



# ASIA-PACIFIC FORESTRY COMMISSION

## TWENTY-EIGHTH SESSION

Incheon, Republic of Korea, 17 - 21 June 2019

## FORESTS AND CLIMATE CHANGE

### I. Introduction

1. This note provides an overview of a recent analysis by FAO of forest-related actions included in Nationally Determined Contributions (NDCs) made by countries in Asia and the Pacific under the Paris Agreement and implications for the implementation of the Agreement once it commences in 2020.

### II. The Paris Agreement, forestry and NDCs in Asia and the Pacific

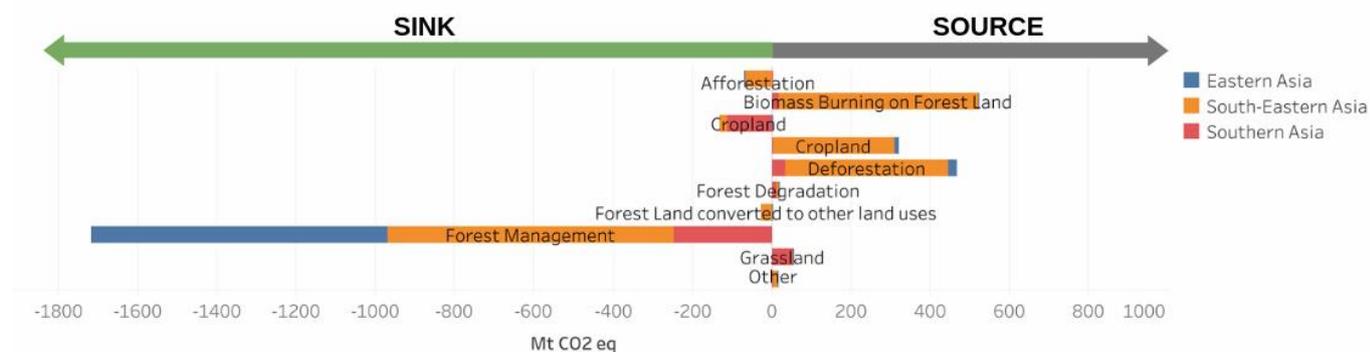
2. The Paris Agreement (December 2015) of the United Nations Framework Convention on Climate Change (UNFCCC) makes reference to the importance of conserving and enhancing carbon sinks and reservoirs and highlights the special role of forests in this regard.

3. As of 31 March 2019, 183 Parties had provided NDC submissions to the UNFCCC. Of these, 38 NDC submissions were by Parties from Asia and the Pacific and one of these (the Marshall Islands) had submitted the world's only second NDC submission. These NDCs include 'business as usual' scenarios for greenhouse gas (GHG) emissions; conditional and unconditional commitments for reducing these emissions, including measurable targets; actions needed to meet these targets; priority areas for adaptation and climate resilience; and implementation requirements covering financial assistance, technology transfer and capacity development. A high proportion of countries in the region have highlighted Land-Use, Land-Use Change and Forestry (LULUCF) as key areas for measures to achieve mitigation targets under their respective NDCs (Figure 1). Many countries in the region have re-affirmed existing plans for action on REDD+.

4. A forthcoming publication by FAO of the information reported in the NDCs, National Communications (NCs), Biennial Update Reports (BURs) and Technical Needs Assessments (TNAs)

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in Asia<sup>1</sup> and the Pacific<sup>2</sup> respectively, assesses the potential cumulative impact of NDC contributions from countries in the region. In both Asia and the Pacific, the LULUCF sector constitutes a net sink at aggregate levels. In Asia, greenhouse gas (GHG) removals are dominated by forest management<sup>3</sup> (88 percent of removals) and cropland (7 percent). Sources of emissions from LULUCF are dominated by biomass burning on forest land (37 percent of emissions), followed by deforestation (33 percent) (Figure 1: Emissions and removals in the LULUCF sector by major category and sub-region in Asia).



**Figure 1: Emissions and removals in the LULUCF sector by major category and sub-region in Asia<sup>4</sup>**

5. In the Pacific, GHG removals are dominated by afforestation<sup>5</sup> (52 percent of removals) and forest management<sup>6</sup> (48 percent). Sources of emissions are relatively small compared to sink categories and largely constituted by deforestation and cropland.

6. All countries assessed in Asia (25 in total) communicated a mitigation contribution in their NDCs. Of these contributions, 19 countries set a GHG target and six countries qualify their contribution in terms of “Action-only.” Twenty-two countries include the LULUCF sector in their general mitigation contributions. Out of these 22 countries, seven<sup>7</sup> set GHG targets for the sector, expressed as an absolute reduction of net emissions compared to net emissions either from a base year or in a Business As Usual (BAU) scenario, four<sup>8</sup> include a non-GHG target, nine include a set of

<sup>1</sup> For the purpose of this analysis, Asia comprises 25 countries spanning three geographic areas: Eastern Asia (mainland China, Democratic People’s Republic of Korea, Japan, Mongolia and Republic of Korea), South-eastern Asia (Brunei Darussalam, Cambodia, Indonesia, Lao People’s Democratic Republic (PDR), Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam); and Southern Asia (Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan and Sri Lanka).

<sup>2</sup> For the purpose of this analysis, the Pacific comprises 14 countries that make up three geographic areas in Oceania: Melanesia (Fiji, Papua New Guinea, Solomon Islands and Vanuatu), Micronesia (Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, Palau) and Polynesia (Cook Islands, Niue, Samoa, Tonga and Tuvalu).

<sup>3</sup> Forest management accounts for total net emissions related to IPCC (2006) land use category “Forest land remaining forest land” and IPCC (1996) category “Changes in forest and other woody biomass,” when those categories are a net sink at national level.

<sup>4</sup> Source: FAO. 2019 (Forthcoming). Regional analysis of the Nationally Determined Contributions of Asia: Gaps and opportunities in the agriculture sectors. Rome.

<sup>5</sup> Corresponds to the 2006 IPCC Guidelines sub-category “Land converted to forest land” and the Revised 1996 IPCC Guidelines category “Abandonment of Managed Lands.

<sup>6</sup> Corresponds to the 2006 IPCC Guidelines sub-category “Forest land remaining forest land” and the Revised 1996 IPCC Guidelines category “Changes in Forest and Other Woody Biomass.”

<sup>7</sup> Japan (NDC), Cambodia (NDC), Indonesia (NDC), Lao PDR (NDC), Malaysia (NC), Viet Nam (NC) and India (NDC)

<sup>8</sup> China, mainland (NDC), Brunei Darussalam (NDC), Timor-Leste (NDC) and Bhutan (NDC)

policies or measures only and the remaining two countries include the sector in their general mitigation contribution.

7. In the Pacific, all 14 countries communicated a mitigation contribution in their NDCs, of which 11 set a GHG target and three qualify their contribution in terms of “Action-only.” Nine countries include the LULUCF sector in their general mitigation contributions. Out of these, only Papua New Guinea sets a GHG target for the sector.

8. From an economy-wide perspective, under an NDC mitigation scenario, total annual net emissions in Asia are expected to be 47 Gt CO<sub>2</sub> eq in 2030, whereas in the scenario without NDC, annual net emissions would be 118.5 Gt CO<sub>2</sub> eq.<sup>9</sup> NDCs are therefore expected to lead to roughly 60 percent reductions in net emissions by 2030, compared to the scenario without NDC, though at least 70 percent of this outcome is indicated as conditional to international support. However, when compared to the historical 2015 level, net emissions are still projected to double by 2030 under the NDC scenario.

9. In the LULUCF sector alone, under a baseline scenario, annual GHG removals in Asia are expected to be 0.86 Gt CO<sub>2</sub> eq. in 2030<sup>10</sup>, 25 percent more than the 0.69 Gt CO<sub>2</sub> eq. reported in 2015. Under the NDC mitigation scenario, however, the cumulative impact of the quantifiable LULUCF mitigation contributions in Asia is a sink of 2.2 Gt CO<sub>2</sub> eq. in 2030, which is a 160 percent increase in annual GHG removals compared to the scenario without NDC.

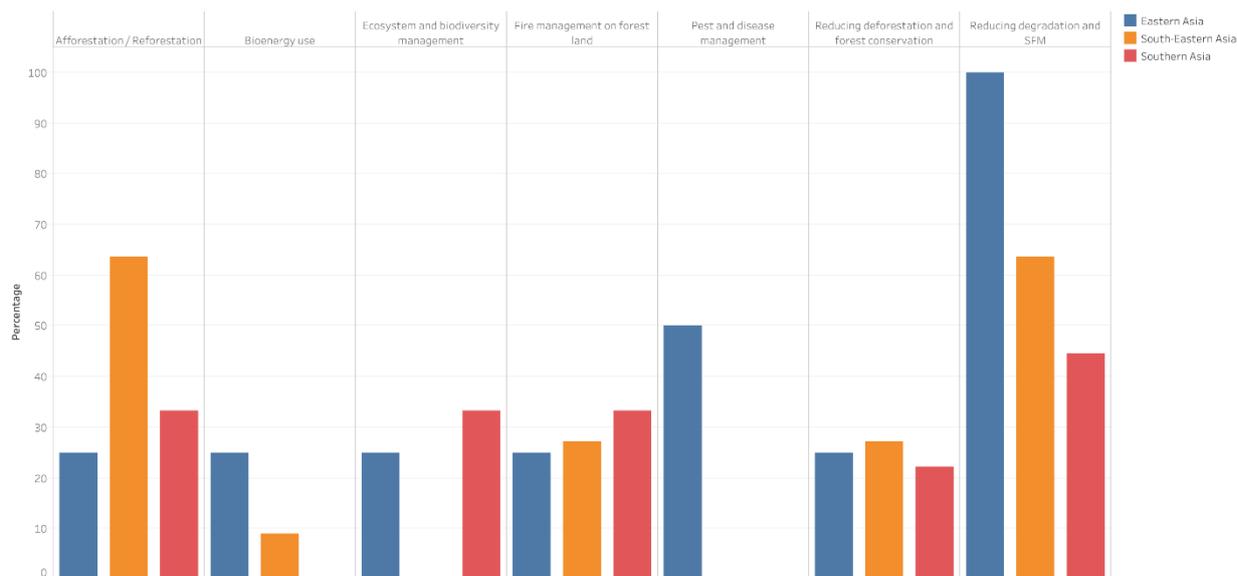
10. In the Pacific, total annual net emissions in the region are expected to be 24.6 Mt CO<sub>2</sub> eq. in 2030, compared to 41.5 Mt CO<sub>2</sub> eq. under the scenario without NDCs. The combined impact of NDCs is therefore expected to lead to a roughly 40 percent reduction in emissions, though about 65 percent of this outcome is conditional to international support. The contribution of the agriculture and LULUCF sector to regional emissions is significant, at around 75 percent, meaning that achievement of the economy-wide mitigation targets in the region will be largely dependent upon implementation of NDC contributions in these sectors.

11. Adaptation is also a key element of the Paris Agreement and of the NDCs submitted by Parties. Parties are therefore encouraged under the Agreement to engage in national adaptation planning and implementation processes. Countries in Asia and the Pacific have highlighted a range of strategies to enhance adaptation in the forestry sector and strengthen the resilience of forest-dependent communities in their NDCs. In Asia, 83 percent of countries with an adaptation component include adaptation in the forestry sub-sector. The majority of those countries (63 percent) include reduced forest degradation and Sustainable Forest Management (SFM) as part of their adaptation strategy, followed by afforestation/reforestation (46 percent), fire management (29 percent), reduced deforestation and forest conservation (25 percent) and ecosystem and biodiversity management (17 percent) (Figure 2). It is important to note that many of these adaptation measures in the forestry sector will also directly contribute to climate change mitigation, if successfully implemented, regardless of whether they are included in the mitigation component of NDCs.

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<sup>9</sup> It should be noted that the high cumulated net reduction value for the region is largely associated with the type of GHG target (GDP intensity) and baseline (2005 base year) communicated by China, in which the GDP growth recorded for the period 2006-2015 (513 percent) combined with that estimated for the period 2016-2030 (at 6.9 percent per year based on 2015 data), would result in a 2030 baseline estimated to be 1 395 percent larger than its 2005 level, assuming no gain in GDP efficiency. As a result, the 65 percent reduction target generates a substantive cumulated net reduction over the implementation period – though 2030 net emissions would nevertheless be higher than those historically.

<sup>10</sup> It should be noted that such extrapolation is almost fully determined by the projected increasing sink reported by Cambodia, Indonesia and Malaysia, affecting the sub-regional counterfactual trend.



**Figure 2: Share of countries with adaptation measures in the forestry sub-sector by management activity and sub-region<sup>11</sup>**

12. In the Pacific, 8 out of 14 countries prioritize adaptation in the forestry sub-sector. Five countries promote afforestation/reforestation as part of this adaptation strategy, four promote reduced deforestation and forest conservation (29 percent), and three promote reduced degradation and SFM.

### III. Moving towards implementation of the forestry contributions under the Paris Agreement

#### REDD+

13. Many countries in the region are making substantial progress in REDD+ and are supported through multilateral initiatives such as the UN-REDD Programme and the Forest Carbon Partnership Facility (FCPF) of the World Bank, as well as bilateral investments. Thirteen countries from the region<sup>12</sup> (out of a total of 38 globally) have submitted Forest Reference Levels (FRLs) to the UNFCCC. FRLs will serve as benchmarks against which countries can report their performance in reducing emissions (and enhancing removals) of greenhouse gases (GHGs) from the forestry and land-use sectors. One country in the region (Malaysia) has already submitted REDD+ results against its FRL, through an annex to the Biennial Update Report (BUR) to the UNFCCC.

14. The requirement for countries participating in REDD+ to develop a comprehensive National Forest Monitoring System (NFMS), using methodologies consistent with FRL methodologies, has contributed to recent advances across the Asia-Pacific region in National Forest Inventories (NFIs), and to the process of developing nationally-specific growth models and allometric equations which will lead to greater accuracy in estimation of GHG emissions and removals. These advances will in turn allow countries to monitor the impacts of policies and regulations on forest ecosystems and adapt these policies accordingly; both in the forestry sector and in other land-use sectors and planning processes.

15. By the first quarter of 2019, at least ten<sup>13</sup> countries in the region had developed national REDD+ strategies or action plans, organized multi-stakeholder consultations and endorsed the

<sup>11</sup> Adaptation measures included by 5 percent or less of countries are excluded from the figure.

<sup>12</sup> Bangladesh, Cambodia, India, Indonesia, Lao PDR, Malaysia, Mongolia, Myanmar, Nepal, Papua New Guinea, Solomon Islands, Sri Lanka and Viet Nam

<sup>13</sup> Cambodia, Fiji, India, Indonesia, Malaysia, Mongolia, Nepal, Papua New Guinea, Sri Lanka and Viet Nam

strategies through official government processes. Several other countries are in the process of doing so and also determining the investment required to implement these strategies successfully, taking into account current and future domestic investment, both in public and private sectors, and anticipated international investment.

### ***Transparency***

16. The Paris Agreement established the Enhanced Transparency Framework (ETF) for Measurement, Reporting and Verification (MRV) of GHG emissions from all sectors, including forestry and land use, under Article 13 of the Agreement. COP24 in Katowice, Poland, resulted in the adoption of common modalities, procedures and guidelines (MPGs) for the ETF. The MPGs will apply to all countries, while also allowing flexibility for developing countries. A key feature of the MPGs is a provision for a Biennial Transparency Report (BTR) that will replace the BUR process. All parties will need to submit a first BTR no later than December 2024. The BTR will be required to cover the following information:

- national inventory report on anthropogenic emissions by sources and removals by sinks of GHGs;
- information necessary to track progress made in implementing and achieving NDCs;
- information related to climate change impacts and adaptation;
- information on financial, technology development and transfer and capacity-building support provided and mobilized;
- information on financial, technology development and transfer and capacity-building support needed and received.

17. The BTR will be subject to a two-stage review process comprising a technical expert review and a facilitative, multilateral consideration of progress. Developing countries will only be assessed on information provided in the BTR related to national GHG inventories and to tracking progress in implementing and achieving a country's NDC. Least Developed Countries (LDCs) and Small Island Developing States (SIDS) will have greater flexibility under the MPGs and will be able to submit BTRs at their discretion.

18. Countries which have already engaged in the development of MRV systems for forest-related emissions, through REDD+ readiness activities, are well-placed to build on the skills and institutional capacity thus developed to ensure that reporting from all sectors uses consistent methodologies and quality control procedures. The forestry sector may, in some cases, provide templates and guidance for the development of a national GHG inventory for other sectors such as agriculture. In the Asia-Pacific region, by early 2019 at least five countries<sup>14</sup> have already started planning for the development of such coordinated reporting approaches, through the Capacity Building Initiative for Transparency (CBIT) Fund.

### ***Financing***

19. Article 9 of the Paris Agreement calls for scaled-up financial resources to support climate action. Achievement of the NDC targets in Asia and the Pacific is conditional on the provision of additional finance to support the implementation of policies and measures.

20. In Asia, most countries have indicated whether they require full, partial or no financial support for NDC implementation. Overall, countries in Asia have estimated that NDC implementation will require US\$1.6 billion. However, only one third of countries report financial needs as part of their current NDCs.

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<sup>14</sup> Bangladesh, Cambodia, Mongolia, Papua New Guinea and Sri Lanka

21. In the Pacific, all countries indicate that the NDC is either partially or fully conditional on the provision of finance. Overall, countries in the Pacific have estimated that NDC implementation will require US\$1.3 billion, of which 60 percent is conditional on international financial support. However, only 50 percent of countries report financial needs as part of their current NDCs.
22. By the end of 2020, the UN-REDD and FCPF programmes will have mobilized a combined total of close to US\$750 million worldwide, for the Readiness phase of REDD+, including for 20 countries in the Asia-Pacific region<sup>15</sup>. Both of these multilateral initiatives are due to terminate at the end of 2020, and several of the bilateral initiatives focused on REDD+ readiness are also approaching conclusion. However, international finance has already begun to flow into the second phase of REDD+; the implementation and piloting phase. The two main sources of finance for this phase are the Green Climate Fund (GCF) and bilateral finance.
23. The GCF Secretariat actively encourages countries to submit proposals for projects which allow the use of the fund for the implementation phase of REDD+, and has released specific guidance on the access to GCF resources for all phases of REDD+<sup>16</sup>. As of April 2019, the GCF had approved a total of 103 projects, worth US\$5 billion, of which 40 projects are from Asia and the Pacific. Several of these projects include components related to REDD+ and integrated land use management, including e.g. protected area management, mangrove restoration and watershed management, with further projects in the pipeline for the 23rd and 24th Board meetings in 2019.
24. A total of US\$900 million is currently pledged for REDD+ Results-Based Payments (RBPs) linked to verified GHG emission reductions under the FCPF Carbon Fund, of which approximately US\$360 million is anticipated to be mobilized by 2024 through Emission Reduction Programmes with countries in Asia and the Pacific. More recently, the GCF has set aside a window of US\$500 million as a pilot REDD+ RBP initiative. This programme will run until the end of 2022 and offers potential opportunities for countries in the Asia Pacific region.
25. In addition to the financial streams available through multilateral initiatives, there are other efforts by industrialized country governments, and other sources, to support the latter phases of REDD+. In particular, the REDD+ Early Movers (REM) initiative managed by Germany's KfW, Norway's International Climate and Forest Initiative (NICFI) and the Biocarbon Fund Initiative. These funds remain largely untapped, pending the demonstration and verification of REDD+ results by participating forested countries.
26. Another source of potential finance for forests may be through carbon markets. As of April 2019, the potential for such markets remains unclear, and will be largely determined by the rulebook for implementation of Article 6 of the Paris Agreement, which has yet to be negotiated, concerning 'internationally transferred mitigation outcomes' (ITMOs). This was one of the most complex areas of negotiation at the UNFCCC COP24 in December 2018, and there is no indication that it will be concluded within 2019.
27. In light of increased climate action and policies, and the ambitions indicated in NDCs across the region and within multilateral fora, a number of new markets are emerging, both on domestic and international fronts, for example, the International Civil Aviation Organization's CORSIA<sup>17</sup>. The potential scope for such financial mechanisms is considerably larger than that from donor government

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<sup>15</sup> UN-REDD Multi-partner trust fund office Gateway ([mptf/undp.org/factsheet/fund/CCF00](http://mptf/undp.org/factsheet/fund/CCF00)) and FCPF website ([www.forestcarbonpartnership.org](http://www.forestcarbonpartnership.org)), accessed February 2019

<sup>16</sup> "Support for REDD-plus", Document GCF/B.14/03, 2016; "Green Climate Fund support for the early phases of REDD-plus", Document GCF/B.17/16, 2017

<sup>17</sup> The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), developed by the International Civil Aviation Organisation (ICAO). GHG emissions from international air travel cannot be ascribed to any particular Party (country) to the UNFCCC, so are excluded from the Paris Agreement. ICAO set up CORSIA as a market-based mechanism to achieve the aspiration of ICAO's members to carbon-neutral growth from 2020 onwards

sources, but until there is clear international agreement and consistency in how emission reductions can be transparently incorporated into offset trading schemes, in line with Article 6 of the Paris Agreement, this potential may remain untapped.

#### **IV. Progress implementing NDCs and the role of FAO in supporting implementation of the Paris Agreement**

28. To encourage further efforts to achieve the 2°C target and address the impacts of climate change over the Paris Agreement commitment period of 2020-30 and beyond, Parties agreed, in 2018, to take stock of the collective efforts in relation to progress towards the goal set in the Agreement. This stocktake took the form of the Talanoa Dialogue. It is anticipated that the outcomes of the Talanoa Dialogue will motivate Parties to increase their respective contributions as new NDCs are developed in preparation for COP26 in 2020.

29. Given the prominence of the forestry sector in NDCs from the region, forestry stakeholders will also need to engage in the process to revisit NDCs and discuss and develop implementation plans, investment plans and timelines for implementation of forestry sector NDC actions. The FAO analysis of NDCs from the region finds that countries are committed to addressing emissions from the LULUCF sectors and that the role of these sectors as carbon sinks will grow by 2030. However, there are gaps that still need to be addressed.

30. A fundamental gap is the quality and completeness of information about the sources and sinks of GHG emissions being tracked by countries. For example, measuring emissions from forest degradation is a serious technical challenge and it is likely that emissions from this source are underestimated. FAO can support countries in improving this information through incorporation of cost-effective, open-source technologies such as SEPAL and the Open Foris<sup>18</sup> toolkit into National Forest Monitoring Systems, and building the institutional capacity necessary to mainstream this information into reporting and decision-making systems.

31. National REDD+ Strategies should incorporate the enabling conditions for REDD+ implementation. Examples of such conditions from existing strategies in the region include investments in land tenure reform and land use planning; strengthening law enforcement and regulatory frameworks; policy, legal and institutional reforms in forestry and related sectors; development of national forest inventories; and strengthening the institutional and local capacities of relevant stakeholders in the forest and land use sectors, as also underlined in Decision B.17/16 of the GCF.

32. Investments in managed forests may focus on those areas which are vulnerable to deforestation due to their proximity to the agricultural frontier, through extension of SFM for timber and non-timber forest products, ecotourism and payments for ecosystem services. Investments may also be targeted at productive land in proximity to forests, including land that was previously forested, to enhance productivity and reduce the opportunities or incentives for further encroachment in forest areas, and to promote agroforestry and other approaches to increase tree cover on land outside forests. To be successful, comprehensive strategies to address GHG emissions from the forest sector must be transparently inter-sectoral and integrated into holistic landscape and watershed management planning processes.

33. In order to monitor and measure the effectiveness of actions intended to achieve NDC objectives, countries should develop transparent and internally consistent data and information systems, registries and platforms to track initiatives, projects and investments, whether as part of a

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<sup>18</sup> SEPAL is the System for Earth Observation Data Access, Processing and Analysis for Land Monitoring, part of the FAO Open Foris system of free, open source software tools for forest data collection, analysis and reporting. <http://www.openforis.org/home.html>

REDD+ implementation and monitoring process, or as part of a comprehensive approach in accordance with the Enhanced Transparency Framework. Countries may also wish to consider designing such systems in order to allow the incorporation, or ‘nesting’, of different types of investment, public or private, which will have a meaningful, measurable impact on GHG emissions from the forest sector, particularly in order to ensure that emission reductions or removals are not double-counted, and so that investors can be confident of the attribution of the impact of their investments. Additionally, countries may also want to consider, in the context of their national forest programmes or forest policy frameworks, the links between their NDC commitments and planned actions in support of the Sustainable Development Goals (SDGs) – particularly SDG13 on combating climate change and SDG15 on life on land – and the Sendai Framework for Disaster Risk Reduction.

34. Through extensive networks of country and region-specific expertise, FAO is prepared to continue support to countries to review and prepare plans for NDC implementation and REDD+ related investments. FAO can also support countries to engage more effectively in global processes to support the Paris Agreement, to assess NDC mitigation and adaptation commitments and to support the development of investment plans, policies and programmes to facilitate implementation of REDD+ strategies. Through technical assistance, FAO is ready to work with countries at the regional level to further build capacity, including on FRLs and NFMS, REDD+ strategy development, implementation and investment planning. As a development partner and Accredited Entity, FAO is also prepared to support resource mobilization through the GCF and other channels.

35. To better support member countries’ work towards achievement of national-level priorities under the Paris Agreement, FAO is implementing a Regional Initiative on Climate Change (RICC) in the 2018-2019 biennium. The initiative is working to achieve FAO’s vision for Asia and the Pacific that *Food and agriculture systems and dependent livelihoods become more resilient to the impacts of climate change through scaled up adaptation measures and mitigation options*. Programmes implemented under this initiative will aim to support the work of forestry administrations towards the forestry-specific elements of their NDCs and to better engage with Paris Agreement processes such as the Enhanced Transparency Framework.

## V. Points for consideration

36. Commission members may wish to:

- Encourage member countries to revise, plan, implement and monitor the core forestry-related mitigation and adaptation activities identified in their respective NDCs.
- Recommend that member countries seek to create synergies with agriculture and other land-use sectors, in order to deliver a range of development benefits such as food security, resilience and emission reductions
- Assess opportunities for international financing mechanisms, particularly the GCF, to complement and enhance their domestic planning and investment strategies.
- Request FAO to strengthen its support to facilitate countries’ REDD+ implementation, including development of registries to track initiatives, projects and investments, institutional capacity development, investment planning and impact monitoring and reporting.