

Inception Report on the Linkages Study of the Biodiversity Component of the NCSA

**Preliminary Report
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National Capacity Needs Self Assessment (NCSA)

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Executive Summary

The National Capacity Self-Assessment (NCSA) process aims to assess the capacities available with a country for fulfilling its mandate towards the implementation of the Convention on Biological Diversity (CBD). The Ashoka Trust for Research in Ecology and the Environment (ATREE) was conferred with the responsibility of conducting this assessment for biodiversity conservation and related issues, so as to identify the strengths and gaps related to biodiversity conservation in India and to prepare a thematic profile to facilitate the prioritisation of areas for GEF support to capacity building.

The linkages study has been conducted by the NCSA team at ATREE. This initial study, more of a reconnaissance survey, has been vital in providing us with an understanding of the organizations, initiatives and legislation involved in biodiversity issues. For the purpose of the linkages study, we listed the CBD requirements as fourteen issues as provided in the NCSA resource Kit (such as an organization's involvement biodiversity planning, in-situ and ex-situ conservation, identification and monitoring of ecosystems, habitats, species, genes, etc) and analyzed each with respect to their organizational mandates, objectives, strategies and major projects. Major legislations and policies relating to biological diversity are assessed in terms of their linkages to each other and to the NCSA. The linkages study has also been conducted to see how the NCSA can be linked with other broad scale and national sustainable development and environmental initiatives in mutually beneficial ways.

As a tool for data validation and further enriching the results of the desktop assessment, a set of criteria has been developed, which shall be the base line document for a formal questionnaire to be sent to organizations involved in biodiversity conservation. A word of caution here is that this is a work in progress and the list of organizations/initiatives/programmes/projects/laws/regulations/etc. assessed here is not exhaustive. For example, the considerable contributions to biodiversity research by universities and state level agencies are yet to be assessed mainly as part of the stocktaking analyzes and thematic assessments. Some of the information relating to the organizations themselves has to be verified by questionnaire surveys and consultations. The ATREE NCSA team would welcome additional information and comments in this regard so as to improve the next step of the assessment process.

1. Introduction

The primary goal of conducting this National Capacity Self-Assessment (NCSA) is to determine national priorities for capacity development to better address global environmental issues. The NCSA for India will analyze our capacity strengths, constraints and gaps, and recommend capacity development actions to address them. The focus of this NCSA is on India's capacity requirements to implement the Convention on Biological Diversity (CBD).

The initial part of the NCSA process has provided us with an understanding of the organizations (ministries, government departments, autonomous institutions, NGOs, civil society members, scientific and academic institutions) initiatives (global, national and regional projects, programmes, etc.) and legislation (acts, laws, policies and other legal mechanisms) involved in the implementation of the CBD requirements. This report outlines the linkages study conducted by ATREE NCSA team and the methodology that we followed. For this phase of the study, we carried out a desktop assessment of mandates and projects of major institutions and initiatives and combined this with some discussions and meetings. It is pointed out here that the listing and assessment of the organizations and initiatives is still a work in progress and will be built upon in the subsequent phases. This initial exercise has provided us with a fairly good idea of the stakeholders involved in biodiversity issues in India.

The following are the outcomes of the linkages analysis phase of the NCSA:

1. Identifying the stakeholders on the issue of biodiversity conservation as being addressed by the CBD.
2. Determining which institutions and initiatives – regional, national or global are relevant to biodiversity conservation in India and its the assessment and obtaining basic information on their mandates, objectives and work.
3. Determining the links between these institutions and initiatives and the NCSA process – i.e. How can past initiatives be used for the NCSA and how they can contribute to it, etc
4. Developing a data-gathering tool to validate and enrich the information gathered from the desktop assessment.

The linkages table describing the linkages between the organizations/initiatives and the NCSA mandate has been collated after an assessment of their mandates/objectives/past and ongoing

projects from secondary literature survey, e.g. annual reports and project appraisal documents, collected from their websites.

The second phase of this process would involve validation and verification of this desktop assessment results from the organizations themselves and perhaps, even a triangulation method could be employed to remove biases and arbitrary conjectures.

2. Convention Requirements and Sub-Components

The Convention on Biodiversity (CBD) requirements that have been included for the linkages study and further steps

Source: 1) NCSA resource kit, Step 3: Thematic Assessments,
 2) CBD Document – Multilateral Convention on biological diversity (with annexes).
 Concluded at Rio de Janeiro on 5 June 1992)

1. **Undertaking national biodiversity conservation planning** (Institutional participation National level conservation planning)
 - Preparation or modification of national level biodiversity conservation planning strategies, programmes or plans (e.g. the UNDP-GEF funded NBSAP Technical Report)
 - Conservation planning efforts that are being networked on a global scale (e.g. the IBA project of Birdlife International, World Heritage Projects, etc)
2. **Identifying and monitoring biodiversity and its conservation** (Is the institution involved in work on identifying and monitoring ecosystems, communities and species that are of critical importance on account of their uniqueness and rarity, degree of threat and economic significance)

Scale of Focus	Compiling databases, surveying and mapping	Monitoring	Biological research	Research of sustainability and economic importance	Identify threats
Ecosystems					
Habitats					
Communities					
Species					
Genetic level					

3. **In-situ conservation, including protected area system management** (Is the institution involved in the following exercises relating to protected areas)
 - Establishing protected areas
 - Develop guidelines for identification, delineation and prioritization of PAs

- Preparing guidelines for regulating or managing bio-resources within or outside PAs
 - Developing guidelines for maintenance of viable populations of species
 - Developing guidelines for sustainable use of ecosystems
 - Developing guidelines and management strategies for restoration and rehabilitation of ecosystems and species
 - Establishing or maintaining means to regulate, manage or control modified organisms from biotechnology, that may have adverse impacts on humans, species and natural ecosystems
 - Preventing the introduction of alien and exotic species that are likely to threaten ecosystems, habitats or species
 - Compatibility between present use trends and sustainable use of biological diversity
 - Legislation on intellectual property rights, traditional lifestyles, collaboration with stakeholders, benefit sharing and equitable distribution
 - Developing or maintaining legislation/policies/guidelines on threatened species and populations
 - Developing or maintaining legislation/policies/guidelines based on the results of identification and monitoring exercises on critical ecosystems, species and populations
4. **Ex-situ conservation of biodiversity** (Is the organization involved with ex-situ conservation of biological diversity on the following levels)
- Establishing and maintaining ex-situ conservation facilities for plants, animals and micro-organisms
 - Adopt measures for recovery, rehabilitation and reintroduction of species
 - Regulate and manage collection of biological resources for setting up ex-situ conservation centres.
5. **Utilizing environmental impact assessment for biodiversity conservation**
(Impact assessment and minimizing adverse impacts)
- Introduce EIA procedures
 - Ensure appropriate EIA arrangements and record threats
 - Encourage information sharing via, bilateral, regional or multilateral arrangements
 - Share information and notify other areas, organizations of imminent threats
 - Develop national arrangements for emergency responses to impacts

6. Managing information, notably through clearinghouse mechanisms (Is your organization involved in work on incentives for biodiversity conservation?)

7. Providing scientific and technical education and training

8. Raising understanding and awareness

- Establishing and maintaining training programmes for biodiversity conservation
- Promote and contribute to research related to biodiversity conservation

Public Education and Awareness

- Promote information dissemination on various aspects of biodiversity in educational programmes
- Cooperate with other states and international organizations in developing educational and public awareness programmes

9. Preserving indigenous and local knowledge, innovations and practices

- Policies on Indigenous and traditional technologies
- Fair and equitable distribution of benefits to indigenous parties

10. Implementing the Cartagena Protocol on Biosafety

11. Regulating access to and transfer of genetic resources

12. Regulating the commercialization and ensuring benefit-sharing from genetic resources

- Develop and carry out scientific research related to genetic resources
- Develop administrative or legislative measures for genetic resources
- Develop legislative measure to ensure that the private sector takes adequate cognizance of national liabilities and obligations

13. Regulating the handling of living modified organisms

14. Accessing financial resources

15. Developing and introducing economic and social incentives

Additions from the CBD Booklet

Sustainable use of components of biodiversity

- Involvement in sustainable use in developing policies and legislation
- Adopt measures relating to use of biological resources to minimize the adverse impacts on biodiversity
- Protect and promote traditional sustainable use models
- Provide support to local communities to initiate remedial measures for degraded areas and resources
- Encourage co-operation between govt. and private sector

3. Framework for and Assessment of Linkages

The linkages study is been carried out following the format outlined in the NCSA Resource Kit (Annex D: Analysis and Planning Tools for NCSA, Sample Section of a linkages study). We have studied the linkages of various governmental and non-governmental organizations, laws and policies, etc (as mentioned below), but this list of institutions/initiatives is not exhaustive, but will be further studied, later on in the process of assessments.

Summary Statistics for Linkage Assessments

Number of institutions/Initiatives for which linkages have been analyzed here are summarized as below:

Central Government Councils/Boards/Departments and Statutory Bodies	7
Central Government Subordinate Offices	6
Central Government Autonomous Institutions/Bodies	40
National Level Initiatives/National Action Plans and reports	25
Academic and Research Institutions	7
Non-Governmental Organizations	33
Large Initiatives undertaken by Non Governmental Organizations	12
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Inter-linkages between institutions and initiatives with the NCSA process for India have been provided in the following tables.

Table 3.1. Linkages with Central Government Councils/Boards/Departments and Statutory Bodies

Table 3.2. Linkages with Central Government Subordinate Offices

Table 3.3. Linkages with Central Government Autonomous Institutions

Table 3.4. Linkages with National Level Initiatives/National Action Plans and Reports

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Table 3.6. Linkages with Non-Governmental Organizations

Table 3.7. Linkages with Large Initiatives Implemented through Non Governmental Organizations

Table 3.8. Linkages with Legislations (Acts, Laws, Policies, etc.)

Table 3.1. Linkages with Central Government Councils/Boards/Departments and Statutory Bodies

Central Government Councils/Boards/Departments and Statutory Bodies				
Sl. No.	Name	Input	Process	Output
1	National Biodiversity Authority (NBA), MoEF	The NBA is a statutory body set up by the Government of India under Biodiversity Act 2005. It regulates activities related to various sections of the Biodiversity Act 2005. Its primary role is to regulate access to biological resources of the country, via transboundary movement	ToRs of committees of the NBA may have shared purposes with NCSA. These can be accessed and coordination can be done to avoid duplication of work. NBA experts can also provide valuable information during stocktaking and thematic assessments on the following topics: 1) material transfer agreements, patents, benefit sharing and IPR, 2) normally traded commodities, 3) rare, endangered, threatened and endemic species, and 4) databases on bio-resources and traditional knowledge.	Members of the expert committees can be asked to contribute information to the thematic assessments, NBA experts can also review relevant sections of the report and action plan. Various reports and documents of NBA consultations are available online. These can be accessed and studied in detail during the stocktaking exercise.
2	Genetic Engineering Approval Committee (GEAC), MoEF	GEAC is a Statutory body set up as under the Notification governing the regulation of Genetically Modified Organism (Rules 1989), under the Environment Protection Act (1986). It deals with genetic resources & biosafety issues	They can be involved in dialogue to ascertain the rules and regulations regulating genetically engineered/modified crops in the country	

3	Central Zoo Authority (CZA), MoEF	CZA can provide extensive inputs at all stages to ex-situ conservation components. Link databases developed by the CZA (such as the stud books) along with other databases.	Can request inputs from CZA for linking databases. CZA can also be approached to review present approaches, guidelines and policy in ex-situ conservation.	Can be designated as the primary organization responsible for reviewing the sections on ex-situ conservation on vertebrates.
4	National River Conservation Directorate (NRC), MoEF	Stocktaking inputs for conservation of rivers and associated wetland ecosystems	Experts from the directorate can be approached to provide inputs to groups working on biodiversity of freshwater ecosystems with respect to action plans and management guidelines.	Can help in reviewing relevant sections of the NCSA action plan.
5	National Medicinal Plant Board (NMPB), Min. of H&FW	Inputs during stocktaking and thematic assessments for sustainable utilisation, genetics and biotech uses of plants.	Network this institution with groups working on 1) development of databases 2) genetics, biotech, IPR and sustainable use groups, specifically require inputs from experts with relation to biotech and benefit sharing for medicinal plants.	To review research, guidelines and inventories for medicinal plants and IPR.
6	Department of Ocean Development (DOD), Min. of Ocean Development	DOD and associated institutions can provide inputs to stocktaking and thematic assessments for marine and coastal areas, and cross-cutting analyzes in relation to climate change.	Include DOD and associated institutions in 1) joint workshop of groups working with indigenous knowledge, IPR, benefit sharing and sustainable use models to provide inputs on human capacity development marine/ocean development, 2) the database development network, 3) working group on mapping and classification of ecosystems.	Identify DOD as a key institution that has capacities for conservation of Ocean and Coastal biodiversity
7	National Bioresource Development Board (NBDB), DBT, Min. of Sc. & Tech.	Can provide inputs to thematic assessments dealing with bioresources	Include this board in 1) joint workshop of groups working with indigenous knowledge, IPR, benefit sharing and sustainable use models to provide inputs on human capacity development the use of biological resources 2) the database development network.	Can provide a review of bioresources components in the NCSA Action Plan

Table 3.2. Linkages with Central Government Subordinate Offices

Central Govt. Sub-ordinate Offices				
Sl. No.	Name	Input	Process	Output
1	Botanical Survey of India (BSI), MoEF	BSI has large collections, database, extensive knowledge of plant taxonomy and distributions. Major contributions will be to Taxonomy, Mapping of forest ecosystems and Database development during the stocktaking exercise.	Use BSI technical knowledge to 1) Compile plant distributions into uniform workable databases, 2) BSI experts can resolve taxonomic gaps in the knowledge of NGOs and small organizations working in the field 3) Can be designated as a party of Database Development network between institutions	Designate BSI as one of the institutions involved in multi-institutional database development networks.
2	Forest Survey of India (FSI), MoEF	FSI can contribute information on forest classification, inventory, and distribution to the stocktaking exercise	1) FSI can provide extensive maps on broad level forest types distribution which can be used as a basis for a number of time series analyzes 2) Establish a workable link with other institutions involved in large scale forest mapping such as NRSA, IIRS and autonomous institutes, consultation with organizations involved in forest and vegetation mapping to identify gaps and to avoid duplication.	A broad level classification of different forest types in the country, forest types with different categories of crown density, disturbance, changes over time, etc to be made available through a single, node or website?
3	Indira Gandhi National Forest Academy (IGNFA), MoEF	IGNFA is the nodal organization for training of Forest Officers of the country	Its curricula for imparting training to these IFS officers can be reviewed in the light of the NCSA vis-à-vis the CBD	

6	Zoological Survey of India (ZSI), MoEF	ZSI can contribute to stocktaking with respect to faunal collections, Taxonomy and Database development	1) experts can provide baseline state level data for large scale species inventories and analyzes 2) ZSI experts can help frame guidelines and rules for wider accessibility of National Zoological Collections.	Designate ZSI as one of the institutions involved in multi-institutional database development networks.
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Table 3.3. Linkages with Central Government Autonomous Institutions

Central Govt. Autonomous Institutions/Bodies				
Sl. No.	Name	Input	Process	Output
1	Arid Zone Research Institute Jodhpur, ICFRE	Input to stocktaking and thematic assessments with respect to 1) forest classification of arid and semi-arid environments	To be networked with groups working on forest classification and mapping, and development of databases, herbaria and collections.	Technical staff overseeing mapping, database development and collection efforts.
2	C.P.R. Environmental Education Centre (CPREEC), MoEF	Input during drawing of action plan	can be a key agency for biodiversity related education and extension services	
3	Central Drug Research Institute (CDRI), under CSIR	Available information is incomplete	Network this institution with groups working on 1) development of databases 2) biotechnology, benefit sharing and sustainable use groups	
4	Central Institute of Medicinal and Aromatic Plants (CIMAP), under CSIR	Inputs during stocktaking and thematic assessments for sustainable utilisation, genetics and biotech uses of plants.	Network this institution with groups working on 1) development of databases 2) biotechnology, benefit sharing and sustainable use groups	Can review the specific thematic component.

5	Central Marine Fisheries Research Institute (CMFRI), ICAR	To give inputs during stocktaking as well as thematic assessments. CMFRI has a very extensive dataset monitoring species composition and quantity of main fish caught at fish landing centres over many years. For NCSA, this could be used to develop a summary of the patterns of exploitation and change in fisheries resources.	Commission a report analysing patterns and trends of change in the exploitation of marine biodiversity	CMFRI experts can also oversee and contribute to any policy level changes that need to be developed for fisheries and marine biodiversity
6	Central Pollution Control Board (CPCB), MoEF	CPCB can contribute towards the NCSA Action Plan	It can be included to look into details of environmental pollution, if any, in the NCSA Action Plan	
7	Centre for Social Forestry and Eco Rehabilitation, Allahabad, ICFRE	This institute can contribute to stocktaking and thematic assessments on indigenous knowledge, IPR and benefit sharing and social forestry and land rehabilitation. Can also be asked to provide inputs for cross-cutting analysis with land degradation	To be included in the joint workshop of groups working with indigenous knowledge, IPR, benefit sharing and sustainable use models to provide inputs on human capacity development in forestry.	Appoint one person from this project to liaison with other projects/ groups working on indigenous knowledge, and to oversee a section on indigenous knowledge and associated thematic components for the NCSA Action Plan.
8	Centre of Forestry Research and Human Resource Development, Chhindwara, ICFRE	This institute can contribute to stocktaking and thematic assessments on indigenous knowledge, IPR and benefit sharing and developing human capacities in relation to forestry.	To be included in the joint workshop of groups working with indigenous knowledge, IPR, benefit sharing and sustainable use models to provide inputs on human capacity development in forestry.	Appoint one person from this project to liaison with other projects/ groups working on indigenous knowledge, and to oversee a section on indigenous knowledge and associated thematic components for the NCSA Action Plan.

9	Council of Scientific and Industrial Research (CSIR)	CSIR is the parent organization for many institutions, therefore covers almost all aspects of biodiversity planning excluding PA management and legislation. CSIR can also facilitate linkages between organizations dealing with work on biological diversity.	In the process of stocktaking, CSIR should be involved at a higher level - i.e. approached for permissions, advice and suggestions when dealing with constituent organizations.	CSIR can review the contributions of its institutions and provide guidelines for them to be involved in the implementation of the NCSA report.
10	Fisheries Survey of India (FSI), Dept of Animal Husbandry, Dairying and Fisheries, Min of Ag.	Stocktaking and thematic assessments in relation to fisheries, especially use of marine species.	Network this institution with groups working on 1) development of databases 2) benefit sharing and sustainable use groups	Help in review of information of marine and freshwater fisheries.
11	Forest Research Centre, Hyderabad, ICFRE	Input to stocktaking and thematic assessments with respect to 1) classification of dry deciduous forests in south India	To be networked with groups working on 1) forest classification and mapping, 2) development of databases, herbaria and collections, 3) specific regional assessments for south India	Technical staff to review specific thematic components of the NCSA Action Plan.
12	Forest Research Institute, Dehradun, ICFRE	FRI can input to stocktaking and thematic assessments with respect to 1) forest classification, 2) taxonomy and databases, and 3) collections, museums and herbaria	To be networked with groups working on forest classification and mapping, and development of databases, herbaria and collections.	Technical staff overseeing mapping, database development and collection efforts.
13	G. B. Pant Institute of Himalayan Environment and Development (GBPIHED), MoEF	Inputs to stocktaking and thematic assessments for Himalayan biodiversity, ecosystems, traditional use, sustainable use models, etc. Large inputs to land and water resource management techniques (relating to crosscutting-analyzes and land degradation).	Include this organization in the 1) database development group, 2) ecosystem classification, and 3) traditional use, sustainable use and benefit sharing groups	Can be designated as a key institution for research, assessments and guidelines on Himalayan diversity and ecosystems.

14	Himalayan Forest Research Institute, Shimla, ICFRE	Inputs to thematic assessments on 1) biotechnology and genetic components, 2) germplasm databases, 3) thematic/regional assessments on the Himalayan region	To be networked with groups working on 1) forest classification and mapping, 2) development of databases, herbaria and collections, 3) specific regional assessments for the Himalayan region.	Technical staff to review specific thematic components of the NCSA Action Plan.
15	Indian Council of Forestry Research and Education (ICFRE), MoEF	ICFRE is the parent organization for a number of forestry related centres and institutes. Inputs and high level support during stock taking and thematic assessments. 1) Can provide a summary of the work of all forest research institutes under ICFRE with respect to management strategies and mensuration techniques, as well as the state of education and training within forestry research. 2) ICFRE and its institutes can provide inputs to large scale forest/ ecosystem mapping efforts, 3) ICFRE and its institutes can provide some level of inputs based on forest classification and forest cover for cross-cutting analyzes dealing with climate change as well as land degradation.	1) Consultations with selected representatives of each institute can provide broad level inputs to stocktaking, 2) Network ICFRE and subsidiary organizations with other institutions involved in broad scale mapping (NRSA, IIRS, FSI, etc.).	Can review NCSA output regarding forestry research methodologies, training and transfer of technologies.
16	Indian Institute of Forest Management, Bhopal, MoEF	IIFM can be involved in stocktaking and thematic exercises related to forest management and policy formulation.	Experts from IIFM can provide extensive inputs with respect to forest management, sustainable use by people, etc. CES is already linked and can be further encouraged to develop more database initiatives.	Can be designated as the nodal agency to review NCSA guidelines and oversee implementation of the action plan.

17	Indian Institute of Remote Sensing (IIRS), Dehradun under NRSA	IIRS can provide a large amount of inputs during stocktaking and thematic assessments to landuse and ecosystem classification exercises and research methodologies.	Can play a key role in the network dealing with mapping and classification.	Can review outputs relating to mapping and classification.
19	Institute of Forest Genetics and Tree Breeding, Coimbatore, ICFRE	Inputs to thematic assessments on biotechnology and genetic components	Access reports and publications from this institute	Technical staff to review specific thematic components of the NCSA Action Plan.
20	Institute of Forest Productivity, Ranchi, ICFRE	Input to stocktaking and thematic assessments with respect to 1) classification of forests in eastern India	To be networked with groups working on 1) forest classification and mapping, 2) development of databases, herbaria and collections, 3) specific regional assessments for eastern India	Technical staff to review specific thematic components of the NCSA Action Plan.
22	Institute of Rain and Moist Forest Research, Jorhat, ICFRE	Input to stocktaking and thematic assessments with respect to 1) classification of rainforests and moist forests in northeast India	To be networked with groups working on 1) forest classification and mapping, 2) development of databases, herbaria and collections, 3) specific regional assessments for northeast India	Technical staff to review specific thematic components of the NCSA Action Plan.
23	Institute of Wood Science Technology, Bangalore, ICFRE	Input to stocktaking exercises in forestry systems, timber, etc	Access reports and publications from this institute	Include recommendations in NCSA outputs
24	National Botanical Research Institute (NBRI), CSIR, Min of Sc & Tech	NBRI has a developed a number of important databases and collections	To be involved in respective groups dealing with 1) collating information for larger scale databases, 2) developing guidelines for database sharing and the sharing of herbaria	Review of specific components

25	National Bureau of Fish Genetic Resources (NBFGR) under ICAR	Stocktaking assessments and inventory for work that has been carried out on the genetics of marine and freshwater fishes.	Access publications, consultation, network this institution with respect to 1) databases and inventories, and 2) biotech, benefit sharing and IPR.	Can be asked to review specific sections relating to fish genetic resources
26	National Bureau of Plant Genetic Resources (NBPGR) under ICAR	Stocktaking assessments and inventory for plant genetics inventories.	Network this institution with groups working on 1) development of databases 2) genetics, biotech, IPR and sustainable use groups, specifically require inputs from experts with relation to biotech and benefit sharing	Key organization for review of research, management and guidelines of plant genetic resources.
27	National Institute of Ocean Technology, Chennai under Min. of Ocean Dev.	Inputs during thematic assessments on harvestable marine resources	Access publications	
28	National Institute of Oceanography (NIO), under CSIR	Specific inputs during stocktaking and thematic assessments on 1) integrated coastal management mechanisms, 2) regional assessments for coastal and marine areas. Can also provide some inputs in cross-cutting analyzes related to climate change. Some projects of the Centre deal with interlinkages between climate change and biological diversity.	Can be a part of 1) joint workshop of groups working with indigenous knowledge, IPR, benefit sharing and sustainable use models to provide inputs on human capacity development in marine and ocean development 2) the database development network, 3) development of management plans	Request technical expertise from staff to review specific components of the NCSA report.
29	National Institute of Science Communication and Information Resources (NISCAIR), under Min of Sc & Tech.	NISCAIR has one of the largest information initiatives with respect to biodiversity in the country	experts from this institute can carry out stocktaking of various database, collection and museum initiatives in the country along with ENVIS and NCL Centre for Bioinformatics	a complete list of databases relating biodiversity, herbaria, collections and their availability, guidelines for proper database construction

30	National Remote Sensing Agency (NRSA), Hyderabad	NRSA can provide inputs and information at all levels on landuse and forest classification, methods, and training in relation to GIS and RS.	Involve experts from NRSA to compile, and summarise forest classification, extent and quality.	NRSA can be one of the key institutions assessing gaps and requirements for forest classification.
31	Salim Ali Centre for Ornithology & Natural History (SACON), MoEF	Inputs during stocktaking and thematic assessments for ornithological studies and inventories, wetland conservation and inputs about sustainable use models in ornithology, e.g. involving edible nest swiftlets.	To link SACON to database groups.	
32	Tropical Forest Research Institute, Jabalpur, ICFRE	Input to stocktaking and thematic assessments with respect to 1) classification of tropical forests and other forests in Central India, 2) ethnobotanical knowledge of tribal communities in Central India.	1) To be networked with groups working on forest classification and mapping, and development of databases, herbaria and collections, 2) included in Joint workshop of groups working on Indigenous Knowledge and associated themes.	Technical staff overseeing mapping, database development, collections and ethnobotany.
33	Wildlife Institute of India, Dehradun, MoEF	Can provide extensive inputs during stocktaking and thematic assessments on various taxa and specific geographic regions. Could provide extensive plant and mammal based ecological inputs for specified regions, WII experts can add significantly as regards to the status, ecology and behaviour of vertebrate species. Will help immensely in building on work by BSI and ZSI	WII experts can provide expertise on groups such as mammals, birds, and plants and give specific inputs to thematic assessments of regions such as the Indian Himalaya, the Western Ghats, Central India, etc. WII can be linked with various database initiatives. A number of studies on status, ecology, distribution and behaviour of species as well as process related mechanisms such as fragmentation, multispecies studies relating to community ecology has been undertaken by WII.	Can be one of the nodal agencies to review and verify databases classifications, etc. WII can be give the lead role in updating and verifying information compiled on status, ecology and distribution of species

34	Centre for Marine Living Resources and Ecology	Centre has the potential to provide scientific data on the biology of species as well as utilisation of fisheries resources. Inputs can be requested both during stocktaking and thematic assessments	Network this institution with groups working on 1) development of databases 2) classifications and mapping of broadscale ecosystems 3) specific thematic assessments for ocean/marine resources, 4) benefit sharing and sustainable use groups	Can provide a review of the fisheries/marine resources component of the NCSA action plan.
35	Space Application Centre (SAC)	Inputs to the stocktaking and thematic component related to mapping and classification of ecosystems.	Include this centre in mapping, classification network along with NRSA, IIRS, FSI and other organizations.	Can review largescale mapping and classification information compiled for the NCSA report.
36	NCL Centre for Biodiversity Informatics (NCBI)	A lot of biodiversity work has already been carried out in India, but information is not easily accessible. NCBI can play a potentially vital role in Bio-Informatics with their databases (PAs, sacred groves, biological collections, etc) and prototype web portal. Consider the NCBI in all stocktaking activities relating to Bio-Informatics and management of info. through clearing house mechanisms. Establish linkages with ENVIS	Commission stakeholder analysis report from NCBI reporting linkages with ENVIS, NISCAIR and other databases	Designate NCBI as the key party handling bioinformatics.
37	Indian Board for Wildlife (IBWL)	IBWL is the primary committee for all aspects relating to Indian wildlife.	Incorporate recommendations of the board with respect to wildlife management, collection guidelines, permits, etc.	
38	Tropical Botanic Garden and Research Institute, Thiruvananthapuram (TBGRI)	TBGRI can give inputs in stocktaking and thematic assessments relating to tropical forests, ex-situ conservation, taxonomy, sustainable use and IPR models.	Can be involved in the database development network. TBGRI can provide inputs to groups working on developing IPR, benefit sharing and sustainable use models on the basis of their past experience.	TBGRI can be designated as one of the key institutions to review sections on tropical forest research and conservation.

39	Institute of Himalayan Bioresource Technology	Can provide inputs for stocktaking and thematic assessments relating to genetic and bioresources for the Himalayan region	Involve this institution in 1) developing databases network, 2) groups discussing IPR, genetics and biotech, benefit sharing and sustainable use models, 3) specific assessments related to the Himalayan region.	Can help in reviewing relevant sections of the NCSA action plan.
40	Institute of Microbial Technology	Inputs during stocktaking on information on microbial technology	Involve this institution in 1) developing databases network, 2) groups discussing IPR, genetics and biotech, benefit sharing and sustainable use models	

Table 3.4. Linkages with National Level Initiatives/National Action Plans and Reports

National Level Initiatives/National Action Plans and Reports				
Sl. No.	Name	Primary Intersections or Overlaps with NCSA	Input	Process
1	National Wildlife Action Plan (NWAP)	The NWAP mandate w.r.t the CBD is in in-situ conservation and management of wildlife. For this component, the Action Plan identifies requirements at a fairly detailed level especially with regard to policy and legislation.	The NWAP sets an agenda for monitoring, research and in-situ conservation of Indian wildlife. As these are described in detail along with policy level inputs, the Action Plan can be referred extensively in the thematic assessments. The NWAP also talks about restoring degraded lands outside protected areas.	The architects of the NWAP, the Indian Board for Wildlife, can be included in consultations for thematic assessments relating to wildlife. Recommendations for areas falling outside PAs should be studied carefully.
2	Tiger task Force (TTF) Report	Although the Task Force was primarily set up to deal with the disappearance of the tiger, the broader objective was to evaluate the nature of problems associated with wildlife conservation. The TTF report calls for institutional reform, suggestions and strategies for environmental protection and scientific research.	Apart from inputs in relation to the tiger, the TTF report tries to deal with the problems associated with PA management in the country and provides generic solutions.	NCSA can build on these solutions, identify gaps, frame specific solutions to some of these problems and develop them into guidelines for PA management.

3	UNDP-GEF funded NBSAP Technical Report	NBSAP for India, has prepared over 30 reviews and over 70 strategy and action plans at various spatial scales, along different themes and targeting different biogeographic and political units. Some of these have been based on consultation and collaboration with a number of agencies, groups and individuals (this also includes representation from tribal groups and local communities).	The Final Technical Report of the NBSAP can be an input document for the NCSA for both stocktaking as well as thematic assessments.	Thematic reviews can be prepared in consultation with the NBSAP technical report and its contributors.
4	Integrated Coastal and Marine Area Management, DOD	Specific inputs during stocktaking and thematic assessments on 1) integrated coastal management mechanisms, 2) regional assessments for coastal and marine areas	Can be a part of 1) joint workshop of groups working with indigenous knowledge, IPR, benefit sharing and sustainable use models to provide inputs on human capacity development in marine and ocean development 2) the database development network.	Request technical expertise from staff to review specific components of the NCSA report.
5	All-India Co-ordinated Project on Capacity Building in Taxonomy (AICOPTAX)	AICOPTAX - stocktaking 1) project addresses the problem of inadequate taxonomic research 2) extensive potential in terms of filling a well recognised gap in current research - the non-availability of qualified taxonomists	AICOPTAX staff from can inform the NCSA can provide a summary of current taxonomy research and identify gaps.	A set of guidelines produced through NCSA for dealing with gaps in taxonomy research. This can be a part of the NCSA Action Plan.
6	All-India Co-ordinated Research Project on Ethnobiology (AICRPE)	AICRPE can contribute to stocktaking and thematic assessments on indigenous knowledge, IPR and benefit sharing.	Joint workshop of groups working with indigenous knowledge, IPR, benefit sharing and sustainable use models.	Appoint one person from this project to liaison with other projects/ groups working on indigenous knowledge, and to oversee a section on indigenous knowledge and

				associated thematic components for the NCSA Action Plan.
7	Environment Research Programme (ERP)	ERP - stocktaking and thematic assessment - deals with a component that is usually not addressed by most organizations or institutions - biosafety, can review the Biosafety component of CBD with respect to India (however some of the projects of this component are still unclear)	Experts from this project can 1)review biosafety guidelines, projects and legislation 2) provide information on cross-cutting issues on climate change especially with respect to pollution	Biosafety guidelines for biodiversity conservation
8	Ecosystem Research Scheme	A broad based scheme that deals with a variety of ecosystem properties and interrelationships with man, can provide general inputs to NCSA Action Plan	The outputs of this project can be assessed in more detail during stocktaking	
9	Eastern and Western Ghats Research Programme	This programme can provide inputs during stocktaking and thematic assessments on regional and local scale initiatives for the focus regions	Consultation with personnel during stocktaking	Project person can review NCSA output for the Western and Eastern Ghats thematic assessments.
10	All-India Co-ordinated Project on Coastal and Marine Biodiversity	Project personnel to be involved in stocktaking and thematic assessments for 1) databases marine biodiversity, 2) benefit sharing, economic use, 3) specific regional assessments of marine and coastal systems	To be networked with groups working on 1) development of databases 2) indigenous knowledge and sustainable use 3) specific thematic assessments for marine and coastal systems such as DOD and associated institutes.	Review of information on specific thematic subjects related to coastal and marine biodiversity.

11	Indian Coral Reef Monitoring Network under NIO	Provide inputs to stock taking and thematic assessments for marine and coastal areas, and cross-cutting analyzes in relation to climate change and its effect on coral reef ecosystems	To be networked with groups working on 1) development of databases 2) classifications and mapping of broadscale ecosystems especially with reference to RS/GIS 3) specific thematic assessments for marine and coastal systems such as DOD and associated institutes.	Review of information on specific thematic subjects related to coastal and marine biodiversity.
12	National Natural Resource Management System	Large scale inputs to thematic assessments 1) for database development, 2) specific regional assessments	To be networked with groups working on 1) development of databases 2) classifications and mapping of broadscale ecosystems 3) specific thematic assessments for biogeographic zones	Technical staff to review specific thematic components of the NCSA Action Plan.
13	Global Ocean Observing System	Specific inputs to thematic assessments on biosafety, larger scale inputs to cross-cutting analyzes on climate change with respect to sea surface temperatures, sea level rise and other ocean and climate parameters.	Access publications, consultation.	A staff member can review the specific component of the NCSA report.
14	Ocean Biodiversity Resource Groups DOD	Contribution in stocktaking and thematic assessments to ocean biodiversity and sustainable use	Consultation/networking with groups working on 1) databases, 2) IPR, sustainable use models and benefit sharing, consultation required for evaluating benefit sharing mechanisms and IPR.	Useful during implementation phases of the NCSA Action Plan
15	Drugs from the Sea DOD	Stocktaking and thematic assessments in relation to marine species	Consultation/networking with groups working on 1) databases, 2) IPR, sustainable use models and benefit sharing, consultation required for evaluating benefit sharing mechanisms and IPR.	
16	Coastal Ocean Monitoring and Prediction System (COMAPS) DOD	Provide inputs to biosafety and pollutants in marine areas for both stocktaking and thematic assessments.	Access publications, consultation.	
17	Biodiversity Characterisation at the Landscape Level Project (IIRS)	Inputs to the stocktaking and thematic component related to mapping and classification of ecosystems.	Include this centre in mapping, classification network along with NRSA, IIRS, FSI and other organizations.	

18	Environmental Information System - India (ENVIS)	Envis is one of the largest initiatives dealing with information compilation with respect to focus areas and target groups. ENVIS reports, centres and experts can provide invaluable information on their specified theme of focus.	Access ENVIS publications, websites and consultation with experts who have compiled these reports. Include ENVIS along with the other networking and database groups.	Experts who have contributed to ENVIS can be identified and asked to review special sections of the NCSA report.
19	Mangrove Ecosystem Information Service	Inputs during stocktaking on various aspects on mangrove ecosystems.	Access websites, review publications, consultations. Network with 1) database and 2) mapping and classification groups	
20	Global Mangrove Information System (GLOMIS)	Inputs during stocktaking on various aspects on mangrove ecosystems.	Access websites, review publications, consultations. Network with 1) database and 2) mapping and classification groups	
21	India Ecodevelopment Project - Ecodevelopment around Protected Areas including Tiger Reserves	Ecodevelopment recommendations can be assessed when evaluating projects and policies (during stocktaking) relating to sustainable use and man-environment relationships.	Incorporate important ecodevelopment objectives into strategies and policies.	
22	Project Elephant	Evaluate broadbased recommendations of Project Elephant, and its coverage during the stocktaking.	Access documents and reports, consultations.	
23	Project Tiger	Evaluate broadbased recommendations of Project Elephant, and its coverage during the stocktaking. Examine effectiveness of the tiger as an umbrella species and identify gaps.	Access documents and reports, consultations.	
24	National Forestry Action Programme (NFAP)	Inputs during stocktaking on information on forestry projects.	Access documents and reports, consultations.	

25	Conservation Assessment and Management Plan Workshops	CAMP reports can be used during stocktaking and thematic assessments of various groups with regard to status, population viability and distribution of populations.	Camp Assessments and action plans for taxonomic groups can be reviewed to identify gaps.
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Table 3.5. Linkages with Academic and Research Institutions

Academic & Research Institutions				
Sl. No.	Name	Input	Process	Output
1	Annamalai University (Centre of Advanced Study in Marine Biology)	Involve it in marine and coastal biodiversity assessment/action plan preparation		
2	Indian Institute of Science (IISc), Bangalore	A major human resource development institute in the realm of both social and natural sciences	Can be involved in specific capacity assessments, relating to specific fields like genetic resources, and Western Ghats resources.	
3	North East Hill University, Shillong	Involve NEHU in the capacity assessments in the North Eastern Region	Can be involved in the NE Workshops and other capacity assessments	
4	University of Agriculture Sciences, Bangalore	can be involved in the research, training and capacity-building in the field of agro-biodiversity		
5	Centre for Ecology Research & Training (CERT)	Involve this organization during stocktaking. Some functions are similar to that of the Centre for Ecological Sciences.		
6	Centre for Ecological Sciences (CES)	CES can provide Inputs during stocktaking and thematic assessments. Has extensive database facilities and significant information on biogeographic units such as the Western Ghats. Other strengths include quantitative ecology, theoretical and analytic skills among experts.	Can be asked involved in reviewing methodologies and analyzes, experts have significant theoretical knowledge and analytical capabilities, substantial work on selected ecosystems, species and geographical regions.	

7	Indian Academy of Sciences, Bangalore	Inputs during stocktaking on various publications, especially Current Science. Subjects include biodiversity, climate change and land degradation.	Access documents.
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Table 3.6. Linkages with Non-Governmental Organizations

Non – Governmental Organizations				
Sl. No.	Name	Input	Process	Output
1	Ashoka Trust for Research in Ecology and the Environment (ATREE)	ATREE is a resource centre for conservation science, conservation livelihoods, plant and insect taxonomy, sustainable use models, conservation governance and policy and ecoinformatics. Focus areas are the Western Ghats and Eastern Himalaya and to a lesser extent coastal and marine habitats.	Nodal agency for NCSA project for biodiversity issues in India. ATREE members can provide inputs at various stages of the NCSA assessment.	NCSA Report outlining the strengths and gaps for biodiversity conservation.
2	BAIF Development Research Foundation, Pune	Scientific research data on indigenous livestock breeds and their management.	Involvement of BAIF scientists on domesticated biodiversity assessment and planning.	Action plan on domesticated biodiversity.
3	Bombay Environmental Action Group (BEAG), Mumbai	Deal with urban environmental issues and litigations/policy advocacy.	Include in the NCSA process for review of urban environmental issues.	Can verify NCSA outputs with respect to urban biodiversity policy.
4	Bombay Natural History Society (BNHS)	Extensive research on avian communities and inland wetlands. Museum facilities and collections. Published JBNHS and Hornbill, which are useful for scientific and public awareness respectively.	Consult with BNHS scientists for stocktaking and thematic assessments especially for prioritisation of avian biodiversity. Include BNHS in the database network.	Can be designated as one of the key NGOs for bird conservation by the NCSA.
5	Centre for Environment Education (CEE)	Experience in awareness building and education /outreach programmes.	CEE experts can provide inputs for developing guidelines and strategies for biodiversity education.	Include CEE as key agency for information dissemination and outreach programme.
6	Centre for Himalayan Environment and Development, Chamoli	Full information not available.		

7	Centre for Science and Environment (CSE)	Inputs based on experience in policy advocacy in biodiversity and habitat management issues.	Include CSE members in mass outreach and policy advocacy part.	CSE can provide guidelines and help in information dissemination based on the NCSA report.
8	Deccan Development Society, Hyderabad	Inputs on grassroots level work and indigenous crop diversity for the thematic assessments.	Members of this society can be consulted for discussions about the Cartagena Protocol and crop biodiversity.	Can help in developing national level guidelines for Cartagena Protocol implementation and local crop diversity initiatives.
9	Development Alternatives	DA can provide inputs during stocktaking and thematic assessments based on their work on biodiversity conservation systems and PA management.	Involve DA in workshops and discussions relating to sustainable use and PA management.	Reviewing the NCSA report and additional inputs during implementation.
10	Foundation for Ecological Security	Inputs during thematic assessments based on their expertise on CPR and water management.	Include FES in workshops and knowledge sharing sessions.	NCSA Report outlining the strengths and gaps for biodiversity conservation.
11	Foundation for Revitalisation of Local Health Traditions	Can provide extensive information during all phases on ex-situ conservation of medicinal plants and indigenous technologies.	Include FRLHT scientists in assessment of threats to floral biodiversity and also prioritization studies on medicinal plants.	Can review sections on medicinal and aromatic plant biodiversity mapping and guidelines for medicinal plant conservation.
12	Gujarat Ecological, Education and Research Foundation (GEER)	Inputs based on biodiversity assessments especially in the state of Gujarat.	Consultation during workshops and discussions.	
13	Indian Environmental Society (IES), New Delhi	Inputs on environmental outreach and training.	Involve IED in seminars and workshops.	Review gaps in NCSA report on the subject of mass awareness and information dissemination about biodiversity conservation.
14	Kalpavriksh - Environmental Action Group	Kalpavriksh was the coordinator for the Technical and Policy Core Group for the UNDP-GEF funded NBSAP Project, the organization can therefore provide inputs to NCSA at all stages.	Include Kalpavriksh in brainstorming sessions and workshops, discussions during all phases.	Can be a key agency for reporting on knowledge management for national, regional and local biodiversity issues and policy.

15	Orissa Environmental Society (OES)	Inputs on thematic assessments on policy. Has regional level expertise on policy advocacy especially for Orissa.	Involvement in regional consultations and assessments on regional policy.	Provide research and technical inputs to the preparatory process of the NCSA report.
16	People's Science Institute (PSI)	Inputs for thematic assessments on scientific know-how for water management and indigenous knowledge.	Consultations.	Review sections of NCSA report on water management.
17	Rhino Foundation for Nature, NE India	Inputs on species and regional level PA management .	Consultations.	
18	Seva Mandir	Inputs on regional level water management and outreach.	Involvement in regional workshops and assessments on water.	Can be asked to review and provide technical inputs to the section on water management for the NCSA report.
19	The C.P. Ramaswami Aiyar Foundation, Chennai (CPREEC)	Inputs on environmental education and outreach during thematic assessments.	Consultations and discussions on potential contributions to education section of NCSA.	Can review sections of the NCSA report on education and outreach.
20	The Energy and Resources Institute (TERI)	Inputs at all phases. Can provide specific information on LMOs and biosafety regulations.	Include TERI scientists in discussions for Cartagena Protocol and to frame guidelines for biosafety.	Can develop and review national level guidelines for the Cartagena Protocol.
21	Wildlife Protection Society of India (WPSI)	Inputs on trade, practices and traffic of wild animals and wild animal body parts.	Commission a report on wildlife trade in India.	Can provide guidelines for improved policy on wildlife trade.
22	Wildlife Trust of India (WTI)	Inputs on wildlife conservation, wild biodiversity policies and legislations, and rehabilitation.	Consultations and discussions.	
23	Worldwide Fund for Nature - India	Inputs during all phases on sections on wildlife and biodiversity conservation, biodiversity prioritisation projects and environmental education.	Share outputs of the BCPP (Biodiversity Conservation Prioritisation Project), knowledge and experience sharing, networking and education.	Designate WWF-I as a major contributor and ask to point out gaps in knowledge management, networking and awareness building for biodiversity conservation.

24	Zoo Outreach Organization, Coimbatore	Inputs during stocktaking and thematic assessments on ex-situ conservation, especially captive breeding. Has also Conservation Assessment & Management Plan (CAMP) Workshops for different taxonomic groups.	Can be asked to take the lead role in preparing the section on ex-situ conservation and the gaps in the same.	Review/outline procedures for ex-situ conservation research for the NCSA report.
25	Orissa Marine Resources Conservation Consortium	Inputs on attaining minimum common objectives in relation to biodiversity conservation and sustainable use of declining resources.	Group members can be asked to provide frameworks of multi-stakeholder participation in biodiversity conservation and sustainable use.	
26	Wildlife Conservation Society - India (WCS India)	Extensive inputs can be obtained during all phases during stocktaking and thematic assessments. WCS India has conducted extensive scientific investigations on various endangered species including the tiger.	Consultations with WCS experts in framing guidelines for NCSA guidelines, consultation with peer-reviewed scientific literature and reports produced by WCS.	WCS India can be asked to review and improve on species level guidelines related to research, that are compiled by the NCSA.
27	Nature Conservation Foundation, Mysore (NCF)	NCF can provide extensive inputs based on their research in north east India, the Trans-Himalaya and the Western Ghats. Institutional expertise ranges from biological research on species and ecosystems (rainforest, cold desert and marine ecosystems), surveys, developing incentive programmes, restoration ecology and education and awareness programmes in relation to hunting.	Consultations and commissioned reports during stocktaking and thematic assessments. NCF publications are easily accessible for consultation on the web.	NCF can be designated as a key institution for reviewing sections mentioned in the inputs column.
28	Foundation for Ecological Research, Advocacy and Learning, Pondicherry FERAL	Inputs based on research in conservation, restoration ecology, hydrology, education and advocacy. Regional target areas for FERAL are selected sites in the Western Ghats, Pondicherry and the Andaman and Nicobar Islands.	FERAL staff can provide inputs to thematic assessments for subjects and regions mentioned in the inputs section.	FERAL can review ecorestoration section of NCSA report and implement projects.

29	Madras Crocodile Bank Trust, Mammallapuram (MCBT)	Extensive experience on breeding techniques and conservation of various species of crocodiles, freshwater turtles and some species of snakes. Experience among team members with respect to research on the Andaman and Nicobar Islands.	Experts can provide inputs to developing policy and guidelines for farming and breeding as well as sustainable use of species.	
30	Andaman and Nicobar Environmental Team, Wandoor (ANET)	Inputs for stocktaking and regional assessments in the Andaman and Nicobar Islands. Research includes work on single species including feral animals, surveys in rainforest, coastal and marine ecosystems, education programmes, etc.	Experts can provide inputs during stocktaking on A&N islands.	ANET can review report as well as implement further follow up action suggested by the NCSA.
31	Society for Andaman and Nicobar Ecology, Port Blair (SANE)	Inputs on the ecology of A&N Islands. Information on a variety of issues including biodiversity conservation, indigenous knowledge and sustainable use models can be accessed from SANE.	Consultations	
32	Centre for Interdisciplinary Studies in Environment and Development, Bangalore (CISED)	CISED can provide inputs on environmentally sound technology and poverty eradication. Carries out interdisciplinary work on the interface of environment and development.	CISED can be consulted in the preparation of guidelines and policies for sustainable-use models, economic valuation and so on.	Experts from this institution can review relevant sections.
33	Centre for Indian Knowledge Systems, Chennai (CIKS)	Inputs on traditional Indian knowledge systems related to Indian agriculture.	CIKS experts can provide inputs on agrobiodiversity - traditional systems, community seed banks, organic farming, local varieties of crops, etc.	CIKS can review sections (on agrobiodiversity and traditional knowledge systems) of the NCSA report.

Table 3.7. Linkages with Large Initiatives Implemented through Non Governmental Organizations

Large Initiatives Implemented through Non Governmental Organizations				
Sl. No.	Name	Input	Process	Output
1	Biodiversity Conservation Prioritisation Project (BCPP)	Inputs on the BCPP project that was a comprehensive exercise to prioritise sites, species and strategies for biodiversity conservation. One of the few projects that were carried out with the help of several community groups and over 40 NGOs, educational and scientific institutions and government agencies.	Share outputs of the BCPP, knowledge and experience sharing, and networking.	Contribute to the development of the national NCSA plan by highlighting strengths and gaps
2	Important Bird Areas Programme (IBA) of BirdLife International	identification, documentation and advocacy for the protection and management of a network of sites important for naturally occurring bird populations	Share outputs of the IBA, knowledge and experience sharing, networking.	
3	Global Biodiversity Forum – founded in 1993 by IUCN, WRI, UNEP, and ACTS	Inputs relating to mechanisms that foster analysis and critical dialogue among a wide range of stakeholders on key ecological, economic, social and institutional issues related to biodiversity.	Multi-stakeholder forum to engage stakeholders and build greater understanding of biodiversity.	Country-level GBF for India with focus on regional and local biodiversity issues.
4	The Equator Initiative of the UNO	Inputs on linking economic development and income generation with the conservation and sustainable use of biodiversity.	Consultations and discussions.	Designate EI as a platform for initiating knowledge management under the NCSA process.
5	The Darwin Initiative, of the GoUK	Inputs on small grants programmes - consider DI for institutional capacity building and training aspects on biodiversity conservation for few regions.	Contact project partners to review capacity building funding opportunities and training aspects after NCSA assessment.	Can evaluate the potential contribution of DI to implementation exercises of the NCSA.

6	Critical Ecosystem Partnership Fund (CEPF) – a joint initiative of Conservation International, the Global Environment Facility, the Government of Japan, the John D. and Catherine T. MacArthur Foundation and the World Bank.	Inputs on providing strategic assistance to help safeguard Earth's biodiversity hotspots while ensuring that civil society is engaged in biodiversity conservation. Under this project profiles are developed for Western Ghats and Eastern Himalaya. Some amount of funds for development has also come through.	Project members can provide extensive inputs on biodiversity conservation, prioritization and the involvement of local communities for Western Ghats and Eastern Himalaya. This can be carried out with discussions with project members and consultation of CEPF outputs.	Explore CEPF to provide funding and technical assistance to help implement region-specific strategies developed together with stakeholders, ensuring action toward BD conservation.
7	World Heritage international Treaty - the Convention concerning the Protection of the World Cultural and Natural Heritage, UNESCO	Inputs on identification, protection and preservation of cultural and natural heritage around the world. In this case, information can be provided on sites for biodiversity prioritization.	Organize a joint consultation with all stakeholders for conservation of the PAs designated as World Heritage sites.	
8	Ramsar Convention on Wetlands	Inputs during stocktaking and thematic assessments for wetlands. Provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.	Organize a joint consultation with all stakeholders for conservation of the PAs designated as Ramsar sites.	development of management plans and regular monitoring & evaluation for these Ramsar sites or even designating more wetlands as Ramsar sites
9	South Asia Watch on Trade, Economics & Environment (SAWTEE)	SAWTEE can provide inputs on capacity building of stakeholder groups in South Asia by equipping them with knowledge, information and skills in context of changing global economic paradigms.	Discussions to analyze the gaps in CBD implementation in India specifically with reference to trade and economics.	
10	Man and the Biosphere Programme (MAB), UNESCO	Can provide insights into broad-based interdisciplinary research agenda with respect to the ecological, social and economic dimensions of biodiversity loss and its reduction; inputs on individual Biosphere Reserve during thematic assessments.	Discussion and consultations.	Can be approached to fund research projects for site biodiversity conservation or training/capacity building workshops for stakeholders based on NCSA guidelines.

11	DIVERSITAS – An international program on the conservation and sustainable use of biorsources	Inputs on synthesizing existing scientific knowledge, identifying gaps and emerging issues, and promoting new research initiatives; also investigates policy implications of biodiversity science.	Members can be consulted to develop frameworks for collaborative research in biodiversity assessment and implementation in India.	Designate DIVERSITAS as a global platform for guiding and facilitating research projects for India.
12	Millennium Ecosystem Assessment (MEA) launched by the UNO	Inputs on large scale assessments and prioritization exercises; specific inputs on biogeographic units such as the Western Ghats during thematic assessments.	Consultations with experts, consult reports of the MEA exercise.	

Table 3.8. Linkages with Legislations (Acts, Laws, Policies, etc.)

Legislations (Acts, Laws, Policies, etc.)				
Sl. No	Name	Input	Process	Output
Over-arching Laws and Grievance Redressal Instruments				
1	Constitution of India: Directive Principles of State Policy (48-A) and Fundamental Duties (51-A)	Article 21 of the Constitution guarantees the Right to Life and therefore the right to a wholesome environment. This can include a range of actions for a secure environment.	Governments can legislate and take all possible actions within the scope of law to guarantee a wholesome environment to the citizens of the country.	Legislation
2	Indian Penal Code, 1860	Cases on environmental damage related to IPC.	Database from Law Reporters and relevant judicial publications to be sources by a task force.	Information becomes available on effectiveness of the IPC as a penal provision against environmental damage.
3	Public Liability Insurance Act, 1991	Data available from the Environment Relief Fund mandated by the law on amount of compensation disbursed for ecological damage in the past.	Such data should be available with District Collectors of the areas where units handling hazardous waste are located.	Information on ecological damage and implementation on compensation schemes under this Central law is made available.

4	Public Liability Insurance Rules, 1991	Collectors registers on relief and claim petitions and register of awards and payments made can be collated in representative states.	Team to be set up to collect such databases from the various regions in the country. This shall be coordinated by the concerned state government.	National and regional overview becomes available on how public claims arising out of environmental damage are disposed off.
5	Code of Criminal Procedure, 1973	Cases on environmental damage related to CrPC.	Database from Law Reporters and relevant judicial publications to be sources by a task force.	Information becomes available on effectiveness of the CrPC as a penal provision against environmental damage.
6	National Environment Tribunal Act, 1995	Extensive data on claims made before the Tribunal.	Stakeholder perspectives to be collated on the functioning of the Tribunal to understand the judicial redressal system for cases involving environmental damage.	Assessment of the effectiveness of the National Environment Tribunal as a judicial redressal system.
7	Draft National Environment Policy	The NEP presents a policy structure to work with. Needs further inputs before it is finalised.	1) Form work group to arrange for national consultations on the NEP to examine the pros and cons of the NEP, 2) arrange for feedback on thematic areas from a wide variety of stakeholders 3) Synthesise the various views of stakeholders in the form of a review document.	A document synthesising all the inputs from stakeholders from further inputs into the NEP is available.
	General Environment Laws			

9	The Environment (Protection) Act, 1986 amended in 1991	<p>The Central Government can play a key role at all stages of the NCSA. The Central Government is also specifically empowered to carry out and sponsor investigations and research relating to problems of the environment. This makes the MoEF an active partner in the NCSA process. The MoEF can assume responsibility for achieving a range of NCSAs own targets and it is mandated to do so under the EP Act.</p>	<p>1) Various reviews and investigations and research projects identified by the NCSA can be recommended to the MoEF for action. 2) In addition, some of the actionable points of the NCSA needs to be placed before the MoEF since this institution has been vested with considerable powers for environment protection actions.</p>	<p>Officers are designated for the achievement of NCSA's targets. Action Programmes and research programmes are initiated based on the NCSA's recommendations and based on the involvement of the MoEF at all stages.</p>
10	The Environment (Protection) Rules, 1986	Same as the EPAct.	Same as the EPAct.	Same as the EPAct.
11	The Water (Prevention and Control of Pollution) Act, 1974, as amended up to 1988	<p>State Pollution Control Boards contain databases (on various aspects such as location, effluents, nature of industry etc) on industries operating under their jurisdiction. They can also provide field level information on the problems with implementing the provisions of the law.</p>	<p>SPCBs should be mobilised for research projects involving pollution studies. NCSA can work closely with the SPCBs in streamlining their databases and making the same easily accessible by other research organizations and civil society groups. The PCBs can also provide information on pollution related data to the NCSA team on their capacities to implement the provisions of the Water Act.</p>	<p>NCSA and PCB collaborate on various joint research and implementation projects.</p>
12	The Water (Prevention and Control of Pollution) Rules, 1975	Same as the Water Act.	Same as the Water Act.	Same as the Water Act.

13	The Water (Prevention and Control of Pollution) Cess Act, 1977 amended in 2003	Information on the functioning of various economic incentives / disincentives can be obtained from the Board using the Cess as an example.	Databases can be sourced from the SPCBs.	The NCSA and the SPCBs work together on improving capacities to implement economic incentives.
14	The Water (Prevention and Control of Pollution) Cess Rules, 1978	Same as the Water Cess Act.	Same as the Water Cess Act.	Same as the Water Cess Act.
15	The Air (Prevention and Control of Pollution) Act, 1981, as amended by Amendment Act, 1987	The PCBs can provide inputs on the capacities of industries to meet emissions standards. They can also provide inputs on their own capacities for ensuring air pollution.	1) PCB officials involved in a project to identify capacities of industries in various categories, 2) PCSBs can be involved in an in-house capacity assessment exercise.	1) PCB capacities assessments for implementation of the Air Act available with the NCSA, 2) Capacity within industry for complying with Air Act available.
16	The Air (Prevention and Control of Pollution) Rules, 1982	Same as Air Act.	Same as Air Act.	Same as Air Act.
17	Noise Pollution (Regulation and Control) Rules, 2000	Prosecutions and case laws related to noise pollution related violations can assist in the formulation of standards where none currently are enforced and can actually enhance enforcement.	1) Need to collate existing database on noise pollution related case law, 2) need to review and suggest possible penal provisions and implementation mechanisms for implementing noise pollution related environmental problems.	Database of case law on noise pollution available for suggesting legal initiatives for biodiversity planning using this popular environmental law instrument.

18	<p>Rules for the Manufacture, Use, Import, Export and Storage of Hazardous micro-organisms Genetically engineered organisms or cells 1989</p>	<p>Carry out a review of the capacities of the committees set up by this Rule.</p>	<p>1) Workshops to be held with civil society groups to ascertain the capacities existing within the various committees constituted by this Rule (especially the GEAC), 2) Various committees including the GEAC to provide inputs on their own functioning and capacities to NCSA.</p>	<p>Needs assessment of the various committees is carried out in a inclusive and participatory way.</p>
19	<p>Ozone Depleting Substances (Regulation and Control) Rules, 2000</p>	<p>The law provides for detailed collation of information on the use and productions and restriction of ODSs. This is a good database of information on ODSs.</p>	<p>1) Implementing agencies can provide information on implementation of this law, 2) Task force to work on the loopholes within this legislation and on corrective measures.</p>	<p>One of the few available reports on the status of control efforts for ODSs is available.</p>
20	<p>The Environment Impact Assessment Notification, 1994</p>	<p>Data available from various NGOs on the effectiveness of the legislation and state wide experiences with its implementation.</p>	<p>1) Conduct meetings with civil society groups to examine issues with the implementation of the EIA notification, 2) Form a task force on the EIA Notification, 3) Draft alternative EIA with civil society groups that have been working on the EIA notification.</p>	<p>Assessment of the effectiveness of the EIA notification; NGO Draft EIA notification.</p>

21	National Environment Appellate Authority Act, 1997	Cases available with the NEAA through which its functioning can be assessed. Information is also available with certain NGOs on how this body functions.	1) Formulate a civil society team comprising of lawyers and environmental groups, to examine the capacities of the NEAA to dispose off various environmental clearance cases.	Needs assessment of the NEAA complete.
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Ecologically Sensitive Area Notifications				
22	Murud-Janjira Notification, 1989	Cases of violation of the ESA's norms; Challenges of managing the ESA.	1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.	Needs assessment of the ESA for enhanced management of the region.
23	Doon Valley Notification, 1989	Cases of violation of the ESA's norms; Challenges of managing the ESA.	1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.	Needs assessment of the ESA for enhanced management of the region.

24	Antop Hill Notification, 1990	Cases of violation of the ESA's norms; Challenges of managing the ESA.	<p>1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.</p>	Needs assessment of the ESA for enhanced management of the region.
25	Dahanu Taluka Notification, 1991	Cases of violation of the ESA's norms; Challenges of managing the ESA.	<p>1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.</p>	Needs assessment of the ESA for enhanced management of the region.

26	Aravalli Notification, 1992	Cases of violation of the ESA's norms; Challenges of managing the ESA.	<p>1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.</p>	Needs assessment of the ESA for enhanced management of the region.
27	Numaligarh Notification 1996	Cases of violation of the ESA's norms; Challenges of managing the ESA.	<p>1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.</p>	Needs assessment of the ESA for enhanced management of the region.

28	The Eco Sensitive Zone - Pachmarhi, Notification, 1998	Cases of violation of the ESA's norms; Challenges of managing the ESA.	<p>1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.</p>	Needs assessment of the ESA for enhanced management of the region.
29	Mahabaleshwar-Panchgani Notification, 2001	Cases of violation of the ESA's norms; Challenges of managing the ESA.	<p>1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.</p>	Needs assessment of the ESA for enhanced management of the region.

30	Matheran Notification 2003	Cases of violation of the ESA's norms; Challenges of managing the ESA.	<p>1) Assess needs of the managing authority for the ESA, 2) Assess threats to the ESA 3) Suggest methods for enhanced management of the ESA 4) Follow a participatory method with stakeholder interviews and discussions to obtain a holistic picture 5) Carry out the above assessments through civil society groups familiar with the workings of ESAs.</p>	Needs assessment of the ESA for enhanced management of the region.
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Specific to wildlife and forests				
31	National Wildlife Action Plan, 2002-2016	Large number of guidelines and recommendations.	<p>1) Compare the recommendations of the Wildlife Action Plan with the existing mechanisms within the WLPA.</p>	Areas of similar and divergence between the wildlife Plan and the Act emerge.
32	The Indian Wild Life (Protection) Act, 1972 amended in 2002	Vast number of cases are available with the various park officials on the issue of non-settlement of claims or of conflicts within Pas; Number of critiques available on the listing of specific species on the various schedules of the WLPA; number of instances of community based conservation within the country that need to be recognized by the government.	<p>1) Creation of task force on rationalising the species on the schedules in light with latest information on the populations of the species 2) Constitution of a working group on enhancing community-based conservation within PAs 3) Special task force to investigate conflicts between people living within PAs and of conservation measures; 4) Expert group to assist in review of the WLPA to suit the requirements of marine conservation.</p>	Rationalised list of animals on the schedules; better community-based conservation mechanisms; suitable changes made to the legislation for marine conservation.

33	The Wildlife (Transaction and Taxidermy) Rules, 1973	Databases available with State Forest Departments (Wildlife Wing).	1) Form task force to assist the Forest Departments to maintain easily accessible data 2) Make databases available online, 3) Evaluate the efficiency of the implementation mechanisms in this rule.	Enhanced database protocols; format for better data collection and implementation of these rules is available.
34	The Wildlife (Stock Declaration) Central Rules, 1973	Databases available with State Forest Departments (Wildlife Wing).	1) Form task force to assist the Forest Departments to maintain easily accessible data 2) Make databases available online, 3) Evaluate the efficiency of the implementation mechanisms in this rule.	Enhanced database protocols; format for better data collection and implementation of these rules is available.
35	The Wildlife (Protection) Licensing (Additional Matters for Consideration) Rules, 1983	Databases available with State Forest Departments (Wildlife Wing).	1) Form task force to assist the Forest Departments to maintain easily accessible data 2) Make databases available online, 3) Evaluate the efficiency of the implementation mechanisms in this rule.	Enhanced database protocols; format for better data collection and implementation of these rules is available.
36	Wildlife (Specified Plants - Conditions for Possession by Licensee) Rules, 1995	Databases available with State Forest Departments (Wildlife Wing).	1) Form task force to assist the Forest Departments to maintain easily accessible data 2) Make databases available online, 3) Evaluate the efficiency of the implementation mechanisms in this rule.	Enhanced database protocols; format for better data collection and implementation of these rules is available.
37	Wildlife (Specified Plant Stock Declaration) Central Rules, 1995	Databases available with State Forest Departments (Wildlife Wing).	1) Form task force to assist the Forest Departments to maintain easily accessible data 2) Make databases available online, 3) Evaluate the efficiency of the implementation mechanisms in this rule.	Enhanced database protocols; format for better data collection and implementation of these rules is available.

38	Recognition of Zoo Rules 1992 Wildlife (Protection) Rules, 1995	Information available with the Central Zoo Authority.	1) Need to form task force to evaluate the effectiveness of Zoos in the conservation of endangered species, 2) Need to conduct detailed capacity needs assessments at each zoo.	Picture emerges of the functioning and the role played by zoos in overall conservation and education.
39	National Zoo Policy	There are several recommendations in the Zoo Policy. The Central Zoo authority can assist the NCSA in determining the extent to which these objectives have been achieved.	1) Collate information from the Central Zoo Authority (CZA) on the functioning of various zoos in the country, 2) Develop an evaluation format for the CZA to use for evaluating the performance of zoos.	Points identified where areas of similarity exist between animal welfare and conservation, these can then be converted into actionable points.
40	Prevention of Cruelty to Animals Act, 1960	Animal welfare rules are fairly explicit, however these may not have a direct impact on conservation of biodiversity.	1) Can explore the indirect links between animal welfare and conservation.	List of priority tasks are identified for animal welfare that have significance for conservation.
41	Indian Forest Act 1927	Large number of critiques of the Indian Forest Act, stating that a review of this antiquated law is required.	1) Constitute a group for the review of the Indian Forest Act, based on the various critiques from NGOs and other civil society groups, 2) Reexamine the draft NGO bill for the management of forests.	Review of this important Forest law takes place.
42	Forest Conservation Act 1980, amended in 1988	Database of forest clearance available; Capacities of the Forest Advisory Committee needs to be assessed to assist them in making decisions in their functioning.	1) Collect database on matters dealt with by the Forest Advisory Committee, 2) Carry out a capacity needs assessment of the Forest Advisory committee.	Priority areas for the Advisory Committee emerge; Capacities of the Advisory Committee becomes clear with respect for performance of their duties.
43	Forest Conservation Rules, 1981	Same as Forest Conservation Act	Same as Forest Conservation Act	Same as Forest Conservation Act

44	The Forest Policy 1988	The Forest Policy contains several recommendations that overlap with other forest laws. These are however important principles and need to be streamlined further.	1) Constitution of task force to examine the areas of commonality and dissonance between the Forest Policy and the Indian Forest Act, the Forest Conservation Act and the orders of the supreme court.	Steps are identified for changes in legislation.
45	Joint Forest Management Circular 1990	JFM has created several village committees for the protection of forests. There are also several NGOs involved in promoting JFM throughout the country. Several national NGO networks have been formed around the issue of JFM.	1) Collate information from NGO networks formed around JFM about its functioning and the issues involved in implementation of JFM, 3) Commission a study to understand the impediments to sustaining JFM in various states across the country.	Initiatives are taken to either revive JFM or to change the manner in which it functions based on stakeholder suggestions.
46	The Biological Diversity Act 2002	The Biological Diversity Act 2002 was one of the main outcomes of India signing the CBD. This act has mandated the setting up of the NBA and the State Biodiversity Authorities that looks at a variety of biodiversity resource use and indigenous rights issues.	1) Consultations on issues with the biodiversity Act, 2) Conduct meetings to popularise the provisions of the biodiversity Act, 3) Review the stakeholder perspectives on the provisions of the act and its rules and their implications for benefit sharing and conservation of biodiversity resources.	1) Better understanding of the implications of the Act, 2) Steps are identified for changes to be made in the legislation, and in the Rules in particular.
47	Biological Diversity Rules 2004	Same as Biodiversity Act	Same as Biodiversity Act	Same as Biodiversity Act

48	Plant Varieties Protection and Farmers' Rights Act, 2001	A new act, this Act has much potential for the protection of farmer's rights and is one of the few specialised legislations that deals with the subject of biodiversity conservation through these positive mechanisms.	1) Needs assessment of the Tribunals needs to take place, 2) Discussions should be held with NGOs that have played a key role in designing and lobbying for this Act.	A better legal framework for the implementation of the Act is available.
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Coastal and Marine Legislations				
49	Coastal Regulation Zone Notification, 1991	Number of critiques of the CRZ notification are available, it is an important law that many civil society groups have worked towards implementing.	1) Identify lacunae in the law from earlier critiques, 2) Conduct meetings to popularise the findings of the Swaminathan Report on CRZ and critiques of this Report, 3) Identify agencies who can prepare maps at the ground level to implement the notification.	Synthesised view of the implementation of the CRZ notification, Task Force is set up to rectify the lacunae in the law with a view to strengthen the this legislation.
50	Aquaculture Authority , 1997	The Aquaculture authority contains databases on the performance of aquaculture farms in the country.	1) Needs assessment exercises to be conducted with the Authority to identify capacity gaps, 2) More information on its functions and lacunae are yet to be completely investigated and should be done though a task force with members of the civil society in it.	Better mechanisms available for the functioning of the Aquaculture Authority.

51	Coast Guard Act, 1978	The Coast Guard machinery has wide access across the Indian waters and a number of resources that can be tapped for effective conservation.	1) Identify capacities within the Coast Guard for marine conservation, 2) Conduct training programmes for the Coast Guard in identification of marine mammals and species that are sighted in routine sorties and surveys, 3) Conduct training programmes for the officers of the Coast Guard on how they can be involved in implementation of other coastal and marine laws along with their responsibility of protecting India's marine resources.	Gap areas are identified.
52	The Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act, 1981	Database of foreign vessels with permits to fish in India waters available with Central Government under this Act.	Can estimate the number of vessels and the nature of fishing activity they undertake to estimate trends in fishing effort, capacities etc.	Better understanding of fishery potential of the country and status of fishing in Indian Waters.
53	The Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Rules, 1982	Same as Maritime Zones Act.	Same as Maritime Zones Act.	Same as Maritime Zones Act.
54	The Merchant Shipping Act, 1958	Contains number of provisions for the protection of the maritime areas and guidelines for ships.	1) Collate the various notifications and orders issued under the Merchant Shipping Act to assess the status of implementation of this law, 2) Need to simplify and distribute these laws and notifications and make coastal communities (particularly those living in the vicinity of ports) aware of the same.	Better implementation of the law and better understanding among civil society members.

55	The Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976	This is an important legislation that operationalises UNCLOS and other international obligations of the country.	1) Collate the various rules made under this Act 2) Check for the conservation implications of these rules, 3) Need to check whether this Act adequately meets the various international obligations of India for conservation, 4) Widely disseminate or make available the various rules made under this act.	A better legal framework for the implementation of the Act is available.
56	Offshore Area Mineral (Development and Regulation) Act, 2002	Contains interesting provisions for the management of offshore regions.	1) collect information from the Ministry of Commerce and the Petroleum Ministry on the areas declared as closed areas.	Sensitive areas declared as closed areas to offshore drilling.

State Fisheries Legislations				
57	Goa, Daman and Diu Marine Fishing Regulation Act, 1980 amended 1989	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
58	Goa, Daman and Diu Marine Fishing Regulation Rules, 1982 amended 2001	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.

59	Kerala Marine Fishing Regulation Act, 1980	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
60	Kerala Marine Fishing Regulation Rules, 1980	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
61	Maharashtra Marine Fishing Regulation Act, 1981	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
62	Maharashtra Marine Fishing Regulation Rules, 1982	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
63	Orissa Marine Fishing Regulation Act, 1982,	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.

64	Orissa Marine Fishing Regulation Rules, 1983	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
65	Tamil Nadu Fishing Regulation Act, 1983, amended in 2000	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
66	Tamil Nadu Fishing Regulation Rules, 1983, amended in 2000	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
67	Karnataka Marine Fishing Regulation Act, 1986	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
68	Karnataka Marine Fishing Regulation Rules, 1987	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.

69	West Bengal Marine Fishing Regulation Act, 1993	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
70	West Bengal Marine Fishing Regulation Rules, 1995 amended in 1998	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
71	Andhra Pradesh Marine Fishing Regulation Act, 1994	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
72	Andhra Pradesh Marine Fishing Regulation Rules, 1995	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
73	Lakshadweep Marine Fishing Regulation Act, 2000	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.

74	Lakshadweep Marine Fishing Regulation Rules, 2001	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
75	Gujarat Fisheries Act, 2003	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.
76	Gujarat Fisheries Rules , 2003	Fish catch data and other statistics available, extension officers available with the Department for education work.	1) Needs assessments can be done with the extension officers of the Department of Fisheries 2) Training projects designed to enhance monitoring capacities of extension officers.	Improves fisheries monitoring techniques; improved implementation techniques.

4. Preliminary Results, Gaps and Future Plan of Action

4.1. Strengths and gaps

The initial linkages study identified a number of strengths and gaps. These are summarized below and would need to be examined in detail during the stocktaking and thematic assessments.

- Extensive efforts in mapping and classification of ecosystems.
- Large numbers of database initiatives have been reported. However, there needs be a co-ordination of database initiatives
- There are large gaps in taxonomic research and knowledge; some programmes such as AICOPTAX have already begun to address these.
- Various institutions dealing with utilisation of resources need to be brought on a common platform to frame guidelines for sustainable use, IPR and benefit sharing.
- Interlinkages between NGOs and govt. institutions need to be improved as both groups can learn from each other.
- Very little information on biodiversity conservation outside protected areas.
- Legislations need to be coherent, suitable implementation mechanisms are lacking; need to streamline legislation to enhance conservation.
- Poor understanding of the law among stakeholders including enforcement agencies.

Further analysis of linkages

- Representation of linkages for various components will be carried out based on simple summary statistics such as sub-totals and percentages.

Example: based on the linkages matrix, a simple subtotalling can be carried out to identify the number of institutions involved in a particular activity, e.g. environmental impact assessment. Gaps in EIA can be identified when we see that EIA assessments for vertebrates is not well represented.

- Graphical representations and GIS mapping will be attempted.

Example: Graphical representations and GIS mapping (e.g. choroplething) can be used to depict the amount of conservation effort targeted in different biogeographical and political units, and also perhaps for different taxa. For example, we can develop a map of the amount of research effort targeting various biomes.

4.2. Plan of Action

- Stakeholder analysis criteria have already been prepared (see Appendix 1).
- Preparation of stakeholder questionnaires has been initiated
- Request for high-level support from MoEF has been put forth.
- Consultations and questionnaire surveys will be initiated.
- More detailed stocktaking study and thematic assessments are planned based on the CBD requirements and their sub-components.

Appendix 1: Stakeholder Analysis Criteria

This document lists the categories and fields required to carry out the stakeholder analysis. The stakeholder questionnaire that is to be sent to all institutions will be developed from this document. Institutions and projects will have slightly different questionnaires.

1. Type of Institution

Ministries
Govt. departments
Autonomous Organizations
Central. Govt. Institutions
State Govt. Institutions
Universities
Consortiums
Agencies
International Large N.G.Os/ Societies/ Trusts
International N.G.Os Societies/ Trusts
India – Large N.G.Os Societies/ Trusts
India – Medium N.G.Os Societies/ Trusts
India – Small N.G.Os Societies/ Trusts
Networks
Individuals

2. Type of initiative

Initiatives
Funds
Programs
Projects
Workshops
Meetings
Conferences
Symposia

3. Nature of policy

Treaties
Conventions
Declarations
Petitions
Notifications
Bills
Acts
Laws
Policies

Date of establishment

Average (yearly) amount of funding from the government:

Amount (yearly) of funding from other sources:

4. Annual funds allotted to

Infrastructure
Salaries & allowances
Training
Library & Documentation

5. Total allocation to hotspots

Western Ghats
A&N Islands
Eastern Himalaya
Western & Central Himalaya
Trans Himalaya

6. Details of staff

Scientists/Faculty
No. of unfilled vacancies in the above category
Research fellows
No. of unfilled vacancies in the above category
Support staff
of staff with doctoral degrees
of staff with post graduate degrees (including Ph.Ds)

7. Projects

No. of projects undertaken before 2000
No. of large projects (exceeding Rs.)
No. of medium projects (exceeding Rs.)
No. of small projects (exceeding Rs.)

No. of projects undertaken since 2000
No. of large projects (exceeding Rs.)
No. of medium projects (exceeding Rs.)
No. of small projects (exceeding Rs.)

8. Institutional focus areas

With an approximate no. projects, the number of staff involved and a rough estimate of the funds allocated to each category (after 2000) if possible.

Field Research
Laboratory Research
Advocacy
Education and outreach
Governance & Implementation
Policy
EIA
Combination
Finance, taxes, patents
Intellectual Property Rights
Management
Monitoring
Mapping
Surveys
Biological Research
Env. Sc. Sub-disciplines (climatology, hydrology)

Economic valuation
Sociology - demography
Socio-Economic
Anthropology
Law
Policy
Interdisc. Research
Multidisc. Research
Biological
Biosafety
Env. Sc. Sub-disciplines (climatology, hydrology)
Economic valuation
Sociology - demography
Socio-Economic
Anthropology
Law
Policy
IPR & benefit sharing
Focused work on single aspect

9. Taxa

Mammals	Birds	Reptiles
Amphibians	Fishes	Fungi and Lichens
Flora	Invertebrates	Other

10. Target areas

Biogeo. Zone
Biome
Ecosystem
Habitat
Multiple Species
Single Species
Population
Gene
Combination

11. Habitat types where work is carried out

Evergreen forests	Deciduous forests	Grasslands
Alpine	Scrub	Desert
Wetlands	Montane	Coastal
Marine	Freshwater	Other

12. States and Union Territories where work is carried out

Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chandigarh
Chattisgarh
Delhi

Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir
Jharkhand
Karnataka
Kerala
Lakshadweep
Madhya Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Nagaland
Orissa
Punjab
Rajasthan
Sikkim
Tamil Nadu
Tripura
Uttaranchal
Uttar Pradesh
West Bengal

Andaman & Nicobar Islands
Dadra & Nagar Haveli
Daman & Diu
Lakshadweep
Pondicherry

13. Geographical focus areas

With approximate no. projects, the number of staff involved and a rough estimate of the funds allocated to each category (after 2000) if possible.

14. Terrestrial

Trans-Himalaya
Himalaya
The Indo-Gangetic Plain
North-East India
The Deccan Plateau
The Semi-Arid Zone
The Indian Desert
Coasts
Islands

15. Aquatic

Marine
Freshwater

Ex-situ conservation units
Zoological and botanical parks and gardens
Gene banks

Ecoregions - WWF

Biomes
Forest-Types – get Champion and Seth
Ecosystems

16. Target stakeholder groups

Government Ministries & departments (e.g. Forest Department)
Local Communities with land rights, etc
Local communities with usufruct rights
Specific tribal groups
Corporate organizations & groups employed in extractive activities
Academic groups- indirect stakeholders (e.g. a city that depends on water from a catchment)

17. Sections of the society

All groups
Youth
Women
Children
Lower economic classes
Other
Socio-economic – income based groups

18. Stage of a project

Proposal
Initial phase
Midway
Final stage
Completed

19. Project duration

Short term (less than 1 yr)
Medium term (2-5 yrs)
Long term (> 5 yrs)

20. Outputs

Peer-reviewed publications
Books
Reports
Educational output
Accessibility of outputs
Definite recommendations
Vague recommendations
Working plans (F.D)
Annual Reports

Draft
Final
In review

Specific to the region
Specific to the region
Generic