) Ministry of Environment and Tourism (hereinafter referred to as MET) clarified that the Climate Change and International Cooperation Department (hereinafter referred to as CCICD) is responsible for the implementation of the Project in cooperation with JICA. This was confirmed among the Director General of the Department of Public Administration and Management (hereinafter referred to as DPAM), the Director General of the CCICD, JICA missions and JICA Mongolia Office. In this regard, MET issued a letter dated April 3, 2017, No. 01/1743 to JICA Mongolia Office as shown in Appendix 2.
- ii) Both parties confirmed that the Project will be under the management of the CCICD and implemented by the Climate Change Project Implementation Unit (hereinafter referred to as CCPIU), Environment and Climate Fund (hereinafter referred to as ECF).
- iii) Both parties agreed that the Information and Research Institute of Meteorology and Hydrology and Environment (hereinafter referred to as IRIMHE) will be one of the cooperating agencies in the Project, with an expected role as a data provider.
- iv) Ensuring smooth implementation and sustainability of the Project, Mongolia side will endeavor to strengthen collaboration with relevant ministries and academic institutions.
- v) Both parties agreed that the MET designates the Director General of the CCICD as the Project Director, and the Director of ECF as the Project Manager. Also, the Chairperson of the Joint Coordination Committee (hereinafter



referred to as JCC) was agreed to be the State Secretary at the MET.

- vi) Mongolia side explained that the personnel expenses for the CCPIU, ECF are paid by donor funds. However, Both parties confirmed that their employment will be secured even during the interval between external funding, since the contracts are made between the personnel of the CCPIU and the DPAM, and the personnel expenses during the time is secured by governmental fund, so that the sustainability of this Project will be ensured during and after its implementation period.

#### 4. Contribution to promoting mitigation actions

Both parties confirmed the following from the perspective of Project impact on the promotion of climate change mitigation actions:

- i) The direction of the Project is consistent with the Green Development Action Plan (2016-2030) developed by MET. Both parties confirmed that this Project would contribute to an improved GHG inventory, and that this improved inventory would be used as a tool to develop mitigation policies and measures such as those contained in future NDCs and the monitoring of such actions.
- ii) The Green Development Action Plan (2016-2030) has moved into the implementation phase, and the DCCIC is responsible for the implementation of the plan with regard to climate change, as MET explained.
- iii) Mongolia side will share relevant information of the Project with concerned ministries, agencies and institutions in order to reflect the Project outcomes to mitigation policies and measures.



**Project Design Matrix**

**ANNEX2**

Version 0  
April 19, 2017

**Project Title:** Project for capacity development to establish a national GHG inventory cycle of continuous improvement

**Implementing Agency:** MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

**Target Group:** ECF (Environment and Climate Fund)

**Period of Project:** November, 2017 ~ October 2021

**Project Site:** Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary		Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<p><b>Overall Goal</b></p> <p>Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.</p> <p><b>Project Purpose</b></p> <p>The GHG inventory is regularly improved with the cooperation of relevant institutions</p>	<p>The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)</p> <p>1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle                  2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET                  3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent                  4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle                  5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented</p>	<p>• National Inventory Report and NDC</p> <p>1) GHG improvement plan and report on improvement of priority issues                  2) National Manual approved by MET                  3) National manual and MoU between MET/[ECF] and data providers                  4) Improvement guidance and report on improvement of priority issues                  5) Improvement guidance and research report on improvement of priority issues</p>	<p>A: C/Ps trained through the Project do not leave the office in large number                  B: Political instability/economic crisis that affect the inventory activities do not occur                  C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21</p>			



<p><b>Outputs</b></p> <p>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</p>	<p>1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice)  1-2) List of priority issues of GHG inventory is developed (twice)  1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice)  1-4) Report on improvement of priority issues is developed (twice)  1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET</p>	<p>1-1) Long list of issues  1-2) List of priority issues of GHG inventory  1-3) GHG inventory improvement plan  1-4) Report on improvement of priority issues  1-5) Final draft submitted to Technical and Science Committee</p>		
<p>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</p>	<p>2-1) List of priority issues for highly priority theme in Energy sector is developed (twice)  2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice)  2-3) Report on improvement of priority issues in Energy sector is developed (twice)  2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※ After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)</p>	<p>2-1) List of priority issues  2-2) Improvement guidance  2-3) Report on improvement of priority issues  2-4) Report on improvement of priority issues</p>		
<p>Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.</p>	<p>3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice)  3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once)  3-3) Research report on improvement of priority issues in LULUCF sector is developed (once)  3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※ After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)</p>	<p>3-1) List of priority research issues  3-2) Improvement guidance  3-3) Research report on improvement of priority issues  3-4) Research report on improvement of priority issues</p>		

Activities	Inputs	The Mongolian Side	Important Assumption
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p>	<p><b>The Japanese Side</b></p> <p>1) Long term expert • GHG inventory (General)</p> <p>2) Short term experts • GHG inventory (Institutional Arrangements) • GHG inventory (Energy) • GHG inventory (Land use, Land use change and Forestry) • Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment • PC for data management • Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p><b>The Mongolian Side</b></p> <p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: The first BUR is submitted according to the schedule (in June 2017) and, after the submission, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>

Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle

Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.

Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement

Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.

Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2

Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.

Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector

Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.

Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.

Activity 2-6: Compile the results of improvements into a report.

**Pre-Conditions**

Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)

Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.

Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.



<Issues and countermeasures>

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)









**Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.**

Activity	Plan		Actual		JICA	ECF (CCPIU)
	Δ	Δ	Δ	Δ		
Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2						
Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.						
Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector						
Activity 2-4: Collect data based on the improvement guidance.						
Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.						
Activity 2-6: Compile the results of improvements into a report.						
Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)						

**Output 3: Capacity to organize issues in the LULUCF sector and systematically improve the inventory is strengthened.**

Activity	Plan		Actual		JICA	ECF (CCPIU)
	Δ	Δ	Δ	Δ		
Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.						
Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.						
Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.						
Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3						
Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.						
Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.						
Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.						
Activity 3-8: Compile the results of the improvement into a report.						
Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement						
Activity 3-10: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)						

**Duration / Phasing**

Activity	Plan		Actual	
	Δ	Δ	Δ	Δ
Activity 2-1				
Activity 2-2				
Activity 2-3				
Activity 2-4				
Activity 2-5				
Activity 2-6				
Activity 2-7				
Activity 3-1				
Activity 3-2				
Activity 3-3				
Activity 3-4				
Activity 3-5				
Activity 3-6				
Activity 3-7				
Activity 3-8				
Activity 3-9				
Activity 3-10				

Monitoring Plan	2017				2018				2019				2020				2021				Responsible Organization		
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual		Japan	GOING
Monitoring																							
Joint Coordinating Committee																							
Set-up the Detailed Plan of Operation																							
Submission of Monitoring sheet																							
Reports/documents																							
Inception Report																							
Project Completion Report																							
Public Relations																							
Establishment and operation of website																							

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# Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement Implementation Structure

Annex 4

## Joint Coordinating Committee

Special Envoy of Mongolia for Climate Change

Ministry of Environment and Tourism

State Secretary at the Ministry of Environment and Tourism (JCC Chair)

Department of Public Administration and Management

JICA

JICA Mongolia Office

Embassy of Japan in Mongolia

Other persons from Japan side

Cooperating Agencies

Information and Research Institute of Meteorology, Hydrology and Environment

Ministry of Finance

Other Relevant Ministries

Academic Institutes

Other Persons from Mongolian Side

Project Team

The Counterparts

Department of Climate Change & International Cooperation

Director General (Project Director)

Personnel

Environment & Climate Fund

Director (Project Manager)

Climate Change Project Implementation Unit (CCPIU)

Members of JICA missions

JICA Experts

Cooperation

Advice



**List of Proposed Members of Joint Coordinating Committee (JCC)  
for the Project for Capacity Development to Establish a National GHG Inventory Cycle  
of Continuous Improvement**

1. Composition

The JCC will be composed of the following members. The chair may declare closed sessions against the observers. The rules and guidelines for the management of the JCC will be determined at the initial stage of the Project.

- (1) Chairperson:  
State Secretary at the Ministry of Environment and Tourism
- (2) Project Team:
- 1) Project Director:  
Director General, Department of Climate Change and International Cooperation,  
Ministry of Environment and Tourism
  - 2) Project Manager:  
Director, Environment and Climate Fund
  - 3) Members of JICA missions
  - 4) JICA Experts
  - 5) Personnel from the Ministry of Environment and Tourism
  - 6) Personnel from the Environment and Climate Fund
  - 7) Others whom are to be agreed by the Counterparts and JICA
- (3) Other members from Mongolian side:
- 1) Cooperation partners:
    - Ministry of Finance
    - Information and Research Institute of Meteorology, Hydrology and Environment
    - National Statistics Office of Mongolia
    - Ministry of Mining and Heavy Industry
    - Ministry of Energy
    - Ministry of Road and Transport Development of Mongolia
    - The State Agency of Land Affairs, Geodesy and Cartography/ Ministry of Construction and Urban Planning
    - Ministry of Food, Agriculture and Light Industry
    - City of Ulaanbaatar

- 2) Other persons that Mongolian side might consider necessary
- (4) Other Members from Japanese side:
  - 1) Chief Representative, Representative and staff of JICA Mongolia Office
  - 2) Staff from JICA Headquarters, other domestic and foreign offices
  - 3) Staff from the Embassy of Japan
  - 4) Other persons that Japanese side might consider necessary

Note: Official(s) of Embassy of Japan may attend the JCC meeting as observer(s). The chairperson can name new members or request the attendance of other participants, as necessary, upon agreement of the JCC.

**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title : Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 1 (Term: October 17, 2017 – October 30, 2017)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: October 30, 2017**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

The contract for the JICA Project members started in October 17, 2017, and the members have drafted the Work Plan (Japanese) describing the project objectives, detailed activities, implementation structure, etc. This will be translated into English before the first mission to Mongolia, tentatively scheduled for November 19 to November 29 and shared with the project counterparts.

During this first mission, the JICA Project members, consisting of GHG inventory (Institutional arrangements) and Project administrative coordination, will hold kickoff meetings with ECF and other stakeholders, with a view to finalize the contents of the Work Plan with ECF.

**1-2 Progress of Activities**

**None**

**1-3 Achievement of Output**

**None**

**1-4 Achievement of the Project Purpose**

**None**

**1-5 Changes of Risks and Actions for Mitigation**

There have been no changes in risks of implementation of the Project since the planning of the Project.

**1-6 Progress of Actions undertaken by JICA**

None

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

None

**1-8 Progress of Environmental and Social Considerations (if applicable)**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

None

**2 Delay of Work Schedule and/or Problems (if any)**

**2-1 Detail**

None

**2-2 Cause**

None

**2-3 Action to be taken**

None

**2-4 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None

**3 Modification of the Project Implementation Plan**

Minor revisions were made to the PO attached to the R/D. This will be discussed with the project counterparts during the first mission.

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

To be confirmed in the next term.

**II. Project Monitoring Sheet I & II** *as Attached*

Monitoring Sheet1

Project Monitoring Sheet I

Version 1

October 30, 2017

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Implementing Agency: MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

Target Group: ECF (Environment and Climate Fund)

Period of Project: November, 2017~October 2021

Project Site: Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	•National Inventory Report and NDC		no revisions	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	no achievements this term	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed(twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee			
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance(twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance(※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		no achievements this term	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1)List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions(once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues			

## PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p> <p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
			<b>Pre-Conditions</b>
			<p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p>



## PM Form 3-1 Monitoring Sheet Summary

Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.


Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)


<b>&lt;Issues and countermeasures&gt;</b>
<p>none this term</p>

Project Monitoring Sheet II														Version 1											
Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement														Dated October 30, 2017											
Inputs														Monitoring											
	Year	2017				2018				2019				2020				2021				Remarks	Issue	Solution	
		IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV							
<b>Expert</b>																									
GHG inventory (General)																				long term expert					
GHG inventory (Institutional arrangements)																				approximately 1 week a quarter/expert	none	none			
GHG inventory (Energy 1)																									
GHG inventory (Energy 2)																									
GHG inventory (LULUCF 1)																									
GHG inventory (LULUCF 2)																									
GHG inventory (LULUCF 3)																									
Project administrative coordination/ training																									
<b>Equipment</b>																									
PC for data management																				1 week training	none	none			
																					none	none			
<b>Training in Japan</b>																									
Training for Counterpart on GHG inventories in Japan																					none	none			
																					none	none			
<b>In-country/Third country Training</b>																									
Training for Counterpart on GHG inventories in developing country																					none	none			
																					none	none			
<b>Activities</b>																						Responsible Organization		Achievements	Issue & Countermeasures
<b>Sub-Activities</b>																						<b>Japan</b>	<b>GOMNG</b>		
<b>Output 0: Hold a kickoff workshop of the project</b>																									
																				JICA	ECF	revised timing	not an issue		
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>																									
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	○	○	○	○	○															JICA	ECF	none	none		
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	○																			JICA	ECF	none	none		
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	○	○	○	○	○															JICA	ECF	none	none		
1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	○	○	○	○	○															JICA	ECF	none	none		
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	○	○	○	○	○															JICA	ECF	none	none		
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	△	○	○	○	○															JICA	ECF	none	none		
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	○	○	○	○	○															JICA	ECF	none	none		
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	△	○	○	○	○															JICA	ECF	none	none		





**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 2 (Term: November 1, 2017 – May 30, 2018)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: May 30, 2018**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

The contract for the JICA Project members started in October 17, 2017. The detailed Plan of Operation, Monitoring Sheet, and Work Plan were drafted in October.

During the first mission in November 2017, the JICA Project members, consisting of GHG inventory (Institutional arrangements) and Project administrative coordination, held kickoff meetings with the Ministry of Environment and Tourism (MET), the Environment and Climate Fund (ECF) and other stakeholders, and finalized the contents of the Work Plan with ECF. The JICA Project members also purchased one desktop computer, one printer, and relevant appliances, as per the Project Design Matrix (PDM) of the Project.

All JICA Project members participated in the second mission in January 2018, when the first Joint Coordination Committee (JCC) and the kickoff workshop of the Project were held. The implementation of the technical work of the Project began during the second mission, focusing on the technical review of the GHG inventory as contained in the First Biennial Update Report (BUR1) submitted by Mongolia in the summer of 2017.

During the third mission in March/April 2018, JICA Project members and ECF continued the technical review of the BUR1 inventory, met with institutions in charge of compiling energy statistics, and held the first LULUCF working group meeting.

The long term expert in charge of GHG inventory (General) began operation on March 22, 2018.

The JICA technical cooperation website was established in January 2018, with updates on the JCC and kickoff workshop meetings.

The table below shows the inputs for this and previous terms.



## **1-2 Progress of Activities**

### **A. Summary**

The first JCC meeting and kickoff workshop were held in January 2018, with the objective of presenting an overview of the Project goals and activities, providing participants with technical information regarding the GHG inventory preparation and improvement cycle, and detailed information on the specific activities of the Project. With the Work Plan of the project officially approved in the two meetings, JICA Project members and ECF began implementation of the technical work as per the Plan of Operation (P/O).

The main task for the duration of this term has been the technical review of the BUR1 inventory and preparation for the energy and Land Use Land Use Change and Forestry (LULUCF) sector improvements. Most activities have been carried out as planned but there have been some delays in the technical review. Also, there have been some developments in Mongolia which had some implications on the JICA Project scope and activities, specifically relating to the energy sector.

### **B. Output 1**

JICA Project members and ECF began the technical review of the BUR1 inventory from November 2017. As of now, the following elements of the review are complete: the institutional, procedural, and legal arrangements of the GHG inventory; the uncertainty assessment and key category analysis; the energy sector; the industrial processes sector; and the agriculture sector. A draft waste sector review is currently under consideration by ECF and the LULUCF sector review is in progress by the JICA Project members.

Once the review of the remaining two sectors is complete, the JICA Project members and ECF will consider the improvement method/procedure and develop a short list, which will be presented to a wide audience in a workshop.

### **C. Output 2**

JICA Project members confirmed the high priority energy sector theme in Mongolia during the first mission. As was identified during the Project design survey, the following themes are of high priority: developing the capacity to prepare energy balance tables annually; collecting coal consumption data by coal type; improving on the estimation methodologies of international aviation bunkers; and collecting energy consumption data by industry for major industries.

During the March/April mission, JICA Project members obtained information regarding the Mongolian Energy Economics Institute's initiative to develop the energy balance table in Mongolia with the cooperation of all relevant institutions in Mongolia with support from GIZ and possibly other donors. In order to avoid duplication of work, the JICA Project

members are considering ways to enhance this domestic work and avoid duplication. The JICA Project members plan to discuss its potential for cooperation with the Energy Economics Institute during the June mission.

#### **D. Output 3**

JICA Project members confirmed the high priority LULUCF sector research theme in Mongolia during the first mission. As was identified during the Project design survey, improvement of GHG estimation methodologies in grassland is the priority in the LULUCF sector. Specifically, the following are key issues that need to be resolved/understood in order to improve the method in grassland: identification of land classification system and land use definitions clear enough to allow carbon stock changes to be estimated in grassland; decision on what estimation system/estimation files or software are to be used; deciding how to identify the history of land use/ land management changes and its improvement plans.

The JICA Project members and ECF held its first LULUCF working group meeting to gather information from Mongolian researchers in order to clarify the terms of reference (TOR) for the literature research to be conducted later this year. Specifically, the meeting attempted to do the following: Clarify the grassland and soil data that each institution has collected; Clarify the data that should be collected for soil organic carbon calculation; List the potential data sources or literature for survey; and agree on the possible contribution by each institution for existing data (literature) research.

The JICA Project members are planning to finalize the TOR for the literature review work, and begin the consultant selection process in June.

The following table shows the progress of all Project activities.



Table 2 Overview of inputs for this term

Activities	Year	2017			2018		
		IV	I	II			
<b>Sub-Activities</b>							
<b>Output 0: Hold a kickoff workshop of the project</b>							
	Plan						
	Actual						
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>							
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan						
	Actual						
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan						
	Actual						
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan						
	Actual						
1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan						
	Actual						
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan						
	Actual						
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan						
	Actual						
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan						
	Actual						
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan						
	Actual						
1.9 Compile the results of improvement into a report.	Plan						
	Actual						
1.10 Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Plan						
	Actual						
1.11 Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.	Plan						
	Actual						
1.12 Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	Plan						
	Actual						
1.13 Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	Plan						
	Actual						
<b>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</b>							
2.1 Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	Plan						
	Actual						
2.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	Plan						
	Actual						
2.3 Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	Plan						
	Actual						
2.4 Collect data based on the improvement guidance.	Plan						
	Actual						
2.5 Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	Plan						
	Actual						
2.6 Compile the results of improvements into a report.	Plan						
	Actual						
2.7 Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan						
	Actual						
<b>Output 3: Capacity to organize issues in the LULUCF sector and systematically improve the inventory is strengthened</b>							
3.1 Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.	Plan						
	Actual						
3.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1	Plan						
	Actual						
3.3 Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.	Plan						
	Actual						
3.4 Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	Plan						
	Actual						
3.5 Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	Plan						
	Actual						
3.6 Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.	Plan						
	Actual						
3.7 Estimate emissions and removals based on the results of Activity 3-5.	Plan						
	Actual						
3.8 Compile the results of the improvement into a report.	Plan						
	Actual						
3.9 Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement	Plan						
	Actual						
3.10 Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan						
	Actual						

1-3 Achievement of Output

None

**1-4 Achievement of the Project Purpose**

No achievements yet

**1-5 Changes of Risks and Actions for Mitigation**

There have been no changes in risks of implementation of the Project since the planning of the Project.

**1-6 Progress of Actions undertaken by JICA**

None

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

None

**1-8 Progress of Environmental and Social Considerations (if applicable)**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There are several climate change relevant projects being implemented or considered for implementation in Mongolia. The table below shows the major projects that are relevant to this JICA Project.

JICA Project members will follow the progress of these projects and coordinate work with the other donors to facilitate the improvement of GHG inventories in Mongolia.

Table 3 Overview of inputs for this term

<b>Project</b>	<b>Implementing Agency</b>	<b>Objectives/Goals</b>	<b>Donor</b>
Fourth National Communication and Second BUR	ECF	Submitting BUR2 by 2020 and NC4 by 2022	UN Environment/GEF
Capacity Building Initiative for Transparency (CBIT)	ECF	Improve activity data collection in agriculture sector	FAO/GEF
MRV Program of the Mongolia	ECF	Enhance national inventory system, and improve methodology in industry sector	GGGI
Efficiency of grid-based energy supply schemes	Energy Economy Institute	Develop electricity/heat balance table	GIZ
Waste and Climate Change Project	The Asia Foundation	Strengthening the capacity of policy makers and practitioners in Bhutan, Mongolia, and Nepal to reduce GHGs and short-lived climate pollutants from the waste sector, based on circular economy concept.	German Ministry of Environment, UN Environment

**2 Delay of Work Schedule and/or Problems (if any)****2-1 Detail**

As described in 1-2 B,. delays are observed in activity 1.2 “Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues”, specifically the BUR1 review for the LULUCF and waste sectors. The review was planned to conclude in January, but is still ongoing. Consequently, some delays are occurring in activity 1.4 “Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue” and activity 1.5 “Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.”

**2-2 Cause**

The delay has been caused mainly by a positive reason, specifically, that the technical review has been carried out at a much more detailed level than expected, therefore taking more time than originally expected. As for the LULUCF sector review, the delay has been caused due to the long time spent on preparing for the LULUCF working group meeting.

**2-3 Action to be taken**

The JICA Project members will share the work among themselves in order to finalize the review as soon as possible.

**2-4 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

**Project Monitoring Sheet I**

**Project Title:** Project for capacity development to establish a national GHG inventory cycle of continuous improvement

**Version 2**

**Implementing Agency:** MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

**May 30, 2018**

**Target Group:** ECF (Environment and Climate Fund)

**Period of Project:** November, 2017~October 2021

**Project Site:** Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	· National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	no achievements this term	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee			
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		no achievements this term	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues			

PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p> <p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p> <p>Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
			<b>Pre-Conditions</b>
			<p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p>



PM Form 3-1 Monitoring Sheet Summary

Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.

Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance.  
(Combined with Activity 1-12.)



<Issues and countermeasures>

none this term







**TO CR of JICA Mongolia OFFICE**

## **Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 3 (Term: May, 2018 – October, 2018)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: October 30, 2018**

### **I. Summary**

#### **1 Progress**

##### **1-1 Progress of Inputs**

For the reporting term of this report (from the start of the JICA experts' contract in October 2017 to September 2018), the JICA experts made 24 man trips to Mongolia. In June 2018, there was a member change for the Greenhouse gas (GHG) inventory (Land Use, Land Use and Change, and Forestry 2) position, but the experts for the other six positions have remained the same since start of the contract. However, due to some changes in the specific activities of output 2 and the technical needs of relevant stakeholders, the GHG inventory (Energy 1) has only provided input from Japan, and not travelled to Mongolia as of yet. In addition to the short term JICA experts under the contract, the long term expert in charge of GHG inventory (General) was dispatched in March 2018 and has been carrying out activities to complement the short term experts.

The first task of the JICA experts was the drafting of the detailed Plan of Operation (P/O) and Monitoring Sheet, which were completed in October 2017. The Work Plan of the Project was completed in November 2017 through consultation with Project counterparts, the Ministry of Environment and Tourism (MET) and the Environment and Climate Fund (ECF), and other stakeholders. In January 2018, the first Joint Coordination Committee (JCC) and the kickoff workshop of the Project were held, with the objective of presenting an overview of the Project goals and activities, providing participants with technical information regarding the GHG inventory preparation and improvement cycle, and detailed information on the specific activities of the Project. The second JCC is planned to be held early 2019 to confirm the progress of the Project activities.

In November 2017, the JICA experts purchased one desktop computer, one printer, and relevant appliances, as per the Project Design Matrix (PDM) of the Project.

The JICA technical cooperation website was established in January 2018, with posts on



were identified, the JICA experts and ECF prioritized the identified issues/problems and drafted an improvement plan for the 2017-2019 cycle inventory. There have been some delays in the technical review and other related activities, but the JICA experts and ECF are still on schedule to carry out the improvement activities with a view to completing the BUR2 inventory during the Project duration as planned.

For output 2, "Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened," the JICA experts and the Mongolian Energy Economics Institute (MEEI) agreed, in August 2018, on a Memorandum of Understanding for supporting MEEI to develop the national energy balance table regularly to be used as input data for the GHG inventory.

For output 3, "Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened," the JICA experts, with the support of Mongolian soil experts, are carrying out a survey of the existing literature on the carbon in grassland soils in Mongolia, in preparation for the field study to be carried out in 2019.

Table 2 Overview of inputs for this term

Sub-Activities	Year	2017			2018									
		Month	10	11	12	1	2	3	4	5	6	7	8	9
<b>Activity 0: Hold a kickoff workshop of the project</b>	Plan													
	Actual													
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>	Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan												
		Actual												
	Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan												
		Actual												
	Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan												
		Actual												
	Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan												
		Actual												
	Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan												
		Actual												
	Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan												
		Actual												
	Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan												
	Actual													
Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan													
	Actual													
Activity 1-9: Compile the results of improvement into a report.	Plan													
	Actual													
Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Plan													
	Actual													
Activity 1-11: Revise and develop new Memorandum of Understanding between MET/ECF and data providers used in previous inventory preparation as needed.	Plan													
	Actual													
Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	Plan													
	Actual													
Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	Plan													
	Actual													
<b>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</b>	Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	Plan												
		Actual												
	Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	Plan												
		Actual												
	Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	Plan												
		Actual												
	Activity 2-4: Collect data based on the improvement guidance.	Plan												
	Actual													
Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	Plan													
	Actual													
Activity 2-6: Compile the results of improvements into a report.	Plan													
	Actual													
Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan													
	Actual													
<b>Output 3: Capacity to organize issues in the LULUCF sector and systematically improve the inventory is strengthened.</b>	Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.	Plan												
		Actual												
	Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.	Plan												
		Actual												
	Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.	Plan												
		Actual												
	Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	Plan												
		Actual												
	Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	Plan												
		Actual												
Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.	Plan													
	Actual													
Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.	Plan													
	Actual													
Activity 3-8: Compile the results of the improvement into a report.	Plan													
	Actual													
Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement	Plan													
	Actual													
Activity 3-10: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan													
	Actual													

**b. Output 1 activities**

JICA experts and ECF began the technical review of the BUR1 inventory from November 2017. This review was conducted for crosscutting issues of the GHG inventory in addition to technical reviews for the five sectors of the GHG inventory (energy, industrial processes and product use, agriculture, LULUCF, and waste). The review was conducted by filling out a series of checklist sheets for the respective theme/sector of the inventory. The list



of review sheets and a sample review checklist are shown below.

CROSS CUTTING ISSUES	1.4 Agriculture, Forestry, and other land use
1. Guidance for review of inventory management system	1.4.1 Agriculture
1.1 INVENTORY ARRANGEMENTS	1.4.1 (1) General
1.2 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)	1.4.1(1) Reflection of policy measures
1.3 KEY CATEGORY ANALYSIS	1.4.1 (2) Subsector
1.4 UNCERTAINTY ANALYSIS	1.4.1 (2)1 Enteric fermentation and manure management
1.5 NATIONAL INVENTORY IMPROVEMENT PLAN	1.4.1(2)1(1) Livestock population characterization
1.6 ARCHIVING SYSTEM	1.4.1(2)1(2) Tier 2 method of Enteric fermentation
2. Guidance for assessment of methods and TACCC principles	1.4.1(2)1(3) Manure management system
2.1 METHODS AND DATA DOCUMENTATION	1.4.1(2)1(4) Other (manure management)
2.2 RECALCULATIONS	1.4.1 (2) 2) Rice cultivation
2.3 TACCC PRINCIPLES	1.4.1(2)2(1) Conditions of rice cultivation
1 CROSSCUTTING ISSUES (SECTORAL ALLOCATION ISSUES)	1.4.1 (2) 3) Agricultural soils
1.1 CROSSCUTTING ISSUES (SECTORAL ALLOCATION ISSUES)	1.4.1(2)3(1) Completeness
TECHNICAL SECTORAL ISSUES	1.4.1(2)3(2) Nitrogen cycle
1.2 Energy	1.4.1 (2) 3(3) Activity data
1.2.1 General	1.4.1(2)4) Burning savannahs and agricultural residue
1.2.1 (1) Reference approach and sectoral approach	1.4.1(2)4(1) National circumstances of burning savannahs
1.2.1 (2) CO2 from biomass fuels	1.4.1(2)4(2) Activity data of burning agricultural residue
1.2.2 Subsector	1.4.1(2)5) Liming and urea application
1.2.2 (1) Stationary combustion	1.4.1(2)5(1) Activity data (Liming)
1.2.2 (1) 1) Feedstock, Reductant, and Non-energy product use	1.4.1(2)5(2) Activity data (Urea application)
1.2.2 (1) 2) Other allocation issues (auto producer, interaction with Waste)	1.4.2 LULUCF
1.2.2 (2) Mobile combustion	1.4.2 (1) General
1.2.2 (2) 1) International aviation and marine bunker fuels	1.4.2(1)1) Choice of IPCC guidelines (for all IPCC guidelines)
1.2.2 (2) 2) Other allocation issues (military use, mobile sources in agriculture/forestry/fisheries)	1.4.2(1)2) Consistent representation of land areas (for 2000GL and GPGL-LULUCF)
1.2.2 (3) Fugitive emissions	1.4.2(1)2(1) Land representation system
1.2.2 (3) 1) Coverage issues	1.4.2(1)2(2) Application of the managed land proxy (for all IPCC guidelines)
1.2.2 (3) 2) Coverage issues	1.4.2(1)2(3) Methodological issues (for all IPCC guidelines)
1.2.2 (4) Carbon dioxide transport and storage (including monitoring systems)	1.4.2(2) Specific elements
1.2.2 (4) 1) Reporting of amount of CO2 captured and CO2 leakage from CCS	1.4.2(2)1) Generic estimation methods
1.3 Industrial Processes and product use (IPPU)	1.4.2(2)1(1) Carbon pools (for all IPCC guidelines)
1.3.1 General	1.4.2(2)1(2) Subcategorization (for all IPCC guidelines)
1.3.1(1) Allocation issues with the Energy sector	1.4.2(2)2) Sector specific estimation methods
1.3.1(2) Incorporating abatement technology and/or manufacturing processes	1.4.2(2)2(1) Forest land
1.3.1(3) Completeness of the sector	1.4.2(2)2(2) Cropland and grassland
1.3.2 Subsector	1.4.2(2)2(3) Wetlands
1.3.2(1) Coverage of Mineral products	1.4.2(2)2(4) Settlements and other land
1.3.2(2) Chemical products	1.4.2(2)2(5) Harvested wood products
1.3.2(3) Metal production	1.4.2(2)2(6) Non-CO2 estimations
1.3.2 (4) F gases	1.5 Waste
1.3.2(4) 1) Potential emissions vs actual emissions	1.5(1) Solid waste stream
	1.5(2) Wastewater treatment
	1.5(3) Waste incineration

6.1 INVENTORY ARRANGEMENTS			
Potential key issues	Processes for data collection, estimation, and approval of the inventory information		
General references	CGE Training materials for the preparation of BURs: institutional arrangements Managing the national greenhouse gas inventory process, UNDP		
Detailed review element	Question	Elaboration/clarification	Findings
Institutional arrangements	Check if there is one entity that has main responsibility for the inventory preparation.	It is easier to avoid double counting and inconsistencies between different sectors when one entity has overall responsibility.	
	Are all relevant government agencies (statistics office, energy, forestry, agriculture agency, etc.) involved in the inventory process?	The inventory agency should include all relevant agencies and organizations that collect necessary data for emission/removal estimates.	
	On what basis do data providers provide data to the inventory agency? Are there potential data providers that are not providing data?	Some countries may need to have legal contracts, MoUs, MoAs, or other legal documents to formally establish a channel for data collection.	
	How are the data collected (purchasing statistics, online submission of data, telephone interview, fax, etc.)?	Data collection can be a time consuming process. It is important for the inventory agency to have in place a system that can efficiently and sustainably collect the necessary data.	
	Check if the experts estimating the emissions and removals and those compiling the inventory have a common understanding of the limitations in the data.	Good communication between the different experts performing the calculations and those collecting the data is important to assure the accuracy of the estimates. This may be part of the quality assurance routines, and it is the responsibility of the lead inventory agency to assure common understanding and implementation of the routines.	
Procedural arrangements	Is there a time line or an inventory preparation schedule that is agreed by all stakeholders?	There should be an inventory work plan that has an audience larger than the inventory team. It should describe the anticipated tasks, who will do them and by what date, the expected actions and/or products at each stage and the resources budgeted. This work plan may be part of the Party's QA/QC plan.	
	How often is the timeline or schedule updated?		
Legal arrangements	Is there a law or regulation that formalizes the institutional setup for the inventory preparation?	In cases where necessary information is not publicly available, legal and/or less formal collaboration arrangements may be needed to be established so that data can be obtained in a timely manner and in the format required.	
	Are there formal legal contracts between organizations?		
Documentation	Has the Party described the inventory arrangements in the country?	Party's inventory arrangements should describe the entire inventory process.	

All challenges/potential issues identified in the technical review were compiled into a long list of issues and an assessment of the level of priority of each challenge/potential issue was made taking into consideration the importance of the category, the impact of improvement, the time and cost needed to make the improvement, etc. The challenges/potential issues that are considered high priority were compiled into a short list of issues to be addressed during the 2017-2019 GHG inventory. The criterion used for

the prioritization of issues is shown in the table below.

Criteria	Priority level
Degree of technical difficulty	Low: Can be resolved by a junior expert
	Medium: Can be resolved by a senior expert
	High: Need scientist, academia or other expert to consider issue
cost of addressing issue	Low: Can be done without additional cost
	Medium: May be funded by JICA project
	High: Need other additional sources of funding
time to address the issues	Low: Can be resolved in days
	Medium: Can be resolved in months/during JICA project
	High: Multiple years are needed to resolve issue
Key category(O, ×)	O: Category is a key category and should be prioritized
	×: Category is a not a key category and are not a high priority
Expected effect	Low: Few % increase/decrease of emissions/removals compared to sector total
	High: Over 10% increase/decrease
	Unknown: Could be increase or decrease

For each challenge/potential issue in the short list, the JICA experts and ECF drafted an improvement plan that describes the problem, how it can be resolved, who the stakeholders are, and timeline to carry out the improvement. This document is the compilation of all the improvement plans for all high priority issues to be addressed during the 2017-2019 GHG inventory preparation cycle. Outline of the improvement plan is as shown in table 6.

A second workshop of the Project will be held in November, where the results of the technical review, the long list, the short list, and the draft improvement plan will be presented and discussed. The JICA experts and ECF will reflect any comments made in the workshop to finalize the documents.

1 Introduction
1.1 Purpose of the GHG inventory improvement plan
1.2 Steps taken to develop the improvement plan
1.3 Potential issues identified by the technical review
1.3.1 General
1.3.2 Energy
1.3.3 IPPU
1.3.4 Agriculture
1.3.5 LULUCF
1.3.6 Waste
1.4 Next steps
2 Improvement plan
2.1 General/Crosscutting issues
2.1.1 Develop a Quality Assurance/Quality Control (QA/QC) plan
2.1.2 National Inventory improvement plan
2.1.3 Improving the key category analysis and uncertainty assessment
2.1.4 Strengthen national inventory arrangements
2.1.5 Need for the development of archiving system
2.1.6 Need for public awareness raising activities
2.1.7 Documentation
2.1.8 Expert judgment
2.2 -2.6 Sector chapters
For each of the high priority issues identified, (1) Elaboration of the issue, (2) Improvement plan, (3) Relevant stakeholders, (4) Timeline

### c. Output 2 activities

JICA experts confirmed the high priority energy sector theme in Mongolia during the first mission in 2018. As was identified during the Project detailed planning survey, the following themes are of high priority: collecting coal consumption data by coal type; improving on the estimation methodologies of international aviation bunkers; and collecting energy consumption data by industry for major industries.

During the March/April 2018 mission, JICA experts learned of MEEI's initiative to develop the energy balance table in Mongolia. In order to avoid duplication of work, the JICA experts and ECF agreed to work directly with MEEI to strengthen their capacity to develop the national energy balance table on a regular basis to be used as input to the GHG inventory. After a series of discussions between the JICA experts and MEEI, in August 2017, both parties agreed to the contents of the JICA support and signed a Memorandum of Understanding (MoU) to establish effective partnership to set up a national system to develop domestic energy balance tables for Mongolia in a continuous and sustainable manner (see Annex II for the MoU). This will be accomplished through the following general activities:

- MEEI will carry out necessary work to develop national energy balance tables and provide JICA experts with access to necessary information and data in timely manner; and
- JICA experts will provide MEEI with technical support for developing national energy balance tables

The detailed list of support activities to be carried out is shown in the figure below.

Energy balance table development process		Possible support to MEEI's initiative from JICA experts		
1 <sup>st</sup> cycle	<b>Check available data</b>	<ul style="list-style-type: none"> <li>List up currently available energy data that can be utilized for the energy balance table development.</li> </ul>	<b>Drafting work plan</b> Design work-flow for the table development including roles and responsibilities.	<b>Translation</b> Translate IEA's relevant document into Mongolian.
	<b>Insert data into tables (Trial)</b>	<ul style="list-style-type: none"> <li>Insert the data above into a format of energy balance tables and check data coverage. (Here IEA's energy balance table format is used.)</li> </ul>	<b>Inserting data into the format</b> Receive data from MEEI and insert them into the energy balance table format.	<b>Involving academics into the table development process</b> Interview with domestic academics expertized in energy statistics and obtain relevant information such as availability of additional useful data and get back the result to MEEI.
	<b>Analyze data gaps</b>	<ul style="list-style-type: none"> <li>Check data gaps (which fuels and categories are not covered) based of the result of the insert above.</li> <li>Consider how to fill the data gaps.</li> </ul>	<b>Analyzing data gaps</b> Analyze the result of the data insert and identify data gaps.	
	<b>Research availability of additional data</b>	<ul style="list-style-type: none"> <li>Conduct interview with relevant ministries and agencies and obtain additional data to fill the gaps.</li> <li>Insert the additional data into the tables.</li> </ul>	<b>Recruiting additional staff</b> Hire local consultants who can assist MEEI in collecting additional data.	May hire such academics as local consultants and have them lead the table development by giving technical advice to MEEI, if appropriate academics are found.
	<b>Complete the tables and get approval</b>	<ul style="list-style-type: none"> <li>Complete the energy balance tables.</li> <li>Get approval from the working group for energy balance table</li> </ul>	<b>Supporting table development</b> Give technical advise to MEEI in inserting the additional data and completing the tables.	
2 <sup>nd</sup> cycle onwards	<b>Design the institutional arrangement</b>	<ul style="list-style-type: none"> <li>Ask data provider (relevant institutions) for continuous data provision (MoU maybe necessary).</li> <li>Design work-flow for continuous table development.</li> </ul>	<b>Design a draft institutional arrangement</b> Design a draft institutional arrangement including roles and responsibilities of institutions involved in the table development, work-flow and schedule for continuous table development, and data format.	
	<b>Develop preparation manual</b>	<ul style="list-style-type: none"> <li>Develop a manual to prepare energy balance tables.</li> </ul>	<b>Develop a draft preparation manual</b> Develop a draft of the manual to prepare energy balance tables.	

Taking the contents of the MoU with MEEI into account, the JICA experts and ECF reconsidered the activities listed under output 2. As a result, there were no revisions made to the activities, but the scope of activity was revised. Specifically, support for national energy balance table was added as part of the scope of output 2, and MEEI was added to the target of JICA support. In addition, for activity 2-3, parties agreed that there will be no working group meetings under the JICA Project, but the JICA experts would support the MEEI working group meetings, as they have been mandated to discuss and work on the energy balance tables. The table below describes the revision in scope of activities under output 2.

Activities under output 2	Revised list of activities
Activity 2-1 : Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	<ul style="list-style-type: none"> <li>- No change</li> <li>- Development of the energy balance table will be included as a priority issue</li> </ul>
Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	<ul style="list-style-type: none"> <li>- No change</li> </ul>
Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	<ul style="list-style-type: none"> <li>- Working Group meeting will be held as part of the workshop as described in activity 1-6</li> <li>- Improvement guidance for priority issues of the energy sector will be drafted. The priority issue of energy balance development will be discussed in the working group meetings hosted by the MEEI under its initiative.</li> <li>- JICA experts will support the working group meetings under the MEEI.</li> </ul>
Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.	<ul style="list-style-type: none"> <li>- No change</li> <li>- For the energy balance table development, there will be no data collection carried out under the JICA Project (JICA experts may support the data collection as part of the support to the MEEI and its working group)</li> </ul>
Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	<ul style="list-style-type: none"> <li>- No change</li> <li>- JICA experts will propose methods to use the MEEI developed national energy balance table to be used for estimating GHG emissions under the energy sector.</li> </ul>
Activity 2-6: Compile the results of improvements into a report.	<ul style="list-style-type: none"> <li>- No change</li> </ul>
Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)	<ul style="list-style-type: none"> <li>- No change</li> </ul>

#### d. Output 3 activities

JICA experts confirmed the high priority LULUCF sector research theme in Mongolia during the first mission. As was identified during the Project detailed planning survey, improvement of GHG estimation methodologies in grassland is the priority in the LULUCF sector. Specifically, the following are key issues that need to be resolved/understood in order to improve the method in grassland: identification of land classification system and land use definitions clear enough to allow carbon stock changes to be estimated in grassland; decision on what estimation system/estimation files or software are to be used; deciding how to identify the history of land use/ land management changes and its improvement plans.

The JICA experts and ECF held its first LULUCF working group meeting to gather information from Mongolian researchers in order to clarify the terms of reference (TOR) for

the literature research to be conducted in 2018. Specifically, the meeting attempted to do the following: Confirm and organize the grassland and soil data that each institution has collected; Identify the data that should be collected for soil organic carbon calculation; List the potential data sources or literature for survey; and agree on the possible contribution by each institution for existing data (literature) research.

The JICA experts have contracted Institute of Geography and Geoecology, Mongolian University of Life Sciences, and National University of Mongolia to conduct the literature review work. Specifically, the three institutes have been tasked to organize the soil datasets with the following information:

- The representative value of soil organic carbon data: SOC up to 30cm depth
- Summary information of methods to estimate SOC up to 30 cm depth or background data (proportion of organic carbon, bulk density, mass of coarse fragment-free soil/total mass of the soil and the original data) \*1
- Supplementary information on the representative value: Range or standard deviation and number of sample
- Information on soil type\*2: (This links to how many soil types are used in the GHG inventory estimation.)
- Information on grassland type and management status of each representative value: Eco-region\*3, management\*4/degraded status\*5.
- Information on geo-graphical location of each representative value which is enough to specify the location on a map: Name of place, location (latitude, longitude), elevation
- Information on time for each representative value: year, season
- Information on climate condition for each representative value: climate, average rainfall (last 10 years as a standard), average temperature (last 10 years as a standard) when data is available
- Source (in case of published data: Title, Name of author, published year, and Name of journal or book)
- Brief summary of data (several lines)
- Additional information, if any

\*1 This information should be provided to the extent possible, when the original value of soil organic carbon data does not represented as SOC up to 30 cm depth and the Service Provider needs to estimate average value of SOC up to 30 cm depth.

\*2 In relation to the information on soil type, the Service Provider shall provide a suggestion of current Mongolian soil classification translated into the IPCC soil class. The IPCC soil class can be obtained from the 2006 IPCC guidelines.

\*3 Based on predetermined five eco-regions: High forest steppe, Low forest steppe, Steppe, Semi desert and Desert. The service provider may create further sub-category under these eco-regions if necessary.

\*4 For peat soil, this management information may include the condition of drainage or cultivation status.

\*5 The existing categorization of degraded status can be used. The service provider shall include information on how the original survey considered the degraded status.

### **1-3 Achievement of Output**

For output 1, "Capacity to regularly and continuously improve the GHG inventory system is strengthened," the long list of issues has been prepared by the JICA experts and ECF experts as attached to this progress report [file: Long list 2018.xlsx]. Also, the list of priority issues for outputs 2, "Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened," and output 3, "Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened," have been identified and confirmed by the JICA experts and ECF. For output 2, the high priority issues in the energy sector are of the following: developing the capacity to prepare energy balance tables annually; collecting coal consumption data by coal type; improving on the estimation methodologies of international aviation bunkers; and collecting energy consumption data by industry for major industries. For output 3, the high priority research theme in the LULUCF sector is the improvement of GHG estimation methodologies in grassland is the priority in the LULUCF sector.

### **1-4 Achievement of the Project Purpose**

The JICA experts and ECF are currently drafting the GHG inventory improvement plan for the 2017-2019 inventory and will be presented to stakeholders in November 2018 at the second workshop.

### **1-5 Changes of Risks and Actions for Mitigation**

none.



**1-6 Progress of Actions undertaken by JICA**

None

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

None

**1-8 Progress of Environmental and Social Considerations (if applicable)**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There are several climate change relevant projects by other donors being implemented or considered for implementation in Mongolia. The table below shows the major projects by other donors that are relevant to this JICA Project. JICA experts will follow the progress of these projects and coordinate work with the other donors to facilitate the improvement of GHG inventories in Mongolia, as necessary.

Table 3 Overview of inputs for this term

PM Form 3-1 Monitoring Sheet Summary

	Name of project	Donor	Implementing agency	Objective of project	Relation to GHG inventories	Coordination with JICA project
1	ENEV 3+	GIZ	Ministry of Energy and Energy Regulatory Commission	Facilitating/Improving energy policy in Mongolia	GIZ has advised the Energy Institute to get in touch with the IEA for the energy balance development.	No need for close coordination. However, Ms. TSETSGEE Sereevjav has experience and has network with domestic energy experts, which may be useful for our project.
2	Energy Efficient Building Rehabilitations in Ulaanbaatar City (Public Investment in Energy Efficiency Phase 2)	GIZ, Swiss Development Cooperation (SDC), BMZ	Ulaanbaatar city Municipality	Introducing the governance-related procedures and the innovative technical knowledge developed under PIE 1 to ger areas		
3	Working group for the development of national energy balance tables (Formal name unknown)	GIZ, IEA	Mongolian Energy Economics Institute (MEEI)	Developing national energy balance tables	The national energy balance tables will be used as activity data in the energy sector GHG inventory.	JICA experts will provide technical and financial support to MEEI based on the MoU.
4	agriculture	GEF, CBIT	ECF	Reducing high uncertainty of activity data on mitigation actions/GHG inventory in Agriculture Sector	They may collect livestock data as well as fuel use of dung for energy sector.	Collected livestock data may be more accurate than national statistics.
5	MRV	GGGI	ECF	Developing sector MRV guidelines (which would include GHG inventory) in industry and waste sectors	They may improve data collection in IPPU and waste sector, or energy consumption in industry	Energy data in industry may be an input for MEEI's energy balance table.
6	Promoting Low-Carbon Development in Central Asia Regional Economic Cooperation Program Cities	ADB	UB city	Aiming to support participating cities (in China and central Asia) to strengthen their capacity to plan and implement climate actions.	Not much to national level inventory.	Proposed to estimate urban planting in their inventory.
7	NAMA in the construction sector in Mongolia	UNDP	Ministry of Construction		Coal consumption data (in residences?) can be collected through the project	Coal consumption data may be integrated into energy balance table.
8	REDD+ National Forest Inventory in Mongolia	UN-REDD, GIZ	MET/MOFALI	Develop methodology for National Forestry Inventory (NFI)	Forest Inventory provides forest stock data which is basis for estimating carbon amount in forest land	The project is closing in November 2018.
9	GCF readiness on Low-carbon district heating system	UNEP, GCF	MET/Ministry of Energy	Develop a funding proposal for GCF on "ger" area district heating system project	not much	Not much
10	Information matters	GIZ	MET	Enhancing MRV	MRV and F-gas training workshops were held.	Not much
11	Waste and Climate change	Asia Foundation	MET/UB city	Obtaining climate finance for waste sector	Waste composition study will be conducted in September (summer) and November (winter) 2018.	Waste composition data may be useful for estimation in waste sector

**2 Delay of Work Schedule and/or Problems (if any)****2-1 Detail**

Some delays are observed in activity 1.2 “Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues.” The review was planned to conclude in January, but was finalized in August. Consequently, delays occurred in activity 1.4 “Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue” and activity 1.5 “Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.” The activity 1-6 “Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure” is set to be carried out in November.

**2-2 Cause**

The technical review under activity 1.2 took nearly nine months instead of the originally planned three months because the Project counterparts ECF requested that the technical review be conducted in detail not only for the priority sectors energy and LULUCF, but also for industrial processes and product use, agriculture, and waste sectors. Originally, the review for the industrial processes and product use, agriculture, and waste sectors was planned to be carried out using nine checklists, but in order to respond to the ECF request, 32 checklists were used, resulting in the delay.

In addition, starting the technical review after the first JCC and kickoff workshop instead of at the beginning of the project was an additional cause for delay.

**2-3 Action to be taken**

Although several activities have been delayed, the JICA experts expect to still carry out the improvement activities and finish the 2019 inventory as planned.

**2-4 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

Not applicable

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

**Project Monitoring Sheet I**

**Project Title:** Project for capacity development to establish a national GHG inventory cycle of continuous improvement

**Implementing Agency:** MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

**Target Group:** ECF (Environment and Climate Fund)

**Period of Project:** November, 2017~October 2021

**Project Site:** Ulaanbaatar and other locations as necessary, Mongolia

**Version 3**

**October 22, 2018**

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	• National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/ECF and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/ECF and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	no achievements this term	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee			
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		no achievements this term	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues			

PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p> <p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
			<p><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p>

PM Form 3-1 Monitoring Sheet Summary

Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)

Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.


Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)

	
	<p style="text-align: center; background-color: yellow;"><b>&lt;Issues and countermeasures&gt;</b></p> <p>none this term</p>

**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 4 (Term: October 1, 2018 – April 30, 2019)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: May 14, 2019**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

**Experts**

During the reporting term of this report (October 2018 to April 2019), the JICA Project expert team made 16 man trips to Mongolia.

**Meetings**

In November 2018, the Project counterparts, the Ministry of Environment and Tourism (MET) and the Environment and Climate Fund (ECF), and JICA Project expert team hosted the second workshop for “The Project for Capacity Development to Establish a National GHG Inventory Cycle of Continuous Improvement (The Project) ” to present key stakeholders with the results of First Biennial Update Report (BUR1) review and draft improvement plan, and to build cooperative relationship with stakeholders for the implementation of the improvement plan.

**Training**

In November 2018, an ECF staff was sent to Katowice, Poland to the 24<sup>th</sup> session of the Conference of the Parties (COP 24) to the United Nations Framework Convention on Climate Change (UNFCCC) as a representative of Mongolia to present the BUR1 findings and challenges at the Facilitative Sharing of Views workshop in addition to following negotiation items under the enhanced transparency framework. The trainee successfully presented an overview of the BUR1 at the workshop and answered the questions posed at the workshop. With this experience, the trainee has a better appreciation of the important elements of the BUR and what can be expected in the enhanced transparency framework under the Paris Agreement. This trip was implemented as the third country



training of the JICA Project.

Public relations

The JICA Project website (<https://www.jica.go.jp/project/english/mongolia/018/index.html>) describing Project activities and updating milestones was opened in January 2018. Post on the second workshop was made during this reporting period.

The JICA Project facebook site (<https://www.facebook.com/jicaghginventorymongol>) posted 13 messages with 9 shares during this reporting period.

The table below shows the inputs from the Japanese side for this reporting term.

Table 1 Overview of inputs for this term

Inputs			Year		2018			2019					
			Month		10	11	12	1	2	3	4		
<b>Expert</b>													
I n M o n g o l i a	1	GHG Inventory (General)	Plan										
			Actual										
	2	GHG Inventory (Institutional arrangements)	Plan										
			Actual										
	3	GHG Inventory (Energy 1)	Plan										
			Actual										
	4	GHG Inventory (Energy 2)	Plan										
			Actual										
5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan											
		Actual											
6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan											
		Actual											
6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan											
		Actual											
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan											
		Actual											
8	Project administrative coordination/ training	Plan											
		Actual											
I n J a p a n	2	GHG Inventory (Institutional arrangements)	Plan										
			Actual										
	3	GHG Inventory (Energy 1)	Plan										
			Actual										
	4	GHG Inventory (Energy 2)	Plan										
			Actual										
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan										
			Actual										
6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan											
		Actual											
6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan											
		Actual											
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan											
		Actual											
8	Project administrative coordination/ training	Plan											
		Actual											
<b>Training</b>													
	Training in Japan		Plan										
			Actual										
	In-country and/or third country Training		Plan										
			Actual										
<b>Monitoring</b>													
Monitoring	Joint Coordinating Committee		Plan										
			Actual										
	Set-up the Detailed Plan of Operation		Plan										
			Actual										
	Submission of Monitoring Sheet		Plan										
			Actual										
<b>Reports/Documents</b>													
	Inception Report		Plan										
			Actual										
	Project Completion Report		Plan										
			Actual										
<b>Public Reations</b>													
	Establishment and operation of website		Plan										
			Actual										

## 1-2 Progress of Activities

### A. a. Overview of activities carried out in this reporting period

The table below shows an overview of the Project activities carried out during this reporting period.

Table 2 overview of activities during this reporting period

Sub-Activities	Year	2018			2019			
		Month	10	11	12	1	2	3
<b>Activity 0: Hold a kickoff workshop of the project</b>	Plan							
	Actual							
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>	Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan						
	Actual							
	Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan						
	Actual							
	Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan						
	Actual							
	Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan						
	Actual							
	Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan						
	Actual							
	Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan						
	Actual							
	Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan						
Actual								
Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan							
Actual								
Activity 1-9: Compile the results of improvement into a report.	Plan							
Actual								
Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Plan							
Actual								
Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.	Plan							
Actual								
Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	Plan							
Actual								
Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	Plan							
Actual								
<b>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</b>	Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2.	Plan						
	Actual							
	Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	Plan						
	Actual							
	Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	Plan						
	Actual							
Activity 2-4: Collect data based on the improvement guidance.	Plan							
Actual								
Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	Plan							
Actual								
Activity 2-6: Compile the results of improvements into a report.	Plan							
Actual								
Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan							
Actual								
<b>Output 3: Capacity to organize issues in the LULUCF sector and systematically improve the inventory is strengthened.</b>	Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.	Plan						
	Actual							
	Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.	Plan						
	Actual							
	Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.	Plan						
	Actual							
	Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	Plan						
	Actual							
	Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	Plan						
	Actual							
Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.	Plan							
Actual								
Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.	Plan							
Actual								
Activity 3-8: Compile the results of the improvement into a report.	Plan							
Actual								
Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement	Plan							
Actual								
Activity 3-10: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan							
Actual								

**B. Output 1**Overview

For output 1, the JICA Project expert team and ECF finalized the technical review of the GHG inventory as contained in BUR1 inventory. After the technical review was done and issues/problems of the Mongolian inventory were identified, the JICA Project expert team and ECF prioritized the identified issues/problems and drafted an improvement plan for the 2017-2019 inventory cycle. The results of the review and improvement plan were presented at the second workshop of the JICA Project.

Detail

The technical review of the BUR1 inventory was conducted for crosscutting issues of the GHG inventory in addition to technical reviews for the five sectors of the GHG inventory (energy, industrial processes and product use, agriculture, LULUCF, and waste). The review was conducted by filling out a series of checklist sheets for the respective theme/sector of the inventory.

All challenges/potential issues identified in the technical review were compiled into a long list of issues and an assessment of the level of priority of each challenge/potential issue was made taking into consideration the importance of the category, the impact of improvement, the time and cost needed to make the improvement, etc. The challenges/potential issues that are considered high priority were compiled into a short list of issues to be addressed during the 2017-2019 GHG inventory.

For each challenge/potential issue in the short list, the JICA Project expert team and ECF drafted an improvement plan that describes the problem, how it can be resolved, who the stakeholders are, and timeline to carry out the improvement. This document is the compilation of all the improvement plans for all high priority issues to be addressed during the 2017-2019 GHG inventory preparation cycle.

A second workshop of the Project was held on November 16, 2018 where the results of the technical review, the long list, the short list, and the improvement plan were presented and discussed. There was high level of interest among workshop participants, particularly with regards to the prioritization of the necessary improvements, and improvement plan was accepted. Since November, the JICA Project expert team and ECF have been carrying out the research and data collection as per the improvement plan.

An overview of the research activities currently underway for the 2017-2019 inventory can be found in the table below.

Table 3 Summary of key improvements to be made for the 2017-2019 inventory

Sector	Action	Deadline
crosscutting	Develop a Quality Assurance/Quality Control (QA/QC) plan	Jul. 2019
	Need for the development of archiving system	Jun. 2019
	Need for public awareness raising activities	Jun. 2019
	Improving documentation of the GHG inventory	Dec. 2019
IPPU	Improve the completeness of the IPPU sector	Sept. 2019
	Consider ways to sustain the data collection for HFC consumption	Sept. 2019
Agriculture	Improve the completeness of the agriculture sector	Dec. 2019
Waste	Missing activity data for CH <sub>4</sub> from SWDS (MSW in other urban and rural area)	Jul. 2019
	Missing activity data for CH <sub>4</sub> from SWDS (sewage sludge and ISW)	Jul. 2019

### C. Output 2

The JICA Project expert team and ECF held a technical seminar on the energy sector for the MEEI on November 21, 2018 to share Japan's experience in the national energy balance table development and the results of the technical analysis on Mongolia's current national energy balance tables conducted by the JICA Project expert team, aiming to enhance technical capacity of MEEI experts involved in national energy balance development.

The training seminar successfully provided the MEEI experts with technical information regarding national energy balance development. The MEEI experts actively engaged in technical discussions with the JICA expert and the ECF expert, and through the discussions, the MEEI experts recognized that a large amount of work was necessary for national energy balance development, especially from the planning phase.

Meanwhile, the JICA Project expert team learned that the NSO was also planning to prepare the energy balance table based on its experience developing the energy account with the Asia Development Bank. After a series of discussions with the NSO, in February 2019, the JICA Project expert team agreed to a Memorandum of Understanding (MoU) with NSO for technical cooperation for national energy balance table development. The contents of the MoU are similar to the MoU with the MEEI.

On April 17, 2019, the JICA Project expert team and ECF held the same technical seminar on the energy sector that was conducted for MEEI to the NSO. Through discussions during the seminar and meetings after the seminar, the JICA Project expert team and NSO agreed that they will begin work to fill out the IEA template for the energy balance table with the data currently being collected by the NSO to identify the gaps.

**D. Output 3**

For output 3, the JICA Project expert team, with the support of the Institute of Geography and Geocology, Mongolian University of Life Sciences, and National University of Mongolia, worked to finalize of the literature survey on the carbon in grassland soils in Mongolia and the improvement guidance paper for the soil survey.

The literature survey results and improvement guidance paper underwent several revisions based on discussions with ECF, soil researchers, and other stakeholders throughout this reporting term. A general timeline for the work can be seen in the figure below.

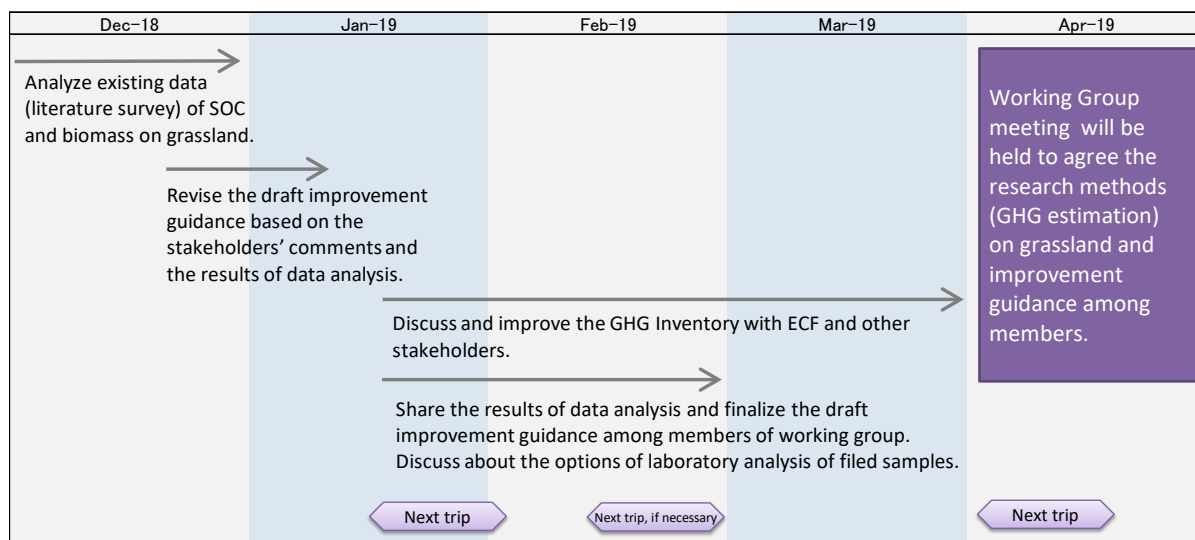


Figure 1 Timetable for activities under output 3

On April 19, 2019, the second LULUCF working group meeting was held. The meeting, which was jointly held by JICA Project expert team and ECF, aimed to present key domestic experts with the results of the research on the existing soil and biomass data and discuss on necessary data for current estimation methodologies options and field survey manual including site selection. More than 25 stakeholders, including Ministry of Environment and Tourism, research institutions such as Institute of Geography and GeoEcology, Mongolian University of Lifesciences, National University of Mongolia, Research Institute of Meteorology Hydrology and Environment, and Wildlife Conservation Society participated in the meeting, and active discussions were held.

As a result of discussion at the meeting, the Improvement Guidance was approved and the strategy and rough schedule of field surveys to collect necessary data to improve the inventory were decided. A summary of the Improvement Guidance paper can be found in the table below.

Table 4 Summary of the Improvement Guidance

Heading		Contents
1.	Introduction	
1.1	Objective of the Improvement Guidance	Objective: To provide the survey methodology to collect basic information to develop and improve the GHG estimation methodologies of grassland in Mongolia, especially, to identify the carbon stock and carbon stock change of grassland for developing the relevant parameters.
1.2	Scope of the Improvement Guidance and field study	The survey focuses on three carbon pools: 1) Above-ground biomass; 2) Below-ground biomass; and 3) Soil organic carbon of grassland.
1.3	Options of GHG estimation methodology	Several options for estimating GHG emissions/removals. Method will be selected in 2019.
1.4	Management and utilization of Survey Data	ECF and JICA will use the collected raw data to improve the GHG estimation methodologies of the LULUCF sector.
2.	Design and Preparation of Field Survey	
2.1	Determination of survey site	General area has been determined by the literature study, but the exact locations will be proposed by the local consultants.
2.2	Schedule of Field Survey	Each survey around 3 weeks including traveling days. The first round will be conducted from July to September 2019, and the second round will be carried out from June to September 2020.
2.3	Preparation of Field Survey	According to procedures in Mongolian law, if necessary, the Surveyor needs to apply official permission to carry out the sampling survey. The necessary equipment is provided in Annex 1.
3.	Survey Method	
3.1	Plot Setting for Field Survey	The survey method and laboratory analysis has been developed based on the methods being used in Mongolia, taking into consideration the international standard methods.
3.2	Method of Below Ground Biomass Survey	
3.3	Method of Soil Survey	
Annex 1	Checklist of Survey Materials	Materials and tools necessary for the survey
Annex 2	Survey Formats	Forms to be filled out by the surveyors
Annex 3	Description/Classification for Field Survey Record	Forms to be filled out by the surveyors

In May 2019, the JICA Project expert team will begin the tender process for the local consultants, and select the consultants by June. The first field survey will be carried out in the summer of 2019 based on the Improvement guidance.

**1-3 Achievement of Output**

For output 1, the long list of issues was prepared in the previous reporting term. The short list containing the priority issues and the improvement plan were completed during this reporting term, as described in section 1-2 B.

For output 2, the list of priority issues was completed in the previous reporting term. The improvement guidance has been finalized and contained in the improvement plan developed in output 1.

For output 3, the list of priority issues was completed in the previous term. The improvement guidance was finalized as described in section 1-2 D.

**1-4 Achievement of the Project Purpose**

The JICA experts and ECF finalized the GHG inventory improvement plan for the 2017-2019 inventory during this reporting term. The improvement guidance for output 2 and 3 have been drafted during this reporting term.

**1-5 Changes of Risks and Actions for Mitigation**

The LULUCF expert in the ECF, who was the lead ECF expert for activities in output 3, has been taking sick leave since early 2019. During her absence, the JICA experts have been in close contact with the Special Envoy on Climate Change in ECF, and have consulted the Special Envoy on all matters related to output 3.

The JICA experts have expressed their concern to the ECF and MET, and both organizations assured the JICA experts that a new expert will be assigned to the LULUCF sector and to the output 3 activities. Since then, an expert has been officially assigned to the position as of late May, 2019.

**1-6 Progress of Actions undertaken by JICA**

The JICA Mongolia office met with the ECF to express concern regarding the extended leave by the LULUCF expert.

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

The MET and ECF plan to assign a new member to the LULUCF sector and output 3 activities soon.

**1-8 Progress of Environmental and Social Considerations**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There are several climate change relevant projects by other donors being implemented or considered for implementation in Mongolia. The table below shows the major projects by other donors that are relevant to the JICA Project. JICA experts will follow the progress of these projects and coordinate work with the other donors to facilitate the improvement of GHG inventories in Mongolia, as necessary.

Table 5 Overview of inputs for this term

	Relevant sector	Name of project	Donor	Implementing agency	Objective of project	Coordination with JICA project
1	Agriculture	agriculture	GEF, CBIT	ECF	Reducing high uncertainty of activity data on mitigation actions/GHG inventory in Agriculture Sector	Collected livestock head data may be more accurate than national statistics. This could contribute to reducing uncertainty. Their "MRV helpdesk" may refer to methodology for GHG inventory. Or they could propose improved methodology for GHG inventory in a future.
2	Industry/ Waste	MRV	GGGI	ECF	Developing sector MRV guidelines (which would include GHG inventory) in industry and waste sectors	Methodological improvement in Cement production may be proposed by them. ECF and JICA project can consider that if proposed.
3	City inventory	Promoting Low-Carbon Development in Central Asia Regional Economic Cooperation Program Cities	ADB	UB city	Aiming to support participating cities (in China and central Asia) to strengthen their capacity to plan and implement climate actions.	Proposing estimating urban tree planting in their inventory. We can consider their estimation method for Settlement at the end of 2019 if they develop methodology.
4	Energy	NAMA in the construction sector in Mongolia	UNDP	Ministry of Construction	Develop policy recommendations for mitigation actions in the construction sector	There may not be much needs for direct cooperation. Fuel consumption data from buildings may be integrated into energy balance table.
5	Crosscutting (institutional)	NDC Partnership	(multiple)	MET	Improve the institutional arrangements for climate change action	Draft legal document on CC will be prepared by 2020. JICA project can provide input to the draft legal document.
6	Forestry	REDD+ National Forest Inventory in Mongolia	UN-REDD, GIZ	MET/MOFALI	Develop methodology for National Forestry Inventory (NFI)	This project is closing in November 2018. There is no plan for the next phase at moment.
7	Waste	Waste and Climate change	Asia Foundation	MET/UB city	Obtaining climate finance for waste sector	Waste composition data may be useful for estimation in waste sector



**2 Delay of Work Schedule and/or Problems (if any)**

**2-1 Detail**

No delays in the Project

**2-2 Cause**

Not applicable

**2-3 Action to be taken**

Not applicable

**2-4 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

**Project Monitoring Sheet I**

**Project Title:** Project for capacity development to establish a national GHG inventory cycle of continuous improvement

**Version 4**

**Implementing Agency:** MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

**May 14, 2019**

**Target Group:** ECF (Environment and Climate Fund)

**Period of Project:** November, 2017~October 2021

**Project Site:** Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/ECF and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/ECF and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	1) The GHG inventory improvement plan was finalized in November 2018. 4) The improvement guidance of priority issues in the energy sector was developed in November 2018.	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee		The following has been developed: 1-1) Long list of issues; 1-2) List of priority issues of GHG inventory; and 1-3) GHG inventory improvement plan	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		2-1) List of priority issues has been developed 2-2) Improvement guidance has been developed	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues		3-1) List of priority research issues and 3-2) improvement guidance for highly priority research theme in LULUCF sector has been developed	

PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>

PM Form 3-1 Monitoring Sheet Summary

Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2

Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.

Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector

Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.

Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.

Activity 2-6: Compile the results of improvements into a report.

Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)

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Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

**Pre-Conditions**

A: Necessary C/Ps are assigned prior to the commencement of the Project

B: The first BUR is submitted according to the schedule (in June 2017)

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.

Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)



**<Issues and countermeasures>**

none this term

Project Monitoring Sheet II

Version 4

Dated May 14, 2019

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Inputs	Year	2017	2018				2019				2020				2021				Remarks	Monitoring	
																				Issue	Solution
			IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III		IV	
<b>Expert</b>																					
GHG inventory (General)	Plan																		long term expert		
GHG inventory (Institutional arrangements)	Actual																				
GHG inventory (Energy 1)	Plan																				
GHG inventory (Energy 2)	Actual																				
GHG inventory (LULUCF 1)	Plan																				
GHG inventory (LULUCF 2)	Actual																				
GHG inventory (LULUCF 3)	Plan																				
Project administrative coordination/ training	Actual																				
<b>Equipment</b>																					
PC for data management	Plan																				
	Actual																				
<b>Training in Japan</b>																					
Training for Counterpart on GHG inventories in Japan	Plan																				
	Actual																				
<b>In-country/Third country Training</b>																					
Training for Counterpart on GHG inventories in developing country	Plan																				
	Actual																				
<b>Activities</b>																					
<b>Sub-Activities</b>																					
<b>Output 0: Hold a kickoff workshop of the project</b>																					
	Plan																				
	Actual																				
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>																					
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan																				
	Actual																				
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan																				
	Actual																				
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan																				
	Actual																				



PM Form 3-1 Monitoring Sheet Summary

1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	long list compiled	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	long list compiled	none
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	short list complete	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	short list complete	none
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	△	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	Held November 2018	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	Held November 2018	none
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	Developed and finalized at the workshop held November 2018	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	Developed and finalized at the workshop held November 2018	none
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	△	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	in progress	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	in progress	none
1.9 Compile the results of improvement into a report.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
1.10 Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
1.11 Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
1.12 Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
1.13 Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	gaps identified. In process of drafting manual	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	gaps identified. In process of drafting manual	none
<b>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</b>																								
2.1 Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	identified in 2017	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	identified in 2017	none
2.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	identified in 2017	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	identified in 2017	none
2.3 Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	Held in conjunction with activity 1.6.	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	Held in conjunction with activity 1.6.	none
2.4 Collect data based on the improvement guidance.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	in progress	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	in progress	none
2.5 Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
2.6 Compile the results of improvements into a report.	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
2.7 Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	○	○	○	○	○	Plan	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none
						Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	JICA	ECF	none	none

Output 3: Capacity to organize issues in the LULUCF sector and systematically improve the inventory is strengthened												
3.1 Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.	○	○	○	○	Plan	█	JICA	ECF	identified in 2017	none		
					Actual	█						
3.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1	○				Plan	█	JICA	ECF	identified in 2017	none		
					Actual	█						
3.3 Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.	△				Plan	█	JICA	ECF	workshop held in April 2018. 2nd workshop held April 2019.	none		
	○	○	○	○	Actual	█						
3.4 Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	○	○	○	○	Plan	█	JICA	ECF	Draft complete	none		
					Actual	█						
3.5 Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	○	○	○	○	Plan	█	JICA	ECF	none	none		
					Actual	█						
3.6 Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.	○				Plan	█	JICA	ECF	none	none		
					Actual	█						
3.7 Estimate emissions and removals based on the results of Activity 3-5.	○	○	○	○	Plan	█	JICA	ECF	none	none		
					Actual	█						
3.8 Compile the results of the improvement into a report.	○	○	○	○	Plan	█	JICA	ECF	none	none		
					Actual	█						
3.9 Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement	○	○	○	○	Plan	█	JICA	ECF	none	none		
					Actual	█						
3.10 Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	○	○	○	○	Plan	█	JICA	ECF	none	none		
					Actual	█						
<b>Duration / Phasing</b>					Plan	█						
					Actual	█						
<b>Monitoring Plan</b>				Year	2017	2018	2019	2020	2021	Remarks	Issue	Solution
					IV	I II III IV	I II III IV	I II III IV	I II III IV			
<b>Monitoring</b>												
Joint Coordinating Committee				Plan	█						none	none
				Actual	█							
Set-up the Detailed Plan of Operation				Plan	█						none	none
				Actual	█							
Submission of Monitoring Sheet				Plan	█	█	█	█	█	█	none	none
				Actual	█	█	█	█	█			
<b>Reports/Documents</b>												
Work Plan				Plan	█						none	none
				Actual	█							
Project Progress Report				Plan			█		█		none	none
				Actual			█		█			
Project Brief Note				Plan						█	none	none
				Actual						█		
Project Completion Report				Plan						█	none	none
				Actual						█		
<b>Public Relations</b>												
Establishment and operation of JICA TC website				Plan	█	█	█	█	█	█		
				Actual	█	█	█	█	█			

**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 5 (Term: May 1, 2019 – September 30, 2019)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: November 22, 2019**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

**Experts**

During the reporting term of this report (May 2019 to September 2019), the JICA Project expert team made 10-man trips to Mongolia. A GHG inventory (LULUCF 4) member was added to the JICA Project expert team to support the soil survey and monitor progress of the survey carried out in September 2019.

**Meetings**

The second Joint Coordination Committee (JCC) of the Project was held on September 19, 2019 at the Ministry of Environment and Tourism of Mongolia. The JICA Project experts explained the progress of Project activities and the future, and JCC members discussed the fundamental challenge of the national arrangements for preparing GHG inventories in Mongolia. During the meeting, MET informed members of its plan to transfer the Climate Change Project Implementation Unit (the five members that work on the GHG inventory, BUR, and National Communication (NC)) from under ECF into MET, which would enable MET to secure funding for GHG inventory work in the future. It also explained that the National Climate Committee (NCC) would begin activities in 2019. The Chair of the NCC will be the MET Minister, and the members would be comprised of Vice Minister level members from stakeholder ministries, who would mainly discuss adaptation, Nationally Determined Contribution (NDC) development/monitoring, but also consider the GHG inventory/BUR/NC development as part of its scope. The MET also explained that it was planning to establish a Scientific Council beneath the NCC, which would be expected to provide technical input and feedback to the GHG inventory.

Reports

The Monitoring sheet Vol.4 was submitted in May 2019.

Public relations

The JICA Project website (<https://www.jica.go.jp/project/english/mongolia/018/index.html>) describing Project activities and updating milestones was opened in January 2018. The post on biomass and soil pre-survey was made during the reporting period.

The JICA Project Facebook site (<https://www.facebook.com/jicaghginventorymongol>) posted 10 messages with 10 shares during this reporting period.

The table below shows the inputs from the Japanese side for this reporting term.

Table 1 Overview of inputs for this term

Inputs			Year					
			Month	5	6	7	8	9
<b>Expert</b>								
M o n i t o r i n g	1	GHG Inventory (General)	Plan Actual	█	█	█	█	█
	2	GHG Inventory (Institutional arrangements)	Plan Actual		█			█
	3	GHG Inventory (Energy 1)	Plan Actual		█			█
	4	GHG Inventory (Energy 2)	Plan Actual					█
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan Actual					█
	6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan Actual		█	█	█	█
	7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan Actual		█	█	█	█
	8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan Actual	██				█
	9	Project administrative coordination/ training	Plan Actual		█			█
J a p a n	2	GHG Inventory (Institutional arrangements)	Plan Actual					
	3	GHG Inventory (Energy 1)	Plan Actual					
	4	GHG Inventory (Energy 2)	Plan Actual					
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan Actual					
	6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan Actual					
	7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan Actual					
	8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan Actual					
	9	Project administrative coordination/ training	Plan Actual					
	<b>Training</b>							
	Training in Japan	Plan Actual					█	
	In-country and/or third country Training	Plan Actual						
<b>Monitoring</b>								
Monitoring	Joint Coordinating Committee	Plan Actual					█	
	Set-up the Detailed Plan of Operation	Plan Actual						
	Submission of Monitoring Sheet	Plan Actual	█					
<b>Reports/Documents</b>								
	Inception Report	Plan Actual						
	Project Completion Report	Plan Actual						
<b>Public Relations</b>								
	Establishment and operation of website	Plan Actual	█	█	█	█	█	



**B. Output 1**Overview

During this reporting term, the JICA Project expert team and ECF have been carrying out the activities of the improvement plan as approved by the workshop participants.

Detail

During this reporting term, the JICA Project expert team and ECF carried out the research and data collection as per the improvement plan (Activity 1-8). An overview of the progress of the first improvement cycle can be found in the table below.

Table 3 Overview of the progress of implementation of the improvement plan

Sector	Issue	Action	Progress
crosscutting	Mongolia does not have a plan or guideline which outlines the steps to prepare the inventory including quality control/quality assurance checks.	Develop a Quality Assurance/Quality Control (QA/QC) plan in accordance with the IPCC Guidelines	A draft QA/QC Plan has been drafted. Currently being translated to Mongolian.
	Archiving is not systematically carried out in Mongolia and previous files are not centrally stored or managed.	Need for the development of archiving system	An archiving manual has been drafted and is being tested now.
	Public awareness on climate change issues is not being sufficiently carried out.	Develop materials on climate change for public awareness purposes	Project website and Facebook established. Collecting data on what information needs to be transmitted.
	Mongolian inventory report does not follow a consistent structure for each of the sectors, and does not fully explain the methods and results of each of the categories.	Improving documentation of the GHG inventory	Structure of next GHG inventory report agreed and template for the report has been developed.
energy	see output 2		
IPPU	Many of the categories of the IPPU sector have not been reported due to the lack of information	Improve the completeness of the IPPU sector	Industry research completed and categories that emit/do not emit emissions have been identified.
	HFC emissions were based on a recent project, but there are no plans to sustain the data collection in the future.	Consider ways to sustain the data collection for HFC consumption	To be considered in the second cycle
Agriculture	Some of the categories of the agriculture sector have not been reported due to the lack of information	Improve the completeness of the agriculture sector	To be considered in the second cycle
Waste	Emissions from solid waste disposal sites (SWDS) in urban areas other than Ulaanbaatar and the rural areas have not been estimated.	Missing activity data for CH <sub>4</sub> from SWDS (MSW in other urban and rural area)	To be considered in the second cycle
	Emissions from sewage sludge and industrial solid waste (ISW) are not included in the current inventory.	Missing activity data for CH <sub>4</sub> from SWDS (sewage sludge and ISW)	To be considered in the second cycle

The issue that received most attention during this reporting term is the development of the Quality Assurance/Quality Control (QA/QC) Plan which is in accordance with the IPCC Guidelines. The ECF has no guidebook or plan for developing the GHG inventory. For the BUR1 and the NC3, the members collected data and estimated emissions and removals without presenting a clear timetable and expected role for the stakeholders, resulting in a weak collaboration relationship between ECF and the data provider.

The QA/QC Plan is a tool described by the IPCC Guidelines which should be developed and updated to support the preparation and improvement of the GHG inventory cycle. The JICA Project experts have therefore drafted a QA/QC Plan in accordance with the IPCC Guidelines, which will be shared and agreed on with relevant stakeholders, and consequently enhance the national arrangement for the GHG inventory preparation. The outline of the QA/QC Plan is as shown in Table 4.

Table 4 Outline of the QA/QC Plan

1	INTRODUCTION
	1.1 Overview
	1.2 Legal basis for national GHG inventory
	1.3 Definitions
2	DATA QUALITY OBJECTIVES
3	ROLES AND RESPONSIBILITIES
	3.1 Overview
	3.2 Ministry of Environment and Tourism
	3.3 Environment and Climate Fund
	3.4 Expert Working Group on GHG inventories
	3.5 Data providers/Line Ministries
	3.6 QA Experts
4	SCHEDULE FOR BIENNIAL SUBMISSION
	4.1 Inventory planning (PLAN)
	4.2 Inventory preparation (DO)
	4.3 Checking (CHECK)
	4.4 Follow-up (ACT)
5	QA/QC PROCEDURES
	5.1 Overview
	5.2 Assessment of Tier and Methodology
	5.3 Data collection
	5.4 Handling of confidential data
	5.5 Estimation and compilation
	5.6 Archiving
	5.7 QA procedures
	5.8 Reporting, documentation and archiving procedures
	REFERENCES

## C. Output 2

### Overview

A draft energy balance table was developed in collaboration by Mongolian Energy Economics Institute (MEEI) and National Statistical Office of Mongolia (NSO) in September 2019, and the JICA Project expert team is analyzing the output to assess the quality of the

data and to identify necessary improvements to the table.

### Detail

In September 2019, both MEEI and NSO shared a draft energy balance table data set that they collaborated on. During the September mission, the JICA Project expert team discussed technical issues such as how the energy balance table was developed, and the organizational structure for developing the energy balance tables in the future, and the support that JICA could provide to MEEI and NSO. It became apparent to the JICA Project expert team that MEEI and NSO were able to develop the energy balance table this time, but there are no clear plans or roadmap for the future. Therefore, the JICA Project expert team will continue to discuss a workplan with both institutions while continuing the analysis of the data provided by MEEI and NSO.

As for the other priority issues of output 2, the JICA Project expert team consulted ECF and discussed with other stakeholders as necessary, to consider the way forward. An overview of the progress of all high priority issues of output 2 are shown in the table below.

Table 5 Status of high priority issues in output 2

High priority issue	Action	Progress
Set up national system to develop national energy balance table in continuous manner	Work with stakeholders such as MEEI, NSO, Energy Regulation Committee, and others to develop a sustainable arrangement for Mongolia in developing national energy balance tables on a regular basis.	MoUs with MEEI and NSO have been signed. The national energy balance tables for 2015 and 2016 was developed by MEEI and NSO. The JICA Project expert team is in the process of analyzing the table.
Disaggregate emissions from main industries and collect coal consumption data by coal type	Work with stakeholders such as MEEI, NSO, Ministry of Mining and Heavy Industry, Ministry of Food, Agriculture and Light Industry and domestic industrial associations to obtain disaggregated data for coal including energy consumption data by industry.	The national energy balance tables for 2015 and 2016 was developed by MEEI and NSO. The JICA Project expert team is analyzing the table now.
Improving on the estimation methodologies of international aviation bunkers	Collect energy consumption data by flight in several years for flights arranged by domestic airlines from the Mongolian Civil Aviation Authority (MCAA).	Contrary to prior communication, MCAA did not collect the fuel consumption data. The JICA Project expert team will directly contact the airlines operating in Mongolia to collect required data.
Estimate fugitive emissions from oil system other than oil production, and emissions from venting and flaring in oil production.	Identify fugitive emission that occur and are not covered in the current GHG inventory. Then, collect required data and estimate emissions.	Identified that emissions from venting and flaring from production and transport in the oil industry were not estimated in BUR1 and the data has been collected.



## D. Output 3

### Overview

The “Improvement guidance- field survey” draft was tested in June, and after some revisions, the revised guidance paper was used in the biomass and soil surveys, conducted in August and September, respectively. The soil and biomass samples are now at the laboratories of the local consultants and being analyzed.

### Detail

In May 2019, the JICA Project expert team began the tender process for the local consultants and select the local consultants in June. Pre-surveys were carried out in June to test the “Improvement guidance- field survey.” The biomass pre-survey was conducted near Hustai National Park from 16th to the 17th June 2019 and the soil pre-survey was conducted near Mongol Nomadic from 20th to 21st June 2019. Based on the results of pre-surveys and discussion among the local consultants, several points such as survey formats or how to select sampling points were revised and it was revealed that surveys can be conducted based on "the revised Improvement guidance- field survey".

The biomass survey was carried out by the local consultants from National University of Mongolia (NUM) from 13th August to 3rd September in the northern region of Mongolia to sample aboveground plant biomass and roots (Activity 3-5). Over 500 samples were collected in the survey, and the samples were sent to the NUM for analysis. The survey area is as shown below.

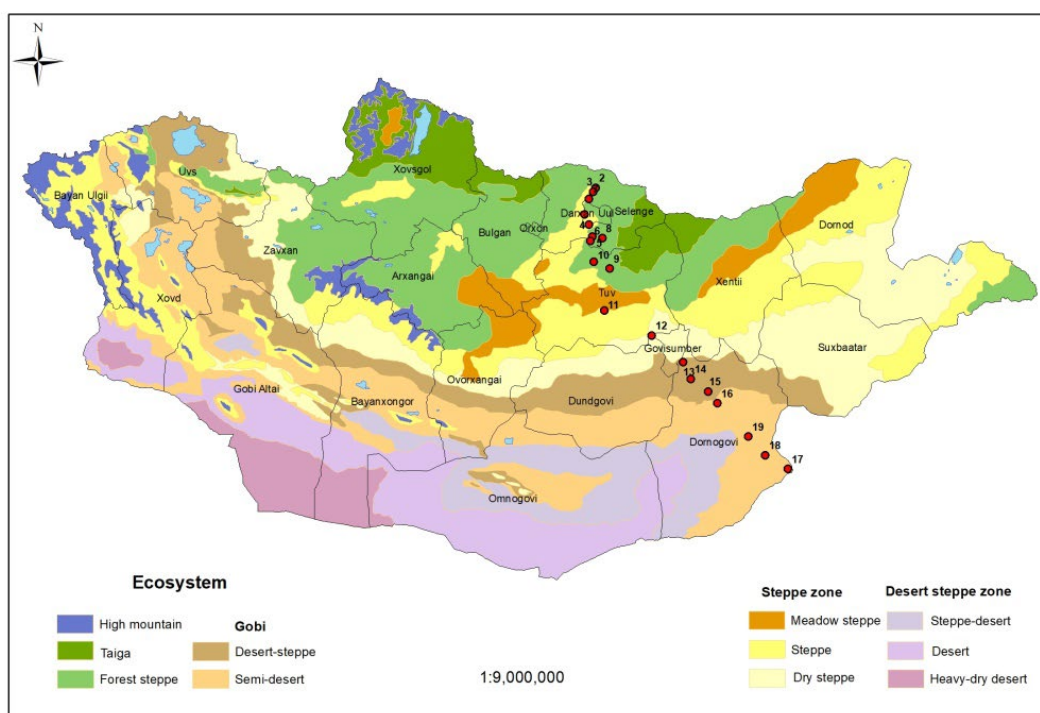


Figure 1 Sampled area for biomass

The soil survey was carried out by the local consultants from Institute of Geography and Geocology (IGG) from 1st September to 20th September in the eastern region of Mongolia to sample soil (Activity 3-5) to evaluate the soil organic carbon. The samples were sent to IGG for analysis. The survey area for soil is as shown below.

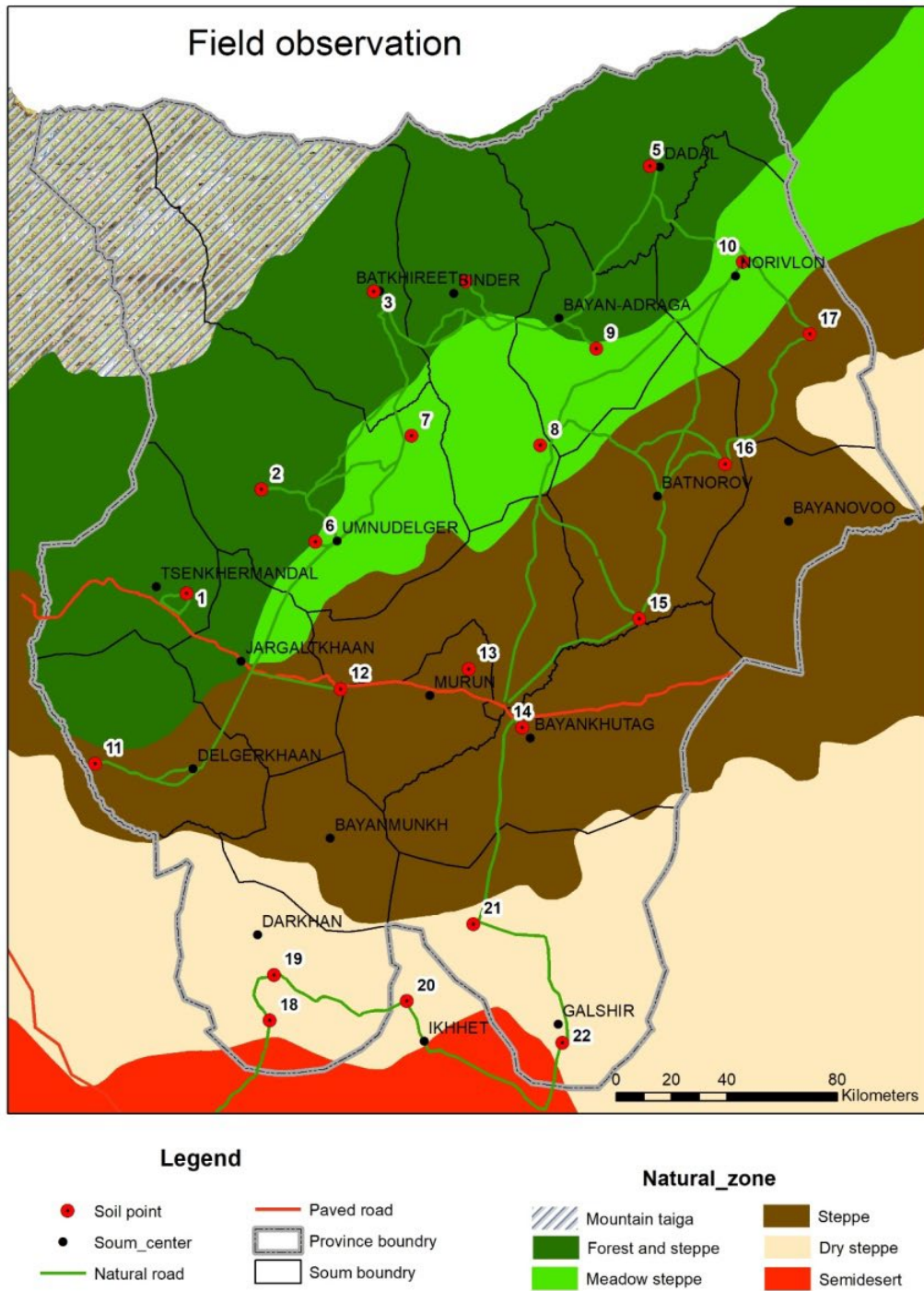


Figure 2 Sampled area for soil

The analyzed data on above ground biomass and soil organic carbon will be obtained by November 10, 2019. The JICA experts will consider how to improve grassland GHG estimation methodologies from November based on the results of the analyzed data. Based on the consideration and discussion among domestic experts, additional surveys will be conducted in 2020.

### 1-3 Achievement of Output

During this reporting period, the list of priority issues of the GHG inventory, the GHG inventory improvement plan, and the improvement guidance for outputs 2 and 3 were completed. The following table shows the status of the achievement of the outputs.

Table 6 Status of achievement of output

Output	Means of verification		Status
Output 1	1-1)	Long list of issues	Completed previously
	1-2)	List of priority issues of GHG inventory	Done
	1-3)	GHG inventory improvement plan	Done
	1-4)	Report on improvement of priority issues	To complete in 2020
	1-5)	Final draft submitted to Technical and Science Committee	To complete in 2021
Output 2	2-1)	List of priority issues	Completed previously
	2-2)	Improvement guidance	Done. Part of 1-3)
	2-3)	Report on improvement of priority issues	To complete in 2020
	2-4)	Report on improvement of priority issues (second cycle)	To complete in 2021
Output 3	3-1)	List of priority research issues	Completed previously
	3-2)	Improvement guidance	Done.
	3-3)	Research report on improvement of priority issues	To complete in 2021
	3-4)	Research report on improvement of priority issues	To complete in 2021

### 1-4 Achievement of the Project Purpose

During this reporting term, the JICA experts and ECF finalized the improvement guidance for output 3.

**1-5 Changes of Risks and Actions for Mitigation**

Three members of ECF left their posts during this reporting term. The LULUCF expert in the ECF, who was the lead ECF expert for activities in output 3, began taking sick leave since late 2018, and officially quit ECF in the summer of 2019. In May 2019, two experts were assigned to the LULUCF sector and to output 3 of the Project. One of the LULUCF experts quit ECF in August, but the other has remained committed to the Project activities and is actively engaged with the Project. In September 2019, the JICA Project expert team was informed that the contract for the BUR coordinator was terminated. However, also in September, the National Communication coordinator, who had been studying in graduate school in England the past year resumed her position at ECF and has taken the BUR coordinator's place as the compiler of the GHG inventory. In the end, in total, three members left ECF and three joined/returned, so there were no changes in the number of experts in the team, and there are no significant delays in the Project activities. However, the instability of the ECF remains problematic, and is an issue that should continue to be monitored in the future. This issue has been identified as an important assumption for the successful implementation of the Project and is part of the PDM of the Project.

Although personnel change in an organization such as staff changing jobs or quitting is natural, the handing over of work from predecessor to successor is not carried out effectively because GHG inventory information is not managed, stored, or shared among the ECF staff. The Project has produced an archiving manual (Activity 1-13) with the purpose of managing, storing, and sharing all GHG inventory relevant information, and the manual is being tested in ECF now. Also, because ECF does not have a guideline or manual that explains the steps to prepare a GHG inventory, the JICA Project expert team and ECF has drafted a QA/QC Plan for GHG inventories (see Table 3). Delays in work due to personnel changes should be minimized by the developing and using of the archiving manual and the QA/QC Plan.

**1-6 Progress of Actions undertaken by JICA**

After the second JCC meeting, MET requested the JICA Project expert team to support funding for a local consultant to carry out the additional duties involved with the relocation of CCPIU. The Project hired a local consultant in November, as the relocation of the CCPIU into MET could enhance the sustainability of the GHG inventory preparation work. This consultant will work on drafting legal documents regarding the relocation and preparation of other MET internal documents.

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

The MET and ECF assigned two members to the LULUCF sector and output 3 activities in May 2019. Although one member has since quit ECF, the other expert remains in ECF, and he has remained committed to the Project activities.

During the second JCC meeting, the MET informed JICA and the JCC members that it is planning to relocate the Climate Change Project Implementation Unit from ECF into MET, which would enable MET to secure funding for GHG inventory work in the future. This may be an important move to strengthen the national arrangement of Mongolia and enhance the sustainability of regular preparation of the GHG inventory in Mongolia. Ideally, the GHG inventory, BUR, NC preparation work is not carried out taking a project-based approach, but as part of the regular duties of the Mongolian government.

The MET plans to submit the necessary paperwork on the CCPIU relocation in 2019, and if the application is approved, the CCPIU would relocate in the year 2020, although it is not clear to which department.

**1-8 Progress of Environmental and Social Considerations**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There is no significant update on other donor projects since the last reporting period. JICA Project experts will continue to follow any climate change projects and coordinate, as necessary.

Table 7 Relevant projects

	Relevant sector	Name of project	Donor	Implementing agency	Objective of project	Coordination with JICA project
1	Agriculture	agriculture	GEF, CBIT	ECF	Reducing high uncertainty of activity data on mitigation actions/GHG inventory in Agriculture Sector	Collected livestock head data may be more accurate than national statistics. This could contribute to reducing uncertainty. Their "MRV helpdesk" may refer to methodology for GHG inventory. Or they could propose improved methodology for GHG inventory in a future.
2	Industry/ Waste	MRV	GGGI	ECF	Developing sector MRV guidelines (which would include GHG inventory) in industry and waste sectors	Methodological improvement in Cement production may be proposed by them. ECF and JICA project can consider that if proposed.
3	City inventory	Promoting Low-Carbon Development in Central Asia Regional Economic Cooperation Program Cities	ADB	UB city	Aiming to support participating cities (in China and central Asia) to strengthen their capacity to plan and implement climate actions.	Proposing estimating urban tree planting in their inventory. We can consider their estimation method for Settlement at the end of 2019 if they develop methodology.
4	Crosscutting (institutional)	NDC Partnership	(multiple)	MET	Improve the institutional arrangements for climate change action	Draft legal document on CC will be prepared by 2020. JICA project can provide input to the draft legal document.
5	Waste	Waste and Climate change	Asia Foundation	MET/UB city	Obtaining climate finance for waste sector	Waste composition data may be useful for estimation in waste sector

## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail/Cause**

At the beginning of the Project, the assumption was that ECF would complete its GHG inventory for the BUR2 by the end of year 2019. However, because ECF delayed preparation/submission of its BUR project proposal to the GEF, the revised completion deadline for the BUR2 GHG inventory is now 2020 for ECF. Therefore, the Mongolian BUR submission cycle is no longer in line with the JICA inventory improvement cycle, but the Project activities will be carried out as planned, with the first inventory improvement cycle ending at the end of 2019, and the second, at the end of the Project duration.

The reason for the delays can be attributed to the turnover of ECF staff and the lack of management and coordination of the many projects that ECF is engaged in.

### **2-2 Action to be taken**

Some planned improvements have not been carried out during the first inventory improvement cycle as described in the improvement plan agreed in November 2018, such as technical issues in sectors (as seen in table 3), but progress has been made in the crosscutting issues, which are the core focus of output 1. The priority issues that were not considered during this current cycle will be considered in the next and final cycle.

### **2-3 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

During the next reporting term, the JICA Project expert team and ECF will draft the GHG inventory improvement paper on the issues addressed during the first cycle (Activity 1-9). ECF will reflect the improvements described in the paper to the BUR2 GHG inventory which will be completed by the end of 2021. The JICA Project expert team will support ECF as necessary.

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None



**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

Project Monitoring Sheet I

Version 5

October 31, 2019

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement


Implementing Agency: MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

Target Group: ECF (Environment and Climate Fund)

Period of Project: November, 2017~October 2021

Project Site: Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	·National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	1) The GHG inventory improvement plan was finalized in November 2018. 4) The improvement guidance of priority issues in the energy sector was developed in November 2018. 5) The Improvement Guidance: field survey was completed in June 2019.	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee		The following has been developed: 1-1) Long list of issues; 1-2) List of priority issues of GHG inventory; and 1-3) GHG inventory improvement plan	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		2-1) List of priority issues has been developed 2-2) Improvement guidance has been developed	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues		3-1) List of priority research issues and 3-2) improvement guidance for highly priority research theme in LULUCF sector has been developed	

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/ECF and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
			<b>Pre-Conditions</b>
			<p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p>
			
			<b>&lt;Issues and countermeasures&gt;</b>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p> <p>Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p>			<p>Due to delays in ECF, it took approximately two years since the submission of the first BUR to start next GHG inventory preparation. ECF staff in charge of the AFOLU sector took leave from early 2019 and officially quit in the summer. Two replacement staff were assigned the AFOLU sector but one has quit in August 2019. In addition, the BUR coordinator has left the office in September 2019.</p> <p>Although the BUR submission cycle is no longer in line with the JICA inventory improvement cycle, the Project activities will be carried out as planned.</p> <p>Also, some planned improvements may not be carried out as originally planned, but they will be prioritized in the second improvement cycle.</p>
<p>Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.</p> <p>Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.</p> <p>Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.</p> <p>Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3</p> <p>Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.</p> <p>Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.</p> <p>Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.</p> <p>Activity 3-8: Compile the results of the improvement into a report.</p> <p>Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement</p> <p>Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)</p>			





PM Form 3-1 Monitoring Sheet Summary

Duration / Phasing		Plan																					Remarks	Issue	Solution	
		Actual	2017					2018					2019					2020								2021
Monitoring Plan		Year	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	Remarks	Issue	Solution
<b>Monitoring</b>																										
Joint Coordinating Committee		Plan																								
		Actual																							none	none
Set-up the Detailed Plan of Operation		Plan																								
		Actual																							none	none
Submission of Monitoring Sheet		Plan																								
		Actual																							none	none
<b>Reports/Documents</b>																										
Work Plan		Plan																								
		Actual																							none	none
Project Progress Report		Plan																								
		Actual																							none	none
Project Brief Note		Plan																								
		Actual																							none	none
Project Completion Report		Plan																								
		Actual																							none	none
<b>Public Relations</b>																										
Establishment and operation of JICA TC website		Plan																								
		Actual																								

**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 6 (Term: October 1, 2019 – April 30, 2020)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: June 10, 2020**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

**Experts**

During the reporting term of this report (October 2019 to April 2020), the JICA Project expert team made 3-man trips to Mongolia. JICA Project expert team missions from January 2020 have been postponed due to the coronavirus situation. Total man months was 0.77 in Mongolia and 2.95 for activities in Japan.

The long-term expert's term of service expired in March 2020.

**Meetings**

No large meetings were held during this reporting term.

**Reports**

No reports were submitted during this reporting term.

**Public relations**

No posts have been made to the Project website or Facebook site.

The table below shows the inputs from the Japanese side for this reporting term.

Table 1 Overview of inputs for this term

Inputs			Year				2020			
			2019			2020				
			Month	10	11	12	1	2	3	4
<b>Expert</b>										
I n M o n i t o r i n g	1	GHG Inventory (General)	Plan	█	█	█	█	█	█	█
			Actual	█	█	█	█	█	█	█
	2	GHG Inventory (Institutional arrangements)	Plan	█	█	█	█	█	█	█
			Actual	█	█	█	█	█	█	█
	3	GHG Inventory (Energy 1)	Plan	█	█	█	█	█	█	█
			Actual	█	█	█	█	█	█	█
	4	GHG Inventory (Energy 2)	Plan	█	█	█	█	█	█	█
			Actual	█	█	█	█	█	█	█
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan	█	█	█	█	█	█	█
		Actual	█	█	█	█	█	█	█	
6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan	█	█	█	█	█	█	█	
		Actual	█	█	█	█	█	█	█	
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan	█	█	█	█	█	█	█	
		Actual	█	█	█	█	█	█	█	
8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan	█	█	█	█	█	█	█	
		Actual	█	█	█	█	█	█	█	
9	Project administrative coordination/ training	Plan	█	█	█	█	█	█	█	
		Actual	█	█	█	█	█	█	█	
I n J a p a n	2	GHG Inventory (Institutional arrangements)	Plan							
			Actual							
	3	GHG Inventory (Energy 1)	Plan							
			Actual							
	4	GHG Inventory (Energy 2)	Plan							
			Actual							
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan							
			Actual							
	6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan							
		Actual								
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan								
		Actual								
8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan								
		Actual								
9	Project administrative coordination/ training	Plan								
		Actual								
<b>Training</b>										
	Training in Japan	Plan								
		Actual								
	In-country and/or third country Training	Plan								
		Actual								
<b>Monitoring</b>										
Monitoring	Joint Coordinating Committee	Plan								
		Actual								
	Set-up the Detailed Plan of Operation	Plan								
		Actual								
	Submission of Monitoring Sheet	Plan								
		Actual								
<b>Reports/Documents</b>										
	Inception Report	Plan								
		Actual								
	Project Completion Report	Plan								
		Actual								
<b>Public Reactions</b>										
	Establishment and operation of website	Plan	█	█	█	█	█	█	█	
		Actual	█	█	█	█	█	█	█	

## 1-2 Progress of Activities

### A. Overview of activities carried out in this reporting period

The table below shows an overview of the Project activities carried out during this reporting period.





**B. Output 1**Overview

During this reporting term, the JICA Project expert team and ECF concluded improvement activities for the first GHG inventory improvement cycle. The third workshop of the Project was originally scheduled for February 2020 but was postponed due to the global spread of the novel corona virus pandemic.

Detail

During this reporting term, the JICA Project expert team and ECF concluded the research and data collection as per the improvement plan (Activity 1-8). The improvements have been described in the improvement report (Activity 1-9) which will be reflected by ECF in their next GHG inventory.

The results of the first improvement cycle for output 1 are shown in the table below.

Table 3 Results of the first GHG inventory improvement cycle for output 1

Sector	Issue	Action	Result
crosscutting	Mongolia does not have a plan or guideline which outlines the steps to prepare the inventory including quality control/quality assurance checks.	Develop a Quality Assurance/Quality Control (QA/QC) plan in accordance with the IPCC Guidelines	A draft QA/QC Plan was drafted in English and Mongolian
	Archiving is not systematically carried out in Mongolia and previous files are not centrally stored or managed.	Need for the development of archiving system	An archiving manual has been drafted and is being tested now.
	Public awareness on climate change issues is not being sufficiently carried out.	Develop materials on climate change for public awareness purposes	Project website and Facebook established. Collecting data on what information needs to be transmitted.
	Mongolian inventory report does not follow a consistent structure for each of the sectors, and does not fully explain the methods and results of each of the categories.	Improving documentation of the GHG inventory	Structure of next GHG inventory report agreed and template for the report has been developed.
energy	see output 2		
IPPU	Many of the categories of the IPPU sector have not been reported due to the lack of information	Improve the completeness of the IPPU sector	Industry research completed and categories that emit/do not emit emissions have been identified.
	HFC emissions were based on a recent project, but there are no plans to sustain the data collection in the future.	Consider ways to sustain the data collection for HFC consumption	To be considered in the second cycle
Agriculture	Some of the categories of the agriculture sector have not been reported due to the lack of information	Improve the completeness of the agriculture sector	To be considered in the second cycle
Waste	Emissions from solid waste disposal sites (SWDS) in urban areas other than Ulaanbaatar and the rural areas have not been estimated.	Missing activity data for CH <sub>4</sub> from SWDS (MSW in other urban and rural area)	To be considered in the second cycle
	Emissions from sewage sludge and industrial solid waste (ISW) are not included in the current inventory.	Missing activity data for CH <sub>4</sub> from SWDS (sewage sludge and ISW)	To be considered in the second cycle

The issue that received most attention during this reporting term is the development of the Quality Assurance/Quality Control (QA/QC) Plan which is in accordance with the IPCC Guidelines. The QA/QC Plan is a guidance paper that describes the legal basis for GHG inventories, the stakeholders' roles and responsibilities, and the GHG inventory process, which is to be regularly updated to support the preparation and improvement of the GHG inventory cycle. For the BUR1 and the NC3, the ECF members collected data and estimated emissions and removals without presenting a clear timetable and expected role for the stakeholders, resulting in a weak collaboration relationship between ECF and the data provider.

The 3<sup>rd</sup> Workshop of the Project was scheduled to be held in February 2020, with the objective of presenting the results of the first GHG inventory improvement cycle and the plan for the second improvement cycle. However, due to the global spread of the novel coronavirus, it has been postponed. Without a clear end to the coronavirus spread and the travel restrictions, the JICA Project experts and ECF have decided that the workshop will be held online.

The long-term expert supported the ECF in translating the BUR1 into Mongolian. In addition, the long-term expert prepared an MRV Handbook for the MET, which explained the MRV framework and included some guidance on how to develop an MRV system in Mongolia.

## **C. Output 2**

### Overview

The JICA Project experts and ECF discussed and agreed on the outcome of the first GHG inventory improvement cycle for output 2 and the priority areas for the second cycle. Experts also agreed that the Mongolian Energy and Economy Institute and the National Statistics Office would continue to be the main stakeholders which will require support on developing the energy balance table.

### Detail

While progress was made in all four priority issues for the energy sector during the first GHG inventory improvement cycle, only one issue on the gaps in fugitive emissions was completely resolved. The JICA Project experts and ECF agreed that the other three issues, namely, the development of energy balance tables, difference between sectoral and reference approaches, and international aviation bunker issues, will need further work in the second GHG inventory improvement cycle (Activity 2-1). The experts also agreed that the MEEI, NSO, and MCAA will continue to be the key stakeholders whose participation

will be crucial for addressing the priority issues.

The high priority issues for the second GHG inventory improvement cycle and the planned work are shown in the table below.

Table 4 High priority issues for the second cycle for output 2

	Challenge	Further work
1	No detailed national energy balance tables prepared on a regular basis	<ul style="list-style-type: none"> <li>Consider the scope, roles and responsibilities, timeline, etc. for developing the national energy balance table on a regular basis.</li> <li>To carry out this work, an Energy Working Group has been proposed by some stakeholders. The TOR of this group will need to be discussed.</li> </ul>
2	Analyze differences between sectoral and the reference approaches	<ul style="list-style-type: none"> <li>Improve the archiving/backup system and data management in ECF in case of software issues.</li> <li>Conduct analysis of the 2 approaches in the BUR2 and document in the next inventory report</li> </ul>
3	Need to improve method for international aviation bunkers	<ul style="list-style-type: none"> <li>ECF and JCA experts will need to carry out surveys to each airlines in Mongolia and request fuel consumption statistics directly.</li> </ul>

## D. Output 3

### Overview

The local consultants for the soil/biomass field surveys (National University of Mongolia (NUM) and Institute of Geography and Geoecology (IGG)) provided the JICA Project expert team the results from the laboratory, which the JICA Project experts have analyzed.

### Detail

The biomass survey was carried out by the local consultants from NUM from 13th August to 3rd September 2019 in the northern region of Mongolia to sample aboveground plant biomass and roots, and the soil survey was carried out by the local consultants from IGG from 1st September to 20th September 2019 in the eastern region of Mongolia to sample soil (Activity 3-5) to evaluate the soil organic carbon. The samples were sent to IGG for analysis, and the analyzed data on above ground biomass and soil organic carbon was submitted in November 2019.

The JICA experts will consider how to improve grassland GHG estimation methodologies from November based on the results of the analyzed data. Based on the consideration and discussion among domestic experts, additional surveys will be conducted in 2020.

### Analysis of Soil Organic Carbon

- Overview of field survey
  - Visited 42 observation points (Ecoregion: Steppe, Land use: Grazing or Floodplain), and collected 3 samples at each point.
  - Assessed the average amounts of soil organic carbon at each point (42 SOC data was obtained).

	A	B	C	L	M	N	O	R	S
1	ID	Latitude (decimal system)	Longitude (decimal system)	Soil type (select)	Eco region (select)	Land use (type of grassland use, select)	Degradation level	SOC (ton/ha)	SOC % to 30cm
2	TS-01	47.74859	109.17007	Kastanozem	Steppe zone	Grazing	Moderate	41.19	1.51
3	JA-201	47.55713	109.47396	Kastanozem	Steppe zone	Grazing	Low	48.50	2.01
4	UM-02	48.07268	109.55752	Chernozem	Steppe zone	Grazing	Moderate	48.74	1.35
5	UM-202	48.08326	109.81712	Chernozem	Steppe zone	Grazing	Low	50.50	1.66
6	BT-03	48.69110	110.16570	Chernozem	Steppe zone	Grazing	Moderate	68.82	2.31
7	BT-203	48.64910	110.22963	Chernozem	Steppe zone	Grazing	Low	69.13	1.95
8	Bl-04	48.70398	110.62076	Chernozem	Steppe zone	Grazing	Low	76.12	2.94
9	Bl-204	48.65029	110.71576	Chernozem	Steppe zone	Grazing	Moderate	43.76	1.16
10	DD-05	49.02846	111.56999	Chernozem	Steppe zone	Grazing	Moderate	30.48	0.70
11	DD-205	48.85247	111.62571	Chernozem	Steppe zone	Grazing	Low	55.94	1.77
12	UM-06	47.89263	109.80228	Chernozem	Steppe zone	Grazing	Low	60.14	2.32
13	UM-206	47.96928	109.85521	Chernozem	Steppe zone	Grazing	Moderate	44.06	1.84
14	GB-07	48.21512	110.30212	Chernozem	Steppe zone	Grazing	Moderate	54.09	1.67
15	GB-207	48.21320	110.32888	Chernozem	Steppe zone	Grazing	Low	68.15	2.10
16	Bl-08	48.15378	110.92357	Kastanozem	Steppe zone	Grazing	Low	46.79	1.36

**The results of field survey**  
 The data in red square is the base of the analysis.

- Soil type
- Land use
- Degradation level
- SOC [ton/ha]

- 2 analyses of soil organic carbon
  1. Two-way ANOVA (analysis of variance) to SOC (Land use and Degradation level)
  2. Two-way ANOVA to SOC (Soil type and Degradation level)
 (these analyses are divided into two parts; (1) analyses using only the data from field survey, (2) analyses using the data from field survey and from literature surveys.)

### Analysis of Biomass

- Overview of field survey
  - Visited 20 sites (Ecoregion: Low forest steppe, steppe, semidesert), and collected samples from 27 points at each site.
  - Assessed the average amounts of above and below ground biomass at each point (540 biomass data was obtained).

	A	B	C	D	O	Q	S	T	U	V
1	ID	Latitude (decimal system)	Longitude (decimal system)	Eco region (select)	Degradation level	Sample	Peak amount of AGB (g/m <sup>2</sup> )	Peak amount of BGB (g/1178cm <sup>3</sup> )	Ratio of BGB to AGB	
2	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Grass	10.20	2.27	
3	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Carex	10.76		
4	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Forbs	19.72		
5	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Litter	21.04	2.95	
6	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Dung	41.20		
7	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Grass	10.36		
8	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Carex	40.48	2.95	
9	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Forbs	28.60		
10	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Litter	7.40		
11	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Lichen	0.40		

**The results of field survey**  
 The data in red square is the base of the analysis.

- Ecoregion
- Degradation level
- AGB [g/m<sup>2</sup>]
- BGB [g/1178cm<sup>3</sup>]
- Ratio of BGB to AGB [-]

(only Grass, Carex and Forbs)  
 (Calculated from AGB and BGB)

- The units of AGB [g/m<sup>2</sup>] and BGB [g/1178cm<sup>3</sup>] were converted into [ton/ha].
- 3 analyses of biomass
  1. Two-way ANOVA to AGB (Ecoregion and Degradation level).
  2. Two-way ANOVA to BGB (Ecoregion and Degradation level).
  3. Two-way ANOVA to Ratio (Ecoregion and Degradation level).

Figure 1 Overview of the Soil and Biomass analysis

**1-3 Achievement of Output**

There are no achievements during this reporting period.

**1-4 Achievement of the Project Purpose**

There are no achievements during this reporting period.

**1-5 Changes of Risks and Actions for Mitigation**

There are no changes to the risks and actions for mitigation. An additional risk is the coronavirus situation which has limited the JICA Project experts' travel to Mongolia since February 2020, and as a result, the JICA Project experts have not been able to carry out activities in Mongolia as planned.

The JICA Project experts and ECF will consider holding the third Workshop of the Project online and begin the second GHG inventory improvement cycle remotely.

**1-6 Progress of Actions undertaken by JICA**

None.

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

During the February 2020 mission, the MET informed JICA that the Climate Change Project Implementation Unit from ECF would move out of ECF and join a new state owned corporation, to be called, Climate Change Research and Cooperation Center. This organization will be tasked to carry out all climate change related projects in Mongolia. This can be considered as an important move to strengthen the national arrangement of Mongolia and enhance the sustainability of regular preparation of the GHG inventory in Mongolia. Ideally, the GHG inventory, BUR, NC preparation work is not carried out taking a project-based approach, but as part of the regular duties of the Mongolian government.

**1-8 Progress of Environmental and Social Considerations**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There are update on other donor projects since the last reporting period. JICA Project experts will continue to follow any climate change projects and coordinate, as necessary.

**2 Delay of Work Schedule and/or Problems (if any)****2-1 Detail/Cause**

At the beginning of the Project, the assumption was that ECF would complete its GHG inventory for the BUR2 by the end of year 2019. However, because ECF delayed preparation/submission of its BUR project proposal to the GEF, the revised completion deadline for the BUR2 GHG inventory is now 2020 for ECF. Therefore, the Mongolian BUR submission cycle is no longer in line with the JICA inventory improvement cycle, but the Project activities will be carried out as planned, with the first inventory improvement cycle ending at the end of 2019, and the second, at the end of the Project duration.

The reason for the delays can be attributed to the turnover of ECF staff and the lack of management and coordination of the many projects that ECF is engaged in.

**2-2 Action to be taken**

Some planned improvements were not carried out during the first inventory improvement cycle as described in the improvement plan agreed in November 2018, such as technical issues in sectors, but progress has been made in the crosscutting issues, which are the core focus of output 1. The JICA Project expert team will consult with ECF with regards to which of the sectoral issues will be addressed in the next and final cycle. As these sectoral are not part of the inventory system in Mongolia, there is no implication on the Project whether they be addressed by the Project members or not.

**2-3 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None.



**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

Project Monitoring Sheet I

Version 6

June 10, 2020

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Implementing Agency: MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)


Target Group: ECF (Environment and Climate Fund)

Period of Project: November, 2017~October 2021

Project Site: Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	·National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	no achievements this term	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee		no achievements this term	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		no achievements this term	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues		no achievements this term	

PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p> <p>Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p>			<p style="text-align: center;"><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p> <div style="text-align: center;">  </div>

<p>Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.</p> <p>Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.</p> <p>Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.</p> <p>Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3</p> <p>Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.</p> <p>Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.</p> <p>Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.</p> <p>Activity 3-8: Compile the results of the improvement into a report.</p> <p>Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement</p> <p>Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)</p>		<p style="text-align: center;"><b>&lt;Issues and countermeasures&gt;</b></p> <p>Due to delays in ECF, it took approximately two years since the submission of the first BUR to start next GHG inventory preparation. ECF staff in charge of the AFOLU sector took leave from early 2019 and officially quit in the summer. Two replacement staff were assigned the AFOLU sector but one has quit in August 2019. In addition, the BUR coordinator has left the office in September 2019. Although the BUR submission cycle is no longer in line with the JICA inventory improvement cycle, the Project activities will be carried out as planned. Also, some planned improvements may not be carried out as originally planned, but they will be prioritized in the second improvement cycle.</p>
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Project Monitoring Sheet II

Version 6

Dated June 10, 2020

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Inputs		Monitoring																				Remarks	Issue	Solution			
		Year	2017				2018				2019				2020				2021								
			IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
<b>Expert</b>																											
	GHG inventory (General)	Plan																									long term expert
	GHG inventory (Institutional arrangements)	Actual																									
	GHG inventory (Energy 1)	Plan																									
	GHG inventory (Energy 2)	Actual																									
	GHG inventory (LULUCF 1)	Plan																									
	GHG inventory (LULUCF 2)	Actual																									
	GHG inventory (LULUCF 3)	Plan																									
	GHG inventory (LULUCF 4)	Actual																									
	Project administrative coordination/ training	Plan																									
	Actual																										
<b>Equipment</b>																											
	PC for data management	Plan																									none
	Actual																										none
<b>Training in Japan</b>																											
	Training for Counterpart on GHG inventories in Japan	Plan																									1 week training
	Actual																										none
<b>In-country/Third country Training</b>																											
	Training for Counterpart on GHG inventories in developing country	Plan																									none
	Actual																										none

Activities		Monitoring																				Responsible Organization		Achievements	Issue & Countermeasures		
		Year	2017				2018				2019				2020				2021				Japan			GOMNG	
Sub-Activities			IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
<b>Output 0: Hold a kickoff workshop of the project</b>																											
	Output 0: Hold a kickoff workshop of the project	Plan																									none
	Actual																										none
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>																											
	1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan																									none
	Actual																										none
	1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan																									none
	Actual																										none
	1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan																									none
	Actual																										none
	1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan																									none
	Actual																										none
	1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan																									none
	Actual																										none
	1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan																									none
	Actual																										none
	1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan																									none
	Actual																										none
	1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan																									none
	Actual																										none
	1.9 Compile the results of improvement into a report.	Plan																									none
	Actual																										none
	1.10 Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Plan																									none
	Actual																										none







**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 7 (Term: May 1, 2020 – October 30, 2020)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: November 20, 2020**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

**Experts**

During the reporting term of this report (October 2019 to September 2020), the JICA Project expert team made 3-man trips to Mongolia. Total man months was 0.77 in Mongolia and 10.5 for activities in Japan. Due to the impact of the novel coronavirus, missions scheduled from after February 2020 have been changed to activities in Japan.

In April 2020, the GHG Inventory (Energy 2) member was replaced. In addition, the GHG Inventory (LULUCF 2) member retired in July 2020.

**Meetings**

On June 4, 2020, the LULUCF Working Group and the third workshop (Output 3) was held via web conference (see Annex I) to discuss with stakeholders the results of the analysis of the biomass and soil surveys conducted in summer 2019 and the approach for the biomass and soil surveys to be conducted in 2020. The results of the analysis were approved by the local experts. In addition, an agreement was reached on the approach for the biomass and soil surveys in 2020, including the number of sites and samples to be included in the biomass survey and soil survey.

The third workshop (Output 2) was held on 26 June 2020 via web conference (see Annex II) to report on the results of the first improvement cycle in the energy sector and to discuss the approach and activities of the second improvement cycle. The workshop participants agreed to establish a working group for an energy balance table under the Project and agreed on an action plan for the second improvement cycle.

Reports

The Progress Report Vol. 2 and Monitoring sheet Vol. 5 was submitted in November 2019, and the Monitoring sheet Vol.6 was submitted in June 2020.

Public relations

The JICA Project website (<https://www.jica.go.jp/project/english/mongolia/018/index.html>) describing Project activities and updating milestones was opened in January 2018. Five posts were made during the reporting period with two shares.

The table below shows the inputs from the Japanese side for this reporting term.

Table 1 Overview of inputs for this term

Inputs		Year	2019			2020														
			Month	10	11	12	1	2	3	4	5	6	7	8	9					
<b>Expert</b>																				
I n M o n i t o r i n g	1	GHG Inventory (General)	Plan																	
		Actual																		
	2	GHG Inventory (Institutional arrangements)	Plan																	
		Actual																		
	3	GHG Inventory (Energy 1)	Plan																	
		Actual																		
	4	GHG Inventory (Energy 2)	Plan																	
		Actual																		
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan																	
	Actual																			
6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan																		
	Actual																			
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan																		
	Actual																			
8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan																		
	Actual																			
9	Project administrative coordination/ training	Plan																		
	Actual																			
I n J a p a n	2	GHG Inventory (Institutional arrangements)	Plan																	
		Actual																		
	3	GHG Inventory (Energy 1)	Plan																	
		Actual																		
	4	GHG Inventory (Energy 2)	Plan																	
		Actual																		
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan																	
		Actual																		
	6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan																	
	Actual																			
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan																		
	Actual																			
8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan																		
	Actual																			
9	Project administrative coordination/ training	Plan																		
	Actual																			
<b>Training</b>																				
	Training in Japan	Plan																		
	Actual																			
	In-country and/or third country Training	Plan																		
	Actual																			
<b>Monitoring</b>																				
Monitoring	Joint Coordinating Committee	Plan																		
	Actual																			
	Set-up the Detailed Plan of Operation	Plan																		
	Actual																			
	Submission of Monitoring Sheet	Plan																		
	Actual																			
<b>Reports/Documents</b>																				
	Inception Report	Plan																		
	Actual																			
	Project Completion Report	Plan																		
	Actual																			
<b>Public Relations</b>																				
	Establishment and operation of website	Plan																		
	Actual																			

**1-2 Progress of Activities**

**A. Overview of activities carried out in this reporting period**

The table below shows an overview of the Project activities carried out during this reporting



## B. Output 1

### Overview

Inventory improvement activities were carried out in 2019 based on the improvement plan developed in November 2018 and the results of these activities were summarized in an improvement report. Outcomes of the first GHG inventory improvement cycle include technical improvements in the area of industrial processes and product use (IPPU), in addition to the draft QA/QC plan, manual on archiving and data management, and GHG inventory reporting templates. The table below is an overview of the improvements in Output 1.

Table 3 Overview of the improvements in the GHG inventory system

Sector	Issue	Result of 1st cycle
crosscutting	Mongolia does not have a plan or guideline which outlines the steps to prepare the inventory including quality control/quality assurance checks.	A Quality Assurance/Quality Control (QA/QC) plan in accordance with the IPCC Guidelines has been drafted.
	Archiving is not systematically carried out in Mongolia and previous files are not centrally stored or managed.	An archiving manual was drafted, and is currently being tested.
	Public awareness on climate change issues is not being sufficiently carried out.	The JICA Project website and Facebook pages have been updated. ECF will update its website as soon as it has the necessary financial and human resources.
	Mongolian inventory report does not follow a consistent structure for each of the sectors, and does not fully explain the methods and results of each of the categories.	A template for the inventory report was drafted
energy	see output 2	
IPPU	Many of the categories of the IPPU sector have not been reported due to the lack of information	Research on the IPPU industries were conducted to identify which categories are relevant to Mongolia.
	HFC emissions were based on a recent project, but there are no plans to sustain the data collection in the future.	no improvements made
Agriculture	Some of the categories of the agriculture sector have not been reported due to the lack of information	Rice cultivation should be reported as Not Occurring.
Waste	Emissions from solid waste disposal sites (SWDS) in urban areas other than Ulaanbaatar and the rural areas have not been estimated.	Interviews were carried out, but the waste generation amount was not estimated during the reporting period.
	Emissions from sewage sludge and industrial solid waste (ISW) are not included in the current inventory.	no improvements made

### Detail

#### ① Development of QA/QC plan

Since Mongolia did not have a document explaining the GHG inventory preparation system, procedures, schedules, quality control/quality assurance (QA/QC) checking procedures, etc., JICA experts and ECF developed a draft QA/QC plan based on the IPCC guidelines. By sharing this plan with relevant institutions and positioning it as a consensus document, it is expected that the collaboration between the ECF and the relevant institutions will be strengthened and that documenting the procedures for preparing the inventory will enhance each stakeholder's understanding of the inventory



preparation. The key components of the QA/QC plan are as follows.

**【Legal basis for GHG inventory】**

According to Article 24 of the Atmosphere Law, the Mongolian Ministry of Environment and Tourism (MET) is responsible for the development, update and implementation of climate-related policies and is the body responsible for the preparation of national reports (NC), biennial update reports (BUR) and GHG inventories submitted to the UNFCCC. In 2015, the Climate Change Project Implementation Unit (CCPIU) was established within the Nature Conservation Fund (currently ECF), which is responsible for UNFCCC-related work under MET's leadership. In 2019, the MET established the National Climate Committee (NCC), a cross-agency body to consider national adaptation and mitigation measures. The NCC is responsible for reviewing national climate change measures and approving documents and reports to be submitted to the UNFCCC and will act as the final approving body for the GHG inventory.

**【Purpose of QA/QC plan】**

By complying with and regularly updating the QA/QC plan, the inventory agency can ensure the GHG inventory principles of transparency, accuracy, chronological consistency, comparability and completeness (TACCC) are met. In addition, the introduction of the PDCA cycle into this plan will achieve the project's goal of continuous improvement of the inventory.

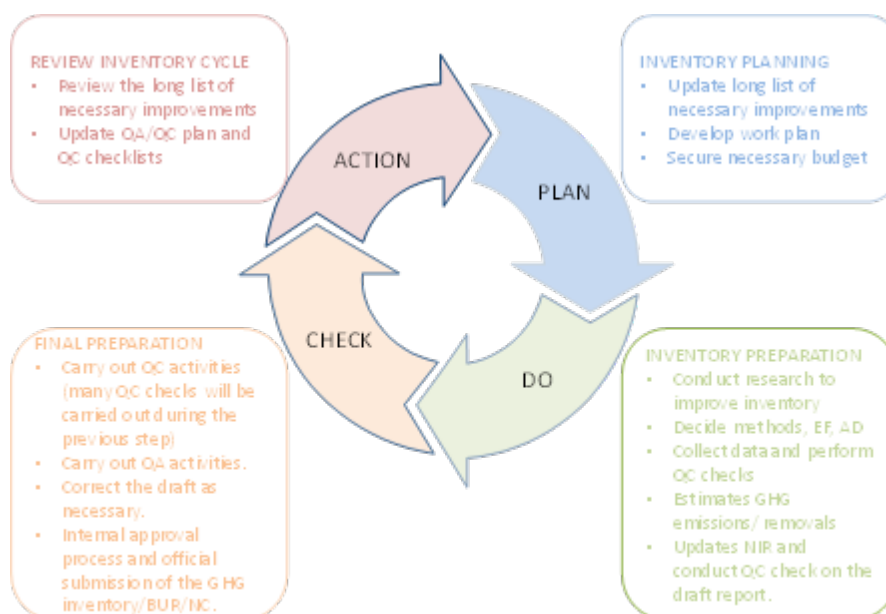


Figure 1 PDCA Cycle for GHG Inventory

**【Roles and responsibilities of each stakeholder】**

The MET is the agency responsible for the GHG inventory preparation, and the CCPIU within the ECF is the operational unit which collects data from related ministries, databases and local governments and estimates GHG emissions and sinks. In addition, the ECF will establish an ad hoc committee to address highly specialized issues as needed and act as the secretariat. The MET/ECF will request experts with the appropriate expertise and the working group member will provide technical guidance, support, data to the MET/ECF who will propose the improvement based on their guidance, which will be finally be checked by the working group member. A diagram of the inventory preparation system and an overview of the roles of the expert working group are shown in Figure 2 and Figure 3.

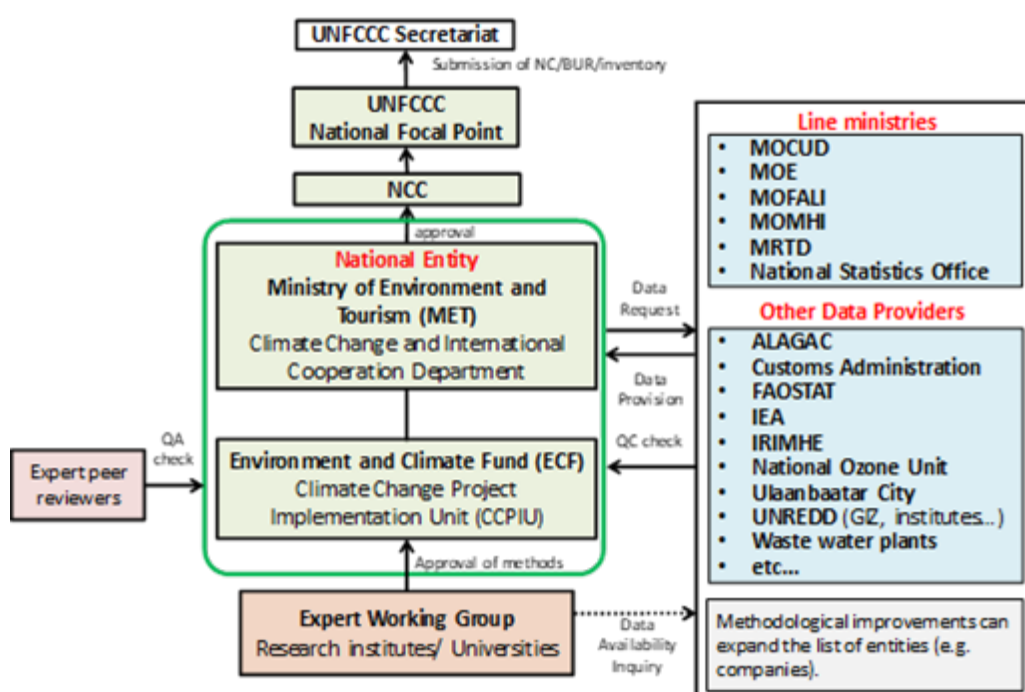


Figure 2 PDCA Cycle for GHG Inventory

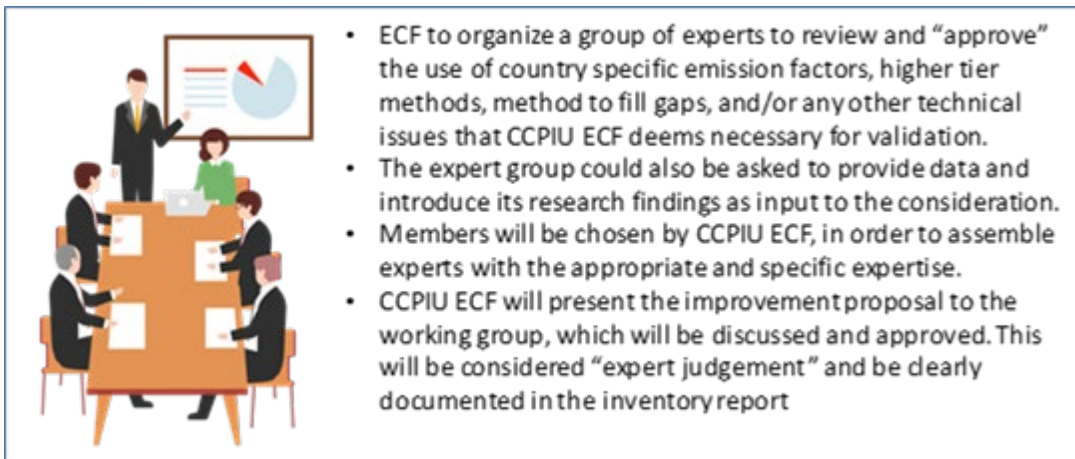


Figure 3 Overview of the roles of the expert working group

**【Inventory cycle】**

A GHG inventory preparation schedule in line with the BUR submission was discussed with the ECF and a timeline was developed to visualize the process of preparing the GHG inventory and the level of stakeholder involvement. By clarifying the GHG inventory preparation schedule in the QA/QC plan, stakeholders will understand when they will be requested to carry out a certain activity, such as data provision.

Table 4 Schedule table for preparing the GHG inventory

	Stakeholder																												
	ECF	MET	data providers	Expert working group	external expert	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>INVENTORY PLANNING</b>																													
Review the previous inventory	●					→	→																						
Update the list of necessary improvements	●					→	→																→	→					
Developing work plan	●	⊙				→	→	→	→																				
Hold inception workshop	●	⊙	○	○	○																								
<b>INVENTORY PREPARATION</b>																													
Short term improvement activities	●		○	⊙		→	→	→	→	→	→	→	→	→	→														
Long-term Research/improvement activity	●		○	⊙		→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
<b>Data collection</b>																													
Prepare request format	●																												
Dispatch letter	●																												
Fill and send back	●		●																										
Data QC	●																												
<b>Compilation</b>																													
Prepare DB	●																												
GHG estimation	●																												
Draft NIR	●																												
Report QC	●																												
<b>FINAL PREPARATION</b>																													
Carry out final QC activities	●																												
Review workshop	●		○	○	○																								
QA	⊙																												
Circulate draft for review	●		●																										
Modification	●																												
Validation workshop	●	⊙																											
Submission	●																												
<b>REVIEW INVENTORY CYCLE</b>																													
Update the list of necessary improvements	●																												
Update QA/QC Plan	●																												

●: lead stakeholder, ⊙: sub lead stakeholder, ○: participants

**【QC Checklist】**

A simple collection of QC checklists was made with reference to the 2006 IPCC guidelines.

Each CCPIU member will fill in each checklist in the process of preparing calculation files and reports.

Table 5 List of people responsible for preparing the GHG inventory

QC PERSONNEL LIST			
Year of submission:			
Title	QC Responsibility	Name	Contact Information
Inventory Lead	All aspects of the inventory programme, cross cutting QC and implementing overall QA/QC plan		
Sector Leads	Implementing QC procedures for each sector		
	Energy sector		
	IPPU sector		
	Agriculture sector		
	LULUCF sector		
Waste sector			
Archive/IT	Maintaining hard copy archive and file server		

Table 6 QC management checklist

QC MANAGEMENT CHECKLIST		
Year of submission:		
Activities	Task Completed	
	Name	Date
Update QC checklists as appropriate		
Clarify and communicate QC responsibilities and deadlines to inventory team members.		
Distribute QC checklist to appropriate inventory team members and set deadline for completion.		
Fill the list of recalculation/improvement.		
Collect completed QC checklists and forms.		
Cross cutting		
Inventory Report		
Energy		
IPPU		
Agriculture		
LULUCF		
Waste		
Endorsement		
Review completed QC checklists and forms for completeness and accuracy.		



Table 7 Inventory report format checklist

INVENTORY REPORT FORMAT CHECKLIST		
Year of submission:		
Activities	Individual (first initial, last name)	Date
<b>Front Section (For inventory lead or the person in charge of the section)</b>		
Cover page has correct date, title, and contact address		
Confirm that there is no error indication in field codes (e.g. table of contents, figure/table/reference/footnote numbers).		
Check the field code of the final pages/tables/figures of each chapter matches with indexes.		
The Executive Summary and Introduction are updated with appropriate years and discussion of trends		
<b>Tables and Figures (For inventory lead)</b>		
All numbers in tables match numbers in spreadsheets		
Check that all tables have correct number of significant digits (e.g. down to 2 decimal places for CO <sub>2</sub> equivalent)		
Check that table formatting is consistent		
Check that all figures are updated with new data and referenced in the text		
Check table and figure titles for accuracy and consistency with content		
<b>References (For inventory lead or archive)</b>		
Check consistency of references, and that in text citations and references match		
Check if cited webpages are available online and a copy is archived.		
<b>General Format (For inventory lead)</b>		
Use "find" command on MSWord to find spelled-out acronyms to confirm that all acronyms are spelled out first time and not subsequent times throughout each chapter		
All fonts in text, headings, titles, and subheadings are consistent		
All highlighting, notes, and comments are removed from document		
Size, style, and indenting of bullets are consistent		
Spell check is complete		
<b>Other Issues (Anybody)</b>		
Check that each section is updated with current year		

## ② Archiving manual

JICA experts and the ECF have prepared an archiving manual based on the 2006 IPCC guidelines. We have organized the calculation files and reference information, guidance on file names, use of network servers, and archiving checklists, and are currently piloting this manual and checklists in the BUR2 creation process. The manual is made up of four components, namely, 1. the meaning of archiving, 2. List of items for archiving and archiving method, 3. Archiving method, and archiving checklist. Excerpts from this manual are provided below.

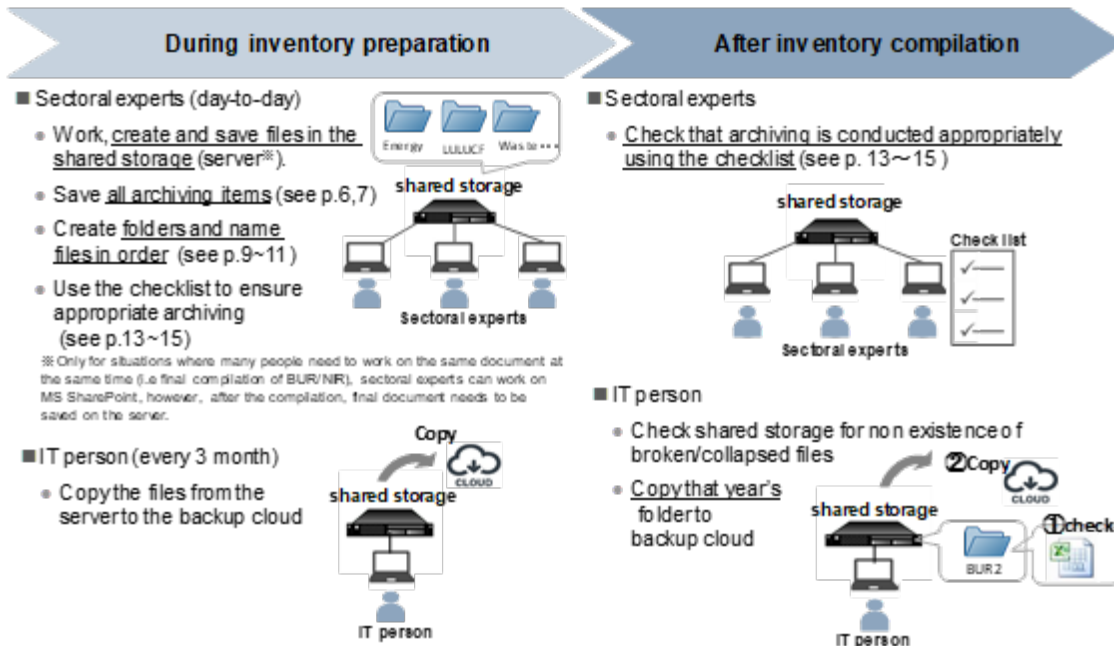
## 2. List of items for archiving and archiving method

- Items included in NIR: archive NIR
- Items not included in NIR: additional documents need to be archived

Theme	Item	Archiving methods	
		NIR	Additional document
Institutional Arrangements	Institutional Arrangements	✓	Not needed
	Responsibilities		
	Procedures for planning, preparation, and management of the inventory process		
Emission Factors, Activity Data and other parameters	EFs, AD and other parameters for the reported time series	✓	✓
	Assumptions and criteria for the selection of EFs and AD	✓	✓
	The methods for generation and aggregation	✓	Not needed
	Reference source incl. IPCC default factors	✓	Not needed
Uncertainties	Uncertainty associated with AD and EFs	✓	Not needed
Methods	Methods used (incl. methods for uncertainty estimates and recalculations)	✓	✓
	The rationale for choice of methods	✓	✓

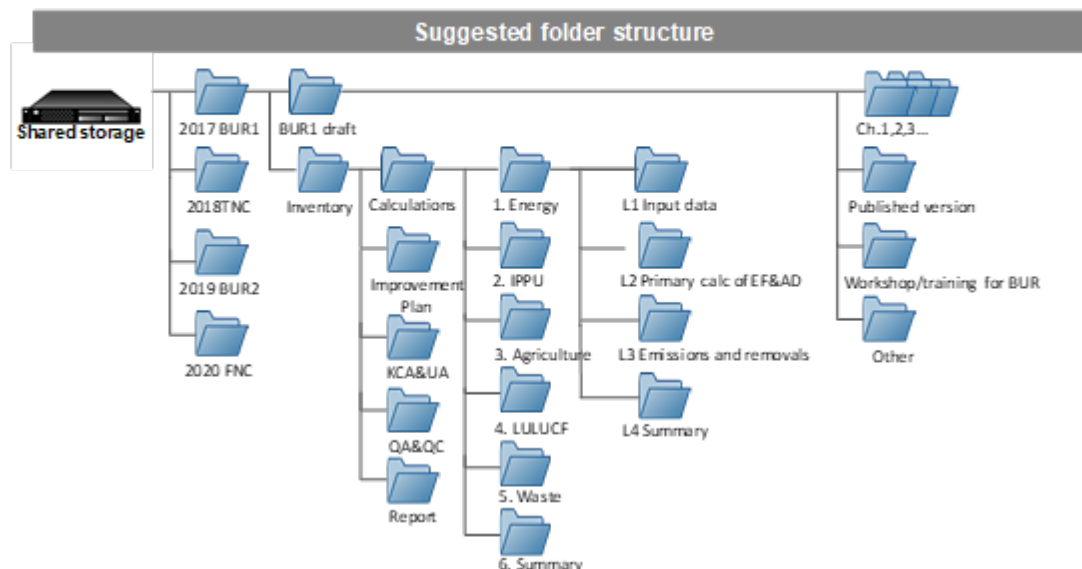
Theme	Item	Archiving methods	
		NIR	Additional document
Expert judgement	Individuals providing expert judgement for uncertainty estimates	NA	✓
	Their qualifications for the judgement		
Recalculations	Changes in data inputs or methods from previous inventories	NA	✓
Key Category Analysis	Key Category Analysis	✓	Not needed
Trend analysis	Any analysis of trends from previous years	✓	✓
QA/QC activities	QA/QC plan	NA	✓
	Outcomes of QA/QC procedures	NA	✓
Planned improvement	Planned improvement	✓	✓
Results of ICA	Results of ICA (documentation of TA, FSV)	NA	✓
Calculation worksheets	Worksheets and interim calculations for category estimates	NA	✓
	Aggregated estimates and any recalculations of previous estimates	NA	✓
Complete datasets	complete datasets that are used in inventory development	NA	✓
Electronic data bases and software	Electronic databases or software used in the production of the inventory	NA	✓

### 3.a. Documentation and archiving procedure: electronic data



### 3.b. Folder structure

- Create folders in a way that is easy for everyone in the team to access necessary data and archive important items.



## 4. Archiving checklist

- Below checklist should be used by **all sectoral experts** and **by IT person** to check whether archiving is conducted appropriately.

### Check list for sectoral experts

1. **At the end of every month:** Check the following checkpoints and tick the box.

Check Point	Jan	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>Electronic data</b>												
Are you working and saving files on the server?												
Are the items listed in the Archiving manual saved as you progress with the compilation?												
Are saved files named according to the rule?												
Are files saved according to the agreed folder structure?												
<b>Paper data</b>												
Have you scanned and saved important paper documents on the server?												
Have you stored paper documents in your cabinet?												

### ③ Inventory report template

Mongolia submitted an inventory report (NIR) as an annex to BUR1, but since this report lacked some reporting items (methodology for each category, source of activity data, explanation on categories which are not estimate), identified problems such as lack of uniformity in the level of information across sections, JICA experts prepared a new inventory template with reference to the regulations on inventory reports of ECF and Annex I countries. From BUR2 onwards, it is expected that reports will be prepared using this template and resolve issues such as the absence of certain reporting items.

## C. Output 2

### Overview

In September 2019, a draft energy balance table prepared jointly by Mongolian Energy Economics Institute (MEEI) and National Statistics Office (NSO) was completed and JICA experts analyzed the data and considered the necessary improvements. The JICA Project experts discussed with MEEI and NSO regarding the structure, budget and plans for the continuous preparation of the energy balance table, but as it was found to be a challenge for the MEEI/NSO to have a continuous budget, JICA experts supported the MEEI/NSO in drafting a paper on the significance of the continuous preparation of the energy balance table. In June 2020, a third workshop (Output 2) was held and workshop participants

agreed to establish a working group for an energy balance table under the project and agreed on an action plan for the second improvement cycle.

Detail

① Draft energy balance chart

A draft energy balance table was submitted in September 2019, jointly prepared by MEEI and NSO. Key data items were filled in, but the background data for the energy balance table was not shared, so it was not possible to verify that the data from the survey form was correctly reflected in the template. An overview of the 2015 energy balance table, the percentage of primary energy supply by fuel, the composition of fuels, and fuel consumption by sector are shown in Figure 4, Figure 5, and Table 8, respectively.

Total primary energy supply in 2015 was 3 million metric tons of oil equivalent (Mtoe). Coal is the main fuel in the energy mix, accounting for 46% of the total primary energy supply. It is followed by oil with 41% and biofuels and waste with 12%. Total energy production is 10Mtoe, with coal accounting for the largest share (84%) of domestic production. Fossil fuels account for 96% of total energy production.

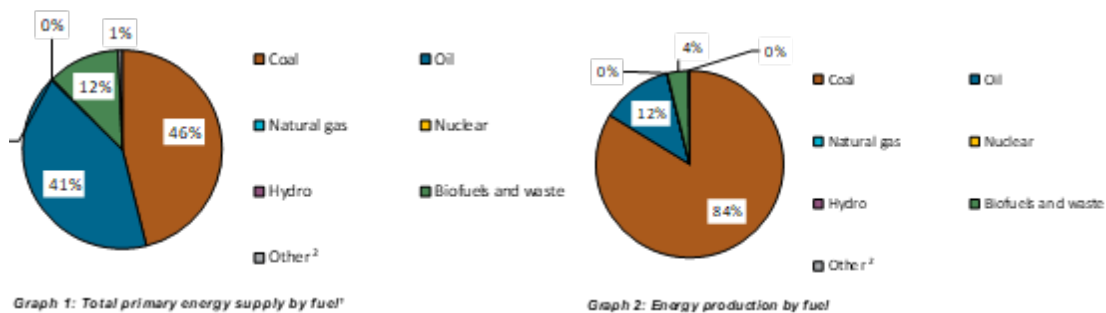


Figure 4 Primary Energy Supply in 2015

With a total final consumption of 3 Mtoe in 2015, the household sector is the largest energy consuming sector.

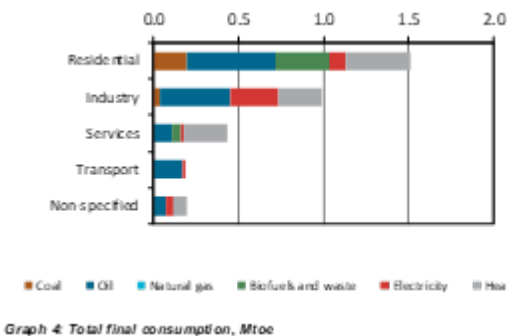


Figure 5 Final Energy Consumption in 2015

Table 8 Energy Balance Table for 2015 (simplified table)

2015		Thousand tonnes of oil equivalent (ktoe)										
SUPPLY AND CONSUMPTION		Coal	Crude oil	Oil products	Natural gas	Nuclear	Hydro	Geo-therm./Solar/ etc.	Biofuels / Waste	Electricity	Heat	Total
Production		8518	1253	-	-	-	6	21	370	-	-	10188
Imports		0	-	1353	-	-	-	-	-	122	-	1474
Exports		-6081	-1162	-	-	-	-	-	-	-4	-	-7248
Int. marine bunkers		-	-	-	-	-	-	-	-	-	-	-
Int. aviation bunkers		-	-	-	-	-	-	-	-	-	-	-
Stock changes		-582	-91	-51	-	-	-	-	-	-	-	-1123
<b>TOTAL</b>		<b>1455</b>	<b>0</b>	<b>1302</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>21</b>	<b>370</b>	<b>117</b>	<b>-</b>	<b>3271</b>
Transfers		-	-	-	-	-	-	-	-	-	-	-
Statistical differences		1	-0	0	-	-	-	-	-	-	0	1
Electricity plants		-	-	-4	-	-	-6	-21	-	-	-	-32
CHP plants		-1227	-	-2	-	-	-	-	-	477	1068	315
Heat plants		-	-	-	-	-	-	-	-	-	-	-
Blast furnaces		-	-	-	-	-	-	-	-	-	-	-
Gas works		-	-	-	-	-	-	-	-	-	-	-
Coke/peat fuel/BKB/IB plants		-	-	-	-	-	-	-	-	-	-	-
Oil refineries		-	-	-	-	-	-	-	-	-	-	-
Petrochemical plants		-	-	-	-	-	-	-	-	-	-	-
Liquefaction plants		-	-	-	-	-	-	-	-	-	-	-
Other transformation		-	-	-	-	-	-	-	-	-	-	-
Energy industry own use		-	-	-	-	-	-	-	-	-67	-65	-132
Losses		-0	-	-	-	-	-	-	-	-67	-33	-100
<b>TFC</b>		<b>228</b>	<b>-</b>	<b>1286</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>370</b>	<b>460</b>	<b>671</b>	<b>971</b>	<b>3324</b>
<b>INDUSTRY</b>		<b>33</b>	<b>-</b>	<b>418</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>282</b>	<b>268</b>	<b>891</b>
Iron and steel		-	-	-	-	-	-	-	-	-	1	1
Chemical and petrochemical		-	-	-	-	-	-	-	-	-	-	-
Non-ferrous metals		-	-	-	-	-	-	-	-	-	-	-
Non-metallic minerals		-	-	-	-	-	-	-	-	-	19	19
Transport equipment		-	-	-	-	-	-	-	-	-	-	-
Machinery		-	-	-	-	-	-	-	-	-	1	1
Mining and quarrying		10	-	322	-	-	-	-	-	183	42	557
Food and tobacco		-	-	-	-	-	-	-	-	-	-	-
Paper, pulp and printing		-	-	-	-	-	-	-	-	-	-	-
Wood and wood products		-	-	-	-	-	-	-	-	-	-	-
Construction		2	-	41	-	-	-	-	-	25	36	103
Textile and leather		-	-	-	-	-	-	-	-	-	-	-
Non-specified		22	-	57	-	-	-	-	-	73	159	311
<b>TRANSPORT</b>		<b>0</b>	<b>-</b>	<b>173</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>17</b>	<b>-</b>	<b>191</b>
Domestic aviation		-	-	61	-	-	-	-	-	-	-	61
Road		-	-	46	-	-	-	-	-	7	-	52
Rail		-	-	66	-	-	-	-	-	10	-	76
Pipeline transport		-	-	-	-	-	-	-	-	-	-	-
Domestic navigation		-	-	-	-	-	-	-	-	-	-	-
Non-specified		0	-	1	-	-	-	-	-	-	-	1
<b>OTHER</b>		<b>198</b>	<b>-</b>	<b>703</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>370</b>	<b>180</b>	<b>714</b>	<b>714</b>	<b>2143</b>
Residential		194	-	526	-	-	-	311	100	384	384	1516
Comm. and public services		-	-	98	-	-	-	58	12	251	251	418
Agriculture/forestry		1	-	8	-	-	-	-	3	5	5	17
Fishing		-	-	-	-	-	-	-	-	-	-	-
Non-specified		1	-	71	-	-	-	-	45	76	76	192
<b>NON-ENERGY USE</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
In industry/transf./energy		-	-	-	-	-	-	-	-	-	-	-
of which: chem./petrochem.		-	-	-	-	-	-	-	-	-	-	-
In transport		-	-	-	-	-	-	-	-	-	-	-
In other		-	-	-	-	-	-	-	-	-	-	-

## ② Draft Energy Balance Table

A draft energy balance table was completed in 2019, but both NSOs and MEEI confirmed that their plans including the budget for post-2020 activities are unclear. Having been asked to prepare a briefing paper for budgeting within their respective agencies for securing the necessary budgets for continuous work on developing the energy balance tables, JICA experts prepared a document on the significance of continuity of energy balance sheet preparation. An excerpt of the document is presented below.

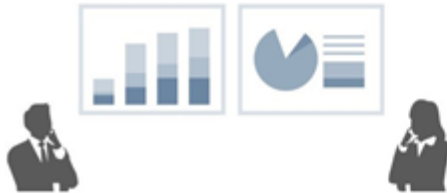
### The Energy Balance table is the basis for energy/climate change policy

- The energy balance table is used to understand the current energy production/consumption in addition to forecast these into the future
- This analysis is the foundation for a country's national energy/climate change policy

#### Energy/climate change policy development process

##### Analysis of energy production/consumption

- Analysis of current and future energy production/consumption
  - Can domestic production cover the future forecasted energy consumption? What are the import/export potential?
  - What are the fuels/flows that are consuming the most in the country? In the future?/etc.



##### Energy climate change policy consideration

- Based on the analysis, the country can plan effective energy and climate change policies
  - If imports are necessary, where are the potential countries that can supply?
  - Where are the largest potential for CO<sub>2</sub> emission reduction.
- This then can be monitored by analyzing the energy balance table regularly



### EBT is a secondary statistic, primary statistics needed

- The EBT is a secondary statistic, which is compiled using many government statistics
- The EBT compiler needs to collate and compile energy data from several government agencies and private sector bodies (in some cases, estimation is necessary)
- Energy supply and consumption are taken from different statistics and may not match. Therefore, some estimation is necessary to balance the data.

#### Statistics used in Japan's EBT

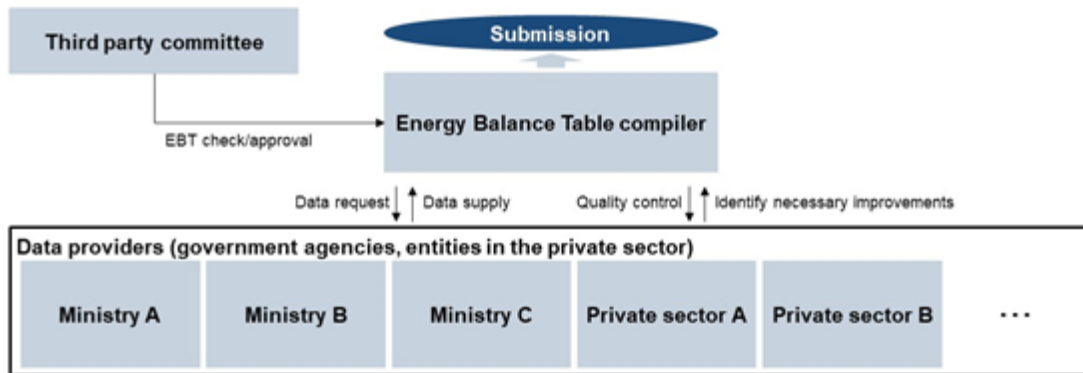
Sector	Examples of base data
<b>Energy Transformation &amp; Own Use</b>	<ul style="list-style-type: none"> <li>■ Profile of Supply and Demand for Electric Power (ANRE)</li> <li>■ Statistical Survey on Gas Utility Industry (ANRE)</li> </ul>
<b>Industry</b>	<ul style="list-style-type: none"> <li>■ Yearbook of the Current Survey of Energy Consumption (METI)</li> <li>■ Energy Consumption Census (ANRE)</li> </ul>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>■ Statistical Yearbook of Motor Vehicle Fuel Consumption (MLIT)</li> <li>■ Statistical Survey on Coastwise Vessel Transport (MLIT)</li> <li>■ Statistical Yearbook of Air Transport (MLIT)</li> <li>■ Energy consumption and CO<sub>2</sub> emissions from motorcycles (MOE)</li> </ul>
<b>Commercial</b>	<ul style="list-style-type: none"> <li>■ Energy Consumption Census (ANRE)</li> </ul>
<b>Residential</b>	<ul style="list-style-type: none"> <li>■ Annual Report on the Family Income and Expenditure Survey (MIC)</li> </ul>

Source: Kainou (2015) Development of 2013FY version of "General Energy Statistics of Japan", Kainou (2012) Description of the General Energy Statistics

### Institutional arrangements are necessary for the development of the EBT

- As previously described, data needs to be collected from different stakeholders. Therefore, institutional arrangements are necessary for the collaboration and data collection.

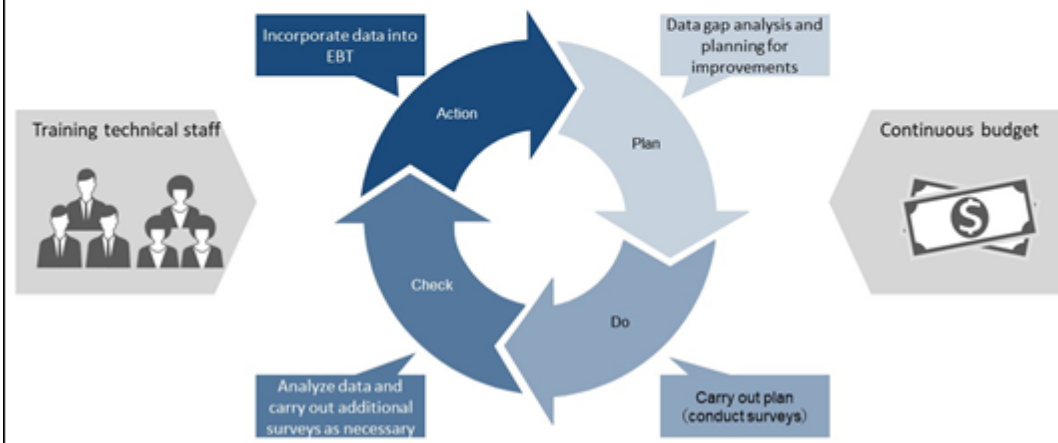
#### A typical organizational setup for energy balance table preparation



### Continuous improvement is necessary for the EBT

- It is impossible to develop a perfect EBT in a short period of time. The first step should be to use all available data, and develop a plan to improve in steps.
- A sustainable program to train technical staff and continuous budget is critical.

#### The improvement cycle of the EBT



#### ① The Third workshop

In the third workshop (Outcome 2), the results of the first improvement cycle in the energy sector were shared and the approach and activities of the second improvement cycle were discussed. The outcomes of the first improvement cycle include: a strengthened



collaborative relationship between MEEI/NSOs and the ECF; the completion of the 2015/2016 Energy Balance Table; the breakdown of solid fuels and manufacturing industries in the Energy Balance Table; and improved completeness of sources of fugitive emissions (CH<sub>4</sub> and N<sub>2</sub>O emissions from ventilation valves and flaring).

The second improvement cycle involves (1) continuing to consider refining the 2015 and 2016 energy balance tables, (2) updating the manual for preparing the energy balance tables, and (3) reconstructing the energy balance tables going back to 1990. Participants agreed to establish a working group under the Project to discuss and examine the above three points with various stakeholders. The general plan of the second improvement cycle is shown below.

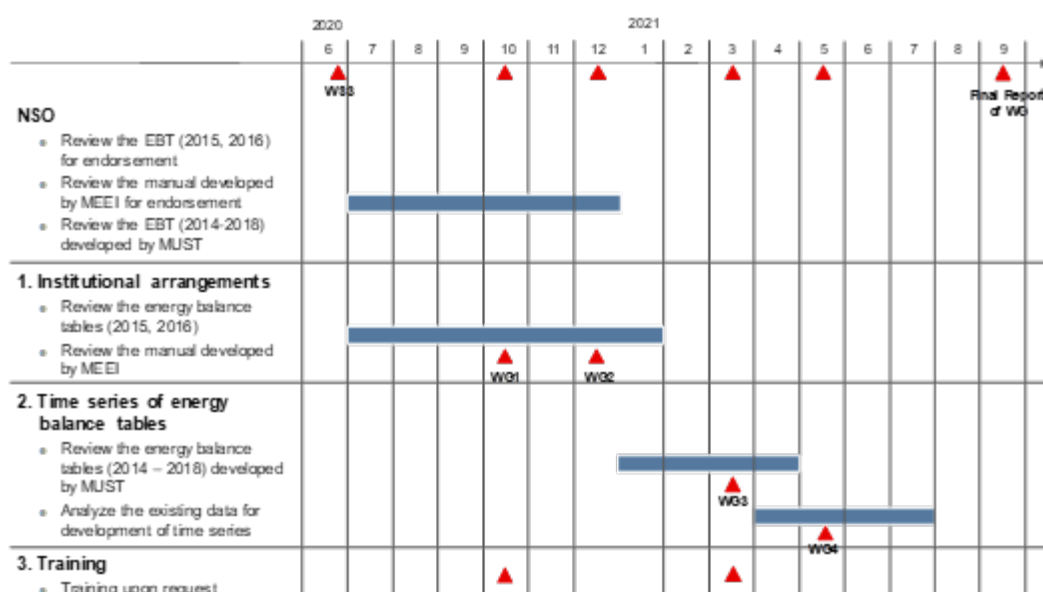


Figure 6 Action Plan for the Second Improvement Cycle

### D. Output 3

#### Overview

In August-September 2019, JICA experts worked with a local experts' research group to collect samples in a biomass and soil survey and to analyze the sample data in 2020. The third meeting of the LULUCF Working Group and the third workshop (Output 3) was held in June 2020, where the results of the analysis by JICA experts were approved and the approach for the 2020 soil and biomass survey was agreed upon. In July-August 2020, the local experts' research group collected samples during the biomass and soil surveys and are currently analyzing the samples in the local experts' laboratory.

Detail

As a first step in developing a estimation method for grassland-derived GHGs, a literature review was conducted from April 2018 to April 2019 to understand what information is available on grasslands at this stage and the extent of the gap between the information needed to develop an emission/removal estimation method and the information currently available. As a result of the literature review and discussions with experts in Mongolia, it was found that more data on soil carbon stocks (SOC) and the aboveground sub-surface biomass ratio (AGB) were needed for the development of calculation methods, and as a second step, field studies to obtain soil and biomass data were carried out in 2019.

As a third step, the third LULUCF working group met to discuss how the results of the 2019 survey could be reflected in the GHG inventory. More than 20 researchers from MET, Mongolian University of Life Sciences, National University of Mongolia, Institute of Information, Meteorology and Hydrology, Wildlife Conservation Society, etc. participated in the working group meeting. In the working group, members of the JICA experts presented an overview of the analysis of the 2019 soil and biomass survey results, the 2020 soil and biomass survey plan, and an updated version of the Improvement Guidance - Field Survey. During the discussion sessions, many questions were asked about how to handle the analytical results and the 2020 biomass and soil field study plan. National experts also provided comments and suggestions to help improve the results of the 2019 survey analysis. Suggestions were made, for example, that the relationship between biomass and climate should be taken into account when applying newly developed biomass parameters to GHG inventories. As a result of the working group discussions, the 2020 Biomass and Soil Field Survey Plan was approved for the purpose of collecting data on soil carbon stocks over time and the aboveground subsurface biomass of the alpine region for inventory improvements. Based on the "Improvement Guidance - Field Research", researchers from the field re-commissioners (Institute Geography-Geoecology (IGG) and National University Mongolia (NUM)) Group) conducted a field study in July and August 2020. The methodology for calculating grassland-derived GHG emissions will be improved in 2021, based on the results of the literature review and the results of the studies conducted in 2019 and 2020, as well as discussions with experts in Mongolia.

**1-3 Achievement of Output**

During this reporting period, a draft improvement report for the priorities of Outcome 1 and Outcome 2 has been completed. The status of the achievement of the outcomes is shown in Table 9.

Table 9 Energy Balance Table for 2015 (simplified table)

Output	Means of verification		Progress
Output 1	1-1)	Long list of issues	Completed in 2018
	1-2)	List of priority issues of GHG inventory	Completed in 2019
	1-3)	GHG inventory improvement plan	Completed in 2019
	1-4)	Report on improvement of priority issues	Draft completed
	1-5)	Final draft submitted to Technical and Science Committee	In progress
Output 2	2-1)	List of priority issues	Completed in 2018
	2-2)	Improvement guidance	Completed in 2019
	2-3)	Report on improvement of priority issues	Draft completed
	2-4)	Report on improvement of priority issues	To be complete after May 2021
Output 3	3-1)	List of priority research issues	Completed in 2018
	3-2)	Improvement guidance	Completed in 2019
	3-3)	Research report on improvement of priority issues	To be complete after January 2021
	3-4)	Research report on improvement of priority issues	To be complete after July 2021

#### 1-4 Achievement of the Project Purpose

The project target indicators have not been met during this reporting period.

Table 10 Achievement of Project purpose

Objectively Verifiable Indicators	Means of Verification	Progress
1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle	1) GHG improvement plan and report on improvement of priority issues	GHG improvement plan was complete in 2018
2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET	2) National Manual approved by MET	National Manual to be completed in March 2021
3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent	3) National manual and MoU between MET/[ECF] and data providers	MoU as described in the National Manual will be drafted in March 2021 as necessary
4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle	4) Improvement guidance and report on improvement of priority issues	Improvement guidance was complete in 2018. The improvement report was completed 2020.
5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	5) Improvement guidance and research report on improvement of priority issues	LULUCF improvement guidance was complete in 2019. The improvement report will be complete July 2021

#### 1-5 Changes of Risks and Actions for Mitigation

On May 20, 2020, the Cabinet established the Climate Change Research and Cooperation Center Corporation under the MET. The Centre has a duty to implement the climate change

policies, statutes and decisions made by the Grand National Assembly, the Cabinet and the central administrative body responsible for climate change. The company also said that it would operate on the principle of in-house financing and would take a corporate form of independence and participation in civil law legal relations. The CCPIU (Climate Change Project Implementation Unit, the project's main counterpart) within the ECF will be relocated to the Centre. A restructuring of the ministry will be considered after the local elections on October 15, 2020, followed by a reorganization of the ministry's subdivisions. No major change of plans are expected as the ruling party remained in power as a result of the National Grand Council elections in June.

**1-6 Progress of Actions undertaken by JICA**

None.

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

None.

**1-8 Progress of Environmental and Social Considerations**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There have been no changes regarding other donor projects since the previous reporting period; JICA experts will continue to gather information and collaborate as needed.

Table 11 Relevant projects

Relevant sector	Name of project	Donor	Implementing agency	Objective of project	Coordination with JICA project
1 Agriculture	agriculture	GEF, CBIT	ECF	Reducing high uncertainty of activity data on mitigation actions/GHG inventory in Agriculture Sector	Collected livestock head data may be more accurate than national statistics. This could contribute to reducing uncertainty. Their "MRV helpdesk" may refer to methodology for GHG inventory. Or they could propose improved methodology for GHG inventory in a future.
2 Industry/Waste	MRV	GGGI	ECF	Developing sector MRV guidelines (which would include GHG inventory) in industry and waste sectors	Methodological improvement in Cement production may be proposed by them. ECF and JICA project can consider that if proposed.
3 City inventory	Promoting Low-Carbon Development in Central Asia Regional Economic Cooperation Program Cities	ADB	UB city	Aiming to support participating cities (in China and central Asia) to strengthen their capacity to plan and implement climate actions.	Proposing estimating urban tree planting in their inventory. We can consider their estimation method for Settlement at the end of 2019 if they develop methodology.
4 Crosscutting (institutional)	NDC Partnership	(multiple)	MET	Improve the institutional arrangements for climate change action	Draft legal document on CC will be prepared by 2020. JICA project can provide input to the draft legal document.
5 Waste	Waste and Climate change	Asia Foundation	MET/UB city	Obtaining climate finance for waste sector	Waste composition data may be useful for estimation in waste sector

## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail/Cause**

#### a. Delay in Mongolia's BUR/GHG inventory preparation cycle

At the start of the project, it was envisaged that the ECF would complete the GHG inventory of BUR2 by the end of 2019; however, due to delays in the preparation and submission of the BUR project request by the ECF to the GEF, as well as delays in the data collection process, the GHG inventory of BUR2 is expected to be completed by the end of 2021. As a result, the Mongolian BUR/GHG inventorying cycle no longer coincides with the improvement cycle of this project, but the project's activities will be conducted as per the P/O, with two cycles of inventory improvement activities.

The reason for the delay in preparing the BUR project request was due to a series of retirements at ECF and ECF's inability to effectively manage and coordinate multiple tasks.

#### b. Impact of COVID 19

Since February 2020, the JICA Project experts have not been able to travel to Mongolia due to the COVID 19 lockdown.

### **2-2 Action to be taken**

#### a. Delay in Mongolia's BUR/GHG inventory preparation cycle

The QA/QC plan, archiving manual, NIR template, etc. developed in the first improvement cycle and the improvement plans planned for the second improvement cycle will all be reflected in BUR2.

#### b. Impact of COVID 19

The JICA Project experts and ECF have carried out the Project activities by conducting online meetings and workshops. The level of communication between the JICA Project experts and counterparts have gone down due to internet connection issues, change in scheduling, etc. and as a result, the work efficiency has gone down. Still, the JICA Project experts have added information in the meeting materials and provided before the meeting to improve the quality of meetings.

### **2-3 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None.

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

Project Monitoring Sheet I

Version 7

November 20, 2020

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Implementing Agency: MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

Target Group: ECF (Environment and Climate Fund)


Period of Project: November, 2017~October 2021

Project Site: Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	·National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	1) The GHG inventory improvement plan was finalized in November 2018. 4) The improvement guidance of priority issues in the energy sector was developed in November 2018. 5) The Improvement Guidance: field survey was completed in June 2019.	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee		The following has been developed: 1-1) Long list of issues; 1-2) List of priority issues of GHG inventory; and 1-3) GHG inventory improvement plan	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		2-1) List of priority issues has been developed 2-2) Improvement guidance has been developed	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues		3-1) List of priority research issues and 3-2) improvement guidance for highly priority research theme in LULUCF sector has been developed	



## PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p> <p>Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p>			<p><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p> <div style="text-align: center; margin-top: 20px;">  </div>

<p>Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.</p> <p>Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.</p> <p>Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.</p> <p>Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3</p> <p>Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.</p> <p>Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.</p> <p>Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.</p> <p>Activity 3-8: Compile the results of the improvement into a report.</p> <p>Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement</p> <p>Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)</p>		<p style="text-align: center;"><b>&lt;Issues and countermeasures&gt;</b></p> <p>Due to delays in ECF, it took approximately two years since the submission of the first BUR to start next GHG inventory preparation. ECF staff in charge of the AFOLU sector took leave from early 2019 and officially quit in the summer. Two replacement staff were assigned the AFOLU sector but one has quit in August 2019. In addition, the BUR coordinator has left the office in September 2019.</p> <p>Although the BUR submission cycle is no longer in line with the JICA inventory improvement cycle, the Project activities will be carried out as planned.</p> <p>Also, some planned improvements may not be carried out as originally planned, but they will be prioritized in the second improvement cycle.</p>
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Project Monitoring Sheet II

Version 7

Dated November 20, 2020

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Inputs		Monitoring																				Remarks	Issue	Solution			
		Year	2017				2018				2019				2020				2021								
			IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
<b>Expert</b>																											
	GHG inventory (General)	Plan																									long term expert
	GHG inventory (Institutional arrangements)	Actual																									Due to the coronavirus pandemic, the JICA Project experts have not been in Mongolia since February 2020. The activities have been switched to domestic work
	GHG inventory (Energy 1)	Plan																									
	GHG inventory (Energy 2)	Actual																									
	GHG inventory (LULUCF 1)	Plan																									
	GHG inventory (LULUCF 2)	Actual																									
	GHG inventory (LULUCF 3)	Plan																									
	GHG inventory (LULUCF 4)	Actual																									
	Project administrative coordination/ training	Plan																									
	Actual																										
<b>Equipment</b>																											
	PC for data management	Plan																									none
	Actual																										none
<b>Training in Japan</b>																											
	Training for Counterpart on GHG inventories in Japan	Plan																									1 week training, as necessary
	Actual																										none
<b>In-country/Third country Training</b>																											
	Training for Counterpart on GHG inventories in developing country	Plan																									carried out in 2018
	Actual																										none

Activities		Monitoring																				Responsible Organization		Achievements	Issue & Countermeasures						
		Year	2017				2018				2019				2020				2021				Japan			GOMNG					
Sub-Activities			IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV								
<b>Output 0: Hold a kickoff workshop of the project</b>																															
	Output 0: Hold a kickoff workshop of the project	Plan																										JICA	ECF	workshop held	none
	Actual																														
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>																															
	1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan																										JICA	ECF	list of potential issues identified and finalized	none
	Actual																														
	1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan																										JICA	ECF	list of potential issues identified and finalized	none
	Actual																														
	1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan																										JICA	ECF	list of potential issues identified and finalized	none
	Actual																														
	1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan																										JICA	ECF	long list compiled	none
	Actual																														
	1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan																										JICA	ECF	short list complete	none
	Actual																														
	1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan																										JICA	ECF	Held November 2018	none
	Actual																														
	1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan																										JICA	ECF	Developed and finalized at the workshop held November 2018	none
	Actual																														
	1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan																										JICA	ECF	in progress	none
	Actual																														
	1.9 Compile the results of improvement into a report.	Plan																										JICA	ECF	none	none
	Actual																														





**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 8 (Term: November 1, 2020 – April 30, 2021)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: October 18, 2021**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

Experts

During the reporting term of this report (November 2020 to June 2021), the JICA Project expert team made no trips to Mongolia due to the coronavirus disease (COVID-19) related lockdowns. Total man months was 10.1 for activities in Japan.

Meetings

On February 25, 2021, the Third JCC meeting was held. The JCC members welcomed the progress made by the JICA Project members, despite the restrictions and challenges posed by COVID-19 pandemic. The JCC members noted some of the concerns with regards to the progress and remaining activities until the end of the project period of October 2021. The JCC members acknowledged that since early 2020, the JICA Project experts have not been on the ground to directly communicate with the Project counterparts and other key stakeholders, resulting in decreased efficiencies and productivity. This has especially posed challenges in holding group meetings with several stakeholders, which is fundamental in GHG inventory preparation which require cooperation from a wide range of actors. Given the concerns described above, the JCC members agreed that there is a need to consider an extension of the Project. The JCC members agreed that the Project members discuss and produce a plan for the extension to ensure that technical improvements will be made as planned, describing the necessary work for Project members.

Reports

The Progress Report Vol. 3 was submitted in November 2020.



Table 2 Overview of activities during this reporting period

Sub-Activities	Year	2020			2021			
		Month	10	11	12	1	2	3
Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan							
	Actual							
Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan							
	Actual							
Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan							
	Actual							
Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan							
	Actual							
Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan							
	Actual							
Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan							
	Actual							
Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan							
	Actual							
Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan							
	Actual							
Activity 1-9: Compile the results of improvement into a report.	Plan							
	Actual							
Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Plan							
	Actual							
Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.	Plan							
	Actual							
Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	Plan							
	Actual							
Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	Plan							
	Actual							
Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	Plan							
	Actual							
Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	Plan							
	Actual							
Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	Plan							
	Actual							
Activity 2-4: Collect data based on the improvement guidance.	Plan							
	Actual							
Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	Plan							
	Actual							
Activity 2-6: Compile the results of improvements into a report.	Plan							
	Actual							
Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan							
	Actual							
Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.	Plan							
	Actual							
Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.	Plan							
	Actual							
Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.	Plan							
	Actual							
Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	Plan							
	Actual							
Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	Plan							
	Actual							
Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.	Plan							
	Actual							
Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.	Plan							
	Actual							
Activity 3-8: Compile the results of the improvement into a report.	Plan							
	Actual							
Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement	Plan							
	Actual							
Activity 3-10: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan							
	Actual							



**B. Output 1**

Few activities were implemented during the reporting term. As mentioned above, the 3<sup>rd</sup> JCC meeting concluded that the JICA Project experts and counterparts discuss and produce a plan for the extension to ensure that technical improvements will be made as planned, describing the necessary work for Project members. After discussions with the CCRCC, the JICA Project experts and CCRCC members agreed that in output 1, there will be no need for specific additional activities requiring an extension. The activities for the remainder of the Project term will consist of updating and fine tuning the Output 1 products developed in the first half of the project such as the QA/QC Plan, archiving manual, inventory report template, in addition to carrying out sector specific activities such as research on HFC emissions from the refrigeration and air conditioning category under the Industrial processes and product use (IPPU) sector.

**C. Output 2**Overview

A series of meetings were held between the JICA Project experts and the MEEI to improve the 2015 and 2016 energy balance table data. The first working group meeting for the energy balance table for GHG inventories in Mongolia, originally scheduled for November 2020 has been delayed due to scheduling conflicts. After the 3<sup>rd</sup> JCC, the JICA Project experts and relevant stakeholders discussed ways to facilitate the Project activities and generally agreed on the approach and timeline forward.

Detail

## ① Improving the 2015 and 2016 energy balance table

In July 2020, after the 3<sup>rd</sup> workshop for output 2, JICA experts received the revised version of energy balance tables for 2015 and 2016 from MEEI and NSO. Through discussions with MEEI the JICA Project experts identified potential issues with the table data and discussed ways to address the issues. As the background data has not all been shared, the assessment was done mostly comparing the new draft with the IEA World Energy Balance 2020 (Country: Mongolia, year: 2015, 2016) and the previous version received from MEEI in August 2019.

A summary of the issues is as shown in the table below.

Table 3 Issues to be addressed to the 2015/2016 energy balance tables

Priority	Issue	Relevant comments
Very high	Improvement of consistency with the IEA energy balance structure	"Oil extraction" has been added under Energy Transformation, which does not exist under transformation processes in the IEA data. At the final consumption part, several sub-categories under Industry have been added. These are slightly different from the IPCC category and IEA category which follow the International Standard Industrial Classification <sup>1</sup> . The category structure under the final consumption part could be improved (e.g. Agriculture should be at the same level with Industry and Transport)
High	Missing product coverage (Coke oven gas)	Coke Oven Gas is not reported in the latest EBT.
High	Disaggregation of hard coal into Coking coal and Other bituminous coal	Hard Coal may be able to split into "Coking coal" and "Other bituminous coal".
High	Clarification on energy product (LNG or NGL?)	Under Oil products, "Liquified Natural Gas (LNG)" is included in the latest EBT. As LNG is usually reported under Natural Gas, not under Oil products, this may be "Natural Gas Liquids". "LPG" was changed to "LNG" in the latest EBT. According to the definition of fuel type in the manual for EBT development, LNG should be NGL. However, if it is meant to be the liquified natural gas, the values should be reported under Natural Gas.
High	Potential missing values	Other bituminous coal and Lignite consumed for Transport are reported in the IEA data, but these are not reported in the latest EBT (2015). Lignite consumed for Transport is reported in the latest EBT (2016). Normally the same energy product tends to be consumed under the same category every year, EBT (2015) should be checked. Missing values - there must be numbers for input of coal for "coal processing and coking" and "solid fuel processing" The input of Lignite for Heat production should be minus value, and also the value for Heat is missing in the EBT (2016).
High	Potential mis-allocation	Most lubricants are used for non-energy purposes. About 70% of the final consumption of Lubricants allocated under Residential, which should be checked. In the IEA data, all consumptions of Lubricants are allocated under Non-energy use. Kerosene and Lubricants are allocated to Transport, however these energy products rarely consumed under Transport category. In the IEA data, all consumptions of Lubricants are allocated under Non-energy use. The allocation of Motor gasoline has been changed in the latest version. Motor gasoline is usually consumed under Transport (Road). Also it is possible that Motor gasoline is consumed under Industry and Commercial & Public Services, but the amount consumed under residential seems to be too much. The allocation should be checked again.

## ② Way forward

During the 3<sup>rd</sup> JCC, the plan for the remainder of the Project duration was presented. However, the JICA Project experts noted that progress is slower than expected due to the COVID19 restrictions. Many meetings and working group meetings have been postponed, and the collaboration between JICA Project experts and MEEI and other stakeholders have not been as in depth or as frequent as when the JICA Project experts are on the ground. The CCRCC and JICA Project experts noted that as of April 2021, the activities were approximately 5 months behind schedule.

After a series of discussions with CCRCC and MEEI after the 3<sup>rd</sup> JCC, stakeholders have agreed that an extension would be needed for the Project to achieve its goal of the second GHG inventory improvement cycle, namely, the finalization of the 2015/2016 energy balance table, the development of the energy balance table manual, and the development of the time series energy balance table for 1990 to 2017.

Therefore, the timelines for the Output 2 activities will be revised to reflect the above. The

timelines for Output 2 activities before the 3<sup>rd</sup> JCC and the current draft are shown in the tables below.

Table 4 Schedule for Output 2 activities as presented at the 3<sup>rd</sup> JCC

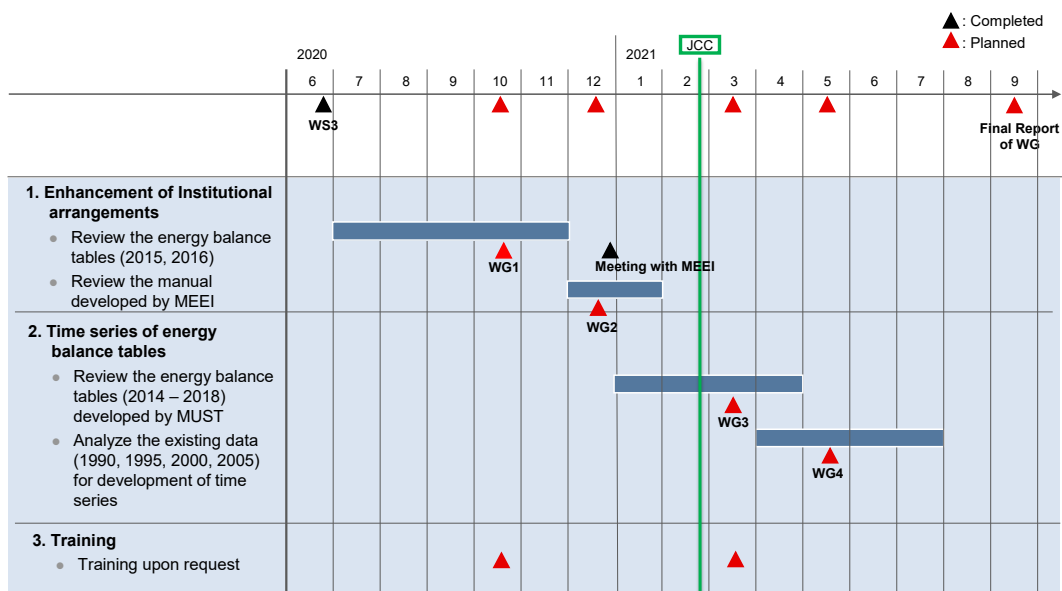


Table 5 draft schedule for Output 2 activities (under discussion)

Task	2021												2022			
	4	5	6	7	8	9	10	11	12	1	2	3				
Working group meeting																
Finalization of EBT(2015, 2016)																
Data collection (MEEI)																
Revision of EBT (JICA & MEEI)																
Final confirmation by MEEI (MEEI)																
Development of EBT manual																
Data collection (MEEI)																
Analysis of development process of energy balance (JICA with MEEI)																
Development of EBT manual (JICA)																
Review and finalization of EBT manual (MEEI with JICA)																
Development of time series of EBT																
Data collection (MEEI)																
Development of time series (2014-2019) (MEEI)																
Preparation of template of manual (JICA)																
Development of manual on time series (2014-2019) (MEEI with JICA)																
Development of time series (1990-2013) (JICA with MEEI)																
Development of manual on time series (1990-2013) (JICA)																
Finalization of time series of EBT and manual (JICA & MEEI)																

### D. Output 3

#### Overview

In July-August 2020, the local experts' research groups carried out the second biomass and soil sample surveys and the composition analysis results of the samples were submitted to the JICA Project experts in November 2020. This data, together with the data from the previous survey and literature surveys were analyzed by the JICA Project experts. After the 3<sup>rd</sup> JCC, the JICA Project experts and relevant stakeholders discussed ways to facilitate the Project activities and generally agreed on the approach and timeline forward.

#### Detail

##### ① Biomass and soil data analysis

The JICA Project experts analyzed the data from literature surveys carried out in 2017~2018 and the soil/biomass sample survey data collected in 2019 and 2020 to understand the relationship between the parameters as shown below.

	A	B	C	L	M	N	O	R	S
1	ID	Latitude (decimal system)	Longitude (decimal system)	Soil type (select)	Eco region (select)	Land use (type of grassland use, select)	Degradation level	SOC (ton/ha)	SOC % to 30cm
2	TS-01	47.74859	109.17007	Kastanozem	Steppe zone	Grazing	Moderate	41.19	1.51
3	JA-201	47.55713	109.47396	Kastanozem	Steppe zone	Grazing	Low	48.50	2.01
4	UM-02	48.07268	109.55752	Chernozem	Steppe zone	Grazing	Moderate	48.74	1.35
5	UM-202	48.08326	109.81712	Chernozem	Steppe zone	Grazing	Low	50.50	1.56
6	BT-03	48.69110	110.16570	Chernozem	Steppe zone	Grazing	Moderate	68.82	2.31
7	BT-203	48.64910	110.22963	Chernozem	Steppe zone	Grazing	Low	69.13	1.95
8	BI-04	48.70398	110.62076	Chernozem	Steppe zone	Grazing	Low	76.12	2.94
9	BI-204	48.65029	110.71576	Chernozem	Steppe zone	Grazing	Moderate	43.76	1.16
10	DD-05	49.02846	111.56999	Chernozem	Steppe zone	Grazing	Moderate	30.48	0.70
11	DD-205	48.85247	111.62571	Chernozem	Steppe zone	Grazing	Low	55.94	1.77
12	UM-06	47.89263	109.80228	Chernozem	Steppe zone	Grazing	Low	60.14	2.32
13	UM-206	47.96928	109.85521	Chernozem	Steppe zone	Grazing	Moderate	44.06	1.84
14	GB-07	48.21512	110.30212	Chernozem	Steppe zone	Grazing	Moderate	54.09	1.67
15	GB-207	48.21320	110.32888	Chernozem	Steppe zone	Grazing	Low	68.15	2.10
16	BI-08	48.15378	110.92357	Kastanozem	Steppe zone	Grazing	Low	46.79	1.36

**The results of field survey**  
The data in red square is the base of the analysis.

- Soil type
- Land use
- Degradation level
- SOC [ton/ha]

	A	B	C	D	O	Q	S	T	U	V
1		ID	Latitude (decimal system)	Longitude (decimal system)	Eco region (select)	Degradation level	Sample	Peak amount of AGB (g/m <sup>2</sup> )	Peak amount of BGB (g/1178cm <sup>3</sup> )	Ratio of BGB to AGB
2	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Grass	10.20	2.27	
3	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Carex	10.76		
4	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Forbs	19.72		
5	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Litter	21.04	2.95	
6	Site I	GG-1-1	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Dung	41.20		
7	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Grass	10.36		
8	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Carex	40.48		
9	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Forbs	28.60		
10	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Litter	7.40		
11	Site I	GG-1-2	50.04503	106.07089	Low forest steppe(<2000m)	Middle	Lichen	0.40		

**The results of field survey**  
The data in red square is the base of the analysis.

- Ecoregion
- Degradation level
- AGB [g/m<sup>2</sup>]
- BGB [g/1178cm<sup>3</sup>]
- Ratio of BGB to AGB [-]

(only Grass, Carex and Forbs)  
(Calculated from AGB and BGB)

Figure 1 Parameters analyzed in statistical analysis of soil and biomass

Preliminary results show that under specific conditions, degradation levels and/or climate conditions (dry and wet) have an effect on the amount of organic carbon amount. Even if there is a general decreasing trend of carbon amount from low degradation to high

degradation, the amount of carbon is not completely linked to degradation levels (e.g. no statistical difference between high degradation and moderate degradation).

The "Improvement Guidance - Field Research" developed by JICA Project experts with the support of Institute Geography-Geocology and National University Mongolia Group was finetuned and translated in Mongolian so that stakeholders can continue to use the guidance to collect samples for the GHG inventory emission/removal estimation.

② Way forward

During the 3<sup>rd</sup> JCC, the plan for the remainder of the Project duration was presented. However, the JICA Project experts noted that progress is slower than expected due to the COVID19 restrictions and other reasons, specifically, data collection on the timeseries grassland monitoring data. This is critical information needed to estimate the emissions and removals from grassland.

After a series of discussions with CCRCC after the 3<sup>rd</sup> JCC, stakeholders have agreed that an extension would be needed for the Project to achieve its goal of the second GHG inventory improvement cycle, namely, the estimation of GHG emissions and removals from grassland and the entire LULUCF sector for the entire time series.

Therefore, the timelines for the Output 3 activities will be revised to reflect the above. The timelines for Output 3 activities as of now are shown in the table below.

Table 6 draft schedule for Output 3 activities (under discussion)

Task	2021										2022	
	4	5	6	7	8	9	10	11	12	1	2	
Development of estimation method (activity 3-7)												
Receive Single year's monitoring data from IRIMHE												
First attempt of inventory estimation (JICA & CCRCC)												
Hearing from experts												
Elaborate of methodologies (JICA & CCRCC)												
Time series estimation before monitoring years (JICA & CCRCC)												
Receive time series information from IRIMHE												
Development of whole time series estimation (JICA & CCRCC)												
Final confirmation by experts												
Development of GHG inventory, compiling a report (activity 3-8)												
Development of estimation file for grassland (JICA&CCRCC)												
Development of estimation file for other LULUCF (JICA&CCRCC)												
Development of a report (CCRCC, supported by JICA)												
Preparation of list of priority issues (activity 3-9)												
Update the long list and make a plans for the next BUR/BTR												
Experts meetings												
Experts meeting (activity 3-6)												
Final meeting (activity 3-10)												

**1-3 Achievement of Output**

During this reporting period, there were no achievements completed. The status of the achievement of the outcomes is shown in Table 7.

Table 7 Achievement of Outputs

Output	Means of verification		Progress
Output 1	1-1)	Long list of issues	Completed in 2018
	1-2)	List of priority issues of GHG inventory	Completed in 2019
	1-3)	GHG inventory improvement plan	Completed in 2019
	1-4)	Report on improvement of priority issues	Draft completed
	1-5)	Final draft submitted to Technical and Science Committee	In progress
Output 2	2-1)	List of priority issues	Completed in 2018
	2-2)	Improvement guidance	Completed in 2019
	2-3)	Report on improvement of priority issues	Draft completed
	2-4)	Report on improvement of priority issues	To be completed 2021
Output 3	3-1)	List of priority research issues	Completed in 2018
	3-2)	Improvement guidance	Completed in 2019
	3-3)	Research report on improvement of priority issues	To be completed 2021
	3-4)	Research report on improvement of priority issues	To be complete after July 2021

**1-4 Achievement of the Project Purpose**

The project target indicators have not been met during this reporting period.

Table 8 Achievement of Project purpose

Objectively Verifiable Indicators	Means of Verification	Progress
1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle	1) GHG improvement plan and report on improvement of priority issues	GHG improvement plan was complete in 2018
2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET	2) National Manual approved by MET	National Manual to be completed in 2021
3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent	3) National manual and MoU between MET/[ECF] and data providers	MoU as described in the National Manual will be drafted in 2021 as necessary
4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle	4) Improvement guidance and report on improvement of priority issues	Improvement guidance was complete in 2018. The improvement report was completed 2020.
5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	5) Improvement guidance and research report on improvement of priority issues	LULUCF improvement guidance was complete in 2019. The improvement report will be completed 2021

**1-5 Changes of Risks and Actions for Mitigation**

As described above, due to COVID-19 related lockdowns and restrictions, the Project activities have lost momentum and delays have been confirmed. This was acknowledged at the 3<sup>rd</sup> JCC, and after a series of discussions between the Project experts and CCRCC and other stakeholders, it was decided that an extension until February 2022 was warranted to ensure the outputs of the Project.

**1-6 Progress of Actions undertaken by JICA**

As there is general agreement on the need for an extension of the Project, JICA and the MET will formally amend the Record of Discussions of the Project to extend until February 2022.

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

None.

**1-8 Progress of Environmental and Social Considerations**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There have been no changes regarding other donor projects since the previous reporting period; JICA experts will continue to gather information and collaborate as needed.



## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail/Cause**

The causes of delay of work has not changed since the previous reporting period.

#### **a. Delay in Mongolia's BUR/GHG inventory preparation cycle**

At the start of the project, it was envisaged that the ECF would complete the GHG inventory of BUR2 by the end of 2019; however, due to delays in the preparation and submission of the BUR project request by the ECF to the GEF, as well as delays in the data collection process, the GHG inventory of BUR2 is expected to be completed by the end of 2021. As a result, the Mongolian BUR/GHG inventorying cycle no longer coincides with the improvement cycle of this project, but the project's activities will be conducted as per the P/O, with two cycles of inventory improvement activities.

The reason for the delay in preparing the BUR project request was due to a series of retirements at ECF and ECF's inability to effectively manage and coordinate multiple tasks.

#### **b. Impact of COVID 19**

Since February 2020, the JICA Project experts have not been able to travel to Mongolia due to the COVID 19 lockdown.

### **2-2 Action to be taken**

As mentioned above, the Project will be extended until February 2022 in order to ensure the completion of the expected outputs of the Project.

#### **a. Delay in Mongolia's BUR/GHG inventory preparation cycle**

The QA/QC plan, archiving manual, NIR template, etc. developed in the first improvement cycle and the improvement plans planned for the second improvement cycle will all be reflected in BUR2.

#### **b. Impact of COVID 19**

The JICA Project experts and ECF have carried out the Project activities by conducting online meetings and workshops. The level of communication between the JICA Project experts and counterparts have gone down due to internet connection issues, change in scheduling, etc. and as a result, the work efficiency has gone down. Still, the JICA Project experts have added information in the meeting materials and provided before the meeting to improve the quality of meetings.

**2-3 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None.

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

Project Monitoring Sheet I

Version 7

November 20, 2020

**Project Title:** Project for capacity development to establish a national GHG inventory cycle of continuous improvement

**Implementing Agency:** MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)


**Target Group:** ECF (Environment and Climate Fund)

**Period of Project:** November, 2017~October 2021

**Project Site:** Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	·National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/[ECF] and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/[ECF] and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	1) The GHG inventory improvement plan was finalized in November 2018. 4) The improvement guidance of priority issues in the energy sector was developed in November 2018. 5) The Improvement Guidance: field survey was completed in June 2019.	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee		The following has been developed: 1-1) Long list of issues; 1-2) List of priority issues of GHG inventory; and 1-3) GHG inventory improvement plan	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		2-1) List of priority issues has been developed 2-2) Improvement guidance has been developed	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues		3-1) List of priority research issues and 3-2) improvement guidance for highly priority research theme in LULUCF sector has been developed	

PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p> <p>Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p>			<p style="text-align: center;"><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p> <div style="text-align: center;">  </div>

Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.

Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.

Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.

Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3

Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.

Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.

Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.

Activity 3-8: Compile the results of the improvement into a report.

Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement

Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)

**<Issues and countermeasures>**

Due to delays in ECF, it took approximately two years since the submission of the first BUR to start next GHG inventory preparation. ECF staff in charge of the AFOLU sector took leave from early 2019 and officially quit in the summer. Two replacement staff were assigned the AFOLU sector but one has quit in August 2019. In addition, the BUR coordinator has left the office in September 2019.

Although the BUR submission cycle is no longer in line with the JICA inventory improvement cycle, the Project activities will be carried out as planned.

Also, some planned improvements may not be carried out as originally planned, but they will be prioritized in the second improvement cycle.

**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 9 (Term: May, 2021 – September, 2021)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: February 28, 2022**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

Experts

During the reporting term of this report (October 2020 to September 2021), the JICA Project expert team made no trips to Mongolia due to the spread of the COVID19 pandemic. Total man months was 7.1 for activities in Japan.

Meetings

On February 25, 2021, the Third JCC meeting was held. The JCC members welcomed the progress made by the JICA Project members, despite the restrictions and challenges posed by COVID-19 pandemic. The JCC members noted some of the concerns with regards to the progress and remaining activities until the end of the project period of October 2021. The JCC members acknowledged that since early 2020, the JICA Project experts have not been on the ground to directly communicate with the Project counterparts and other key stakeholders, resulting in decreased efficiencies and productivity. This has especially posed challenges in holding group meetings with several stakeholders, which is fundamental in GHG inventory preparation which require cooperation from a wide range of actors. Given the concerns described above, the JCC members agreed that there is a need to consider an extension of the Project. The JCC members agreed that the Project members discuss and produce a plan for the extension to ensure that technical improvements will be made as planned, describing the necessary work for Project members.

Reports

No reports submitted during this reporting term.

## **1-2 Progress of Activities**

### **A. Output 1**

The 3rd JCC meeting concluded that the JICA Project experts and counterparts discuss and produce a plan for the extension to ensure that technical improvements will be made as planned, describing the necessary work for Project members. After discussions with the CCRCC, the JICA Project experts and CCRCC members agreed that in output 1, there will be no need for specific additional activities requiring an extension. The activities for the remainder of the Project term will consist of updating and fine tuning the Output 1 products developed in the first half of the project such as the QA/QC Plan, archiving manual, inventory report template, as necessary. For sector specific improvements however, the CCRCC and JICA Project experts agreed that research on HFC emissions from the refrigeration and air conditioning category under the Industrial processes and product use (IPPU) sector was a high priority.

Mongolia's BUR1 included a GHG inventory for 2014, which included emissions of HFCs, a type of GHG. However, this relied on one-time data prepared by an international cooperation project to support the ratification of the Kigali amendment to the Montreal Protocol, and its continued production and improvement could not be expected. In addition, for the entire IPPU sector, including HFC emissions, issues arose, such as the data used up to BUR1 no longer being updated, and additional discussions were necessary for continued preparation and improvement.

In the second cycle, we 1) verified whether the data from the Kigali Amendment Ratification Support Project and the data newly collected in this project by the local consultants involved in the project can be used for GHG inventory calculation, and if necessary, process the data to make it available for calculation, and transfer the method to CCRCC; 2) supported the preparation of a manual to enable the CCRCC and other Mongolian government agencies to follow the data collection methods of the local consultants; 3) developed proposed methodological improvements for other IPPU sectors and drafted guidelines for further improvements. In addition, since there are many cross-cutting issues with the energy sector in the IPPU sector, such as the use of coal and other materials in steelmaking and the use of lubricating oil, we also examined the avoidance of double counting with the energy sector.

### **B. Output 2**

#### Overview

In the period from October 2020 to September 2021, significant progress was made in the development of the energy balance table time series (1990-2019). This is due to the

fact that JICA and MEEI agreed to cooperate on the development of time series of the energy balance table, triggered by a request from the Mongolian Energy Economics Institute (MEEI) in February 2021 for JICA's support in securing a budget for its activities in 2021. The cooperation of the National Statistical Office of Mongolia (NSO) and the Mineral Resources and Petroleum Administration of Mongolia (MRPAM) has also been sought to efficiently collect the background data for the energy balance table. Figure 1 shows the activity plan for the preparation of time series of the energy balance table.

Task	Activity	2021												2022			
		4	5	6	7	8	9	10	11	12	1	2	3				
Working group meeting	2-3																
Finalization of EBT(2015, 2016)																	
Data collection (MEEI)	2-4																
Revision of EBT (JICA & MEEI)	2-5																
Final confirmation by MEEI (MEEI)	2-5																
Development of EBT manual																	
Data collection (MEEI)	2-4																
Analysis of development process of energy balance (JICA with MEEI)	2-5																
Development of EBT manual (JICA)	2-5																
Review and finalization of EBT manual (MEEI with JICA)	2-5																
Development of time series of EBT																	
Data collection (MEEI)	2-4																
Development of time series (2014-2019) (MEEI)	2-5																
Preparation of template of manual (JICA)	2-5																
Development of manual on time series (2014-2019) (MEEI with JICA)	2-5																
Development of time series (1990-2013) (JICA with MEEI)	2-5																
Development of manual on time series (1990-2013) (JICA)	2-5																
Finalization of time series of EBT and manual (JICA & MEEI)	2-6																
Hold a final meeting	2-7																

**Detail**

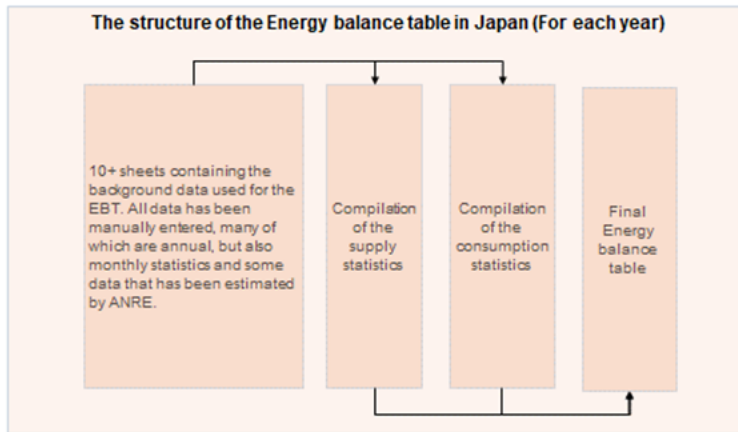
**Holding Working Group meetings (activity 2-3)**

The first meeting of the working group for the energy balance table under the project was scheduled to be held in October 2020, but was postponed due to the lockdown of Ulaanbaatar caused by the spread of the COVID-19. After repeated adjustments, it became difficult to hold the meeting due to the spread of the infection and other various reasons. As an alternative, the meeting materials were shared with the working group members to share the progress of the work to finalise the energy balance table (2015, 2016) that were jointly prepared by MEEI and NSO, and to improve the understanding of the energy balance table and its background data (excerpts of the materials are shown in Figure 5 to Figure 7). Also, JICA discussed the results of the review of the energy balance tables (2015, 2016) with the MEEI in December and agreed on a way for improvement.



The structure of the energy balance table in Japan

- In Japan, EBTs for each year consists of one Excel file, which contains all the background data (1 file is about 65MB) and the actual EBT.
- The file consists of 15+ sheets, approximately 10 are background data. The other sheets are used for compiling the background data and balancing the data to produce the final EBT. This shows the energy balance in original, energy, and carbon units.



4

	Parts of the EBT	Source	Ministry
<b>Background data</b>	<b>Primary supply</b>		
	Import, Export	Trade Statistics	Ministry of Finance
<ul style="list-style-type: none"> <li>■ The EBT is a secondary statistic compiled from various statistics</li> <li>■ The statistics are mostly official national statistics but data from industry groups are also included</li> </ul>	Import, Export of oil products	Current Survey of Petroleum Products Supply and Demand	Agency for Natural Resources and Energy
	<b>Transformation</b>		
	Oil Products	Current Survey of Petroleum Products Supply and Demand	Agency for Natural Resources and Energy
	Gas Conversion and Production	Report of Gas Company	
	Power Generation	Electric Power Statistics	
	Auto Power Generation, Auto Steam Generation	Current Survey of Energy Consumption, Energy Consumption Statistics	
	District Heat Supply	Report of District Heating Company	Japan Heat Supply Business Association
	<b>Final Consumption</b>		
	Agriculture, Forestry, Fishery	Statistics from Ministry of Agriculture, Forestry and Fisheries(MAFF)	Ministry of Agriculture, Forestry and Fisheries
	Major 9 sectors in manufacturing, Other manufacturing,	Current Survey of Energy Consumption, Energy Consumption Statistics, -Energy Consumption Statistics	Agency for Natural Resources and Energy
Commercial	- Report of District Heating Company	Japan Heat Supply Business Association	
Residential	- Report on the Family Income and Expenditure Survey, - Report of Gas Company, - Report of District Heating Company	Ministry of Public Management, Home Affairs, Posts and Telecommunications	
Transportation	- Monthly Statistical Report on Fuel Consumption by Motor Vehicle Transport, - Monthly Report on Air Transport, - Monthly Report on Coastwise Vessel Transport, - Monthly Report on Railway Transport	Ministry of Land, Infrastructure and Transport	

8

Source: Kainou (2015) Development of 2013FY version of "General Energy Statistics of Japan", Kainou(2012) Description of the General Energy Statistics

The first meeting of the working group for the energy balance table, which was postponed to August 2021, was held to share and discuss the results of the data collection for the development of the time series of the energy balance and the future work plan. At the meeting, MEEI, NSO and CCRCC agreed to stocktake what data each agency currently has and to work together to integrate all data. Following this agreement, an online meeting

was held in the same month, and they reviewed the data collected by the three agencies and the missing data for the development of the energy balance table were identified (e.g. stock changes for each fuel type and consumption of petroleum products by category). It was agreed that JICA will issue a formal letter for data to MRPAM, which is most likely to have the data in Mongolia. The official letter was sent to MRPAM from JICA on 7th September, and MRPAM informed JICA to send the requested data where possible.

① Data collection, analysis and compilation (activity 2-4, 2-5)

From July 2021, in cooperation with MEEI, data have been collected from Mongolian and Russian research reports, past Mongolian energy balance tables, NSO, MRPAM, ERC, etc., in order to develop time series of energy balance tables (1990-2019). Data collected for the period 1990-2013 were arranged for each fuel type (see Fig. 8 for an example of coal). Data collected for the period 2014-2019 were used to develop the energy balance tables, and drafts for 2014, 2017 and 2018 were completed (Fig. 9 shows the draft energy balance table for 2014). The structure of the energy balance tables is based on the energy balance table (2015, 2016), which was finalised in cooperation with JICA, MEEI and NSO.

**COAL CONSUMPTION DYNAMICS**  
(from 1970 until 2018)

Year	/MRH,TH/							Total consumption
	Power and thermal plants	Industry and constructoin	Transportation	Agriculture	Residential, public utility, population	Recycling plants	Other	
1970	1001.9	356.1	48.6	51.1	237.1		270.7	1 965.5
1975	1762.8	391.5	52.7	76.7	311.2		172.9	2 767.8
1980	2184.0	711.7	41.7	321.9	426.6		629.7	4 315.6
1985	3678.6	1232.4	60.9	400.5	702.4		92.0	6 166.8
1988	4542.0	1137.0	75.0	429.0	737.0		676.8	7 596.8
1989	4311.0	1066.0	71.6	202.0	668.0		932.9	7 251.5
1990	4324.0	995.0	114.0	159.0	670.0		387.0	6 649.0
1991	4497.0	1099.0	56.0	101.0	1117.0		122.0	6 992.0
1992	4438.0	877.0	66.0	69.0	339.0		430.0	6 219.0
1993	4031.0	711.0	134.0	58.0	565.0		165.0	5 664.0
1994	3771.0	592.0	27.0	38.0	561.0		178.0	5 167.0
1995	3883.0	651.0	97.0	28.0	212.0		333.0	5 204.0
1996	3925.0	555.0	116.0	15.0	158.0		370.0	5 139.0
1997	3673.0	856.0	95.0	7.0	282.0		122.0	5 035.0
1998	4193.0	465.0	8.0	11.0	192.0		117.0	4 986.0
1999	4127.0	347.0	58.0	32.0	202.0		251.0	5 017.0
2000	4753.4	180.0	73.0	30.0	407.0		83.0	5 526.4
2001	4 324.0	152.0	55.0	4.0	334.0		320.0	5 189.0
2002	4 723.2	151.7	78.3	7.6	435.7		138.8	5 535.3
2003	4 380.2	153.5	3.2	8.6	464.9		151.3	5 161.7
2004	4 478.6	90.6	63.8	5.3	451.2		99.0	5 188.5
2005	4 619.6	106.6	101.4	18.3	513.9		112.8	5 472.6
2006	4 595.2	237.3	120.9	8.2	549.9		179.7	5 691.2
2007	4 935.1	203.0	121.7	3.4	454.8		188.1	5 906.1
2008	4 849.9	190.1	41.3	7.2	580.6		174.1	5 843.2
2009	5 077.9	226.3	41.2	13.6	598.2		469.0	6 426.2
2010	5 533.2	179.6	49.5	10.0	614.9		518.6	6 905.8
2011	5 410.1	221.9	52.5	8.9	641.3	2 578.1	427.5	9 340.3
2012	5 800.9	336.6	42.2	3.7	637.0	7 047.1	480.8	14 348.3
2013	6 374.7	222.7	11.3	7.5	787.5	10 082.9	615.1	18 101.7
2014	6 650.9	144.0	49.9	8.1	568.4	4 590.2	532.4	12 543.9
2015	6 687.5	53.3	45.1	7.8	510.5	2 614.4	337.3	10 255.9
2016	6 727.3	152.4	47.5	6.0	748.3	3 030.4	702.7	11 414.6
2017	7 285.0	94.8	68.9	4.9	686.3	8 039.7	502.1	16 681.7
2018	7 734.6	120.1	38.2	2.2	774.1	9 066.5	844.0	18 579.7

② Compile the results of improvements into a report (activity 2-6)

A manual is being developed that will document in detail the background data used to develop the energy balance tables, as well as the methodology and assumptions used in their development. It is expected that the manual, when completed, will help to formalise the development of regular and sustainable energy balance tables, improve the efficiency of the development process, and serve as a transparent explanatory document in the formal approval process.

**C. Output 3**

Overview

In July-August 2020, a local experts' research group consist of the two organizations (Institute Geography-Geoecology (IGG) and National University Mongolia (NUM)) conducted the second cycle of field survey to collect biomass and soil samples based on request from JICA experts. The sampling data was analyzed by a JICA experts' group and the result was shared with others in a meeting held in February. The sampling and the emission factor development have been designed based on the assumption using an existing grassland monitoring network data conducted by Institute of Information, Meteorology and Hydrology (IRIMHE) / NAMEM as an activity data. However, we found frequent data exchange or data obtaining from those organization were still not easy process for the GHG inventory preparation. The other activities conducted under output 3 is a trial use of new software dealing with remote sensing data. The two organizations which had been conducted the field survey under this project also participated this capacity building activities. It also should be noted that the LULUCF expert in CCRCC left and change his job in August 2021. This was the second leave of the LULUCF expert from CCRCC during the project.

① Activities 3-4~3-6

In developing a estimation method for grassland-derived GHGs, a literature review was conducted first in order to understand what information is available on grasslands and the extent of the gap between the information needed to develop an emission/removal estimation method. Then, field surveys to obtain more data on soil carbon stocks (SOC) and the aboveground sub-surface biomass ratio (AGB) were carried out in 2019 and 2020 targeting the areas where little data available and the areas where representative data is expected to be obtained. This was based on the outcome of discussion held with Mongolian experts from MET, Mongolian University of Life Sciences, National University of Mongolia, Institute of Information, Meteorology and Hydrology, Wildlife Conservation Society, etc. participated in the working group meeting.

In addition, a field survey guidance for grassland carbon survey in biomass and soil carbon pools was developed in order to allow Mongolian expert will implement similar survey in the future to improve GHG inventory estimation if necessary, after this project is finished. The preliminary version of this guidance had been developed before the field survey conducted in 2019 with subject to advice from Mongolian experts and updated before the field survey conducted in 2020 based on the experience and lesson learnt from the first cycle of field survey

② Activity 3-7: calculation of emissions and/or removals

Appropriate parameter setting relevant to grassland degradation level was considered

based on the result of surveys conducted by 2020. The areas where surveys were conducted are listed in the table below.

Carbon pools	Aimag
Biomass	Selenge, Darkhan-Uul, Tuv, Govisumber, Ulaanbaatar Dundgovi, Uvs, Bayan-Ulgii, Hovd and Gobi-Altai
Soil	Khentii Dornogobi, Bulgan, Hovsgol and Uvurkhangai

[Above Ground Biomass]

- Forest steppe: No statistical difference was observed between high degraded and moderately degraded grassland. But statistical difference was observed between low degraded and other two.
- Steppe, Semidesert, High mountain belt: No statistical was observed among different degradation levels.
- The averaged amount of above ground biomass were different among eco regions.

	Data	Forest steppe			Steppe			Semidesert			High mountain belt		
		H	M	L	H	M	L	H	M	L	H	M	L
Forest steppe	High	71											
	Moderate	63	-										
	Low	99	○	○									
Steppe	High	35	-	-	○								
	Moderate	28	-	-	-	-							
	Low	36	-	-	-	-	-						
Semidesert	High	18	-	-	○	-	-	○					
	Moderate	53	○	-	○	-	○	○	-				
	Low	152	○	○	○	○	○	○	-	-			
High mountain belt	High	34	○	○	-	○	-	-	○	○	○		
	Moderate	93	-	○	-	-	-	-	○	○	○	-	
	Low	322	-	-	○	-	-	○	-	○	○	○	○

[Below Ground Biomass]

- The samples show no significant difference among different degradation levels in each eco region. But the averaged amount of below ground biomass were different among eco regions.

Data			Forest steppe			Steppe			Semidesert			High mountain belt		
			H	M	L	H	M	L	H	M	L	H	M	L
Forest steppe	High	61												
	Moderate	63	-											
	Low	98	-	-										
Steppe	High	24	-	-	-									
	Moderate	28	-	-	-	-								
	Low	35	-	-	-	-	-							
Semidesert	High	18	○	-	○	-	○	-						
	Moderate	53	○	○	○	-	○	○	-					
	Low	152	○	○	○	-	○	○	-	-				
High mountain belt	High	34	○	-	○	-	-	-	-	-				
	Moderate	88	-	-	-	-	-	-	○	○	○	○		
	Low	312	○	-	○	-	-	-	-	-	○	-	○	

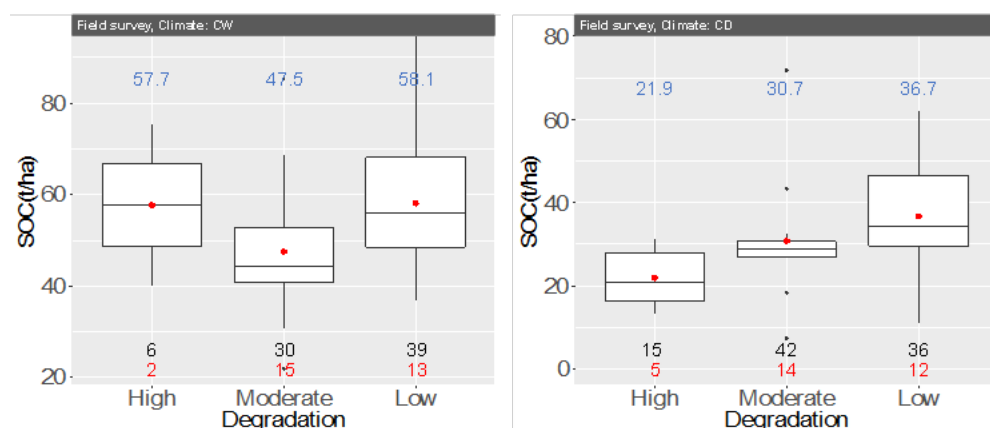
[Root to shoot ratio]

□ There was no significant difference in this parameter among different degradation levels. But the hypothesis that the root to shoot ratio is the same for all eco regions was rejected and so this implies it is appropriate using eco region specific root to shoot ratio.

[Soils]

□ Soil organic carbon (SOC) amount was identical in climate regions between cold temperate dry (CD) and cold temperate wet (CW). Under relatively dry condition, SOC amount has a dependency along with grassland degradation levels. Under relatively humid condition, less relationship was found among SOC amount and grassland degradation levels. This fact is also supported by explanation by the Mongolian grassland experts that precipitation amount is more relevant to amount of carbon in land in Mongolia.

Comparison of SOC



Blue values refer to each average value.  
 Black values refer to number of samples.  
 Red values refer to number of data.

**1-3 Achievement of Output**

none

**1-4 Achievement of the Project Purpose**

none

**1-5 Changes of Risks and Actions for Mitigation**

There have been no changes to the risks.

Sustainable funding was an issue from end of 2018 to mid-2019, CCRCC (then ECF) faced challenges accessing GEF funding for the BUR2 preparation, leading to a disruption of work. During this time, the short- and long-term experts took the lead in many of the Project activities. It is expected that this disruption will not be an issue with CCRCC as a state-owned company.

Staff, including the manager and LULUCF expert, moved on to other positions, creating challenges for building technical capacity and continuous work. This has unfortunately been an issue in 2020/2021. The JICA Project experts have taken the lead during the transition times, working with local consultants and counterparts to implement the Project activities.

COVID19 has affected all, but especially many of our counterparts, stakeholders, local consultants, assistants, etc. In addition, the remote approach has made technical work challenging especially work involving gathering many stakeholders and working with large spreadsheet files. This has affected the efficiency of Project implementation, but the JICA Project experts have taken the lead in cases where counterparts were not available and have held more frequent and longer meetings with counterparts to clarify technical issues.

**1-6 Progress of Actions undertaken by JICA**

None during the reporting term

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

None.

**1-8 Progress of Environmental and Social Considerations**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There have been no changes regarding other donor projects since the previous reporting period.



## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail/Cause**

The causes of delay of work has not changed since the previous reporting period.

#### **a. Delay in Mongolia's BUR/GHG inventory preparation cycle**

At the start of the project, it was envisaged that the ECF would complete the GHG inventory of BUR2 by the end of 2019; however, due to delays in the preparation and submission of the BUR project request by the ECF to the GEF, as well as delays in the data collection process, the GHG inventory of BUR2 is expected to be completed by the end of 2021. As a result, the Mongolian BUR/GHG inventorying cycle does not match the improvement cycle of this Project, but the project's activities were conducted as per the P/O, with two cycles of inventory improvement activities.

The reason for the delay in preparing the BUR project request was due to a series of retirements at ECF and ECF's inability to effectively manage and coordinate multiple tasks.

#### **b. Impact of COVID 19**

As stated above, the JICA Project experts have not been able to travel to Mongolia due to the COVID 19 lockdown.

### **2-2 Action to be taken**

#### **a. Delay in Mongolia's BUR/GHG inventory preparation cycle**

The QA/QC plan, archiving manual, NIR template, etc. developed in the first improvement cycle and the improvement plans planned for the second improvement cycle is expected to be reflected in BUR2, as will the technical improvements proposed, for example, the Fgas emissions, reference/sectoral discrepancy issues, fugitive emissions, harvested wood products.

#### **b. Impact of COVID 19**

The JICA Project experts and ECF have carried out the Project activities by conducting online meetings and workshops. The level of communication between the JICA Project experts and counterparts have gone down due to internet connection issues, change in scheduling, etc. and as a result, the work efficiency has gone down. Still, the JICA Project experts have added information in the meeting materials and provided before the meeting to improve the quality of meetings.

**2-3 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None.

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

Project Monitoring Sheet I

Version 9

October 31, 2021

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Implementing Agency: MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

Target Group: ECF (Environment and Climate Fund)

Period of Project: November, 2017~October 2021

Project Site: Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	·National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/ECF and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/ECF and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	1) The GHG inventory improvement plan was finalized in November 2018. 4) The improvement guidance of priority issues in the energy sector was developed in November 2018. 5) The Improvement Guidance: field survey was completed in June 2019.	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee		all developed with exception of partially developed 1-5	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		all developed	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues		all developed	

PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p> <p>Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p>			<p><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p>



<p>Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.</p> <p>Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.</p> <p>Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.</p> <p>Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3</p> <p>Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.</p> <p>Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.</p> <p>Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.</p> <p>Activity 3-8: Compile the results of the improvement into a report.</p> <p>Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement</p> <p>Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)</p>		<p style="text-align: center;"><b>&lt;Issues and countermeasures&gt;</b></p> <p>Due to delays in ECF, it took approximately two years since the submission of the first BUR to start next GHG inventory preparation. ECF staff in charge of the AFOLU sector took leave from early 2019 and officially quit in the summer. Two replacement staff were assigned the AFOLU sector but one has quit in August 2019. In addition, the BUR coordinator has left the office in September 2019.</p> <p>Although the BUR submission cycle is no longer in line with the JICA inventory improvement cycle, the Project activities will be carried out as planned.</p> <p>Also, some planned improvements may not be carried out as originally planned, but they will be prioritized in the second improvement cycle.</p>
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Project Monitoring Sheet II

Version 9

Dated October 31, 2022

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Inputs	Year	Monitoring																				Remarks	Issue	Solution			
		2017				2018				2019				2020				2021							###		
		IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III					IV	
<b>Expert</b>																											
GHG inventory (General)	Plan																								long term expert		
GHG inventory (Institutional arrangements)	Actual																										
GHG inventory (Energy 1)	Plan																										
GHG inventory (Energy 2)	Actual																										
GHG inventory (LULUCF 1)	Plan																										
GHG inventory (LULUCF 2)	Actual																										
GHG inventory (LULUCF 3)	Plan																										
GHG inventory (LULUCF 4)	Actual																										
Project administrative coordination/ training	Plan																										
Project administrative coordination/ training	Actual																										
<b>Equipment</b>																											
PC for data management	Plan																									none	none
PC for data management	Actual																									none	none
<b>Training in Japan</b>																											
Training for Counterpart on GHG inventories in Japan	Plan																									1 week training, as necessary	none
Training for Counterpart on GHG inventories in Japan	Actual																									none	none
<b>In-country/Third country Training</b>																											
Training for Counterpart on GHG inventories in developing country	Plan																									carried out in 2018	none
Training for Counterpart on GHG inventories in developing country	Actual																									none	none

Activities	Year	Monitoring																				Responsible Organization		Achievements	Issue & Countermeasures			
		2017				2018				2019				2020				2021				###	Japan			GOMNG		
		IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III						IV	
<b>Sub-Activities</b>																												
<b>Output 0: Hold a kickoff workshop of the project</b>																									JICA	ECF	workshop held	none
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>																												
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan																								JICA	ECF	list of potential issues identified and finalized	none
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Actual																								JICA	ECF	list of potential issues identified and finalized	none
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan																								JICA	ECF	list of potential issues identified and finalized	none
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Actual																								JICA	ECF	list of potential issues identified and finalized	none
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan																								JICA	ECF	list of potential issues identified and finalized	none
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Actual																								JICA	ECF	list of potential issues identified and finalized	none
1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan																								JICA	ECF	long list compiled	none
1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Actual																								JICA	ECF	long list compiled	none
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan																								JICA	ECF	short list complete	none
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Actual																								JICA	ECF	short list complete	none
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan																								JICA	ECF	Held November 2018	none
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Actual																								JICA	ECF	Held November 2018	none
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan																								JICA	ECF	Developed and finalized at the workshop held November 2018	none
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Actual																								JICA	ECF	Developed and finalized at the workshop held November 2018	none
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan																								JICA	ECF	in progress	none
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Actual																								JICA	ECF	in progress	none
1.9 Compile the results of improvement into a report.	Plan																								JICA	ECF	none	none
1.9 Compile the results of improvement into a report.	Actual																								JICA	ECF	none	none
1.10 Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Plan																								JICA	ECF	none	none
1.10 Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Actual																								JICA	ECF	none	none







**TO CR of JICA Mongolia OFFICE**

**Project Monitoring Sheet**

**Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement**

**Version of the Sheet: Ver. 10 (Term: October 1, 2021 – February 22, 2022)**

**Name: Takeshi Enoki**

**Title: GHG Inventory (Institutional Arrangements)**

**Submission Date: February 28, 2022**

**I. Summary**

**1 Progress**

**1-1 Progress of Inputs**

Experts

During the reporting term of this report (October 2021 to February 2022), the JICA Project expert team made no trips to Mongolia due to the coronavirus disease (COVID-19) related lockdowns. Total man months was 3.8 for activities in Japan.

Meetings

On February 28, 2022, the Fourth and final JCC meeting was held. The JCC members welcomed the progress made by the JICA Project members, despite the restrictions and challenges posed by COVID-19 pandemic. The JCC members also welcomed the achievements of the Project and confirming the results of each output. Members also noted some of the challenges and recommendations made by the JICA Project experts with regards to sustaining the outputs of the Project in the future.

Reports

No reports submitted during this reporting term.

The table below shows the inputs from the Japanese side for this reporting term.

Table 1 Overview of inputs for this term

Inputs		Year		2021			2022	
		Month		10	11	12	1	2
<b>Expert</b>								
<b>I n M o n i t o r i n g</b>	1	GHG Inventory (General)	Plan					
			Actual					
	2	GHG Inventory (Institutional arrangements)	Plan					
			Actual					
	3	GHG Inventory (Energy 1)	Plan					
			Actual					
	4	GHG Inventory (Energy 2)	Plan					
			Actual					
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan					
		Actual						
6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan						
		Actual						
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan						
		Actual						
8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan						
		Actual						
9	Project administrative coordination/ training	Plan						
		Actual						
<b>I n J a p a n</b>	2	GHG Inventory (Institutional arrangements)	Plan				17	
			Actual				17	
	3	GHG Inventory (Energy 1)	Plan				21	
			Actual				21	
	4	GHG Inventory (Energy 2)	Plan				11	
			Actual				11	
	5	GHG Inventory (Land use, Land use change and Forestry 1)	Plan				13	
			Actual				13	
	6	GHG Inventory (Land use, Land use change and Forestry 2)	Plan				0	
		Actual				0		
7	GHG Inventory (Land use, Land use change and Forestry 3)	Plan				1		
		Actual				1		
8	GHG Inventory (Land use, Land use change and Forestry 4)	Plan				15		
		Actual				15		
9	Project administrative coordination/ training	Plan				4		
		Actual				4		

**1-2 Progress of Activities**

**A. Overview of activities carried out in this reporting period**

The table below shows an overview of the Project activities carried out during this reporting period.

Table 2 Overview of activities during this reporting period

Sub-Activities	Year	2021			2022																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
		Month	10	11	12	1	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	Plan								Actual							Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	Plan								Actual							Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	Plan								Actual							Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	Plan								Actual							Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	Plan								Actual							Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	Plan	█	█						Actual	█	█					Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	Plan								Actual							Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	Plan								Actual	█	█	█	█	█	█	Activity 1-9: Compile the results of improvement into a report.	Plan								Actual				█	█	█	Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	Plan								Actual				█	█	█	Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.	Plan								Actual							Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	Plan						█		Actual						█	Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	Plan								Actual							Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	Plan								Actual							Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	Plan								Actual							Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	Plan	█	█		█		█		Actual	█	█		█		█	Activity 2-4: Collect data based on the improvement guidance.	Plan	█	█	█	█				Actual	█	█	█	█			Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	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Plan								Actual							Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	Plan								Actual							Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	Plan								Actual	█	█	█	█	█	█	Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.	Plan								Actual				█	█		Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.	Plan	█	█	█	█				Actual	█	█	█	█			Activity 3-8: Compile the results of the improvement into a report.	Plan								Actual					█	█	Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement	Plan								Actual					█	█	Activity 3-10: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	Plan								Actual						
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**B. Output 1**

The JICA Project experts, with the support of the local experts continued and finalized the following activities: verify the compatibility between the data from the Kigali Amendment Ratification Support Project and the data newly collected in this Project and determine whether the data can be used for the BUR2 GHG inventory; Process the data for GHG emission estimation, and explain the method to CCRCC; Support the preparation of a manual to enable the CCRCC and other Mongolian government agencies to follow the data collection methods of the local consultants; develop methodological improvements for other IPPU sectors and draft guidelines for further improvements.

As a result, the following were accomplished in the second cycle of GHG inventory improvement for Output 1:

- The JICA Project experts, with support of local consultant, collected data to update the HFC inventory for years 2016-2020.
- A manual was developed to enable the CCRCC and any other agencies (National Ozone Authority) to sustainable data collection and emission estimation in future
- National Inventory report for the IPPU sector: Using the NIR template developed during the first cycle of inventory improvement, the JICA Project experts and CCRCC experts drafted the IPPU report.
- Technical improvements proposal to improve CO<sub>2</sub> emissions estimation from cement manufacturing (this has implication on NDC monitoring, for the “use fly ash for cement production” action)

**C. Output 2**

The JICA Project experts and CCRCC continued to carry out research on the three priority challenges of the energy sector: No national energy balance tables (EBTs) prepared on a regular basis; The differences between sectoral and the reference approaches; and improvement of method for international aviation bunkers

As a result, the following were accomplished in the second cycle of the GHG inventory improvement for Output 2.

- Energy balance table working group meeting, established under the JICA Project, was held in 2020 and 2021, in addition to several bilateral meetings with energy data stakeholders.
- The JICA Project experts and MEEI/NSO carried out research on existing EBTs , energy data and academic research of Mongolia.
- Based on the existing EBTs, a timeseries was produced for 1990-2018.
- The JICA Project experts, MEEI, NSO, and CCRCC drafted a manual for producing the EBT based on the 2014-2018 EBT to facilitate the sustainability of EBTs in the future.

**D. Output 3**

Based on the literature survey and field surveys carried out from 2018 to 2020, significant progress has been made in developing country specific values for the sector. Parameters for grassland calculation were prepared and compiled, but a time series calculation of GHGs could not be carried out due to the inability to obtain the initially assumed activity data from external institutions. In addition, Mongolia's overall policy is to use the IPCC's GHG inventory software, and since the LULUCF sector of the software does not support the calculation of GHGs above Tier 2, the improved results will not be reflected in the next BUR inventory submission. Moreover, the C/P changed twice during the period, which made it difficult to accumulate knowledge on an ongoing basis, and there was a total of more than one year of absence of the C/P from the fade-out period before retirement to the arrival of the new C/P, which hindered the smooth implementation of activities. In addition, a lot of time had to be spent on the follow-up of the estimation methods based on the IPCC guidelines, and support for the development of higher-level calculation methods in cooperation with the Mongolian side had to be reduced.

As a separate activity, JICA Project experts carried out some hands-on training using the TNTmips software to analyze 12 satellite imageries in Mongolia. This software, along with the use of satellite imageries can allow LULUCF experts in Mongolia to properly monitor the changes in land use and enhance the accuracy of the activity data.

**1-3 Achievement of Output**

The following achievements were made for each output during the reporting term.

**1-4) Report on improvement of priority issues**

Report prepared on the F gas emissions for 2014 to 2020.

**2-4) Achieved (limited)**

A report was drafted explaining the achievements of the research on the energy sector. For priority issue (1), experts compiled data in the form of an energy balance table for the period 1990-2019, and prepared a manual detailing the original data and the process of compilation, thereby building the foundation for developing a sustainable energy balance table creation structure. It is expected that the energy balance table and the manual will be used as a basis for the periodic preparation of energy balance tables. For priority issue (2), the reasons of discrepancy between the sectoral and reference approaches were identified, and it is expected that the discrepancies observed in BUR1 will be eliminated in BUR2. For priority issue (3), CCRCC should continue to work closely with the MCAA and

other relevant stakeholders to obtain missing or alternative data such as historical fuel consumption by domestic and international flights and the number of flights since 2015.

### 3-3) Achieved

Prepared a survey report summarizing the results of grassland-related surveys, a priority issue.

### 3-4) Unachieved

Regarding the results of the grassland survey, which is a priority issue, parameters were developed, but time series calculations were not completed due to the delay in obtaining activity data. In addition, the methodologies that can be input into the software used to compile the GHG inventory are limited, so the calculation results produced this time could not be reflected in the GHG inventory. Therefore, given the ultimate goal of reflecting GHG inventory, it is difficult to conclude that sufficient action has been taken.

## **1-4 Achievement of the Project Purpose**

As described above, 4) Improvement report on improvement of priority issues for the energy sector was drafted during this reporting period. Regarding 5) Improvement research report on improvement of priority issues

## **1-5 Changes of Risks and Actions for Mitigation**

There have been no changes to the risks.

Sustainable funding was an issue from end of 2018 to mid-2019, CCRCC (then ECF) faced challenges accessing GEF funding for the BUR2 preparation, leading to a disruption of work. During this time, the short- and long-term experts took the lead in many of the Project activities. It is expected that this disruption will not be an issue with CCRCC as a state-owned company.

Staff, including the manager and LULUCF expert, moved on to other positions, creating challenges for building technical capacity and continuous work. This has unfortunately been an issue in 2020/2021. The JICA Project experts have taken the lead during the transition times, working with local consultants and counterparts to implement the Project activities.

COVID19 has affected all, but especially many of our counterparts, stakeholders, local consultants, assistants, etc. In addition, the remote approach has made technical work challenging especially work involving gathering many stakeholders and working with large

spreadsheet files. This has affected the efficiency of Project implementation, but the JICA Project experts have taken the lead in cases where counterparts were not available and have held more frequent and longer meetings with counterparts to clarify technical issues.

**1-6 Progress of Actions undertaken by JICA**

None during the reporting term

**1-7 Progress of Actions undertaken by Gov. of Mongolia**

None.

**1-8 Progress of Environmental and Social Considerations**

Not applicable

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction**

Not applicable

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

There have been no changes regarding other donor projects since the previous reporting period.

## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail/Cause**

The causes of delay of work has not changed since the previous reporting period.

#### **a. Delay in Mongolia's BUR/GHG inventory preparation cycle**

At the start of the project, it was envisaged that the ECF would complete the GHG inventory of BUR2 by the end of 2019; however, due to delays in the preparation and submission of the BUR project request by the ECF to the GEF, as well as delays in the data collection process, the GHG inventory of BUR2 is expected to be completed by the end of 2021. As a result, the Mongolian BUR/GHG inventorying cycle does not match the improvement cycle of this Project, but the project's activities were conducted as per the P/O, with two cycles of inventory improvement activities.

The reason for the delay in preparing the BUR project request was due to a series of retirements at ECF and ECF's inability to effectively manage and coordinate multiple tasks.

#### **b. Impact of COVID 19**

As stated above, the JICA Project experts have not been able to travel to Mongolia due to the COVID 19 lockdown.

### **2-2 Action to be taken**

#### **a. Delay in Mongolia's BUR/GHG inventory preparation cycle**

The QA/QC plan, archiving manual, NIR template, etc. developed in the first improvement cycle and the improvement plans planned for the second improvement cycle is expected to be reflected in BUR2, as will the technical improvements proposed, for example, the Fgas emissions, reference/sectoral discrepancy issues, fugitive emissions, harvested wood products.

#### **b. Impact of COVID 19**

The JICA Project experts and ECF have carried out the Project activities by conducting online meetings and workshops. The level of communication between the JICA Project experts and counterparts have gone down due to internet connection issues, change in scheduling, etc. and as a result, the work efficiency has gone down. Still, the JICA Project experts have added information in the meeting materials and provided before the meeting to improve the quality of meetings.



**2-3 Roles of Responsible Persons/Organization (JICA, Gov. of Mongolia, etc.)**

None.

**3 Modification of the Project Implementation Plan**

None

**3-2 Other modifications on detailed implementation plan**

None

**4 Current Activities of Gov. of Mongolia to Secure Project Sustainability after its Completion**

none

**II. Project Monitoring Sheet I & II**     *as Attached*

Project Monitoring Sheet I

Version 10

February 28, 2022

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Implementing Agency: MET (Ministry of Environment and Tourism), ECF (Environment and Climate Fund)

Target Group: ECF (Environment and Climate Fund)


Period of Project: November, 2017~October 2021

Project Site: Ulaanbaatar and other locations as necessary, Mongolia

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
Regularly improved Greenhouse Gas (GHG) inventory is used for the development of mitigation actions planning and monitoring.	The latest version of GHG inventory is utilized for development of Nationally Determined Contribution (NDC)	·National Inventory Report and NDC		no achievements this term	none
<b>Project Purpose</b>					
The GHG inventory is regularly improved with the cooperation of relevant institutions	1) A GHG inventory improvement plan is developed and implemented during each GHG inventory cycle 2) National Manual of procedures for preparation of GHG inventories for Mongolia is approved by MET 3) Contents of the National Manual and the MoU between MET/ECF and data providers are consistent 4) Improvement guidance of priority issues in Energy sector is developed and implemented during each GHG inventory cycle 5) Improvement guidance applicable to priority research issues in LULUCF sector is developed and implemented	1) GHG improvement plan and report on improvement of priority issues 2) National Manual approved by MET 3) National manual and MoU between MET/ECF and data providers 4) Improvement guidance and report on improvement of priority issues 5) Improvement guidance and research report on improvement of priority issues	A: C/Ps trained through the Project do not leave the office in large number B: Political instability/economic crisis that affect the inventory activities do not occur C: NDC is developed in time for the deadline for its submission as per COP decision 1/CP.21	1) The GHG inventory improvement plan was finalized in November 2018. 4) The improvement guidance of priority issues in the energy sector was developed in November 2018. 5) The Improvement Guidance: field survey was completed in June 2019.	none
<b>Outputs</b>					
Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened	1-1) Long list of GHG inventory issues (including institutional and technical) with potential ways of improvement is developed (twice) 1-2) List of priority issues of GHG inventory is developed (twice) 1-3) Improvement method/procedure for the priority issues agreed by the relevant institutions are compiled into GHG inventory improvement plan (twice) 1-4) Report on improvement of priority issues is developed (twice) 1-5) Final draft of National Manual of procedures for preparation of GHG inventories for Mongolia is submitted to Technical and Science Committee of MET	1-1) Long list of issues 1-2) List of priority issues of GHG inventory 1-3) GHG inventory improvement plan 1-4) Report on improvement of priority issues 1-5) Final draft submitted to Technical and Science Committee		all developed with exception of partially developed 1-5	
Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.	2-1) List of priority issues for highly priority theme in Energy sector is developed (twice) 2-2) Improvement method/procedure for the priority issues in Energy Sector agreed by the relevant institutions are compiled into improvement guidance (twice) 2-3) Report on improvement of priority issues in Energy sector is developed (twice) 2-4) Priority issues in Energy Sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (twice)	2-1) List of priority issues 2-2) Improvement guidance 2-3) Report on improvement of priority issues 2-4) Report on improvement of priority issues		all developed	none
Output 3: Capacity to organize issues in the Land Use, Land Use Change and Forestry (LULUCF) sector and systematically improve the inventory is strengthened.	3-1) List of priority research issues for highly priority research theme in LULUCF sector is developed (twice) 3-2) Research method/procedure for the priority issues in LULUCF Sector is compiled into improvement guidance based on the research framework agreed by the relevant institutions (once) 3-3) Research report on improvement of priority issues in LULUCF sector is developed (once) 3-4) Priority research issues in LULUCF sector are addressed through implementation of improvement guidance (※After the determination of priority issues, the verifiable indicators will be considered at the Working Group meeting) (once)	3-1) List of priority research issues 3-2) Improvement guidance 3-3) Research report on improvement of priority issues 3-4) Research report on improvement of priority issues		all developed	

## PM Form 3-1 Monitoring Sheet Summary

Activities	Inputs		Important Assumption
	The Japanese Side	The Mongolian Side	
<p>Activity 1-1: Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.</p> <p>Activity 1-2: Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues</p> <p>Activity 1-3: Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.</p> <p>Activity 1-4: Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.</p> <p>Activity 1-5: Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.</p> <p>Activity 1-6: Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.</p> <p>Activity 1-7: Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.</p> <p>Activity 1-8: Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.</p> <p>Activity 1-9: Compile the results of improvement into a report.</p> <p>Activity 1-10: Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle</p> <p>Activity 1-11: Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.</p> <p>Activity 1-12: Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement</p> <p>Activity 1-13: Identify the gaps in the archiving system and public awareness of GHG inventories and address them.</p>	<p>1) Long term expert •GHG inventory (General)</p> <p>2) Short term experts •GHG inventory (Institutional Arrangements) •GHG inventory (Energy) •GHG inventory (Land use, Land use change and Forestry) •Project administrative coordination</p> <p>3) Workshops</p> <p>4) Training in Japan</p> <p>5) In-country and/or third country training</p> <p>6) Equipment •PC for data management •Other equipments as necessary (The details will be determined through mutual consultation between Mongolian and Japanese sides during the course of the implementation of the Project.)</p>	<p>1) Counterpart personnel</p> <p>2) Office space for the long term expert and short term expert team</p> <p>3) Meeting space</p> <p>4) Operation costs as necessary</p>	<p>A: After submission of BUR, it does not take more than half a year to start next GHG inventory preparation supported by UNEP/GEF</p> <p>B: C/Ps do not leave the office in large number</p> <p>C: Political instability/economic crisis/organizational change that affect the project activities do not occur</p>
<p>Activity 2-1: Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2</p> <p>Activity 2-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.</p> <p>Activity 2-3: Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector</p> <p>Activity 2-4: Collect data identified in Activity 2-3 based on the improvement guidance.</p> <p>Activity 2-5: Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.</p> <p>Activity 2-6: Compile the results of improvements into a report.</p>			<p style="text-align: center;"><b>Pre-Conditions</b></p> <p>A: Necessary C/Ps are assigned prior to the commencement of the Project</p> <p>B: The first BUR is submitted according to the schedule (in June 2017)</p>

<p>Activity 2-7: Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12)</p> <p>Activity 3-1: Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.</p> <p>Activity 3-2: Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1.</p> <p>Activity 3-3: Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.</p> <p>Activity 3-4: Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3</p> <p>Activity 3-5: Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.</p> <p>Activity 3-6: Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.</p> <p>Activity 3-7: Estimate emissions and removals based on the results of Activity 3-5.</p> <p>Activity 3-8: Compile the results of the improvement into a report.</p> <p>Activity 3-9: Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement</p> <p>Activity 3-10: Hold a meeting with relevant institutions and other stakeholders to report on the results of activities based on the improvement guidance. (Combined with Activity 1-12.)</p>		<div style="text-align: center;">  </div> <div style="background-color: yellow; text-align: center; padding: 2px;"> <p><b>&lt;Issues and countermeasures&gt;</b></p> </div> <p>Due to delays in ECF, it took approximately two years since the submission of the first BUR to start next GHG inventory preparation. ECF staff in charge of the AFOLU sector took leave from early 2019 and officially quit in the summer. Two replacement staff were assigned the AFOLU sector but one has quit in August 2019. In addition, the BUR coordinator has left the office in September 2019.</p> <p>Although the BUR submission cycle is no longer in line with the JICA inventory improvement cycle, the Project activities will be carried out as planned.</p> <p>Also, some planned improvements may not be carried out as originally planned, but they will be prioritized in the second improvement cycle.</p>
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Project Monitoring Sheet II

Version 10

Dated February 28, 2022

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Inputs	Year	2017				2018				2019				2020				2021				###	Remarks	Monitoring	
		IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III			Issue	Solution
<b>Expert</b>																									
GHG inventory (General)	Plan																					long term expert			
GHG inventory (Institutional arrangements)	Actual																								
GHG inventory (Energy 1)	Plan																								
GHG inventory (Energy 2)	Actual																								
GHG inventory (LULUCF 1)	Plan																								
GHG inventory (LULUCF 2)	Actual																								
GHG inventory (LULUCF 3)	Plan																								
GHG inventory (LULUCF 4)	Actual																								
Project administrative coordination/ training	Plan																								
	Actual																								
<b>Equipment</b>																									
PC for data management	Plan																							none	none
	Actual																								
<b>Training in Japan</b>																									
Training for Counterpart on GHG inventories in Japan	Plan																					1 week training, as necessary		none	none
	Actual																								
<b>In-country/Third country Training</b>																									
Training for Counterpart on GHG inventories in developing country	Plan																					carried out in 2018		none	none
	Actual																								

Activities	Sub-Activities	Year	2017				2018				2019				2020				2021				###	Responsible Organization		Achievements	Issue & Countermeasures
			IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III		Japan	GOMNG		
<b>Output 0: Hold a kickoff workshop of the project</b>																						JICA	ECF	workshop held	none		
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>																											
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.	○ ○ ○ ○ ○																					JICA	ECF	list of potential issues identified and finalized	none		
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues	○																					JICA	ECF	list of potential issues identified and finalized	none		
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.	○ ○ ○ ○ ○																					JICA	ECF	list of potential issues identified and finalized	none		
1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.	○ ○ ○ ○ ○																					JICA	ECF	long list compiled	none		
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.	○ ○ ○ ○ ○																					JICA	ECF	short list complete	none		
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.	△ ○ ○ ○ ○																					JICA	ECF	Held November 2018	none		
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.	○ ○ ○ ○ ○																					JICA	ECF	Developed and finalized at the workshop held November 2018	none		
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.	△ ○ ○ ○ ○																					JICA	ECF	in progress	none		
1.9 Compile the results of improvement into a report.	○																					JICA	ECF	none	none		
1.10 Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	○																					JICA	ECF	none	none		

1.11 Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.	○					Plan														JICA	ECF	none	none	
						Actual																		
1.12 Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	○					Plan															JICA	ECF	none	none
						Actual																		
1.13 Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	○	○	○	○	○	Plan															JICA	ECF	Manual drafted	none
						Actual																		
<b>Output 2: Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</b>																								
2.1 Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	○	○	○	○	○	Plan															JICA	ECF	identified in 2017	none
						Actual																		
2.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	○	○	○	○	○	Plan															JICA	ECF	identified in 2017	none
						Actual																		
2.3 Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	○	○	○	○	○	Plan															JICA	ECF	Held in conjunction with activity 1.6.	none
						Actual																		
2.4 Collect data based on the improvement guidance.	○	○	○	○	○	Plan															JICA	ECF	in progress. Energy balance table obtained	none
						Actual																		
2.5 Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	○	○	○	○	○	Plan															JICA	ECF	none	none
						Actual																		
2.6 Compile the results of improvements into a report.	○	○	○	○	○	Plan															JICA	ECF	none	none
						Actual																		
2.7 Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	○	○	○	○	○	Plan															JICA	ECF	none	none
						Actual																		
<b>Output 3: Capacity to organize issues in the LULUCF sector and systematically improve the inventory is strengthened</b>																								
3.1 Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.	○	○	○	○	○	Plan															JICA	ECF	identified in 2017	none
						Actual																		
3.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1	○					Plan															JICA	ECF	identified in 2017	none
						Actual																		
3.3 Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.	△	○	○	○	○	Plan															JICA	ECF	workshop held in April 2018. 2nd workshop held April 2019.	none
						Actual																		
3.4 Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	○	○	○	○	○	Plan															JICA	ECF	complete	none
						Actual																		
3.5 Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	○	○	○	○	○	Plan															JICA	ECF	complete	none
						Actual																		
3.6 Hold Working Group meetings to consider the research method, the results, and ways to use the research results to develop parameters and activity data.	○					Plan															JICA	ECF	none	none
						Actual																		
3.7 Estimate emissions and removals based on the results of Activity 3-5.	○	○	○	○	○	Plan															JICA	ECF	none	none
						Actual																		
3.8 Compile the results of the improvement into a report.	○	○	○	○	○	Plan															JICA	ECF	none	none
						Actual																		
3.9 Determine the high priority LULUCF research theme and its priority issues that should be addressed in the further inventory cycle, taking into account the results of improvement	○	○	○	○	○	Plan															JICA	ECF	none	none
						Actual																		
3.10 Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	○	○	○	○	○	Plan															JICA	ECF	none	none
						Actual																		

Project Monitoring Sheet II

Version 10

Dated February 28, 2022

Project Title: Project for capacity development to establish a national GHG inventory cycle of continuous improvement

Inputs		Year																				Remarks	Monitoring						
		2017				2018				2019				2020				2021					***	Issue	Solution				
		IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I						
<b>Expert</b>																													
GHG inventory (General)		Plan																							long term expert				
GHG inventory (Institutional arrangements)		Actual																											
GHG inventory (Energy 1)		Plan																								approximately 1 week a quarter/expert	Due to the coronavirus pandemic, the JICA Project experts have not been in Mongolia since February 2020. The activities have been switched to domestic work.	All work has been done remotely, and the experts have been holding several online meetings/workshops.	
GHG inventory (Energy 2)		Actual																											
GHG inventory (LULUCF 1)		Plan																											
GHG inventory (LULUCF 2)		Actual																											
GHG inventory (LULUCF 3)		Plan																											
GHG inventory (LULUCF 4)		Actual																											
Project administrative coordination/ training		Plan																											
Project administrative coordination/ training		Actual																											
<b>Equipment</b>																													
PC for data management		Plan																								none	none		
PC for data management		Actual																											
<b>Training in Japan</b>																													
Training for Counterpart on GHG inventories in Japan		Plan																								1 week training, as necessary	none	none	
Training for Counterpart on GHG inventories in Japan		Actual																											
<b>In-country/Third country Training</b>																													
Training for Counterpart on GHG inventories in developing country		Plan																								carried out in 2018	none	none	
Training for Counterpart on GHG inventories in developing country		Actual																											
Activities		Year																				Responsible Organization		Achievements	Issue & Countermeasures				
Sub-Activities		2017				2018				2019				2020				2021				***	Japan			GOMNG			
		IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I						
<b>Output 0: Hold a kickoff workshop of the project</b>																													
Output 0: Hold a kickoff workshop of the project		Plan																								JICA	ECF	workshop held	none
Output 0: Hold a kickoff workshop of the project		Actual																											
<b>Output 1: Capacity to regularly and continuously improve the GHG inventory system is strengthened</b>																													
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.		Plan																								JICA	ECF	list of potential issues identified and finalized	none
1.1 Review the current institutional, procedural, and legal arrangements of the GHG inventory and develop a list of issues.		Actual																											
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues		Plan																								JICA	ECF	list of potential issues identified and finalized	none
1.2 Conduct a technical review of the previous inventory (methods, assumptions, availability and appropriateness of activity data/emission factor/other parameters) and develop a list of issues		Actual																											
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.		Plan																								JICA	ECF	list of potential issues identified and finalized	none
1.3 Review the method and results of the uncertainty assessment and key category analysis of the previous inventory and develop a list of issues.		Actual																											
1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.		Plan																								JICA	ECF	long list compiled	none
1.4 Compile the lists of issues developed in Activities 1-1 through 1-3 into a long list and identify potential ways to address each issue.		Actual																											
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.		Plan																								JICA	ECF	short list complete	none
1.5 Determine the high priority issues from the long list developed in Activity 1-4 that can be addressed through the Project.		Actual																											
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.		Plan																								JICA	ECF	Held November 2018	none
1.6 Hold a workshop with relevant institutions (inventory compilers, data providers, technical/scientific experts) to address the issues identified in Activity 1-5 and consider and agree on the improvement method/procedure.		Actual																											
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.		Plan																								JICA	ECF	Developed and finalized at the workshop held November 2018	none
1.7 Develop a GHG inventory improvement plan based on the agreed points in Activity 1-6.		Actual																											
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.		Plan																								JICA	ECF	in progress	none
1.8 Conduct inventory improvement activities (for example, improvement of data coverage, methodology, estimation files, revising methods to incorporate mitigation action monitoring parameters) based on the GHG inventory improvement plan developed in Activity 1-7.		Actual																											

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1.9 Compile the results of improvement into a report.	○					Plan														JICA	ECF	none	none
						Actual																	
1.10 Finalize National Manual of Procedures for preparation of GHG inventories of Mongolia (English, Mongolian) prepared in the previous inventory cycle	○					Plan														JICA	ECF	none	none
						Actual																	
1.11 Revise and develop new Memorandum of Understanding between MET/[ECF] and data providers used in previous inventory preparation as needed.	○					Plan														JICA	ECF	none	none
						Actual																	
1.12 Hold a seminar with relevant institutions and other stakeholders to report on the results of improvement	○					Plan														JICA	ECF	none	none
						Actual																	
1.13 Identify the gaps in the archiving system and public awareness of GHG inventory information and address them as needed.	○	○	○	○	○	Plan														JICA	ECF	Manual drafted	none
						Actual																	
<b>Output 2:Capacity to organize issues in the energy sector and systematically improve the inventory is strengthened.</b>																							
2.1 Determine the high priority Energy sector theme and its priority issues that will be addressed through the Project from the list of issues identified in Activity 1-2	○	○	○	○	○	Plan														JICA	ECF	identified in 2017	none
						Actual																	
2.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the priority issues determined in Activity 2-1.	○	○	○	○	○	Plan														JICA	ECF	identified in 2017	none
						Actual																	
2.3 Hold Working Group meetings with the relevant institutions identified in Activity 2-2 to agree on the basic methodologies and necessary data and a research design to address issues, and compile into an improvement guidance for priority issues of the Energy sector	○	○	○	○	○	Plan														JICA	ECF	Held in conjunction with activity 1.6.	none
						Actual																	
2.4 Collect data based on the improvement guidance.	○	○	○	○	○	Plan														JICA	ECF	in progress. Energy balance table obtained	none
						Actual																	
2.5 Analyze and compile the data collected in Activity 2-4 and organize them in a inventory format based on the improvement guidance.	○	○	○	○	○	Plan														JICA	ECF	none	none
						Actual																	
2.6 Compile the results of improvements into a report.	○	○	○	○	○	Plan														JICA	ECF	none	none
						Actual																	
2.7 Hold a seminar with relevant institutions and other stakeholders to report on the results of activities based on the improvement manual. (Combined with Activity 1-12)	○	○	○	○	○	Plan														JICA	ECF	none	none
						Actual																	
<b>Output 3: Capacity to organize issues in the LULUCF sector and systematically improve the inventory is strengthened</b>																							
3.1 Determine the high priority LULUCF research theme and its priority issues that will be addressed through this Project from the list of issues identified in Activity 1-2.	○	○	○	○	○	Plan														JICA	ECF	identified in 2017	none
						Actual																	
3.2 Identify the relevant institutions (inventory compilers, data providers, technical/scientific experts) in addressing the issues determined in Activity 3-1	○					Plan														JICA	ECF	identified in 2017	none
						Actual																	
3.3 Hold Working Group meetings with the relevant institutions identified in Activity 3-2 to agree on the basic methodologies and necessary data for the particular category, in addition to the research design, and determine the research framework.	△					Plan														JICA	ECF	workshop held in April 2018. 2nd workshop held April 2019.	none
						Actual																	
3.4 Consider the research method/procedure, and compile into an improvement guidance for priority issues of the LULUCF sector based on the research framework developed in Activity 3-3	○	○	○	○	○	Plan														JICA	ECF	complete	none
						Actual																	
3.5 Collect the data needed for estimation of the particular category and organize data into a format appropriate for compiling the inventory, based on the improvement guidance.	○	○	○	○	○	Plan														JICA	ECF	complete	none
						Actual																	





## Annex 9: List of products produced by the Project

1. Inventory report for IPPU sector and QA/QC Plan
2. GHG inventory long list and short list of issues
3. GHG inventory improvement plan
4. GHG inventory improvement report
5. Improvement report for the Energy sector
6. LULUCF Sector improvement guidance
7. Improvement report for LULUCF sector