

## Submission on methodological issues under the Paris Agreement for transparency

December 2019

### India on behalf of the Like-Minded Developing Countries (LMDC)

The SBSTA invited Parties to submit their views on the matters related to the methodological issues under the Paris Agreement, including on: experience with using the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, the common reporting format, the transition to the *2006 IPCC Guidelines* and countries' experience with that transition, and the development of country-specific tools for facilitating greenhouse gas inventory reporting; common tabular format tables for tracking progress in implementing and achieving nationally determined contributions; tables for reporting on support needed and received, and support mobilized; approaches to operationalizing the flexibility for those developing country Parties that need it in the light of their capacities, as defined in decision 18/CMA.1.

In this submission, we first would like to propose overall consideration on operationalizing the flexibility and workplan, and then provide specific views on development of common tabular format (CTF) for inventories, NDC and support.

#### I. Overall consideration

##### 1. Views on operationalizing the flexibility

Paragraph 89 of Decision 1/CP.21 clearly states that developing country Parties shall be provided flexibility on level of detail of reporting. Therefore, when submitting reports and tables, developing countries Parties shall be provided flexibility on level of detail of reporting while following the modalities, procedure and guidelines (MPGs). Moreover, paragraph 92 (a) of decision 1/CP.21 requests that the MPGs to take into account the importance of improving reporting over time. Although the reporting tables are *common*, flexibility shall be provided for the developing countries when reporting, which means that *common tables come with flexibility options for those developing countries that need it in light of their capacities*.

When reporting using common tables, the flexibility options provided for developing countries that need it in light of their capacities should include, inter alia:

- Being encouraged, rather than being required mandatorily, to report using the very detailed reporting tables, such as sectoral background data for GHG inventory;
- Having the option not to provide the table when the information is only encouraged to be provided under the MPGs (such as projections), instead of leaving the whole table blank;
- Being allowed to delete the rows or columns including the information which

only encouraged to be provided under the MPGs (such as types of greenhouse gases, projection year or estimates of expected and achieved GHG emissions reductions), instead of leaving the rows or columns blank;

- Developing countries could use a new notation key “FX” in specific cells when reporting the information in the common tabular format in accordance with the flexibility provisions in MPGs.

All of the above should be consistent with the appropriate legal requirement (shall, should, encouragement, etc.) as defined in the MPGs.

## 2. Views on work plan

During SBSTA 51, focused discussion on operationalizing flexibility should be arranged, in order to avoid repetitive discussions under different sub-agenda items. For inventory tables, the discussion can start from summary tables and then on what information is needed in a tabular format besides GHG sources and sinks. For tables on tracking progress of NDC, the discussion can continue on policies and measures tables and projection tables, noting however that the formats for all tables should be agreed together at the end. The discussion on FTC tables could be based on the draft tables developed by co-facilitators. It is also expected to make some progress on training programme and outlines, and strive to reach general consensus or develop clear options. This session should also discuss workplan for next year, including whether the submissions, workshops or technical paper are needed.

As for the time arrangement, the clashes with other transparency-related agenda items should be avoided. In particular, no negotiation sessions should be arranged during multilateral assessment and facilitated sharing of views. Moreover, clashes between the Paris Agreement Article 6 negotiations and transparency-related agenda items should be avoided to the extent possible, especially for issues related to corresponding adjustments.

In addition, this session at COP25/CMA2 should also allocating some time for special information exchange sessions so that developed and developing countries to share their experience in using the IPCC 2006 guidelines, the CRF tables, and other reporting tools under the Convention and Kyoto Protocol reporting processes.

## **II. Tables for greenhouse gas inventory**

Developing countries were required to only provide summary tables in the past, which is significantly different than developed countries who have been using detailed CRF tables for more than 20 years. Till now, developing countries generally still lack sufficient capacity to provide detailed reporting. Respecting this fact, the requirements for developing countries should be undertaken in a progressive manner, and provide time for developing countries to first use general and easy tables and then move to

more detailed and difficult ones over time. In the meantime, capacity building for developing countries in reporting tables or using reporting tools and support for implementation of the required infrastructure to be able to use such complicated tables should be provided to accelerate this process.

Based on current practice, the common tabular formats for inventory could include following: summary tables, cross-cutting tables, sectoral summary tables and sectoral background tables. When reporting, each Party shall provide summary tables, cross-cutting tables and sectoral summary tables (see Annex 1 of this submission for the suggested table formats), provided that developed country Parties will continue to use the CRF tables for their sectoral reporting. Additionally, some tables, such as tables for indirect gases, should not be mandatory. And due to the fact that developing countries are lacking capacities in reporting sectoral background tables, flexibility should be provided for developing countries in reporting sectoral summary and background tables.

### **III. Common tabular format tables for tracking progress in implementing and achieving nationally determined contributions**

Paragraph 77 of MPGs clearly asks each Party to provide the information in a structured summary to track progress of NDC. The format of structured summary should be decided by the Party, including using graphs, tables, textual description, or referring to some paragraphs or parts in the BTR in a structured manner. The key is to effectively display the progress of self-determined indicators, so the formats of display should be in accordance with the types of indicators.

The table of policies and measures have reached some preliminary consensus during SBSTA 50. Parties could further discuss based on the informal note of co-facilitators. The non-mandatory provisions in MPGs, such as paragraph 83 (a)-(c), or expected and achieved GHG emissions reductions for developing countries under paragraph 85, should be considered differently when developing the tables so that Parties can choose to include or not include those columns when using the table to report.

Regarding the table of projection, since developing countries have flexibility in reporting this information or in reporting years and methodologies, developing countries should be allowed to not report this table or adjust the rows or columns if they wish to report.

### **IV. Tables for reporting on support provided and mobilized, and support needed and received**

For information on support provided or mobilized, common reporting tables should be designed in accordance with paragraph 123, 124, 125, 127, and 129 of MPGs. Developed countries should continue to provide the information as required in

19/CP.18 and 9/CP.21 in addition to other information required in the MPGs, and to provide additional information in documentation box as required in paragraph 121 of MPGs. The principle of no-backsliding shall be respected in the design of these tables.

For information on support needed and received, the common reporting tables should be designed in accordance with paragraphs 133, 134, 136, 138, 140, 142, and 144 of MPGs. Since it is not a mandatory reporting requirement for developing countries, developing countries could provide part of the tables when reporting. Suggested formats for these tables are in Annex 2 of this submission.

In this submission, we also would like to share some experience on using tables in reporting support needed and received in developing countries' BURs. For example, in China's second BUR, there are four tables in reporting financial support received including *Financial Support Received by China within the Financial Mechanism under the Convention*, *Grants Received by China from Multilateral Institutions*, *Concessional Loans Projects Received by China from Multilateral Institutions*, *Supports Secured by China from Bilateral Cooperation Programs for Addressing Climate Change*. Each table similarly includes four columns: project name, finance source, project amount, and project cycle, as shown below:

**Table 4-1 Financial Support Received by China within the Financial Mechanism under the Convention (10,000 dollars)**

	Project Name	Finance Source	Project Amount	Sub-project Cycle
1	Joint Demonstration Project of Fuel Cell Vehicles of China	GEF	823	2016-2020
2	Project on Advancing Transformation of Semiconductor Lighting Market and Promoting Energy-saving and Environment-friendly New Light Sources	GEF	624	2016-2020
3	Demonstration Project on Cooperation of Green Logistics Platforms of Zhejiang	GEF	291	2016-2020
4	Promote the Project to Develop Clean, Green and Low-carbon City of China through International Cooperation	GEF	200	2016-2017
	.....			

**Table 4-2 Grants Received by China from Multilateral Institutions (10,000 dollars)**

	Project Name	Finance source	Finance Amount	project Cycle
1	Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing-Tianjin-Hebei Region	ADB	50	2016-2018
2	Promoting Partnerships for South-South Cooperation	ADB	40	2015-2019
3	Developing Cost-Effective Policies and Investments to Achieve Climate and Air Quality Goals in the Beijing-Tianjin-Hebei Region	ADB	83	2016-2018
4	Shaanxi Energy Efficiency and Environment Improvement Financing Program	ADB	60	2015-2016

**Table 4-3 Concessional Loans Projects Received by China from Multilateral Institutions (million dollars)**

	Project Name	Finance Source	Finance Amount	Project Cycle
1	Ningbo Sustainable Urbanization Project	WB	150	2016-2021
2	Hebei Air Pollution Control Project	WB	500	2016-2018
3	Huaxia Bank Air Pollution Control Project	WB	500	2016-2022
4	Hebei Clean Heating Demo Project	WB	100	2016-2021

**Table 4-4 Supports Secured by China from Bilateral Cooperation Programs for Addressing Climate Change (10,000 dollars)**

	Project Name	Finance Source	Finance Amount	Project Cycle
1	Sino-Swiss Low Carbon Cities Project	Switzerland	693	2015-2019
2	EU-China Emission Trading Capacity Building Project	European Union	534	2014-2017
3	Europe-China Eco-Cities Link (EC-LINK) Project	European Union	999	2014-2017
4	Chongqing & Guangdong Low-Carbon Product Certification Project	European Union/ UNDP	96	2013-2014

In addition, China also included tables of prioritized mitigation and adaptation technology needs, as shown below:

**Table 4-5 List for Prioritized Mitigation Technology Needs**

Sectors/ Industries	Technology type	Core technology and description
Energy	1,000 MW high-parameter & large-capacity ultra super critical power generation technology	Design and manufacturing of associated boilers and steam turbines: the main technical equipment includes high-parameter and large-capacity ultra super critical boilers and steam turbines. Boilers can provide high-efficiency working substance with steam pressure higher than 30 MPa and temperature higher than 620 °C.
	Combined gas and steam cycle power generation technology (150 MW level)	Key components including high-temperature components, controlling systems and rotors: the power generation system adopts lower heating value (LHV) gas in a combined cycle power plant (CCPP), such byproduct gases as those from blast furnaces of iron and steel enterprises are transferred through the iron and steel energy pipe network, purified with a dust collector, pressurized, and mixed with the air that is purified with air filter and pressurized, before entering into the combustion chamber of the gas turbine for mixed combustion; high temperature & high pressure flue gas expands and works in the gas turbine, drives the air compressor and the generator for single-cycle power generation.
	Shale gas development technology	Equipment and technology in shale gas development: CO <sub>2</sub> -ESGR technology refers to the injection of CO <sub>2</sub> , which features great flowing through shale reservoir pores and better absorption into shale matrix, into the shale reservoir to expel and replace shale gas. The technology not only improves shale gas yield and daily production, but stores CO <sub>2</sub> in the reservoir.
	Nuclear power generation technology	By research and development of the large forgings for key nuclear power equipment and key parts, such key technology for the melting, forging, machining and bending of large stainless steel forgings are to be grasped.
	Steam turbine systems retrofit	Advanced steam turbine design (including blade profile and stage number) is employed to improve the structure of the steam turbine, the tightness of its cylinders and its efficiency.
		.....

**Table 4-6 Demand List for Prioritized Adaptation Technologies Needs**

Industries	Sub-industry	Core technology and description
Agricultural Forest and Ecological Environment	Agricultural Water-saving Technology	Degradable mulch production technology: degradable moisture conservation materials include photo degradable and biodegradable mulch. Degradable mulch is mainly used to raise the ground temperature, store water and conserve moisture, reduce the evaporation of soil water, improve the physico-chemical properties of soil, suppress weeds and increase plant photosynthetic efficiency, thus improving the survival rate of afforestation and promoting the growth of saplings.
	Selection and Breeding of Stress-resistant Agricultural Varieties	Technologies including insect-resistant cotton, illness-resistant rice, scab-resistant wheat and drought-resistant wheat and corns: These technologies are about designing and building new varieties with specific traits by virtue of identified genes. For example, the toxin genes of resisting <i>helicoverpaarmigera</i> can be implanted into the genome of cotton seeds to produce cotton with insect resistance. Peasants can apply less pesticide or none while planting the variety of cotton, which not only protects the environment but also increase peasants' income.
	Forestry Ecosystem	Develop climate-adaptive measures on forest management by applying landscape disturbance model LANDIS-II, and set different adaptive forest management plans for forest felling and fell application: (1) Scale control measure. Form gaps in different spatial position and scales by felling, with the purpose of diversifying the stand age structure and species and improving the forest's resistance to climate change. (2) Stand Age Control Measure. Fell the mature stands to boost and accelerate their update on the progress towards climax, so as to improve the forest's resistance to influences brought by climate change. (3) Composition Control Measure. Decide whether a variety is felled or retained based on its response to climate change and the simulated result of management value. (4) Forest management technologies considering both forest products and service supply ability: Apply the process-based forest model LandClim to analyze the forest dynamic and its goods and services function under different climate change and management scenarios, the intrinsic connection between wood production and forest diversification as well as the most valuable capability for goods and services.
	Water Source Engineering Construction	Solar photovoltaic water lifting, irrigation and water saving technology: photovoltaic water lifting is about converting the solar radiant energy into electric energy which drives water pump for irrigation. Solar photovoltaic water lifting system is comprised of photocell, controller and solar photovoltaic water pump.

## Annex 1: Suggested format for GHG inventory tables

### I. Summary tables of GHG sources and sinks

#### 1. Mandatory gases (in kt)

The row of this table (as shown in the left column) was designed in accordance with IPCC categories, as energy sector use three-level titles and other sectors use two-level titles. The columns are mandatory gases in accordance with the provisions of MPGs, including the flexibility provisions provided for developing countries, as shown below:

GREENHOUSE GAS SOURCE AND SINK CATEGORIES <sup>1</sup>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	.....
<b>Total national emissions and removals</b>				
<b>1. Energy</b>				
A. Fuel combustion				
1. Energy industries				
2. Manufacturing industries and construction				
.....				
B. Fugitive emissions from fuels				
.....				

<sup>1</sup> In accordance with paragraph 48 of MPGs, developing countries Parties shall be provided for flexibility in reporting gases.

C. CO <sub>2</sub> Transport and storage				
<b>2. Industrial processes and product use</b>				
.....				
<b>3. Agriculture</b>				
.....				
<b>4. Land use, land-use change and forestry</b>				
.....				
<b>5. Waste</b>				
.....				
<b>6. Other (please specify)</b>				
<b>Memo items:</b>				
.....				

## 2. Mandatory gases (in CO<sub>2</sub>eq)

The row of this table (as shown in the left column) was designed in accordance with IPCC categories, as energy sector use three-level titles and other sectors use two-level titles. The columns are mandatory gases in accordance with the provisions of MPGs, including the flexibility provisions provided for developing countries, as shown below:

<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES<sup>2</sup></b>	<b>CO<sub>2</sub></b>	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>	<b>.....</b>	<b>Total</b>
<b>Total national emissions and removals</b>					
<b>1. Energy</b>					
A. Fuel combustion					
1. Energy industries					
2. Manufacturing industries and construction					
.....					
B. Fugitive emissions from fuels					
.....					
C. CO <sub>2</sub> Transport and storage					
<b>2. Industrial processes and product use</b>					
.....					
<b>3. Agriculture</b>					
.....					
<b>4. Land use, land-use change and forestry</b>					
.....					
<b>5. Waste</b>					
.....					
<b>6. Other (please specify)</b>					
<b>Memo items:</b>					
.....					
<b>Total CO<sub>2</sub> equivalent emissions without land use, land-use change and forestry</b>					
<b>Total CO<sub>2</sub> equivalent emissions with land use, land-use change and forestry</b>					

<sup>2</sup> In accordance with paragraph 48 of MPGs, developing countries Parties shall be provided for flexibility in reporting gases.

### 3. Indirect gases and precursor gases<sup>3</sup>

The row of this table (as shown in the left column) was designed in accordance with IPCC categories, as energy sector use three-level titles and other sectors use two-level titles. The columns are indirect gases and precursor gases in accordance with the provisions of MPGs, as shown below:

<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>NMVOC</b>	<b>.....</b>
<b>Total national emissions and removals</b>				
<b>1. Energy</b>				
A. Fuel combustion				
1. Energy industries				
2. Manufacturing industries and construction				
.....				
B. Fugitive emissions from fuels				
.....				
C. CO <sub>2</sub> Transport and storage				
<b>2. Industrial processes and product use</b>				
.....				
<b>3. Agriculture</b>				
.....				
<b>4. Land use, land-use change and forestry</b>				
.....				
<b>5. Waste</b>				
.....				
<b>6. Other (please specify)</b>				
<b>Memo items:</b>				
.....				

<sup>3</sup> In accordance with paragraph 51 and 52 of MPGs, indirect gases and precursor gases are not mandatory requirements for all Parties.

#### 4. Emission trend

The row of this table (as shown in the left column) was designed in accordance with IPCC categories, as energy sector use three-level titles and other sectors use two-level titles. The columns are years of emission trends in accordance with the provisions of MPGs and each gas should be reported in one table (including total emissions), as shown below:

<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES</b>	<b>Year 1</b>	<b>Year 2</b>	<b>.....</b>	<b>Most recent year</b>
<b>Total national emissions and removals</b>				
<b>1. Energy</b>				
A. Fuel combustion				
1. Energy industries				
2. Manufacturing industries and construction				
.....				
B. Fugitive emissions from fuels				
.....				
C. CO <sub>2</sub> Transport and storage				
<b>2. Industrial processes and product use</b>				
.....				
<b>3. Agriculture</b>				
.....				
<b>4. Land use, land-use change and forestry</b>				
.....				
<b>5. Waste</b>				
.....				
<b>6. Other (please specify)</b>				
<b>Memo items:</b>				
.....				

## II. Cross-cutting tables

### 1. Methodologies and emission factors

This table is used to report methodologies and emission factors used.

The methodologies should be reported using following notation keys: D (IPCC default), RA (Reference Approach), T1 (IPCC Tier 1), T2 (IPCC Tier 2), T3 (IPCC Tier 3), CS (Country Specific), M (model), CR (CORINAIR), OTH (Other).

The emission factors should be reported using following notation keys: D (IPCC default), CS (Country Specific), M (model), CR (CORINAIR), OTH (Other).

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>		.....	
	Method applied	Emission factor		
<b>Total national emissions and removals</b>				
<b>1. Energy</b>				
A. Fuel combustion				
1. Energy industries				
2. Manufacturing industries and construction				
.....				
B. Fugitive emissions from fuels				
.....				
C. CO <sub>2</sub> Transport and storage				
<b>2. Industrial processes and product use</b>				
.....				
<b>3. Agriculture</b>				
.....				
<b>4. Land use, land-use change and forestry</b>				
.....				
<b>5. Waste</b>				
.....				
<b>6. Other (please specify)</b>				

### 2. Key categories

This table is used to list all key categories by level or trend assessment, as L represents level assessment and T represents trend assessment:

KEY CATEGORIES OF EMISSIONS AND REMOVALS	Gas	Criteria (L/T)	Key category excluding LULUCF	Key category including LULUCF
<b>Key category 1</b>	<i>Gas</i>	<i>L</i>	√	
.....				

### 3. Recalculations

The row of this table (as shown in the left column) was designed in accordance with IPCC categories, as energy sector use three-level titles and other sectors use two-level titles. The columns are gases which have been recalculated by Parties, as shown below:

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub>					
	Previous submission	Latest submission	Difference	Difference <sup>(1)</sup>	Impact of recalculation on total emissions excluding LULUCF <sup>(2)</sup>	Impact of recalculation on total emissions including LULUCF <sup>(3)</sup>
	CO <sub>2</sub> equivalent (kt)			(%)		
<b>1. Energy</b>						
A. Fuel combustion						
1. Energy industries						
2. Manufacturing industries and construction						
.....						
B. Fugitive emissions from fuels						
.....						
C. CO <sub>2</sub> Transport and storage						
<b>2. Industrial processes and product use</b>						
.....						
<b>3. Agriculture</b>						
.....						
<b>4. Land use, land-use change and forestry</b>						

.....						
<b>5. Waste</b>						
.....						
<b>6. Other</b> <i>(please specify)</i>						
<b>Memo items:</b>						
.....						

### III. Sectoral tables for sources and sinks

These are tables that could be used by developing countries as appropriate in light of their capacities and in the exercise of their flexibility. Developed countries should continue to use the CRF Tables that they have been using for purposes of reporting under the Convention and the Kyoto Protocol.

#### 1. Mandatory gases

The row of this table (as shown in the left column) was designed in accordance with IPCC categories, as energy sector use four-level titles and other sectors use three-level titles. The columns are mandatory gases (need to be reported in both kt and CO<sub>2</sub>eq) in accordance with the provisions of MPGs, including the flexibility provisions provided for developing countries, as shown below as an example for the energy sector:

<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES<sup>4</sup></b>	<b>CO<sub>2</sub></b>	<b>CH<sub>4</sub></b>	<b>N<sub>2</sub>O</b>
<b>Total Energy</b>			
<b>A. Fuel combustion activities (sectoral approach)</b>			
<b>1. Energy industries</b>			
a. Public electricity and heat production			
.....			
<b>2. Manufacturing industries and construction</b>			
a. Iron and steel			
.....			
<b>3. Transport</b>			
a. Domestic aviation			
.....			
<b>B. Fugitive emissions from fuels</b>			
<b>1. Solid fuels</b>			
a. Coal mining and handling			
.....			
<b>C. CO<sub>2</sub> Transport and storage</b>			
1. Transport of CO <sub>2</sub>			
.....			
<b>Memo items:<sup>(1)</sup></b>			
.....			

<sup>4</sup> In accordance with paragraph 48 of MPGs, developing countries Parties shall be provided for flexibility in reporting gases.

## 2. Indirect gases and precursor gases

The row of this table (as shown in the left column) was designed in accordance with IPCC categories, as energy sector use four-level titles and other sectors use three-level titles. The columns are indirect gases and precursor gases in accordance with the provisions of MPGs, as shown below:

<b>GREENHOUSE GAS SOURCE AND SINK CATEGORIES<sup>5</sup></b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>NM VOC</b>
<b>Total Energy</b>			
<b>A. Fuel combustion activities (sectoral approach)</b>			
<b>1. Energy industries</b>			
a. Public electricity and heat production			
.....			
<b>2. Manufacturing industries and construction</b>			
a. Iron and steel			
.....			
<b>3. Transport</b>			
a. Domestic aviation			
.....			
<b>B. Fugitive emissions from fuels</b>			
<b>1. Solid fuels</b>			
a. Coal mining and handling			
.....			
<b>C. CO<sub>2</sub> Transport and storage</b>			
1. Transport of CO <sub>2</sub>			
.....			
<b>Memo items:<sup>(1)</sup></b>			
.....			

<sup>5</sup> In accordance with paragraph 51 and 52 of MPGs, indirect gases and precursor gases are not mandatory requirements for all Parties.

## Annex 2: Suggested Summary Tables in Relation to Support

### I. Summary Table for Financial support needed and received by developing countries

This table is optional for developing countries to use aiming at streamlining the information for support needed and received by year/sector/activity/activity status based on their national circumstances.

<b>Year/Sector/Activity/Activity status (ongoing/planned/completed)</b>	<b>Overall support needed (Total Financial resources required) (a)</b>	<b>Support received (Available Funding) (b)</b>	<b>Additional support needed (Additional funding requirements) (c) = (a)-(b)</b>