

REDD+ is Solution for Restoring Ecosystem Services and Biodiversity

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Forests provide provisioning, regulating, supportive and cultural services to the human-being. Some of the services have local concerns, some have national concerns, some have regional concerns, and some have global concern. Carbon sequestration is regional and global concerns. Regulation of hydrological cycle and soil conservation are regional concerns and needs trans-boundary attention. I like to inform you about few facts in the context of Forests, desertification and biodiversity which are:

- Around 1.6 billion people depend on forests for their livelihood. This includes some 70 million indigenous people
- Forests are home to more than 80 per cent of all terrestrial species of animals, plants and insects
- 2.6 billion people depend directly on agriculture, but 52 per cent of the land used for agriculture is moderately or severely affected by soil degradation
- As of 2008, land degradation affected 1.5 billion people globally
- Arable land loss is estimated at 30 to 35 times the historical rate
- Due to drought and desertification each year 12 million hectares are lost (23 hectares per minute), where 20 million tons of grain could have been grown

- 74 per cent of the poor are directly affected by land degradation globally
- Of the 8,300 animal breeds known, 8 per cent are extinct and 22 per cent are at risk of extinction
- Of the over 80,000 tree species, less than 1 per cent have been studied for potential use
- Fish provide 20 per cent of animal protein to about 3 billion people. Only ten species provide about 30 per cent of marine capture fisheries and ten species provide about 50 per cent of aquaculture production
- Over 80 per cent of the human diet is provided by plants. Only three cereal crops – rice, maize and wheat – provide 60 per cent of energy intake
- As many as 80 per cent of people living in rural areas in developing countries rely on traditional plantbased medicines for basic healthcare
- Micro-organisms and invertebrates are key to ecosystem services, but their contributions are still poorly known and rarely acknowledged

Forests are important in determining the accumulation of greenhouse gases in the atmosphere; they absorb 2.6 billion tonnes of carbon dioxide each year, about one-third of the carbon dioxide released from the burning of fossil fuels. However, this great storage system also means that when forests are cut down, the impact is big. Deforestation accounts for nearly 20% of all greenhouse gas

emissions — more than the world's entire transport sector. At the same time, the removal capacity of forests is decreased as forests are lost and degraded. The countries like Brazil, Indonesia, Malaysia, Russia, PNG and many more other countries have deforestation as a major problem while countries like India, Nepal and other countries of the South Asia region have more forest degradation problem due to unsustainable harvest of forest produce. Both activities contribute towards loss of biodiversity and ecosystem services in turn enhance the GHG emissions.

Sustainable development of all types of forests is a solution for maintaining ecological, social and economic aspirations of the people. Forests should be managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. Countries have the right to use forests for their social and economic development needs. Such use should be based on national policies consistent with sustainable development without damaging the environment of other countries. But here trans-boundary watershed issues become very important. Approximately 40% of the world's population lives in the world's 263 trans-boundary watersheds, identified as those that comprise two or more countries. These trans-boundary basins cover nearly half of the Earth's land surface and account for an estimated 60% of global freshwater flow. Trans-boundary basins link populations of different countries and provide an appropriate ecosystem unit for managing international issues for hundreds of millions of people, including land use, food provision, floods and drought management, and other watershed-based services. I like to remind here that Forest Principles agreed at the Earth Summit in 1992 provides freedom to sovereign countries to deal

environmental issues as per their national plans and strategies but at times it affects the trans-boundary ecosystems adversely. Poorest of the poor who lives in and around the trans-boundary ecosystem, are deprived of the benefits of ecosystem services. The solution to such issues lies with the international negotiations. I experienced as negotiator, the political and economic interests prevails over the ecological concerns.

There is lack of means of implementation for implementing sustainable forest management in developing countries. The four global objectives on forests have been accepted at UNFF in 2006. These objectives are voluntary in nature, not legally binding. The fourth objective is reversing the decline of ODA assistance. In spite, no additional and dedicated financial support for the achieving sustainable forest management, particularly in developing countries.

The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. The first commitment period applies to emissions from 2008 to 2012, and the second commitment period applies to emissions from 2013 to 2020. Countries with commitments under the Kyoto Protocol to limit or reduce greenhouse gas emissions, must meet their targets primarily through sovereign national processes. As a supplementary means of meeting these targets, the Kyoto Protocol introduced three market-based FOREST mechanisms, namely AR-CDM. It could not succeed due to lack of capacity in developing countries to cope up with its cumbersome process.

The Kyoto Protocol, adopted in 1997, excluded forest conservation in developing countries, where most emissions from deforestation are

produced, over concerns of efficacy. Though REDD+ was brought back to the negotiating table in 2005, it took the international community another ten years of painstaking work to address the details that previously prevented its adoption. Now REDD+ is permanently enshrined in Article 5 of the Agreement, finally providing the necessary political signal to mobilize much-needed action around forests.

REDD Plus is a market based financial incentive mechanism for reducing emissions from deforestation and forest degradation, plus signifying positive elements of conservation, SFM, and enhancing carbon stock through afforestation & reforestation, with the potential of sustaining livelihood of Forest Dependent Communities (FDCs), maintenance of ecosystem services and biodiversity conservation with safeguards of people living in and around forests (their rights, governance, and sustainable livelihood). Now it is leaning towards fund based mechanism. COP21 sent a strong and unprecedented message that REDD+ is a critical and prominent piece of the new global climate goal to achieve net-zero emissions in the second half of this century

One of the biggest impacts of the endorsement is that governments are putting their money where their mouths are. Leading up to Paris, REDD+ programs had already attracted an estimated \$10 billion in international investment, largely from government sources. At the start of the COP21, the governments of Norway, Germany and the UK collectively committed another \$5 billion for REDD+ over the next five years. Such investments provide a solid monetary base to jump-start the ambitious forest-related climate goals. Countries put forth in their national climate action plans (INDCs) leading up to Paris. Many

are also hopeful that the permanence of the Paris Agreement language will attract new, long-term investments from other developed countries, as well as private sector actors through zero-deforestation policies and carbon markets.

Of course money is not the only consideration. Far from being a philanthropic cause, REDD+ is a pay-for-performance mechanism that requires countries to prove their forest conservation programs have reduced emissions before they can receive funds. Some countries have already started developing their REDD+ measurement, reporting and verification (MRV) systems thanks to the Warsaw Framework for REDD+, finalized in the 2013 negotiations. The Framework's guidelines on monitoring are especially important for ensuring that country efforts are transparent and consistent over time. According to the Framework, remote sensing and ground-based observations are needed to: (1) Monitor area of deforestation through time (2) Measure changes in forest carbon stocks and the amount of carbon emissions resulting from clearing (3) Measure progress against a historical baseline or "reference level" that may or may not be adjusted for "national circumstances."

Many developing countries do not have adequate policy, regulatory and institutional regime to implement sustainable forest management. The term sustainable management of forests has been used in REDD+ process to highlight the importance of biodiversity conservation and maintenance of ecosystem services. There is need to build the capacity of developing countries with respect to implementation of REDD+.

During 19th and 20th COP, it was decided to prepare Intended Nationally Determined Contributions (INDCs) by all countries. I am giving you the example of India. India have submitted its INDCs targets to UNFCCC along with achieving 2.5 -3 billion tonnes of e Co₂ by 2030. India has the potential to achieve this target but it looks extremely difficult rather impossible due to low political commitment for forestry sector at central as well as State level. The Ministry of Environment, Forests and Climate Change in the Central Government have the responsibility of policy and planning of forestry sector being a subject in the concurrent list of the Constitution of India. The responsibility of implementation of policies is with the state governments who are not consulted before communicating the target of achieving 2.5 -3 billion tonnes of e Co₂ by 2030.

Forests in India are degraded as ISFR 2015 mentioned the loss of substantial area under moderately dense forests category. There is gradual reduction in the growing stock of the forests from 2003 to 2013 continuously. The growing stock inside forests was 4173.36 cubic meter while as per ISFR 2015, it is 4195.05 cubic meter. The data is not comparable due to change of sample sites with every assessment. So we cannot have pride to have minor increase in the growing stock inside the forests as mentioned in the ISFR 2015. The definition of forests adopted by Forest Survey of India for the assessment of forest cover includes horticulture areas having area more than one hectare. It does not give the true picture of the forestry sector.

There are not much dedicated efforts to provide adequate financial resource to the forestry sector. The central government itself reduced

the budget of Ministry of Environment, Forests and Climate Change for the financial year 2015-16. India is aiming to achieve these targets on the basis of Compensatory Afforestation Fund Management and Planning (CAMPA) funds, Green India Mission (GIM), Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Integrated Watershed Management Program (IWMP) and External Aided Projects. GIM was initiated in 2008. After seven years, practically there is no implementation of GIM. There are CAMPA funds also available for the plantations and other forest related activities. State Governments are not in a position to spend on the activities of forestry due to lack of institutional capacity. More than 50 percent front-line staff is not in position and whatever staff is in position, they are aged and lack capacity to implement the policies and plans of the government. The schemes like MGNAREGA and IWMP do not keep dedicated money for forestry sector. If at all, funds are available, there is lack of quality planting material and continuous flow of funds for the maintenance of plantations. We have success of the plantation less than 10% as per the evaluation done by forest survey of India. The major reason is lack of continuous efforts of the maintenance of plantations beyond three years.

More than 275 million people are depending on forests for their livelihood and sustenance need and harvesting forest produce unsustainably which is the major driver for forest degradation. There are enough regulatory mechanisms such as Indian Forest Act, 1927, Wildlife Protection Act, Biological Diversity Act and Forest Conservation Act available to check the unsustainable harvest of forest produce but due to lack of implementation of the regulatory regime, unsustainable harvest has become fait-accompli. The

poverty alleviation programmes and alternate livelihood schemes can provide some check on unsustainable harvest of forest produce in turn will improve the quality of forests. TERI has conducted five pilots of REDD+ and identified the drivers for forest degradation in India which could be mitigated by providing alternate livelihood. The Forest Conservation Act, 1980 checked the deforestation due to forests areas transferred for developmental activities till 2013 but there was dilution of the Forest conservation Act, 1980 in the recent past by issuing bundle of guidelines for relaxing the diversion of forest land for non –forestry activities which disturbed the balance between conservation and development, and more leaning towards development. It infringes the primary objective of the National Forest Policy, 1988 which is the ecological security of the Nation. India need to have combined efforts with respect to research & development, adequate finance, capacity strengthening of forestry institutions and human resource in the forestry sector, only than we can think little bit to achieve the target of 2.5-3 billion tonnes of sequestration of e Co2 by 2030 otherwise it will prove as lip service. It is the situation in most of the developing countries.

REDD+ is a mechanism to implement sustainable forest management for restoring ecosystem services and biodiversity conservation. There is need to dovetail social sector projects with forestry projects to upscale the income of the forest dependent community in turn will reduce the dependence on forests and improve the quality of forests. Most of the developing countries have communicated their INDCs targets ambitiously, not on the basis of reality. The political commitment to the forestry sector in developing countries is very low. Since forests protect the biodiversity and

maintain the Ecosystem Services for the global benefits, it is the responsibility of the developed countries to provide financial and technical support for the readiness of REDD+ implementation, and also to finance the result based performance of enhanced carbon. Most countries around the world have submitted their plans for mitigation and adaptation – the Intended Nationally Determined Contributions (INDCs). The Green Climate Fund (GCF) as a body solely dedicated to supporting the UNFCCC's goal of keeping global temperature rise below 2°C. The funds can support developing countries in realizing the ambition of their INDCs. If I take example of India to achieve 2.5 to 3.5 billion tonnes of e Co₂ by 2030, require 2000 million US\$ for 15 years. Who will finance it ? Likewise other developing countries are also requiring huge financial resource and technical support. Countries are finding difficult to limit rise of temperature within 2 degree, what to talk about to limit 1.5 degree. Responding to the climate challenge requires collective action from all countries, cities, businesses, and private citizens. Among these concerted efforts, advanced economies have formally agreed to **jointly mobilize USD 100 billion per year by 2020**, from a variety of sources, to address the pressing mitigation and adaptation needs of developing countries. As on 20th November 2015, 38 countries have pledged to contribute 10.2 billion US\$ out of which 5.9 billion is signed and 4.3 billion is still to be signed. It itself indicate that there is lack of strong will to limit the rise of temperature within 2 degree.

I conclude by saying that developing countries can play important role in mitigating GHGs through forests means REDD+ provided adequate financial and technology support given by developed countries. Another key issues is maintenance and management of

trans-boundary Ecosystems. The political and economic interests are prevailing over the ecological interests. The developed world must provide support to developing countries for the readiness and implementation of REDD+ for maintaining ecosystem services and conserving biodiversity, and also achieving the sustainable Goal 1: End poverty in all its forms everywhere Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture Goal 13: Take urgent action to combat climate change and its impacts **and Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.**

Thank You Very Much