

Updating India's National Biodiversity Action Plan: the process and way forward

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The National Biodiversity Strategy and Action Plan is the primary tool for implementation of the Convention on Biological Diversity (CBD) at the country level. A National Biodiversity Action Plan (NBAP) was prepared for India in 2008, through an inter-ministerial consultative process. Five years later, it was considered necessary to align the existing NBAP in accordance with the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets (ABTs). This was achieved by formulating India's National Biodiversity Targets (NBTs) and developing a monitoring framework using indicators, and through an evaluation of funding support for biodiversity conservation in India. The draft document was prepared and reviewed through a series of national stakeholder consultations and technical review meetings, based on which the 'National Biodiversity Action Plan: Addendum 2014 to NBAP 2008' was finalized. As part of its commitments to the CBD to accomplish the global ABTs, India must ensure effective implementation of the NBAP and meet the NBTs. This requires cooperation amongst all stakeholders including the relevant federal ministries and state level agencies along with a rigorous and time-bound application of the monitoring framework.

Keywords: Aichi Biodiversity Targets, biodiversity conservation, convention on biological diversity, National Biodiversity Strategy and Action Plan, National Biodiversity Targets.

THE Convention on Biological Diversity (CBD) promotes biodiversity conservation with an inclusive approach involving sustainable use, equitable benefit sharing and access to biological and genetic resources across all stakeholders¹. It urges the parties to the Convention to prepare a national biodiversity strategy or an equivalent instrument, and to mainstream biodiversity conservation across all sectors that have a direct or indirect impact on biodiversity. The contracting parties to the Convention, as required by the Article 6 of the Convention, must prepare these strategies as instruments for the mainstreaming of biodiversity conservation into national development policies and cross-sectoral planning, while including the private sector and civil society into the decision-making process². In the tenth Conference of Parties (CoP-10) to the CBD, held at Nagoya, Japan in 2010, the parties adopted the Aichi Biodiversity Targets (ABTs) which require each signatory to develop an effective, participatory and updated National Biodiversity Strategy and

Action Plan (NBSAP)¹. The NBSAPs envisaged for implementing the Convention at the national level require parties to integrate conservation and sustainable use of biological resources in view of specific national circumstances, employing a multi-sectoral approach and adequate fund allocation³. At the time of writing, 190 of the 196 parties to the Convention developed or revised the NBSAPs in accordance with the Strategic Plan for Biodiversity 2011–2020 (ref. 1).

India became a party to the CBD in February 1994 (ref. 4), and within five years the Government of India (GoI) developed a national policy and macro-level action strategy on biodiversity in 1999 for defining the policies and strategies for the conservation and sustainable use of biological diversity in the country⁵. Subsequently the Ministry of Environment and Forests (now Ministry of Environment, Forest, and Climate Change – MoEFCC), implemented an externally aided project, the NBSAP, from 2000 to 2004 (ref. 4). In 2006, India adopted the National Environment Policy (NEP 2006) seeking to extend the coverage and to fill in gaps that existed in the earlier policies⁶. A National Biodiversity Action Plan (NBAP) was thus prepared, using the final technical report of the NBSAP project (2002–2004), by updating the 1999 document to achieve consonance between NEP 2006 and the NBAP. India's NBAP, formulated through

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an inter-ministerial consultative process, was formally approved by GoI in 2008 (ref. 4).

During CoP-10, the CBD urged parties to develop National Biodiversity Targets (NBTs) using the Strategic Plan for Biodiversity 2011–2020 as a flexible framework in agreement with national priorities and capacities. Parties were also asked to review, and appropriately update and modify, their NBSAPs or equivalent instruments (in India's case, the NBAP) in line with the Strategic Plan 2011–2020, by preparing and integrating their NBTs into their NBSAPs, and reporting on them to CoP-12 (ref. 3). Since India's NBAP was developed rather recently in 2008, it was agreed that the NBAP need not be completely overhauled or revised, but an exercise of updating the NBAP by developing NBTs, keeping in view the ABTs as a framework, was subsequently undertaken.

India initiated the process of developing NBTs in November 2011 through a series of inter-ministerial meetings and stakeholder consultations. Thereafter in 2012, under the Global Environment Facility direct access project on 'Strengthening the Enabling Environment for Biodiversity Conservation and Management in India,' stakeholder consultations for updating the NBAP 2008 were continued^{7,8}.

In view of the need to update the NBAP 2008 and to establish a road map for achieving the ABTs, twelve NBTs and an associated indicator-based monitoring framework were developed. Each NBT was assigned a unique icon to enhance its recall value and outreach to a wider audience (Table 1). A systematic review of the activities undertaken by various ministries/departments of the GoI and State Biodiversity Boards was done to assess the stake of relevant agencies in achieving the targets. The agencies and their linkages with the NBTs were identified based on an extensive review of Result Framework Documents (RFDs) of the then 52 ministries/departments of the GoI, information available in annual reports and websites of ministries, departments and institutions, as well as on discussions and written submissions provided by officials, scientists and relevant stakeholders across the country. The organizations that were consulted included those spread across the country involved directly or indirectly in issues related to biodiversity conservation at national as well as regional scale^{7,8}. Four national-level stakeholder consultations/workshops were held between July 2013 and March 2014 with the goal of updating the NBAP 2008. The first national stakeholder consultation was held in July 2013 to discuss the development of NBTs and the fifth national report to the CBD. This consultation was attended by over 130 participants represented by government bodies (30%), non-governmental organizations (19%), scientific institutions (39%), corporate houses (5%), as well as independent experts (7%) from across the country. Inputs, comments and suggestions received through the consultation were incorporated appropriately in updating the NBAP 2008. In

addition, three consultative workshops were organized on: (i) integrating biodiversity conservation and climate change mitigation strategies in development planning, with the aim of enhancing understanding of the NBAP and its synergies with the National Action Plan on Climate Change (NAPCC); (ii) mainstreaming of gender in biodiversity conservation and; (iii) technology needs assessment for biodiversity conservation for improving understanding of NBTs and NBAP. A meeting was also held with members of State Biodiversity Boards and the National Biodiversity Authority to elicit their inputs in updating the NBAP and discuss their important role in its implementation.

CBD's Strategic Plan for Biodiversity 2011–2020 and ABTs envisage outreach and awareness of the NBSAPs for effective participation and implementation. In this regard, the developed NBTs were publicly discussed and explained through an outreach and communication programme of the Centre for Media Studies' seventh *Vatavaran*, International Environment and Wildlife Film Festival and Forum, held during January–February 2014 at New Delhi supported by the MoEFCC⁸.

A review of the revised draft of NBTs and updating of the NBAP was then undertaken by a technical review committee constituted by MoEFCC, after which an addendum to the NBAP 2008 was developed. Subsequently, a two-day workshop of the Indian National Committee of the International Union for Conservation of Nature-India (IUCN-India) was organized in June 2014 at New Delhi to discuss the development and implementation of strategies and actions and the role of member organizations in achieving the twelve NBTs as defined in the updated NBAP⁹.













The update of the NBAP with the NBTs was submitted as part of India's Fifth National Report (NR5) to the CBD, and as a separate document, namely the addendum (2014) to the NBAP 2008 in October 2014.

The CBD calls for national targets to be 'SMART', viz. strategic, measurable, ambitious, realistic and time-bound¹⁰. India's NBTs, though ambitious, have incorporated quantifiable elements against which progress can be measured. As recommended by the Ad Hoc Technical Expert Group (AHTEG) on indicators for the Strategic Plan for Biodiversity 2010–2020 (ref. 11), India also developed a monitoring framework against which the country's progress towards NBTs would be measured. 119 indicators grouped under 51 composite or headline indicators were developed as part of this framework (available to view at <https://www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf>). The concerned monitoring agencies were identified based on their technical capacity, expertise, and regional/national level coverage.

The process of updating the NBAP also included an assessment of funding support for biodiversity conservation in India. The assessment provided an overview of direct core funding and non-core funding (which

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Table 1. National Biodiversity Targets and their brief description

Icon	National Biodiversity Targets
	By 2020, a significant proportion of the country's population, especially youth, is aware of the values of biodiversity and its conservation and the steps they can take to conserve and use it sustainably.
	By 2020, values of biodiversity conservation are integrated in national and state planning processes, development programmes and poverty alleviation strategies.
	Strategies for reducing rate of degradation, fragmentation and loss of all natural habitats finalized and actions put in place by 2020 for environmental amelioration and human well-being.
	By 2020, invasive alien species and pathways are identified and strategies to manage them developed, so that populations of prioritized invasive alien species are managed.
	By 2020, measures are adopted for sustainable management of agriculture, forestry and fisheries.
	Ecologically representative areas under terrestrial and inland water, and also coastal and marine zones, especially those of particular importance for species, biodiversity and ecosystem services are conserved effectively and equitably based on protected area designation and management and other area-based conservation measures, and integrated into the wider landscapes and seascapes covering over 20% of the geographic area of the country by 2020.
	By 2020, genetic diversity of cultivated plants, farm livestock, and also of their wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.
	By 2020, ecosystems services especially those relating to water, human health, livelihoods and well-being, are enumerated and measures to safeguard them are identified, taking into account the needs of women and local communities, particularly the poor and vulnerable sections.
	By 2015, access to genetic resources and the fair and equitable sharing of benefits arising from their utilization as per Nagoya Protocol are operational, consistent with national legislations.
	By 2020, an effective, participatory and updated national biodiversity action plan is made operational at different levels of governance.
	By 2020, national initiatives using communities' traditional knowledge relating to biodiversity are strengthened, with the view to protect this knowledge in accordance with the national legislations and international obligations.
	By 2020, opportunities to increase the availability of financial, human and technical resources to facilitate the effective implementation of the Strategic Plan for Biodiversity 2011–2020 and the national targets are identified and strategy for resource mobilization is adopted by 2020.

Source: <https://www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf>.

Table 2. Core, non-core and peripheral funding for biodiversity conservation in 2013–14

Nature of funding	Amount (INR in crores)
Core	1564.34
Non-core	259.8
Core + non-core	1824.14
States*	5025.57
Peripheral	2354.74 (23 ministries, 77 schemes)
Total	INR 9204.45 crores or USD 1482.68 million (at 1USD = INR 62.08 in February 2014)

*‘States’ funding includes funds for biodiversity/environment sector disbursed to states as per recommendations of the Planning Commission. Source: <https://www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf>.

originates from the budgetary resources of the MoEFCC), and indirect peripheral funding, which comprises budgetary resources of the GoI towards programmes that have a bearing on biodiversity conservation. The method used to estimate the total amount of leverageable funds for biodiversity conservation drew upon a previous assessment conducted by the MoEF for the year 2010–11 based on which the overall funding for biodiversity conservation was estimated at Rs 92,044.50 million (Rs 9204.45 crores or USD 1482.68 million) for 2013–2014 (ref. 7; Table 2). However, it is expected that in India’s attempt to further mainstream biodiversity, the number of ministries/departments identified and estimates of leverageable funding for biodiversity may change. Although funds for supporting biodiversity conservation also originate from the corporate sector and non-government funding, for instance, from foreign sources, these were not taken up in the assessment. This assessment is being further developed under the ongoing Biodiversity Finance (BIOFIN) project, an initiative of the United Nations Development Programme (UNDP) and the MoEFCC, that is aligned with CBD’s strategy for resource mobilization for biodiversity conservation (<http://www.biodiversityfinance.net/india>).

The updated action plan involves not only the MoEFCC but also identifies 23 other ministries/departments of the GoI for achieving the NBTs. Organizations such as National Biodiversity Authority, State Forest Departments, State Biodiversity Boards, State Planning Boards and concerned state government departments such as mining, education, fisheries, livestock and animal husbandry, local-level institutions including Biodiversity Management Committees, Village Eco-development Committees, Forest Rights Committees, Joint Forest Management Committees and Gram sabha (village assemblies) have been identified as key elements for the implementation of the NBAP^{7,8} (Figure 1). Moreover, many non-governmental organizations, conservation agencies, scientific research organizations, university departments, and government bodies have also been identified as potential agencies for providing data and reporting on the monitoring framework of the NBTs.

Along with this, there is also a need for cross-sectoral coordination and cooperation among ministries identified in the NBAP and corporate houses, non-governmental organizations, Public Sector Undertakings, Panchayati Raj Institutions, and socio-cultural-institutions. Since India’s updated NBAP explicitly identifies lead agencies that need to participate for mainstreaming each proposed activity in the plan, satisfactory funding, active involvement and a structured execution process should play an effective role in guiding progress towards achievement of targets. Implementation of the NBAP will hinge upon participation by the States which need to develop and align their State Biodiversity Action Plans (SBAPs) with the NBTs. Meghalaya, Assam and Uttarakhand have already initiated the formulation of their SBAPs. The NBA and State Biodiversity Boards (SBBs) have a vital role to play in enhancing uptake and effective implementation of actions envisaged under the plans.

Further, relevant legal, administrative and socio-political measures are of paramount significance if India is to achieve the NBTs in consonance with existing policies and legal instruments such as the Wildlife (Protection) Act (1972), Indian Forest Act (1927) and Forest (Conservation) Act (1980), Protection of Plant Varieties and Farmers Right Act (2001), Biological Diversity Act (2002), The Scheduled Tribes and Other Traditional Forest Dwellers Rights to Forest Act (2006), The Indian Patents Act (1970) and Amendment (2005) and The National Green Tribunal Act (2010). Moreover, linkages with the universal objectives of the Sustainable Development Goals as well as with other frameworks and plans with a bearing on biodiversity conservation are important so that synergies may be developed amongst them. These include the United Nations Framework Convention on Climate Change (UNFCCC), Convention on the Conservation of Migratory Species of Wild Animals (CMS), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Treaty on Plant Genetic Resources for Food and Agriculture, Convention on Wetlands (Ramsar Convention), World Heritage Convention (WHC) and the International Plant Protection Convention (IPPC). At this stage, the connect

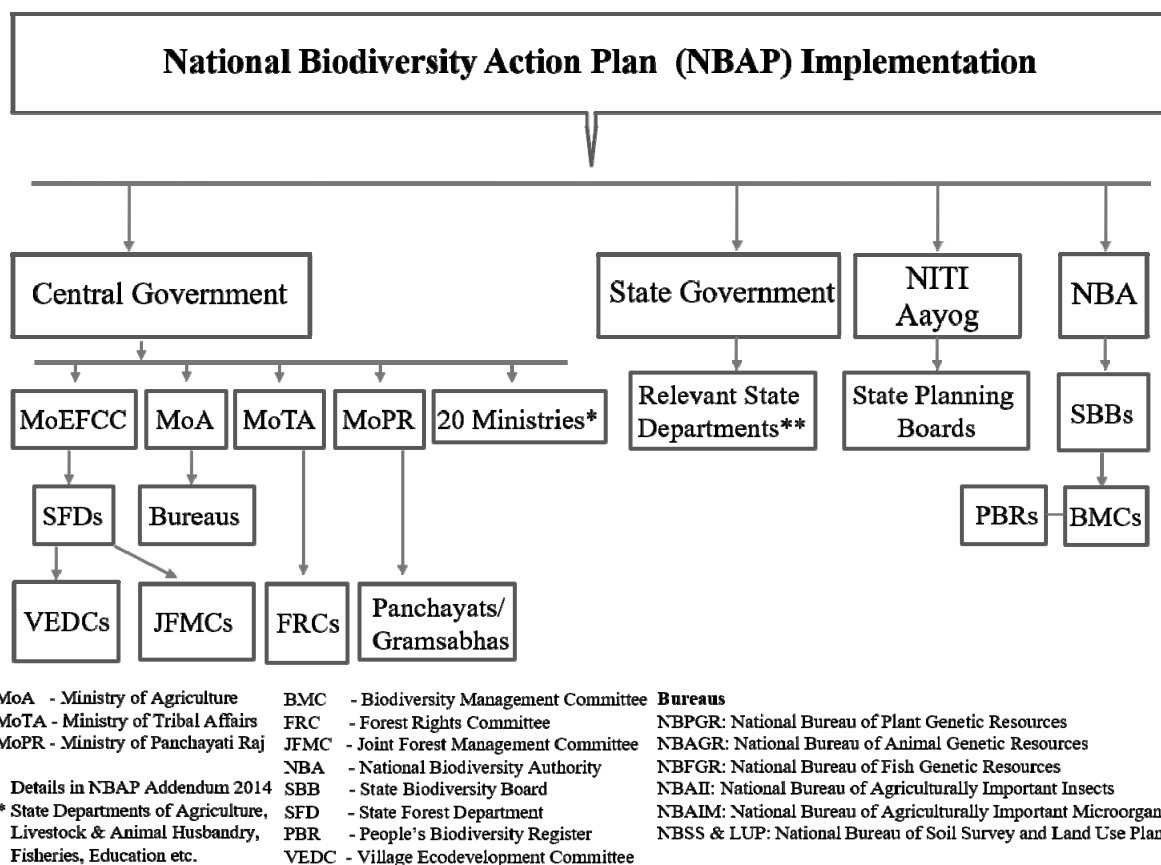


Figure 1. Implementation of the NBAP: Key agencies at the national, regional and local levels (Modified from <https://www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf>).

between legislative frameworks for biodiversity conservation and climate change in particular is weak and strategies need to be developed to strengthen linkages between them and further cooperation between the concerned implementing agencies.

India's updated NBAP addresses the major issues and concerns raised by CBD¹². The addendum to NBAP uses the overall framework provided by the Strategic Plan for Biodiversity 2010–2020 and the ABTs to incorporate NBTs, their associated indicators and monitoring framework as well as an assessment of funding support for biodiversity conservation in India. It is imperative to mobilize all stakeholders including the concerned scientific community, policy planners, decision-makers and local communities and forge partnerships across sectors so as to meet the challenges in the implementation of the NBAP⁷. There is also a need to introspect and understand the causes of failures to conserve biodiversity despite so many acts, regulations, committee reports, research documents, and so on. Strengthening of government institutions on the ground requires serious thinking to achieve the desired goals through appropriate fund allocation and utilization, manpower, and accountability at every level. Lastly, the MoEFCC needs to ensure that the momentum

from the preparatory phase to the implementation phase is not lost.

1. CBD, Convention on Biological Diversity; <https://www.cbd.int/convention/text/> (accessed on 1 November 2016).
2. Moran, D. and Bann, C., The Valuation of Biological Diversity for National Biodiversity Action Plans and Strategies: A Guide for Trainers, United Nations Environment Program (UNEP), Nairobi, 2000, p. 54; <https://www.cbd.int/financial/values/g-valueunepguide.pdf>
3. Prip, C., Gross, T., Johnston, S. and Vierros, M., Biodiversity Planning: an assessment of national biodiversity strategies and action plans, United Nations University Institute of Advanced Studies, Yokohama, Japan, 2010, p. 247; http://archive.ias.unu.edu/resource_centre/UNU-IAS_Biodiversity_Planning_NBSAPs_Assessment_final_web_Oct_2010.pdf
4. NBAP, National Biodiversity Action Plan, Ministry of Environment and Forests, Government of India, 2008, p. 66; <http://nbaindia.org/uploaded/Biodiversityindia/NBAP.pdf>
5. MOEF, Ministry of Environment and Forests, Government of India, National Policy and Macrolevel Action Strategy on Biodiversity, New Delhi, India, 1999.
6. MOEF, Ministry of Environment and Forests, Government of India, National Environment Policy, 2006, p. 52; <http://www.tnpcb.gov.in/pdf/nep2006e.pdf>
7. MOEFCC, Ministry of Environment, Forest and Climate Change, Government of India, National Biodiversity Action Plan (NBAP):

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- Addendum 2014 to NBAP 2008, 2014, p. 75; <https://www.cbd.int/doc/world/in/in-nbsap-v3-en.pdf>
8. MOEFCC, Ministry of Environment, Forest and Climate Change, Government of India, India's Fifth National Report to the Convention on Biological Diversity, 2014, pp. 142; <https://www.cbd.int/doc/world/in/in-nr-05-en.pdf>
9. IUCN Global Policy Unit, An Engagement Strategy for IUCN in National Biodiversity Strategies and Action Plans (NBSAPs), International Union for Conservation of Nature, 2013, p. 19; https://www.iucn.org/downloads/iucn_nbsaps_engagement_strategy_07_13_final.pdf
10. CBD, NBSAP training module version 2.1 – Module 1. An Introduction to National Biodiversity Strategies and Action Plans, Convention on Biological Diversity, Montreal, 2011, p. 18; <http://www.cbd.int/doc/training/nbsap/b1-train-intro-nbsap-revised-en.pdf>
11. CBD, Report of the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020, Convention on Biological Diversity, Geneva, Switzerland, 2015, p. 49; <https://www.cbd.int/doc/meetings/ind/id-ahteg-2015-01/official/id-ahteg-2015-01-03-en.pdf>
12. Pisupati, B. and Prip, C., Interim Assessment of Revised National Biodiversity Strategies and Action Plans (NBSAPs) UNEPWCMC, Cambridge, UK and Fridtjof Nansen institute, Lysaker, Norway, 2015, p. 48; <https://www.cbd.int/doc/nbsap/Interim-Assessment-of-NBSAPs.pdf>
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