

# International Consultation Workshop on the Role of Forest Ecosystems in Meeting Sustainable Development Goals in South Asia

Edited by  
**Rajiv Kumar Chaturvedi**  
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*The forest ecosystems specialist group of the Commission on Ecosystem Management (CEM) of IUCN, organized an international workshop on 09<sup>th</sup> May, 2019 at K K Birla Campus, BITS, Pilani, Goa, with the funding support from the 'Commission On Ecosystem Management' (CEM), IUCN; National Bank For Agriculture And Rural Development (NABARD) and Government of Goa*





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**Figure 1. Participants taking notes**

The forest ecosystems specialist group of the Commission on Ecosystem Management of the International Union for Conservation of Nature (IUCN) and BITS Pilani, K K Birla Goa Campus co-organized an international consultation workshop on 'Role of forest ecosystems in meeting SDGs in South Asia' on 9th May 2019 at BITS Pilani Goa Campus. The workshop received funding support from the 'Commission on Ecosystem Management', IUCN; Goa regional office of NABARD; and Government of Goa.

This workshop aimed to understand the linkages between forest ecosystems and the Sustainable Development Goals (SDGs) and other environmental goals such as the Paris Agreement goals on Climate Change, and Bonn Challenge on recovery of degraded land via afforestation/ reforestation, in South Asia. Specifically, the workshop aimed to understand as to how forest resources through multiple use forest resource management tools and practices can ensure sustained production and supply of forest

ecosystem goods and services to generate multiple dividends such as biodiversity conservation, poverty reduction, ecosystems based adaptation, mitigation, Disaster Risk Reduction and gender inclusive development thus meeting SDG 1 (No poverty), 5 (Gender equality), 12 (Responsible production and consumption), 13 (Climate Action) and 15 (life on land). One of the key outputs of the workshop was the discussion on a Technical Report on 'Role of forest ecosystems in meeting SDGs and Climate Goals in South Asia,' being prepared by the Forest Specialist Group of IUCN/CEM.

Further, the workshop connected global science to local needs and the participants took this opportunity to discuss the need for Goa's State Action Plan on Climate Change. The workshop brought together about 50 global conservation experts and local level practitioners of forests and biodiversity conservation such as members of local Village Biodiversity Committees (VBCs) from Goa, with the aim to link sustainability science with policy and local level intervention.



Figure 2. A discussion during one of the Sessions



Figure 3. Dr. Pradip V Sarmokdam, outlining the agenda of the meeting



Figure 4. Dr. Rajiv welcoming dignitaries and participants to the workshop



# Outlining the Agenda

Dr. Rajiv Kumar Chaturvedi and Dr. Pradip V Sarmokdam, Member Secretary, Goa Biodiversity Board outlined the agenda of the meeting. Dr. Rajiv, one of the workshop organizers, welcomed the dignitaries and participants and introduced the audience to the role of the forest ecosystem thematic subgroup within the IUCN CEM network. He briefly discussed the critical goals of the forest specialist group in relation to Sustainable Development Goals (SDGs) and informed the audience that a technical report of the same will be presented in the post-inaugural session. A survey of the relevant global literature, Dr Chaturvedi stated, indicates that the forest sector has a strong role to play in the context of SDG 13 (Climate Action) and SDG 15 (Life on Land), for example, the global commitments in the forest sector accounted for 25% of the total commitments made in the Paris Agreement. Similarly, much of the land biodiversity resides in forest ecosystems. The forest sector interacts indirectly with several other SDGs such as poverty reduction, gender equality, and water security. He informed the audience that leading researchers will present case-studies on this topic in the second session.

Dr. Chaturvedi emphasized the fact that the successful implementation of global SDGs—specifically the climate action goal of limiting warming below 2°C - are dependent on the success of national SDGs. Comparably, the success of national SDGs- such as the ones coordinated by NITI Aayog— are dependent on the success of state level SDGs such as those of the state of Goa. Dr Chaturvedi concluded his address by outlining the objectives of the workshop. The workshop, especially through the final panel discussion, hoped to link science with policy and local level intervention. The panel discussion, to this end, was centered on Goa's forestry related SDGs such as Climate Mitigation Activities, Adaptation Action, and biodiversity monitoring and conservation. Through the discussions conducted throughout the day, the workshop aimed to foster a collaboration of various stakeholders at the international level (in research) and at local level (in implementation) so as to work together to solve ground level problems related to forest ecosystems in the context of SDGs. With the presence of the respective heads of relevant institutions such as Goa Forest Department, Goa Biodiversity Board, NABARD Goa regional office, and BITS Pilani Goa, Dr Chaturvedi expressed his confidence in the success of this collaboration.

# Welcome

Prof. G. Raghurama, Director, BITS Pilani, Goa campus hosted this event and Mr. Subhash Chandra, Principal Chief Conservator of Forests (PCCF), Goa State, was the Chief Guest, and Guest of Honor for this workshop was Ms. Kamakshi Pai, General Manager, Goa regional office NABARD. Prof. Raghurama welcomed our Chief guest and Guest of the honor. Prof.

Raghurama also welcomed our special invitees from CEM/IUCN Dr. Madhav Karki, Deputy Global Chair, IUCN CEM and Dr. Himlal Baral, Chair, Forest Specialist Group of IUCN/CEM.

Prof. G Raghurama, Director, BITS Pilani KK Birla Goa Campus, welcomed the dignitaries and participants to the workshop. He drew attention



Figure 5. Prof. Raghurama welcoming the Chief Guest Mr. Subhash Chandra



Figure 6. Prof. Raghurama welcoming the Guest of Honor Ms. Kamakshi Pai



Figure 7. Prof. Raghurama welcoming Dr. Himlal Baral



Figure 8. Prof. Raghurama welcoming Dr. Madhav Karki

to the relevance of institutionalised deliberations on socially consequential issues and the need for increased interdisciplinary approaches to the question of sustainable development.

In the context of the current debates on the need for sustainable development, he emphasized the role of BITS Pilani as a premier institute of higher education in the country and, more specifically, the role of the Humanities and Social Sciences Department of the university as a multidisciplinary space that can effectively leverage the expertise of various stakeholders to engage with the problems confronting our developmental landscape and sustainability.

The inaugural speech by Mr. Subhash Chandra, the IFS Principal Chief Conservator of Forest (PCCF), Govt. of Goa and the Chief Guest of the workshop, foregrounded the challenges that face various conservation efforts related to forest ecosystems. Key take-aways from his talk are as below:

1. Forest landscapes cover around 30.6% of the earth's surface. They sustain nearly 1.6 billion of human population, which depends directly or indirectly to great extent on products and ecosystem services of forests. Forests are



**Figure 9. Prof. Raghurama welcoming Guests**

storehouse of over three fourth of terrestrial biodiversity and their role in food and water security is vital. They ensure livelihoods, various products such as food, fiber, medicines,



**Figure 10. Mr. Subhash Chandra delivering his Inaugural Speech**



**Figure 11. Ms. Kamakshi Pai addressing the audience**



**Figure 12. Dr. Madhav Karki discussing Forest Ecosystem based SDG pathways in South Asia**

and biomass based energy to significant rural population.

2. Forest are unevenly distributed across different regions of the world and also within the countries and face varying degrees of pressure for deforestation.
3. Forests and trees are vital for sustainable development. They make vital contributions to sustain lives and sustainability of the planet. Apart from providing sustenance, they provide clean air and water, conserve biodiversity and resilience to climate change. Forest ecosystems also are intertwined with health and wellbeing of people.
4. Tropical forests play an extremely important role in moderating climate and mitigation to climate change. They are also critical for adaptation. Though forests have been recognized for direct contribution to meeting objectives of SDG 6 and SDG 15, forest ecosystems are useful for meeting objectives of other SDGs too in wide ranging themes such as sustainability of agriculture to sustainable cities, green jobs, water management to environmental safety.
5. Global population is projected to increase from around 7.6 billion today to nearly 10 billion people by 2050. The corresponding global demand for food – estimated to grow by 50 percent during this period. This population growth coupled with growing affluence and increasing middle class will put enormous pressure on land especially forests for giving way to expanding agriculture, energy needs, habitation, mining and infrastructure etc. to meet their demands. Forests in developing



**Figure 13. Dr. Himlal Baral discussing about the Forest Specialist Group of CEM/IUCN**

countries where the vast majority of the world's 800 million poor and hungry people are concentrated are more likely to be affected.

6. India, which supports 17% of human population and 18 percent of cattle population of the world, faces challenges for conservation and sustainable management of forests. Around 300 million people including tribal communities depend on forests for various needs.
7. It is imperative to create strong partnerships with stakeholders for improving quality of forests and expanding green cover to realize true potential of forests for achieving sustainable development goals. This also calls for greater convergence of various departments and complementarity of their schemes. The academic, scientific and field departments are to work together for finding out and implementing best practices for optimising

roles of forest ecosystems in ensuring various targets of sustainable development goals.

8. Forest Departments in the country strive to improve and maintain good quality of forests and healthy forest structures for sustainability of forest ecosystems to fulfil their socio, economic and ecological functions. Still there are many major causes and factors beyond forestry sector which influence deforestation and land degradation which have serious implications on forest's ability to perform its vital functions. This also affects biodiversity and wildlife habitat.
9. It's here we need strong partnerships and convergence with important stakeholders to address causes and drivers of deforestation. The forestry sector needs to attract talented and committed youth to bring new ideas, technologies and passion. It needs continuously to innovate bring a balance of economics and conservation and create strong livelihood opportunities in forests, change the way people look at forestry from the societal perspective.

Ms Kamakshi Pai, General Manager, Goa Regional Office, NABARD, and the guest of honour for the event, provided a comprehensive introduction to the activities of NABARD and its role in inclusive, equitable and sustainable development in the country. Established in 1982 by an Act of the Parliament, NABARD has evolved as a Development Bank of the Nation providing financial and non financial services for the development of agriculture and other interventions in the rural areas.

Forests are planet's largest and most important terrestrial ecosystem. They have profound influence on structure and function of human habitat locally and globally. Besides providing a large variety of timber, fibre, food, water etc., the forest ecosystem provides environmental protection. In India, forest is the second largest land use next to agriculture. Forestry combined with agriculture sector has the potential to contribute to the Sustainable Development Goals covering, protection, restoration and management of natural resources, maintaining ecosystems and biodiversity, enhancement of economic growth, poverty and hunger alleviation through food security, employment generation and address various challenges of production, consumption and issues involving climate change.

Forestry sector is identified as sunrise sector having immense potential to contribute to food and nutritional security, curbing adverse effect of climate change and also contribute to the doubling of farmers' income. In addition to enabling communities to transform their local forests into effective sources of livelihood, NABARD is also the national implementing entity for Climate Adaptation Projects. Ms. Pai spoke about the close association between NABARD and the Biodiversity Board in Goa on various areas of development and expressed her optimism about including forest conservation as another potential area of collaboration.

Dr Madhav Karki, Deputy Global Chair, IUCN CEM, spoke about "Forest Ecosystem based SDG Pathways for South Asia" in his inaugural address. He introduced the participants to IPBES Global Assessment findings and discussed their implications in the South Asian context. He closely examined the Global Progress Marker on the SDGs and identified areas where we, as a society, are yet to make meaningful progress on the goals. He specifically identified six sustainable development challenges facing the Asia Pacific region and discussed the unique character of South Asia as the most vulnerable sub-region in terms of climate change. He underscored the need for "transformative change" in the region and comprehensively discussed the transformative approaches in forest ecosystem management.

He further elaborated on the pathways for sustainable forest management and emphasised the need to "think globally and act locally".

Dr Himlal Baral provided a comprehensive introduction to the IUCN Commission on Ecosystem Management's (CEM) Forest Specialist Group in his talk "Inception, Membership, Activities and Vision". He introduced the participants to CIFOR and the role of the Global Landscape Forum in moving from commitment to action on various issues related to ecosystem management. He then moved on to discussing CEM and the different specialist groups within it. He specifically spoke about the activities of the Forest Specialist Group and its future priorities. He discussed the possibility of setting up a CIFOR regional office in Goa in collaboration with Goa Forest Department, Goa State Biodiversity Board and BITS Pilani, Goa campus. He further expressed his optimism about the possibility of

collaboration between various scientific and administrative stakeholders in creating a strong network for forest ecosystem management.

Dr. Himlal and Dr. Rajiv took this opportunity to launch the Logo of the Forestry Specialist Group of IUCN/CEM, in the capacity of the core group members of the specialist group. Dr. Rajiv credited B.Tech students of BITS, Goa

Mr. Ankit Gautam and Mr. Saurav Diwan for assistance in designing the logo.

Dr. Himlal and Dr. Rajiv also announced that the forest specialist group of IUCN/CEM will be using this Logo for publications and communications of the specialist group from this day onwards. At this point a group photo was also clicked



Figure 14. New Logo for the Forest Ecosystems Specialist Group of CEM/IUCN



Figure 15. Group Photo of Dignitaries and Participants

## Session 2

Dr Rajiv Kumar Chaturvedi delivered a talk on the subject “The Role of Forests in Achieving the 17 Sustainable Development Goals”. He discussed the role of forests in meeting two of the SDG goals (SDG #13, Climate Action; and SDG # 15, Life on Land) directly and the other fifteen indirectly, especially building on the IUCN forest specialist Group’s Technical Draft Titled “Role of forests in meeting SDGs”. He broadly discussed the Paris Agreement and the global commitment to tackling climate change by limiting the rise in temperature to 2° C. He then proceeded to discuss how India has pledged to contribute towards the achievement of this goal. He detailed India’s commitments to reducing the emissions intensity of its economy by more than a third and increasing the cumulative electric power generated from non-fossil fuel

to 40% by 2030. Dr Chaturvedi compared the Paris Agreement commitments made by different countries and the challenges that are unique to South Asia and, more specifically, to India.

Professor B.K. Tiwari of the North Eastern Hill University, Shillong spoke on “Traditional Institutions, Livelihood Security and Forest Resources in North-East India: A Road Map for Future.” His address to the participants described the interaction between traditional and formal institutions in governing forests and associated resources in North-East India. He provided specific examples of this interaction by discussing, among others, the Garo and Jaintia communities in Meghalaya, and Ao and Konyak communities in Nagaland. Prof. Tiwari emphasised the need to strengthen these interactions by consulting local, traditional governing bodies while making policy decisions pertaining to forests. He went on to outline the typology of community-managed forests and the unique contributions of traditional institutions in the conservation of forests. He described traditional management as



**Figure 16. Prof. B.K. Tiwari from NEHU, Shillong, Meghalaya**

a dynamic enterprise, evolving over a period of time in tune with the socio-ecological conditions of the region. It is precisely due to the robustness of the interaction between traditional and formal institutions, Prof. Tiwari suggested, that harmonious dual governance in the management of forest resources is immensely desirable.

The two presentations by Dr. Rajiv Kumar Chaturvedi and Prof. B.K. Tiwari followed by a lively interaction between the speakers and participants. The questions from the participants dealt with issues such as the integrity of data on the basis of which climate change is monitored, the role of traditional institutions in the context of increasing modernity in North-East India, and concerns over the dilution of traditional institutions in Indian states where there are limited constitutional provisions to protect them.

Dr Jaideep Joshi from IISc, Bangalore spoke on the topic “Predicting Forest Fires: Towards Meeting SDGs”. He began by discussing the need to

predict forest fires and the traditional techniques that have been employed to do the same. He then introduced the newly developed machine learning approach which offered a substantially greater degree of predictive capacity in the management of forest fires, describing in detail how, in comparison to previous approaches, machine learning has improved this process by synthesizing myriad variables, including population density and road networks. The case study he presented from central India demonstrated the effectiveness of the approach and provided the participants with insights on how modern computer technology can be integrated with conservation efforts.

Mr. Sheikh Adil from BHU, Varanasi spoke on the topic “Reclamation of Degraded Lands: Role of Forests in Meeting Bonn Challenge”. He discussed how the Soil Quality Index can be effectively employed in selecting plants for land restoration. The aim of a typical restoration program is to maintain good soil quality that enables better plant growth and development. Mr Adil described various field performance tests and explained how soil quality index can be used to identify species of trees that support restoration efforts under harsh climactic conditions.

Dr. Parul Srivastava’s presentation on “Technological Intervention for Afforestation and Water Conservation” comprehensively discussed how high-resolution data can be generated and used by the forest staff and other associated stakeholders to carry out afforestation activities. She also demonstrated how this is integrally linked to meeting our water conservation goals and leveraging the current substantial outlay from the government for this purpose. She introduced the participants to the user-friendly and site-specific Decision Support System (DSS)- available both as a web-based platform and a mobile application- which uses geospatial tools to provide salient information about the forests and their biophysical parameters at a regional and global scale in a cost-efficient manner.

She used the example of Government of Maharashtra’s objective to plant 50 crore trees by 2019 to demonstrate how local knowledge and technology can be synthesized to provide practical afforestation solutions for communities and institutions that do not otherwise have the technical know-how on species and plantation-



**Figure 17. Dr Jaideep Joshi discussed his global forest fire model**



**Figure 18. Mr. Sheikh Adil speaking about Bonn Challenge**



**Figure 19. A Group Picture**



practices that are most effective in meeting their afforestation goals.

Three presentations by Dr. Jaideep, Mr. Adil and Dr. Parul were followed by an interaction and several important questions were raised. On a question regarding whether the machine learning model could account for human behaviors that cause forest fires, Jaideep Joshi explained that

while population density and road networks are accounted for as parameters that predict ignition and management of fire respectively, a variable such as human behavior itself cannot be appropriately accounted for. The other questions discussed the ways in which common people can access the high-resolution data generated by ADSS and the general need for community-friendly technologies.

## Post-lunch session



**Figure 20. Q&A Session**

Post-lunch, the second session continued with its final two presenters. Dr. Vidhee Avashia, from IIM Ahmedabad, presented on the changing dynamics of green spaces in Panaji city. Dr. Avashia discussed her research on the change in land use in 47 cities across the country, which encompassed five climate zones and three tier sizes. The basis of data was imaging available from the Landsat satellite programme for each of the cities over four years. Dr. Avashia had developed a “hybrid classification method” to understand how Tier X, Y and Z cities have changed in terms of forest land use. She concluded that forest land is decreasing in Tier Z cities and, within Panaji’s boundaries, an increase in built-up area has been noted.

The last speaker for the second session, Dr Sonali Ghosh, from the Indian Forest Service and a Visiting Faculty from UNESCO C2C on World Natural Heritage Management and Training for Asia and the Pacific Region at Wildlife Institute of India, discussed the role of eco-disaster risk reduction, or eco-DRR, and regulating ecosystem services with respect to sustainable development goals (SDGs). According to Dr Ghosh, the Asian and Pacific regions in the world are the most



**Figure 21. Dr. Sonali Ghosh Receiving Memento from the Chair Dr. Madhav Karki**

disaster-prone areas in the world, with turbulent climates and heavy population concentrations. She described the role of eco-DRR as a method to develop “sustainable management, conservation, and restoration of ecosystems to reduce disaster risk, with the aim to achieve sustainable and resilient development”. Key issues that would warrant the use of eco-DRR would be water use, which is mostly derived from protected areas like forests. Eco-DRR provides several tools that can be put to use in disaster-related efforts. She further explained that Eco-DRR, in the context of World Natural Heritage Management, attempts to find a balance of biological and cultural protection to defend world heritage.

She discussed case studies which featured the use of these tools; the first one described the use of traditional cultural knowledge towards ecosystem services in Manas, Assam. Having worked as a forest officer for 14 to 15 years in Assam, Dr. Ghosh described how she was able to observe the indigenous community in Manas use their understanding of water scarcity, as well as their response to it. Dr. Ghosh insisted that, while the use of such traditional water management

practices are unique, they are not uncommon and are to be found in communities across the country. Protecting such knowledge should become one of the priorities of eco-DRR as well. The second case study briefly discussed the effects of classifying the Western Ghats as a World Heritage Site and mentioned the efforts taken in order to measure the forest carbon content and forest fire occurrences. Dr Ghosh finished her presentation after expressing the hope of possibly including eco-DRR within the discipline of civil engineering and other associated fields in order to further sustainable development goals.

During the discussion stage, two questions were raised. The first one sought Dr Ghosh's position on the government's response to the 2009 floods in Canacona region of Goa, which witnessed the cutting of mangroves in order to facilitate the movement of water. Dr Ghosh explained that buffer loss due to replication of Western building techniques and general ignorance of the effects of hydrology led the government to adopt such a drastic measure. The second question, for Dr Avashia, was concerned with the validity of data from Landsat and other incomplete sources when it came to the research and conclusions.

## Session 3



**Figure 22. Prof. Reena Cheruvalath speaking about the Department of Humanities & Social Sciences at BITS, Pilani, Goa Campus**

The purpose of the third session- “Linking science to practice”- was to introduce the key stakeholders of the workshop to the audience. The session was chaired by Professor B.K. Tiwari from Northeastern Hill University, Shillong, Meghalaya.

The first speaker, Dr. Reena Cheruvalath, Associate Professor and Head of the Department of Humanities and Social Sciences of BITS Pilani, K K Birla Goa Campus, introduced the department and its role in meeting the forest-related sustainable development goals. She pointed out the role of sustainability in the field of education as a major component that must be nurtured within education and proposed collaborations between the department and the organisations of whose members were present in the workshop.

The second speaker, Dr. Shalini Dhyani, the South Asian Chair of CEM/IUCN and Scientist NEERI, discussed the vision, activities, and involvements of CEM/IUCN in South Asia and how it can benefit environmental sustainability. Dr. Dhyani pointed out that long-term ecological reserves affect



**Figure 23. Dr. Shalini Dhyani on the Vision of CEM/IUCN in South Asia**

humanity and can serve as grounds for more sophisticated understanding of contemporary trends based on multi-disciplinary research. She stated that biodiversity loss was a huge concern for national and local groups, since biodiversity and ecosystems are cross-cutting topics that are directly related to the goal of environmental sustainability. Major challenges in the areas of sustainable production and consumption exist in the South Asian region. These include poor resource management, unsustainable agriculture, as well as poor responses to climate change-related issues. Land degradation is a major issue that may lead to mass migration, as well as a loss of 10% of the global GDP. In response to these issues, the IUCN has begun to red-list ecosystems as well as species that are in danger. This is a recent development in the case of the Indian subcontinent, as the socio-economic aspects of the subcontinent that were hitherto ignored are now being taken into consideration while assessing the ecosystem. Healthy ecosystems would help reduce the effect of or prevent natural disasters.



**Figure 24. Mr. Sushil Naik on the vision and activities of NABARD in Goa region**

Dr. Dhyani indicated that the activities of invasive species within ecosystems are also a cause for concern for the IUCN. Other issues of concern included mangrove loss in Goa based on illegal aquaculture expansion, agricultural strains, and pollution due to fertilisers, among other related causes. She also highlighted the urgent need to establish ecosystem balance; the UN had declared 2030 to be the decade by which ecosystem balance should be restored. Dr. Dhyani proposed solutions to address the challenges found in South Asia, including sensitivity to local differences and nature-based solutions, among others. The IUCN's South Asian members have attempted to influence and improve the knowledge base on these complex issues related to ecosystem conservation and developing healthy ecosystems within South Asia by understanding the values of biodiversity and ecosystems as emerging drivers of a global response to ecosystem depletion. Dr. Dhyani concluded her talk by asserting that the IUCN/CEM has a good representation of the member states, while balancing members along gender and academic backgrounds, and encouraged the participation of youths in the organisation. She concluded by summarizing various aspects of the CEM.

Mr. Sushil L Naik, the District Development Manager- South Goa, Goa Regional Office, NABARD, presented on the activities and vision of NABARD pertaining to Goa. Mr. Naik introduced NABARD as a financial institution that financed rural infrastructure and provided advice on policy and other related issues concerning rural and agricultural development. NABARD, which stands for National Bank for Agricultural and Rural Development, was established in 1982. NABARD



**Figure 25. Mr. Cheten Thinley on Forestry and SDGs in Bhutan**

finances self-help groups, sustainable development initiatives, and helps with credit planning for forestry-related concerns across India. Mr. Naik stated that, with Goa, the forestry concerns are mostly private in nature. The Government of India is funding adaptation-related activities throughout the country, with at least one project in each Indian state, through NABARD. These funds have been used to sanction six projects across seven regions so far. The projects sanctioned under the National Adaptation Fund for Climate Change, established in August, 2015, have been implemented by NABARD. To this end, ₹847.88 crores (approximately \$1.21 billion) have been sanctioned by the government, covering 168 districts in India. Climate action strategy for 2019-2020 included identification of goals for climate finance-related results.

The fourth presentation, by Dr. Pradip V Sarmokadam, Member Secretary of the Goa State Biodiversity Board, introduced the activities of the Goa State Biodiversity Board in their involvement of local communities in the conservation of ecosystems. The presentation opened with an elegant video describing Goa's biodiversity. Dr. Sarmokadam defined biodiversity on three levels- the genetic, species, and ecosystem levels. He noted the role of biodiversity management committees, or BMCs, in protecting biodiversity on these three levels across the country. He also commented on how the Biological Diversity Act of 2002, sought to encourage states to create State Biodiversity Boards and BMCs, but could not consistently meet the relevant biodiversity goals. Community involvement in Goa was seen as significant in the success of BMCs in comparison to more top-down

initiatives seen in other states. The issues related to BMCs were, among other factors, based on how the members of the community came to work towards the improvement of the local biodiversity. Dr Sarmokadam concluded his presentation by describing the achievements of Goa's BMCs and encouraged the integration of research, PR- and government-related infrastructures.

The final presenter of the third session, Mr Cheten Thinley, from the Conifer Forestry Research Sub-Centre of Yusipang Department of Forest and Park Services, Royal Government of Bhutan, described the links between forestry in Bhutan and SDGs. About 71% of Bhutan is covered by forest areas, with farming and other livelihood related activities, which take up just over 16% of remaining land, being associated with the presence of the forests. Mr Thinley noted a drive to localise SDGs in Bhutan, with an eye towards using measures such

as the Gross National Happiness Index, which is based on the pillars of sustainable and equitable socioeconomic development, conservation and sustainable management of the environment, good governance, and preservation of the Bhutanese culture. Mr Thinley explained how the SDGs are being correlated with the Royal Government of Bhutan's National Key Result Areas, or NKRA. Mr Thinley concluded the presentation by noting that Bhutan has a national forest policy that seeks to maintain sustainable forests for future generations, and stating that Bhutan is a fragile Himalayan ecosystem and the achievement of SDGs is of crucial importance to Bhutan's future economic and biodiversity prospects, considering the impact India, one of Bhutan's major economic and biodiversity partners, has on it.

The concluding remarks from the chair, Prof Tiwari, marked the closure of the session.

# The Concluding Panel Discussion



**Figure 27. Panel discussion in Progress**

The fourth session was a panel discussion held near the end of the workshop. The panel discussion focussed on encouraging the theme of “Think Global and Act Local”, especially in the context of the requirements of the Goa state. The panel was moderated by Dr Madhav Karki, with the objective to identify the key take-away messages from the workshop.

Ms Kamakshi Pai, the General Manager of the Goa Regional Office of NABARD was the first to speak.

She clarified that NABARD is not just a financial institution but a “developmental financial institution”, and that it works closely with its Biodiversity Board in supporting BMCs. NABARD supports fishing activities, and a model fishing village is being developed in order to set an example for other communities involved with fishing. Expansion of cashew plantation is also sought, with the involvement of the Forest Development Association, since cashew is a cash crop and can be a livelihood option for several communities reliant on agriculture. Ms Pai

suggested that she wanted to continue associating with BITS, especially in the context of need to develop Goa state's State Action Plan on Climate Change (SAPCC). She also highlighted the urgent need for formulating adaptation projects for the state of Goa which are currently lacking as the SAPCC is yet not completed. Lastly, Ms Pai discussed about the Research & Development fund that NABARD offers, especially supporting practical research in the field of agriculture and rural development.

The next speaker, Dr Pradip V Sarmokadam, the Member Secretary of the Goa State Biodiversity Board, sought to establish collaboration with the members of the different institutions present during the workshop as well as requested their inputs for the finalization of Goa's SAPCC. Dr Sarmokadam highlighted the contribution of Goa's Biodiversity Management Committees at the village level in documenting Goa's rich biodiversity. He suggested that the BMCs from Goa involved in the protection of endangered species of fish and salt pans should interact with members of the IUCN. He also pointed out that Goa is a state where livelihood support groups, like farmer self-help groups, could turn into technical support groups. He further stressed that people's biodiversity registries (PBRs) would be the future of documenting and prioritising modes to decide conservation: PBRs should be put to use in the enhancement of conservation. The role of access and benefit sharing was also noted in future collaboration between biodiversity BMCs and climate change BMCs, as they share a large interface between themselves. Lastly, Dr Sarmokadam pointed out that Goa has to take up special bioresource plans for communities and, in this goal, hoped to receive an initial capital infusion to later turn it into rolling capital in order to become self-sufficient.

As a rejoinder to Dr. Sarmokadam's presentation, Dr. Karki pointed out how forests have been utilised for economic development but have, consequently, led to a reduction in the biodiversity and also encouraged the work the BMCs were doing in that regard.

Shri. A. Jeastian IFS, Deputy Conservator of Forests, Planning and Statistics, Goa Forest Department, described the Forest Department as a service department and not nearly as involved with law enforcement as it was previously. He

pointed out that of the 60.28% of the area inside the state of Goa that is covered in forests, about 33% is recorded forest area. He further suggested that Goankars, are, and have been traditionally protective of forests in general. The national goals related to increased forest coverage area would require the involvement of local people, which would mean reaching out and handling the issues they face. He further noted that the Forest Department would like to reduce the gap between scientific organisations and the stakeholders, so as to facilitate collaboration in pursuing the goal of SDGs in the forest sector. Lastly, Mr. A Jabestin suggested that forest ecosystem protection would require the involvement of people who belong to that ecosystem. Although Dr Karki pointed out that a choice had to be made for the apparently conflicting aims of income generation through forestry, development of forests against climate change, and the normal planned route to sustainable development, Mr. A Jabestin further urged for the need to seek synergy among these goals, at least at the level possible for the Forest Department.

The last plenary speaker, Dr. Shalini Dhyani, the South Asian Chair of the IUCN/CEM, noted the interest she saw from the state of Goa as well as the regularity with which the Goa Biodiversity Board was in communication with the IUCN. She stated that Goa's focus on nature-based solutions in core areas, where it could be applied was commendable, and suggested integrating PBRs in such solutions from the first step onwards. Dr Dhyani also suggested that case studies on honey banks and related ideas would be appreciated, and sought information on PBRs.

Dr Rajiv Kumar Chaturvedi, the workshop co-ordinator, stressed the need to bring out a detailed proceeding of this workshop. He urged the participants to set a realistic goal and action plan for the next two years. He appreciated the efforts Goa State Biodiversity Board (GSBB) in setting up of innovation plans such as seed banks, honey banks, and PBRs. However, Dr. Rajiv noted that the state has yet not prepared its SAPCC. Dr. Rajiv offered help, given his experience in working with several Indian states in this context. Dr. Pai, GM of Goa regional office NABARD, pointed out at this juncture that for Goa's SAPCC we would specifically require the following assistance:

- a. Time-series analysis of long-term observed and projected climatology over the state,





**Figure 28. Dr. Madhav Karki in Discussion with Audience**

- b. Assessment of ongoing and projected Climate Impacts on natural and production systems in the state
- c. And, based on scientific understanding we should be able to list climate resilient practices for different sectors.

Dr Karki joined the discussion at this point and stated that a climate-resilient social unit, like a village, would require participation of its people, the imparting of knowledge, and the use of assessments that would form the basis of a comprehensive biodiversity management plan that addresses other aspects like poverty and climate disasters. He allowed the audience to put forward new ideas for the panel.

Among the suggestions put forward were a model landscape for restoration (see Box 1 for details), in the case of biodiversity, livelihood, and climate conservation goals; a request for co-financing project develop locally-customised models; increased scrutiny of forest areas held in private regions, which may be indiscriminately destroyed without concern for the livelihoods of those dependent on them; and compensation or support for maintaining private forest cover, rather than having to move the court every time to protect their property rights. One of the audience members asked Mr. A Jabestin of the Forest Department what had been done about the presence of the Acacia plant in Goa, which is not

native to Goa and was having a detrimental effect on the flora of the state, as well as questions related to the critical forest areas that have been destroyed without any significant actions taken against the people responsible, the recent water scarcity problem that Goa has begun to face for the first time in 17 years, as well as the increased presence of mealy bugs in the state. In response to the questions raised by the audience member related to the efforts the Forest Department was undertaking, the forest officer pointed out that Acacia in wild areas will be removed and replaced with native species. He also clarified that forest areas held privately are a multi-state problem, which would mean collaborating with a lot of other state governments as well as private parties. Lastly, he stated that the significance of the mealy bug problem, should it have been as problematic as the audience member suggested it was, has not been brought to the attention of the Forest Department so far, and requested further clarification on the matter.

Dr. Rajiv further noted that the IUCN membership application was open for interested parties who had attended the workshop. Finally, Dr Chaturvedi suggested the establishment of a WhatsApp group to directly connect experts in related fields and coordinate activities. Dr. Rajiv also reiterated that the Forest Specialist Group of IUCN/CEM will soon bring out the technical report which is discussed during this meeting

### Box 1. Greening of degraded lands in Goa: harnessing public-private partnerships for locally customized restoration of degraded land for multiple ecosystem services

Dr. Himlal Baral of CIFOR proposed a strategy for greening of degraded lands in Goa. The strategy included the following action points:

1. Identify and assess degraded lands for geographic extent and bio-physical characteristics for later targeted implementation of suitable Forest Landscape Restoration (FLR) approaches to restore the provision of a variety ecosystem goods and services
2. Develop and evaluate locally appropriate models of FLR that integrate mixed species of high economic value and ecological function ensuring inclusion and participation of smallholders, local communities, private sectors, government authorities
3. Pilot selected FLR modalities engaging all the relevant stakeholders
4. Quantify, map and evaluate multiple ecosystem goods and services, trade-offs and synergies under different FLR models and outcome scenarios
5. Engage private sector actors to develop customised FLR business models suitable for small and medium enterprises (SMEs) and identify sustainable financing mechanisms for scaling

Before the discussion ended, Dr Sarmodakam reiterated that the biodiversity-related forests should be protected, as well as asked for the IUCN publication to be accessible, given its restrictive price range. He appreciated the suggestion of starting a WhatsApp group, as well as the suggestions and ideas related to improvement of Goa's SAPCC.

The audience members also sought the implementation of effective climate change

mitigation and adaptation projects, such as adoption of climate-smart agriculture by farmers, and planting trees within cities to create spots that both oxygenate the city as well as act as islands for citizens to find some peace away from the city.

Dr Karki concluded the session by suggesting that a scientific assessment would require taking into consideration the concerns of those whose lives are affected, and a proposal to work together should be formulated.



Figure 29. Panel Discussion Concludes

# Acknowledgements

We would like to acknowledge the financial support from the Commission on Ecosystem Management (CEM) of International Union for Conservation of Nature (IUCN) for organising this workshop. The financial assistance received from Research and Development fund of National Bank for Agriculture and Rural Development, India (NABARD) towards the organization of this international workshop is gratefully acknowledged. Support from CIFOR, Indonesia is duly acknowledged. Support from Goa Government and Goa State Biodiversity Board is gratefully acknowledged. We would like to thank Shri Subhash Chandra and Ms. Kamakshi Pai for gracing this occasion as Chief Guest and Guest of honor. We also thank Dr. Pradip V Sarmokdam for generous support and guidance in organizing this workshop. We would like to thank our colleagues from IUCN / CEM and other delegates for participating in this workshop. Our special thanks are due to the members of the different Biodiversity Management Committee Members,

who could attend this workshop and contributed to its success. We would also like to thank the staff from the Goa Forest Department who participated in this even.

Furthermore, we would like to thank Prof. Raghurama, BITS Pilani, K K Birla Goa Campus Director for hosting this workshop. We are also thankful to Dr Reena Cheruvalath, Head of the Department of Humanities and Social Sciences of BITS Pilani, K K Birla Goa Campus, for her generous support. We would also like to thank faculty colleagues from the BITS Pilani, K K Birla Goa Campus, who participated and contributed to this workshop. Last but not the least, we are grateful to research scholars at the department of Humanities and Social Sciences and Office Assistant, Vijay Lamani, for their help in carrying out this workshop. We thank our students Thomson and Sisir for taking a note of the workshop proceedings, which eventually contributed to this workshop report.

# The workshop Agenda

## International Consultative Workshop

on

### “Role of forest ecosystems in meeting SDGs in South Asia ”

May 9<sup>th</sup> 2019

Venue: DLT -6, K K Birla Goa Campus of BITS, Pilani, Goa

#### Workshop Schedule

8:30 – 9:00	Registration
<b>Inaugural session</b>	
9:00 – 9:10	Introduction to the workshop by Dr. Rajiv Kumar Chaturvedi, Assistant Professor, K K Birla, Goa Campus, BITS Pilani & Workshop Co-ordinator
9:10 – 9:20	Welcome address by Prof. G. Raghurama, the Director, K K Birla Goa Campus, BITS, Pilani
9:20 – 9:35	Inaugural speech by Chief Guest, Shri. Subhash Chandra – IFS Principal Chief Conservator of Forest Govt. of Goa
9:35 – 9:50	Inaugural speech by Guest of the Honour, Ms Kamakshi Pai, General Manager, Goa regional office, NABARD
9:50 – 10:15	Inaugural talk “Forest Ecosystem based SDG Pathways” by Dr. Madhav Karki, Deputy Global Chair, IUCN CEM
10:15 – 10:45	Himlal Baral, “Inception, Membership, Activities and Vision” for the Forest Specialist Group of the IUCN Commission on Ecosystem Management (CEM) <b>&amp; Release of Forest Specialist Group of IUCN Commission on Ecosystem Management (CEM) Logo</b> <i>Chair Forest Specialist Group of IUCN Commission on Ecosystem Management (CEM) &amp; Scientist, CIFOR, Indonesia</i>
<b>Group Photo followed by Tea/ Coffee Break</b>	
10:45 – 11:00	Tea/Coffee
<b>Session 2: Role of forest ecosystems in meeting SDGs in South Asia</b>	
<b>Chair:</b> Madhav Karki, Deputy Global Chair, IUCN Commission on Ecosystem Management, IPBES MEP member and Executive Director, CGED – Nepal <b>Rapporteurs –</b> Thomson, Gokul Sisir	
11:00 – 11:05	Opening of the session by the Chair
11:05 – 11:15	Rajiv Kumar Chaturvedi “Technical report on Role of forest ecosystems in meeting SDGs in South Asia”

11:15 – 11:25	Rajiv Kumar Chaturvedi “Role of forests in meeting Climate Action goals in India” <i>Co-Chair Forest Specialist Group of IUCN Commission on Ecosystem Management (CEM) &amp; Assistant Professor, BITS Pilani, Goa Campus</i>
11:25 – 11:40	B.K. Tiwari “Livelihood security and forest resources – experiences from Northeast India” <i>Professor Northeastern Hill University, Shillong</i>
<b>Time for Discussion</b>	
11:50 – 12:05	Jaideep Joshi “Modeling forest fires at global level” <i>IISc, Bangalore</i>
12:05 – 12:15	Sheikh Adil “Reclamation of degraded lands”- Role of forests in meeting Bonn Challenge – A case-study from Gujarat” <i>BHU, Varanasi</i>
12:15-12:25	Parul Srivastava “Technology intervention for afforestation and conservation of water” <i>IORA Ecologicals, New Delhi</i>
<b>Time for Discussion</b>	
12:35-12-45	Vidhee Avashia “Changing dynamics of green spaces in Panaji city” <i>IIM, Ahmedabad</i>
12:45 – 12:55	Sonali Ghosh “Eco DRR and regulating ecosystem services in the context of SDG goals” <i>IFS &amp; Visiting Faculty UNESCO C2C on World Natural Heritage Management and Training for Asia and the Pacific Region at Wildlife Institute of India</i>
<b>Time for Discussion</b>	
<b>Lunch Break (13:00 PM-14:00 PM)</b>	
<b>Session 3: Linking Science to Practice: Introduction to key workshop stakeholders</b>	
<b>Chair: Prof. B.K. Tiwari, Professor, Northeastern Hill University, Shillong, Meghalaya</b>	
<b>Rapporteurs – Thomson, Gokul Sisir</b>	
14:00 – 14:05	Opening of the session by the Chair
14:05 – 14:15	Shalini Dhyani “Activities, vision, and membership of CEM/IUCN South Asia,” <i>Scientist NEERI &amp; Chair CEM/IUCN South Asia</i>
14:15 – 14:25	Sushil L Naik, “Activities and vision of NABARD in this region” <i>District Development Manager – South Goa, Goa Regional Office NABARD</i>
14:25-14:40	Dr. Pradip Sarmokadam/ Member Secretary GSBB “Introducing the Activities of GSBB involving local bodies in ecosystem conservation” <i>Member secretary GSBB, Govt. of Goa</i>
14:40-14:50	Reena Cheruvalath “Introduction to the Humanities and Social Sciences Department at K K Birla Goa Campus, BITS Pilani” <i>Associate Professor, Department of Humanities and Social Sciences, K K Birla Goa Campus, BITS Pilani</i>
14:50 – 14:55	Cheten Thinley “Forestry in Bhutan and its linkages to SDG” <i>Conifer Forestry Research Sub-Center: Yusipang Department of Forest and Park Services Royal Government of Bhutan</i>
14:55 – 15:10	Q & A session and discussion co-ordinated by the Chair and Co-Chair
<b>Tea/Coffee Break</b>	

**Session 4: Panel discussion - Linking Science to Practice**

**Panelists:** Dr. Pradip Sarmokdam (*Member Secretary, Goa State Biodiversity Board- MS GSBB*); Shalini Dhyani (*Chair South Asia, IUCN/CEM*); Subhash Chandra (*PCCF, Goa*); Kamakshi Pai (*GM, Goa regional office NABARD*)

**Moderator:** Dr. Madhav Karki

**Rapporteurs – Thomson, Gokul Sisir**

15:25 – 16:15	Panel discussion
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**Session5: Concluding Session**

**Chair:** MS GSBB, Nodal Officer SDG & Forest Dept. Official Govt. of Goa

**Rapporteurs – Thomson, Gokul Sisir**

16:15 – 16:45	Open Feedback and discussion on way forward
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16:45-16:55	Conclusion session conducted by Rajiv
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16:55 – 17:00	Vote of thanks
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# The list of participants

INTERNATIONAL CONSULTATIVE WORKSHOP  
Role of Forest Ecosystems in Meeting SDG's of South Asia  
BITS Pilani K K Birla Goa Campus

09-05-2019

Sr.no	Name	Organization	Sign
1	B.K. Jiwani	NEHU, Shillong	B.K. Jiwani
2	Sheikh Adil Edrili	BHU, Varanasi	Sheikh Adil Edrili
3	Chetan Thirley	UWICER, Thimphu, Bhutan	Chetan Thirley
4	Madhav Kashi	IUCN/CEG	Madhav Kashi
5	Paul Sivastava	DOKA Ecological Solution PVT. LTD. NEW DELHI	Paul Sivastava
6	Rajshri Nagarkar	Goa state Biodiversity Board	Rajshri Nagarkar
7	Nanshe Ramesh Nilsa	Goa state Biodiversity Board	Nanshe Ramesh Nilsa
8	Rashmi Kerkar	Goa State Biodiversity Board	Rashmi Kerkar
9	Vinayak S. Mhapsekar	Goa State Biodiversity Board	Vinayak S. Mhapsekar
10	Ganpat Sidhaye	Goa State Biodiversity Board	Ganpat Sidhaye
11	Shubika Patil	IIM Ahmedabad	Shubika Patil
12	Vidhee Avastha	IIM Ahmedabad	Vidhee Avastha
13	SONALI GHOSH	C2C - WII Derrada, Govt	Sonali Ghosh
14	Prof.(Dr.) Sangram K. Das	GAMFRC, Silvassa, Goa.	Sangram K. Das
15	JAIDEEP JOSHI	IISC, BANGALORE	Jaideep Joshi
16	Himani Baral	CIFOR, Indonesia	Himani Baral

NAME	INSTITUTE	SIGN	
17	Avelino Fernandes	Neura B.M.C. An	Avelino Fernandes
18	Dhylan Mhalgo Velip	Goa University	Dhylan Mhalgo Velip
19	KAMAKSHI PAI	NABARD	Kamakshi Pai
20	Dr. Pradip Saravanan	GSBB	Dr. Pradip Saravanan
21	Ramesh N. Desai	Biodiversity Board	Ramesh N. Desai
22	ASHA GRIYAN	TERI, GOA	Asha Griyan
23	Shalita Dourado	TERI, GOA	Shalita Dourado
24	José Roque Andrade	NUEVA Biodiversity Mgt. Committee	José Roque Andrade
25	Dr. Uma Masur	Panvelchi Chowgule College	Uma Masur
26	M. Deekak Kumbhar	"	M. Deekak Kumbhar
27	Ms. Rohini Naik	Directorate of Fisheries	Rohini Naik
28	Subhata Chavantes	DFEF, Goa Govt.	Subhata Chavantes
29	Manisha Rane	IFS (P), Goa Govt.	Manisha Rane
30	Rui C. Araujo	Chicalim Biodiversity Mgt. Comm.	Rui C. Araujo
31	Arturo D'Souza	Chairperson Santa Cruz BMC	Arturo D'Souza
32	Flycintha Aguiar	Golden Navlim BMC	Flycintha Aguiar
33	Nitesh Shah	SDCE	Nitesh Shah
34	Shubham A. Velencar	SDCE	Shubham A. Velencar
35	Mangaladas S. Grande	VELING PIND (unclassified)	Mangaladas S. Grande
36	N. Palanikumbh	IFS (P)	N. Palanikumbh

Govt. of Goa

37	Anisha Kalkore, M	DCF (Research), Forest Dept	Di
38	Amol P. Raut	Agonwada-chopdem BMC chairman	Fair.
39	Vithoba H. Bagli	—  —	Member
40	Dattaprasad M. Prabhu Kulkarni	Lolnem - BMC MEMBER	
41	Sushil L. Naik	DDM - South Goa, NABARD	
42	J. Santanu Rodrigues	BMC, Centarium, chairman	
43	Shahini Dnyani	Scientist CSIR - NEERI	
44	Rajiv Kumar Chaturvedi	Assistant Prof. BITS, Pilani, Goa	Rajiv
45	Arjun Halarnkar	PRO - BITS Pilani, KK Birla Goa Campus	
46	Gaetha B.	Assoc. Professor, HSS, BITS	
47	Prizegandha Naik	Research scholar, BITS	Shrik
48	Ashish Kishore	Research Scholar, BITT	
49	Hemant Sharma	" " "	Hemant
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# Media Coverage of the Workshop

## BITS Pilani to organise workshop on 'role of forest ecosystems'

BY A STAFF REPORTER  
reporters@gomantaktimes.com

**Vasco:** BITS Pilani, Goa (K K Birla Campus) in collaboration with Commission on Ecosystem Management under the International Union for Conservation of Nature (IUCN) will organise an international consultation workshop on the 'Role of forest ecosystems in meeting Sustainable Development Goals (SDG) in South Asia' on May 9 at its campus.

According to press release by BITS Pilani, the workshop is being organized with the funding support from the 'Commission on Ecosystem Manage-

ment', IUCN; Goa regional office of National Bank for Agriculture and Rural Development (NABARD); and Government of Goa.

The workshop will be inaugurated by the top officials from Govt. of Goa, Goa regional office NABARD and Director of K K Birla Goa Campus, BITS Pilani. The meeting will witness participation from other prominent scientists from south Asia, and prominent agencies from Goa including Mrs. Kamakshi Pai, General Manager Goa regional office NABARD, Dr. Pradip Sarmokadam, Member Secretary, Goa State Biodiversity Board and various other officials.

This workshop aims to understand the linkages between forest ecosystems and the Sustainable Development Goals (SDGs) and other environmental goals such as Paris Agreement goals on Climate Change, and Bonn Challenge on recovery of degraded land via afforestation/ reforestation, in South Asia.

Dr. Madhav Karki, Deputy Global Chair of the IUCN Commission on Ecosystem Management will be delivering the inaugural lecture.

Specifically, the workshop aims to comprehend as to how forest resources through forest resource management can ensure sustained production and

supply of Forest Ecosystem goods and services.

The workshop will be an opportunity for participants to discuss the strategies for preparation of Goa's State Action Plan on Climate Change. One of the key outputs will be finalisation of a Technical Report on 'Role of forest ecosystems in meeting SDGs and Climate Goals in South Asia'.

Participation in this consultation workshop is by prior registration only. For registrations, contact: [iucn.goa2019@gmail.com](mailto:iucn.goa2019@gmail.com). Details about the workshop could be found here: <https://www.bits-goia.ac.in/IUCN/index.html>.

## International workshop on forest ecosystems at BITS Pilani

### THE GOAN NETWORK

#### VASCO

The forest ecosystems specialist group of the Commission on Ecosystem Management of the International Union for Conservation of Nature (IUCN) and BITS Pilani, K K Birla Goa Campus will jointly organise an international consultation workshop on 'Role of forest ecosystems in meeting SDGs in South Asia' at BITS Pilani Goa Campus on May 9.

The workshop is being organised with the funding support from the IUCN, Goa regional office of NABARD and State government.

Dr. Madhav Karki, Deputy Global Chair of the IUCN Commission on Ecosystem Management will deliver the inaugural lecture.

The meeting will witness participation from other prominent scientists from south Asia and prominent

agencies from Goa, including Kamakshi Pai, General Manager Goa regional office NABARD, Dr. Pradip Sarmokadam, member secretary, Goa State Biodiversity Board, and other officials.

The workshop aims to understand the linkages between forest ecosystems and the Sustainable Development Goals (SDGs) and other environmental goals such as Paris Agreement goals on Climate Change, and Bonn

Challenge on recovery of degraded land via afforestation/reforestation in South Asia.

More specifically, the workshop aims to understand as to how forest resources through multiple use forest resource management tools and practices can ensure sustained production and supply of Forest Ecosystem goods and services to generate multiple dividends such as biodiversity conservation,

poverty reduction, Ecosystems based adaptation, mitigation, Disaster Risk Reduction and gender-inclusive development.

The participants will take this opportunity to discuss strategies for preparation of Goa's State Action Plan on Climate Change. One of the key outputs will be finalisation of a Technical Report on 'Role of forest ecosystems in meeting SDGs and Climate Goals in South Asia'.


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A vertical photograph of a tropical forest. The central focus is a tree trunk covered in vibrant green moss and several climbing vines with heart-shaped leaves. The background is a dense canopy of various green plants and trees, creating a rich, textured environment. The lighting is natural, highlighting the textures of the moss and the colors of the foliage.

This workshop aimed to understand the linkages between forest ecosystems and the Sustainable Development Goals (SDGs) and other environmental goals such as Paris Agreement goals on Climate Change, and Bonn Challenge on recovery of degraded land via afforestation/ reforestation, in South Asia. Specifically, the workshop aims to understand as to how forest resources through multiple use forest resource management tools and practices can ensure sustained production and supply of Forest Ecosystem goods and services to generate multiple dividends such as biodiversity conservation, poverty reduction, Ecosystems based adaptation, mitigation, Disaster Risk Reduction and gender inclusive development thus meeting SDG 1 (No poverty), 5 (Gender equality), 12 (Responsible production and consumption), 13 (Climate Action) and 15 (life on land). One of the key outputs of the workshop was discussion of a Technical Report on 'Role of Forest ecosystems in meeting SDGs and Climate Goals in South Asia,' being prepared by the Forest Specialist Group of IUCN/CEM.

Further, the workshop connected global science to local needs and the participants took this opportunity to discuss Goa's State Action Plan on Climate Change. The workshop brought together about 50 global conservation experts and local level practitioners of forests and biodiversity conservation such as members of local Village Biodiversity Committees (VBCs) from Goa, with the aim to link science with policy and local level intervention.