

Localizing SDGs in India using Nature based Solutions (NbS)*

'15000 scientists from 184 countries have signed a much urgent letter to humanity. This is the 2nd warning note to the world community and their heads, mentioning that, we are in the era of the Sixth Mass Extinction.'¹

The year 2015 presented a historic and unprecedented opportunity to bring countries and citizens of the world together to embark on new paths to improve people's lives everywhere and the state of the ecosystems. The sustainable development goals (SDGs) and targets defined therein will shape the global future course of action to end poverty, promote prosperity, peace and well-being for all, while taking into account environmental and resource limits, conservation of biosphere and tackling climate change. South Asia (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) is the world's most densely populated region and home to more than 500 million poor people of the world. While agriculture is the major source of economy and livelihood in South Asia, rapid urbanization and industrial activities are significantly affecting the land-use pattern and productivity of land systems in the region. South Asia is home to a large number of protected areas (PAs), trans-boundary biodiversity landscapes and seascapes, biosphere reserves, sacred groves, key biodiversity areas and high-altitude wetlands. Some of these are spread in shared landscapes and ecosystems. Moreover, the region has three global biodiversity hotspots and shares several hydro-geological features made up of important river-basin regions and unique ecosystems. However, South Asia is vulnerable to several natural hazards such as floods, droughts, earthquakes, cyclones and tidal surges. The region has experienced rapid rise in temperature

during the last three decades and increased frequency and ferocity of extreme and unseasonal rainfall, floods and cyclonic events. These natural vulnerabilities are further compounded by deforestation and forest degradation, rapid land-use change, and overexploitation of natural resources, unsustainable urban planning and increasing rural-urban migration of population.

The 2030 Agenda for Sustainable Development, comprising 17 SDGs is especially relevant for South Asian countries that, despite their high economic growth and satisfactory Millennium Development Goal (MDG) achievements, account for 37% of the world's poor, suffering from a number of development and infrastructure gaps. With one-fifth of the world's population, South Asia has a critical role in the global achievement of SDGs. It is in these contexts that a workshop was planned as the regional countries are beginning to implement their efforts to achieve multiple goals and targets: 2020 Biodiversity Goals; Paris Climate Agreement and SDGs.

The aim of the workshop was to critically analyse existing ecological, economic (including technological) and socio-political challenges as well as opportunities faced by countries in South Asia. The workshop was also used as a platform to share corporate initiatives and collective strategies under which the countries are trying to transform their traditional economies to low-carbon, climate-resilient and adaptive economies for achieving UN SDGs by 2030. The workshop emphasized on bringing together and developing a multi-stakeholder dialogue to discuss ecosystem management approaches considering the SDGs. It was attended by many eminent scientists, professors and policy makers from South Asia and marked a successful participation from the corporate sectors. It was a good brainstorming and sensitizing session for the researchers and young professionals as well. Three sessions highlighted the existing challenges of South Asia, including managing ecosystems in natural as well as urban settings with special focus on agro-ecosystems. Different sessions of the master workshop

brought in perspectives and the way forward using nature-based solutions (NbS) and ecosystem-based (Eb) approaches to address these threatening and emerging challenges. The workshop revolved around the concepts and approaches to scale up the SDGs and associated National Biodiversity Targets based on Aichi Targets, 2010. The workshop saw focused brainstorming on ecosystem management, agro-ecosystem linkages and NbS with respect to growing urban expansion in India.

Opening remarks of the session were given by Madhav Karki (Commission on Ecosystem Management of International Union for Conservation of Nature (IUCN CEM)) who shared his thoughts on 'Ecosystem protecting biodiversity, infrastructure and communities: Ecosystem based Adaptations (EbA), Ecosystem based Disaster Risk Reduction (EcoDRR), and natural resources', with special emphasis on the scenario from Nepal. He talked about the work done and results achieved by sharing a few successful cases of NBS from Nepal. He also highlighted the sustainable development challenges and NbS and Eb opportunities in Nepal. Concluding his presentation, Karki shared the potential benefits of NbS/Eb-based initiatives with the industry and private sector. Hemanthi Ranasinghe (Sri Lanka) gave an overview on 'Ecosystem management, NbS and SDGs: perspectives from Sri Lanka'. She elaborated on Sri Lanka's geographical features, natural resources, ecosystems, biodiversity targets and trends. She further shared with the audience as to how Sri Lanka has responded to its biodiversity issues and targets using international and national commitments; national policies, laws and regulations; enhanced extension, education and awareness, and enhanced monitoring responses. She emphasized on the blue and green economy perspectives from Sri Lanka and concluded with a few examples of NbS in that country that included integrated water resource management, integrated wetland conservation, integrated coastal management and home-gardens, etc. P. R. Sinha (IUCN India Office, New Delhi) talked about

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the terrestrial, marine areas and forest ecosystems as well as Himalayan regions. He shared the problems and conflicts in these regions that include conflict, land degradation and fragmentation, and threats to biodiversity and important animal species like tigers. He emphasized on how ecosystem management becomes important and the role of mitigation hierarchy in reducing impacts on ecosystems. He concluded his talk by sharing the role of IUCN Leaders for Nature programme in biodiversity mainstreaming in business. Shalini Dhyani (CSIR-NEERI, Nagpur) focused on the major environmental challenges in South Asia, among which climate change is the mega driver.

Using this as a platform, CSIR-NEERI and IUCN CEM launched a conservation calendar that shares the important conservation initiatives by their partner organizations. This was followed by the release of reports by CSIR National Environmental Organisation on EcoDRR. Publications were also released by IUCN and other corporate members. Forest Landscape Restoration Project and released the flier on 'Bonn Challenge and India was released by IUCN FLR, was a key release based on progress of restoration efforts across states and landscapes'. The other publication released during the workshop was on Sarus Conservation Programme by United Phosphorous Limited and Vulture Conservation by Rio Tinto.

The first session of the workshop tackled emerging challenges and opportunities in ecosystem management with reference to SDGs 14 and 15 as well as identifying key players and their roles. It included panel discussions by professors, CEM SA members and corporate members who shared ongoing work and initiatives that have contributed towards ecosystem management with specific reference to SDGs 14 and 15. The session saw perspectives on PAs, Ocean conservation, forests and Eb approaches for corporate initiatives. Some of the key points of the discussion revolved around strategizing the integration of biodiversity and ecosystem service (BES) values

into sector development policies and programmes with reference to SDG 15 and other associated National Biodiversity Targets (NBTs). This involved recognizing that BES is an integral part of PA protection and management (monitoring indicator); simplifying and quantifying BES (reporting mechanisms); payment for protecting BES through dependant sectors (e.g. water and air cess), and developing different models of governance mechanisms for addressing BES protection (e.g. community-based JFM model). The session also saw some relevant discussion on the collaborative models between communities, CSOs, corporates, research and the government in developing an Eco-DRR strategy and the importance of quantitative parameters and monitoring approach, not just grouped at local, regional and national levels, but beyond.

The second session focused on emerging challenges in sustainable management of agro ecosystems with reference to SDGs. The discussion highlighted the global scenarios and challenges to food and agriculture, ecosystem biodiversity and climate change as the global population approaches 10 billion by 2050. Despite of agriculture being the mainstay of the economy and supports 60% of livelihood of total workforce in South Asia the region is still the second most food-insecure region in the world. There are agro-ecosystem issues being faced and common potential strategies discuss these challenges with special focus on the appropriate SDGs and associated Aichi Targets. B. K. Tiwari (NEHU, Shillong) emphasized that to match the current trend in agricultural demands of the country, the existing policies need to be revised to promote forests that support more food production with open access to public, as a majority of the total land we have in the country is of very low productivity. Kavita Gandhi (CSIR-NEERI) talked about concerns of pesticide usage in agro-ecosystems. Pesticide usage should strike a balance between the benefits it offers and ecological impacts it has on the surrounding. The benefits of using chemicals in agriculture

may help in attaining the targets and goals of SDGs 2 and 12 and SDG 8 in the short term, but the ecological impacts of pesticides are an obstacle in attaining SDGs 3, 14 and 15. The role of the Stockholm Convention and Rotterdam Convention in managing chemicals through life-cycle approach and the international importance of introducing sustainable chemistry into the mainstream were discussed by Jitendra Sharma (MoEF and CC, GoI).

The third and final session of the workshop was on nature-based solutions, EcoDRR and urban ecosystem management with reference to SDG 11. The session started with discussions on smart cities and moved to challenges in metro and tier-2 cities with respect to urban development. Perspectives from wetland governance and its implementations in the context of urban ecosystems where waste water and water management is a major concern were the major focus of the session. The discussion led to an understanding that conservation agencies need to organize them under one banner to design a coordinated frame of action and also programme so as to conserve the neighbouring ecosystems and biodiversity for sustainability. The workshop ended with a thought to revisit the discussion and use the same to formulate any required conservation motions for the next IUCN World Conservation Congress to be held in 2020.

1. Davey, T., 15,000 scientists sign 'second notice' warning about climate change, 2017; <https://futureoflife.org/category/environment/>

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