Final summary report for ICAT China: Outcomes, Lessons Learned, and Recommendations for Future Work

Initiative for Climate Action Transparency - ICAT

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AUTHORS

Xianli Zhu

UNEP Copenhagen Climate Centre

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1 - Summary of the country work

1.1 Project overview

The China ICAT project started in 2019. During April 2019, Henning Wuester, ICAT director, Riccardo De Lauretis from ISPRA, and Xianli Zhu from UNEP CCC made a scoping mission to Beijing. During the mission, the team met the Chinese partner, the Chinese MRV experts, and officials from the Climate Change Department at the Ministry of Ecology and Environment. Based on communication with the Ministry of Ecology and Environment (MoEE), the Climate Change Department of the MoEE was the responsible authority, while the project implementation partner in China was appointed as the National Center for Climate Change Strategy and International Cooperation (NCSC). Ms. Tian Wang from NCSC was appointed as the focal point for all communications under the ICAT project.

The Project Cooperation Agreement (PCA) on the ICAT work between NCSC and UNEP DTU Partnership (UDP, which became the UNEP Copenhagen Climate Centre, UNEP-CCC in March 2022) was signed in November 2019. The project activities were completed in March 2022. Two amendments to the PCA were made. After the COVID-19 pandemic broke out, China adopted the zero-tolerance policy and the country team found it impossible to organize in-person consultation meetings, therefore Amendment 1 was made in July 2020 to change the combination of deliverables for payments, so that the country team could receive payment for the research work, while leaving the consultation workshops for later. The original PCA expiration date was 31 July 2021, due to the COVID-pandemic, the project activities experienced some delays. Therefore, Amendment 2 was made to the PCA to extend the contract to 31 March 2023. Then due to the transfer of the UNEP DTU Partnership to the UNEP Copenhagen Climate Centre, all the old contracts signed by DTU on behalf of UDP were terminated, and a new PCA was signed between UNOPS and NCSC in March 2022, with 31 August 2022 as the expiration date. The Chinese partners finished all the activities and submitted all the deliverables in time, and the project was finished in August 2022.

1.2 Project outcomes, outputs, and deliverables

Three outcomes were agreed for the ICAT China project:

More details about the outcomes, outputs, and deliverables are in the following Table 1.

Table 1. ICAT China Overview – Outcomes, Outputs, and Deliverables.

Outcome 1	**Outcome 1: Gap analysis of transparency rules, including sorting out the status of MRV, comparing rules to identify gaps and obstacles, and proposing sustainable institutional arrangements to support high-quality compliance, including inter-sectoral cooperation mechanisms, technical support systems, and working mechanism program.**
Output 1.1	**Handbook for ministries to understand the MPGs**
Deliverable 1	*MPG Handbook for China*

Output 1.2	**Gap analysis report and recommendations, including options for inter-sectoral cooperation mechanisms, and the provision of technical support**
Deliverable 2	*Gap analysis report and recommendations, including options for inter-sectoral cooperation mechanisms, technical support*
Output 1.3	**Consultation workshop among stakeholders**
Deliverable 3	*Consultation workshop*
Deliverable 4	*Final document of gap analysis report and recommendations*
Outcome 2	**Inventory Reporting Guide Update Gap Analysis (Guide on the 2006 inventory guidelines and further updates, and gap analysis). Scoping study on the transition from 1996 to the 2006 IPCC guidelines of the GHG inventory report, including identifying new sources of emissions, data collection mechanisms that need to be established (considering synergies with pollutant reductions), country-specific factors may need to be updated, and analysis of the impact of emissions.**
Output 2.1	**Comparison with the 2006 guidelines and taking into account subsequent updates**
Output 2.2	**Gap analysis at sectoral level to identify new sources of emissions, data collection mechanisms that need to be established, country-specific factors that may need to be updated applying new guidelines by China**
Deliverable 5	*Gap analysis report using 2006 IPCC guidelines*
Output 2.3	**Recommendations for data collection mechanism**
Deliverable 6	*Draft document of recommendations for data collection mechanism*
Output 2.4	**Consultation among stakeholders on establishing data collection system**
Deliverable 7	*Consultation workshop*
Deliverable 8	*Final document of recommendations for data collection mechanism*
Outcome 3	**Improving the MRV for non-CO2 emissions, especially methane emissions**
Output 3.1	**Status report on MRV for methane emissions for energy sector, including coordinating entities, data collection mechanisms, and monitoring practice at enterprise level**
Deliverable 9	*Status report on MRV for methane emissions for energy sector*
Output 3.2	**Status report on MRV for methane emissions for agricultural and waste sector, including coordinating entities, data collection mechanisms, and monitoring practice at enterprise level**
Deliverable 10	*Status report on MRV for methane emissions for agricultural and waste sector*
Output 3.3	**MRV standards for methane emissions in energy sectors, including monitoring and statistic standards and methodologies for coal and oil/gas industries**
Deliverable 11	*Draft monitoring and statistic standards and methodologies for coal and oil industries*
Output 3.4	**Recommendation for improving the MRV for non-CO2 emissions, especially methane emissions**
Deliverable 12	*Consultation workshop*
Deliverable 13	*Recommendation for improving the MRV for non-CO2 emissions*

Outcome 1: Gap analysis of transparency rules, including sorting out the status of MRV, comparing rules to identify gaps and obstacles, and proposing sustainable institutional arrangements to support high-quality compliance, including inter-sectoral cooperation mechanisms, technical support systems, and working mechanism program.

- **Deliverable 1: Handbook in Chinese for ministries to understand the MPGs**. In 2018, the Katowice Climate Change Conference adopted the "Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement" (the "MPGs") as the implementation rules, formally formed the post-2020 Enhanced Transparency Framework (ETF). The ETF sets new requirements for parties' relevant information reports, technical reviews and multilateral assessments. It is conducive to improving the quality of Parties' compliance reports, monitoring and promoting the performance of treaty obligations, as well as enhancing mutual trust in multilateral mechanisms of global climate governance. Based on an English publication "Unfolding the reporting requirements for Developing Countries under the Paris Agreement's: Enhanced Transparency Framework" by the UNEP-CCC, the Chinese team translated it into Chinese and made some revisions to the Chinese national circumstances. This deliverable is a handbook to explain the MPGs to relevant Chinese line ministries.
- **Deliverable 2: Gap analysis report and recommendations, including options for inter-sectoral cooperation mechanisms, technical support**. By comparing current practice and new MPG rules, this report proposed tasks that need to be conducted. Generally speaking, it is highly recommended to conduct capacity building for domestic inventory experts to get familiar with the new MPGs. On inventory, it is necessary to further improve the basic inventory data collection mechanism, coordinate various departments to regularly provide basic data required for inventory, standardize the management of the inventory preparation process. On NDC tracking progress, it is necessary to strengthen the participation of various departments and improve technical capabilities and strengthen methodological research on the calculation of emission reductions for the effects of policy measures and the prediction of greenhouse gas emissions. On adaptation, it is recommended to carry out research on the monitoring and evaluation methodology and indicator system of adaptation actions, to establish and improve methodology and information reporting system related to adaptation actions. On support needed and received, it is recommended to conduct research on the definitions, assumptions, and methodology and to establish an information reporting system related to climate change support. Finally, on technical expert review (TER) and facilitative multilateral consideration of progress (FMCP), it is necessary to clarify the responsibility of various departments and institutions involved in the preparation of the report and to develop a database supporting international expert review to store information during the review process.
- **Deliverable 3:** Consultation workshop. On 19 Oct 2021, under the support of ICAT, NCSC organized a Climate Action Transparency MPG training seminar in Beijing. The seminar was a hybrid of online and in-person participation. In addition to the climate officials from the MoEE, officials and experts from 23 other line ministries and national institutions related to NDC implementation and climate action MRV attended the seminar. The NCSC experts explained the content of the MPG handbook, and each line ministry/national institution provided their advice and recommendations on how to comply with the ETF requirements under the Chinese national circumstances.
- **Deliverable 4:** Final document of gap analysis report and recommendations. This

deliverable is a further revised version based on Deliverable 2, based on extensive stakeholder consultation.

Outcome 2: Inventory Reporting Guide Update Gap Analysis (Guide on the 2006 inventory guidelines and further updates, and gap analysis). Scoping study on the transition from 1996 to the 2006 IPCC guidelines of the GHG inventory report, including identifying new sources of emissions, data collection mechanisms that need to be established (considering synergies with pollutant reductions), country-specific factors may need to be updated, and analysis of the impact of emissions.

- **Deliverable 5: Gap analysis report using 2006 IPCC guidelines**. This report briefly compares the 1996 IPCC Guidelines for National Greenhouse Gas Inventories (hereunder referred to as "1996 IPCC Guidelines") and 2006 IPCC Guidelines for National Greenhouse Gas Inventories (hereunder referred to as "2006 IPCC Guidelines") and assesses China's gaps in fully applying the 2006 IPCC Guidelines. Following the 1996 IPCC Guidelines structure, namely Energy, Industrial Processes and Product Use (hereunder referred to as "IPPU"), Agriculture, Land Use and Change and Forestry (hereunder referred to as "LUCF"), Waste, this report describes the difference between the two guidelines in scoping, calculating and reporting the GHG emissions from different sectors of the economy. Before identifying the obstacles to the IPCC Guideline transition for China's GHG inventory work, this report also identifies the potential data resources and new on-site investigating activities when adopting the 2006 IPCC Guidelines.
- **Deliverable 6: Draft document of recommendations for data collection mechanism.** This Research Paper on Data Collection Mechanism is to support the data collection activities, provide specific data collect suggestions in compiling China's National Greenhouse Gas Inventories by 2006 IPCC Guidelines. One of the initial steps is to identify current obstacles of gathering activity data and emission factors that fit the new guidelines. Therefore, based on the 1996 IPCC Guidelines structure, namely Energy, Industrial Processes and Product Use (here-under referred to as "IPPU"), Agriculture, Land Use and Land-use Change and Forestry (LULUCF), Waste, this paper briefly analyses emerging challenges and sets out next steps for data collection of each sector. Overall, current obstacles to transition to new guidelines include data missing for new categories, data inconsistency among different agencies, parameter missing for higher tier methods, as well as investigation insufficient under the current system. Data collection methods identified in this paper include not only primary data of specific investigation but also secondary data collection from government agencies and research institutions.
- **Deliverable 7: Consultation workshop.** On 20 May 2021, under the support of ICAT, NCSC organized on consultation workshop on applying the IPCC Guidelines for National GHG Inventory Preparation. The workshop combined on-line and in-person participation. From the Chinese side, Ms Ding Ding, Director of the Climate Change Department of MoEE attended the meeting. Other Chinese participants were mainly the MRV experts from various Chinese government agencies and national institutions. Representatives from ICAT Secretariat, ISPRA, and UNEP-CCC also attended this meeting online in the afternoon. The Chinese participants also had a morning session for internal discussion.
- **Deliverable 8: Final document of recommendations for data collection mechanism**. This report is a further revised version of Deliverable 6 based on extensive stakeholder consultation.

Outcome 3: Improving the MRV for non-CO2 emissions, especially methane emissions.

- **Deliverable 9: Status report on MRV for methane emissions for the energy sector,** including coordinating entities, data collection mechanisms, and monitoring practices at the enterprise level.

  Based on a brief introduction to the overall situation of methane emission in China's energy activities, this deliverable focuses on the status on MRV for fugitive emissions of methane from energy sector. From the two fields of coal mining and oil and gas system, there has been giving a deep analysis which presents the methane emission sources and emission mechanism. At the national level, the report contains the methodology for methane emission accounting of coal mining and oil and gas systems in national greenhouse gas inventories according to the Revised 1996 IPCC Guidelines and the 2006 IPCC Guidelines, and the methodology of practical application in the national greenhouse gas inventories according to China's Second National Communications on Climate Change and China's Third National Communications on Climate Change.
- **Deliverable 10: Status report on MRV for methane emissions for agricultural and waste sector, including coordinating entities, data collection mechanisms, and monitoring practice at enterprise level.**

  Similar to deliverable 9, this deliverable provides an overall assessment of MRV for methane emissions for agricultural and waste sectors based on the emission mechanism and current trend. At the national level, the report contains the methodology for methane emission accounting in national greenhouse gas inventories according to the Revised 1996 IPCC Guidelines and the 2006 IPCC Guidelines, and the methodology of practical application in the national greenhouse gas inventories according to the China's Second National Communications on Climate Change and the China's Third National Communications on Climate Change. It also provides monitoring methods and practices at the enterprise level.
- **Deliverable 11-1 and 11-2: Draft monitoring and statistic standards and methodologies for coal and oil industries**

  At the enterprise level, China has formulated and issued the guidelines for accounting and reporting of greenhouse gas emissions for coal production enterprises and oil and gas production enterprises during the 12th Five Year Plan period. The guidelines both state the accounting method and selection of activity data and emission factors for methane emissions from coal mining and oil and gas systems but may encounter some problems and constraints in a specific practice. Based on the current practice and previous analysis, these two deliverables revise the current guidelines and formulate an updated version which could be further used by enterprises directly.
- **Deliverable 12: Consultation workshop report**

  Based on the previous work, we organized the "Methane Emissions MRV workshop" to better support the climate change authorities in preparing the Methane National Action Plan. The workshop invited the Department of Climate Change and relevant experts to discuss the international experience of methane emission MRV, domestic advantages and disadvantages, and suggestions for the next step, to form a policy recommendation report for government departments and provide important information for the next stage of research and formulation of the "Methane National Action Plan" and the development of methane emission control work.
- **Deliverable 13: Recommendation for improving the MRV for non-CO2 emissions**

Finally, this deliverable provides suggestions for further optimization and improvement of the MRV system for fugitive emissions of methane from the energy sector in the future.
The key suggestions encompass the following:

Propose a methodology for local emission factor measurements.
Enhance the granularity of activity data and adopt the tier 3 approach, which relies on detailed facility or equipment statistics.
Elevate monitoring capabilities through facility-based methods, meteorological stations, or meteorological satellites.
Revise the MRV guidelines at the enterprise level to align with best practices.

- **ICAT China Final workshop.** On July 22, 2022, the final workshop of ICAT-China project was organized, hosted by NCSC. Wang Tie, Deputy Director of the Department of Climate Change of the Ministry of Ecology and Environment, and Henning Wuester, Director of the ICAT Project, attended the meeting and provided guidance and comments. Chinese experts from National Climate Strategy Center, Chinese Academy of Agricultural Sciences, Tsinghua University, Chinese Academy of Environmental Sciences presented the key findings from the 3 outcomes and 13 deliverables. Foreign experts from ICAT Secretariat, United Nations Environment Programme (UNDP), Italian National Institute for Environmental Protection and Research (ISPRA) attended the workshop and introduced ICAT toolbox and methane MRV experience. All participants congratulated the conclusion of ICAT-China project and also discussed the further collaboration opportunities and possibility of Phase 2 project.

2 Lessons learned and best practices

2.1 Technical support from UNEP-CCC and ISPRA

In this project, UNEP DTU Partnership (UDP, which became UNEP-CCC in March 2022) and ISPRA are the international implementation partners with their primary role being to provide international technical support.

The technical support from UDP/UNEP-CCC was provided in three forms: 1) project management, including drafting and signing, payment, amendments, as well as progress monitoring and reporting to ICAT Secretariat; 2) shortly after UNEP-CCC developed a guidebook on the Enhanced Transparency Framework in 2019, "Unfolding the reporting requirements for Developing Countries under the Paris Agreement's: Enhanced Transparency Framework". The Chinese project team translated this 74-page publication into Chinese in the early phase of the project, to fully understand the ETF requirements under the Paris Agreement; 3) attending online workshops and reviewing draft deliverables under the project.
The technical support from ISPRA mainly included online discussions at two capacity-building workshops, answering inquiries on how to follow the ETF in practice, and sharing information and

materials.

2.2 Lessons learned and best practices

1. Lesson 1 - Impacts of the COVID-19 pandemic

Due to restrictions on international travel and face-to-face meetings, the international partners and the Chinese project team only met once during the entire project period; the only mission and in-person meeting happened half a year before the project activities started. This made it impossible for the international experts to participate in the consultation meetings and technical discussions among the Chinese experts and project team. The two online workshops lasted half a day, primarily because of the significant time zone disparity (6 hours in summer, and 7 hours in winter) difference between China, Denmark, and Italy. Despite the improvement in online meeting technologies, such brief and online meetings were less effective than the multi-day in-person meetings, that used to take place prior to the COVID-19 pandemic.

2. Lesson 2 - Different expectations on the deliverables of technical advice studies and language barriers

ICAT China aimed at providing technical capacity building and carrying out studies to advice the Chinese government on how to comply with the ETF requirements under the Paris Agreement. In China, although the government often funds research activities to support its policy making, the findings of such research activities are rarely published. Instead, the relevant government agencies are considered the only target audiences.

With such a mindset, the Chinese project partners insisted that the Chinese government authorities, especially the Climate Change Department of MoEE, as the main government agencies in charge of climate change policy-making, negotiation, and MRV, are the targeted audience of the ICAT deliverables. All their deliverables are prepared in Chinese, with each report or deliverable containing onlya short summary. This approach poses a challenge for ISPRA, as they lack personnel proficient in Chinese, thus hindering their ability to comprehend the in-depth content of these reports for review. Additionally, this limitation hampers the broader dissemination of the project's findings and results beyond the limited group of policymakers in Beijing

Even though many attempts were made to seek resource allocation from ICAT for translating the key project deliverables into Chinese, the idea never materialised, and all the deliverables remained in Chinese.

3. Lesson 3 – delays due to institutional changes

During the implementation period of ICAT China project, two institutional changes caused some delays to the various activities. The first institutional change was the transfer of the Climate Change Department from the National Development and Reform Commission (NDRC) to the Ministry of Ecology and Environment. This institutional transfer caused changes in officials, caused a lack of response to international communications, and delayed the project inception process.

Another institutional change was the transfer of UDP to UNEP-CCC. Due to the transfer, UNEP terminated all the contracts signed by DTU on behalf of the UNEP DTU Partnership; UNOPS, as the new host of UNEP-CCC, signed new contracts with relevant partners to replace the old ones. Such a transfer turned out to be slow due to the time-consuming process of contract and funding transfer from DTU to UNOPS, and the lengthy procedures of contract approval and signing in UNEP and UNOPS. Even though the ICAT China was close to completion, it still took months to get the new contract in place.

4. Good practice 1 – country-driven approach in project implementation

The budget of the ICAT China project was 250,000 USD, double the normal amount of the average country budget under ICAT. The three outcomes covered 13 deliverables, also much longer than that for most ICAT countries. The ICAT China team was able to successfully finish all activities under the original project deliver all the activities and submit high-quality deliverables in the 2 years 9 months.

One important reason was that the China ICAT project directly involved the key MRV experts who closely participated in international climate negotiations and China's inventory work, and the preparation of other national reports to the UNFCCC. Therefore, they could quickly identify the gaps and difficulties China faced in meeting the ETF requirements and assess the feasibility and applicability of various solutions under the Chinese national circumstances. When the UNEP-CCC provide the guiding publication on the ETF requirements, they could translate the publication into Chinese and use the publication to guide the subsequent activities under ICAT China. When ISPRA MRV experts shared the good practices of Italy and other EU countries in addressing those gaps and difficulties, the Chinese experts could easily understand the suggestions, discuss how to apply them in the Chinese context and include them in the research report and policy recommendations.

5. Good practice 2 – turning policy deliverables directly into national statistical standards for GHG MRV

Output 3.3 of the ICAT China project includes two draft national standards, *Proposed GHG monitoring and statistic standards and methodologies for coal industries* and *Proposed GHG monitoring and statistic standards and methodologies for oil industries*. These draft standards were prepared by top experts on the topics, based on consultations with key industrial stakeholders, and submitted by the think-tank associated with the Chinese national authority on climate change negotiation and policy making. They provided solid basis for government policymaking on the topics and could easily turn into national standards and shorten the policymaking process.

3. Recommendations for future work

3.1 Attention to non-GHG emissions, especially methane emissions

Most of the existing ICAT tools and guidebooks focus on CO2 emissions, and there was no technical supporting materials for the MRV of non-GHG emissions, especially methane emissions.

Due to the high global warming potential of methane, reducing methane emissions is a low-hanging fruit for climate change mitigation. During the ICAT China project implementation, the Chinese project team found that the existing ICAT tools and guidebooks did not meet their special needs and had to rely on their own research and non-ICAT guidance and publications to support their work.

3.2 Adjusting the ICAT support focuses based on country needs

Both ICAT and the ICAT Chinese partners expressed interest in having a Phase 2 of ICAT in China.

However, the Chinese government, through the Chinese partners, indicated that they would like to continue focusing on non-CO2 GHG emission MRV in future ICAT support. Despite the efforts made by ICAT, UNEP_CCC and ISPRA to elucidate the extensive array of tools and guidebooks that ICAT had developed, the Chinese partners displayed limited interest. Consequently, no tangible steps have been taken thus far to kickstart Phase 2 of ICAT in China.