

Action Plan for Implementing the Convention on Biological Diversity's Programme of Work on Protected Areas



Sri Lanka

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Protected area information:

PoWPA Focal Point:

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Lead implementing agency:

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Multi-stakeholder committee: (Add description)

Not formed yet

Description of protected area system

National Targets and Vision for Protected Areas

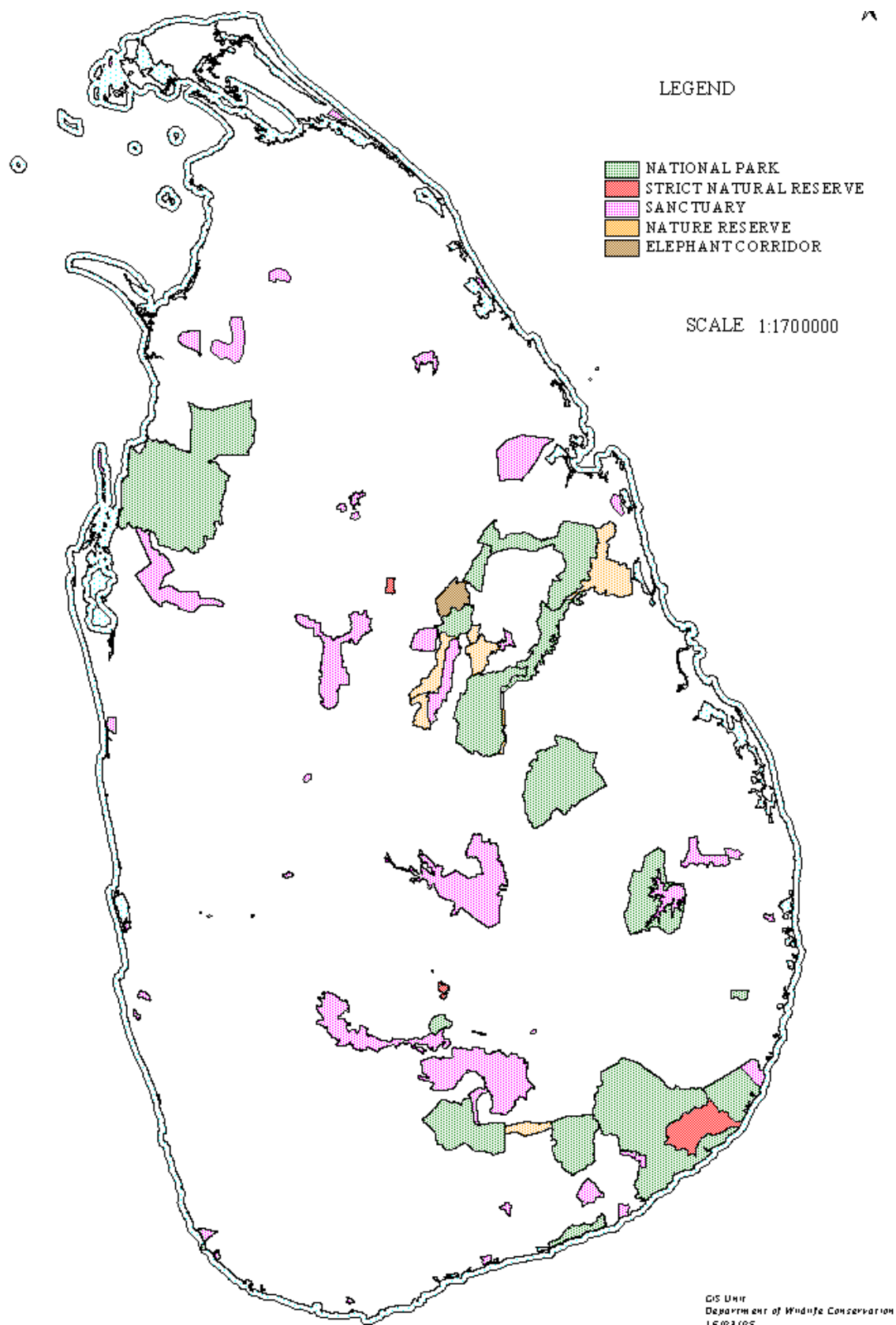
At least 17 per cent of terrestrial and inland water areas and 5 per cent of coastal and marine areas which are particularly important for biodiversity and ecosystem services are effectively managed.

(Insert national targets for protected areas/Target 11 of the Aichi Targets. Include rationale from protected area gap assessment, if completed, along with any additional information about the vision for the protected area system, including statements about the value of the protected area system to the country)

Coverage

Protected area classification in Sri Lanka

- **Strict Nature Reserves (SNR) -03**
- **National Parks (NP) - 21**
- **Nature reserves - 05**
- **Jungle corridors - 01**
- **Sanctuaries - 63**
- **Buffer zone - 00**
- **Refuge - 00**
- **Marine Reserves – 02**
- **World/National heritage wilderness areas – 02**
- **Conservation Forests - 55**
- **Forest reserves – 360**
- **Other state forests-N/A**
- **International Biosphere Reserves (MAB) - 04**
- **National Biosphere reserves – 31**



(Amount and % protected for terrestrial and marine; maps of protected area system)

National Designation	No.	Management Authority	Extent (Ha)
National Heritage Wilderness Area	01	FD	11,187
Conservation Forest	55*	FD	76,822
Forest Reserves	360	FD	575,228
Other Sate Forests	N/A	FD	516,990
Strict Nature Reserves	03	DWLC	31,574
National Parks	21*	DWLC	535,393
Nature reserves	05	DWLC	57,058
Jungle Corridors	01	DWLC	10360
Sanctuaries	63	DWLC	264,101

Description and background

Sri Lanka is a sovereign island nation in the Indian Ocean, located at the tip of the southern point of the Indian sub-continent. Despite its small size of 6,570,134 ha, the island exhibits a wide array of ecosystems with a remarkable diversity of species: considered to be the richest per unit area in the Asian region. Sri Lanka has several distinct climatic zones, each with their characteristic forests. They include rainforests, montane cloud forests, Dry Zone monsoon forests and arid thorn scrub forests. Sri Lanka's wetlands are also diverse, comprising 103 major rivers with their associated marshes and about 12,000 irrigations tanks that harbour wetland species.

Being an island, the country has a rich marine and coastal biodiversity along its 1620 km coastline including coral reefs, mangroves, sea grass beds, salt marsh vegetation, sand dunes and beaches.

(Summary description)

Governance types

In Sri Lanka over 28% of the total land area is reserved and administered by either the Forest Department or Department of Wildlife Conservation: 16.1% and 12.4%, respectively. Designated areas administered by the Forest Department generally tend to be small and confined to the wet zone (Figure 3.12), whereas those under the authority of the Department of Wildlife Conservation tend to be larger and occur mainly in the dry zone (Figure 3.13). However, the classification of designated areas administered by Forest Department was recently revised into three classes and the details of the revision are not available. (Summary matrix of governance types)

Key threats

Deforestation has been the most serious threat to terrestrial biodiversity in Sri Lanka with the island losing approximately 50% of its forest cover within about 50 years. The area under closed canopy dense natural forests shows a marked decline from 44% (2.9 million ha), to 26.6% (1.76 million ha) and 23.88.2% (1.33 million ha) of the land area respectively in 1956, 1983 and 1992 (Legg and Jewel, 1995; FD, 1999) and to 22.5 in 1999 (Forest Department data, 1999). The rate of deforestation also increased from 42,000 ha between 1956 and 1983 to 54,000 ha between 1983 and 1992, Consequently the per capita figure of 0.12 ha of forests in 1983 dropped to 0.09 ha by 1993 (Bandaratillke, 2000). **Table 1.6** shows that all categories of closed canopy natural forest in the island had decreased between 1992 and 1999. **Figure 1.11 a & b** compares Sri Lanka's forest cover by district in 1983 and 1992 (Legg and Jewel, 1995) and 1999 (Forest Department data, 1999). Although a drop to 17 % by 2020 was predicted if no preventive action is taken (MALF, 1995), various conservation measures have been adopted to reduce deforestation. The rate of deforestation had dropped to 20,000 ha per year between 1994-1999 (National Biodiversity Outlook, 2006), showing that the trend for forest loss has now considerably slowed down, though continuing. While some of the forest loss (per district) is attributed to redefining of district boundaries,² the acceleration of deforestation from 1983 to 1992 was partly due to extensive land clearing in the Dry Zone for irrigation schemes established through the Mahaweli Development Project. Much of the post colonial forest loss has been directly as a result of expansion of irrigation, human settlements, agricultural development, and other non-forest development activities such as hydro electric generation (Bogahawatte, N.D). ² A decrease in land area within the district results in a reduced forest cover for the district. Forest encroachment

The threats to Sri Lanka's biodiversity have been identified, chief among which are habitat loss and fragmentation, habitat degradation, over exploitation of biological resources, loss of traditional crop and livestock varieties and breeds, pollution, human - wildlife conflicts, a burgeoning spread of alien invasive species and increasing human population density

Land-use in Sri Lanka

Type of land	Hectares (ha)
Reserved land (reservoirs, streams, roads etc.)	585,300
Forests and catchment areas	2,000,000
Steep lands	380,000
Lands above 5000 ft. Contour	76,400
Barren lands	77,000
Marshes and mangroves	70,000
Presently used land	2,635,000
Sparsely used land (chena, patana, etc..)	728,800
Total land area	6,552,500

Source: adapted from Somasekaran (1996) cited in Madduma Bandara (2000)

(in (Description of key threats, and maps, if available)

Barriers for effective implementation

- ***Population pressure and Increasing demand for land by people and industrialists***
- ***Habitat loss and Unplanned regularization of land encroachments***
- ***Lack of Awareness on ecosystem services – policy makers***
- ***Lack of Financial assistance for Protected Area Management***

(Description of key barriers for effective implementation)

The average population density of the country is about 254 persons / sq km in Sri Lanka. Although the Population growth is about 1.1% per year in Sri Lanka, the population growth in the rural areas showing a higher value than the National average. This exerts a severe pressure for space and the demand for land has been raised as a result. Since the industrial sector has not spread into the rural areas of the country, people in that area left with one option which is Agriculture. This had increased the demand for more and more arable land for cultivations. Therefore rural communities see the forested areas (majority are protected areas) as the source of land and demand for it through legal (land alienation programs) and illegal ways (encroachment). Whatever takes place, this results in reduction of forested areas.

Many forested lands have to be given to be distributed among needy people. When people dwell in encroached lands they do not have any rights on that land. The land tenure becomes unclear. Therefore those people tend to get whatever they can get in the short run and do not look after those lands properly. Therefore those lands become marginal and the productivity loosens. Time to tie these lands have been given to the people under various land alienation schemes and people lose their incomes from

these lands day by day. Ultimately people lose their livelihoods and continuously fall into the poverty vicious cycle. These haphazard land use by people and unplanned settlement of people increase forest fragmentation and habitat loss (both qualitatively and quantitatively).

Devil's due for forest conservation cannot be seen or gained in short run. For them to be realized or show results take time. Naturally people are not that patient and look for short term benefits. Majority of both who demand lands and who take decisions to distribute land among landless do not tend to understand about ecosystem services and they are ignorant about the merits of ecosystem services. Therefore awareness among all levels is a must.

The country has a considerable amount of its land under protection. Currently the country is earning a considerable amount of revenue from ecotourism as well. But these revenue cannot be utilize for conservations since the financial regulations needs that revenue to be deposited in the Government fund. Therefore in a very tight budget the forest and wildlife sector do not get sufficient funds to be re invested to the departmental budgets. There should be a method which facilitate to retain sufficient amount of funds to be re invested to the forest and wildlife sector.

Status, priority and timeline for key actions of the Programme of Work on Protected Areas

Status of key actions of the Programme of Work on Protected Areas

Status of key actions of the Programme of Work on Protected Areas	Status
• Progress on assessing gaps in the protected area network (1.1)	4
• Progress in assessing protected area integration (1.2)	2
• Progress in establishing transboundary protected areas and regional networks (1.3)	1
• Progress in developing site-level management plans (1.4)	3
• Progress in assessing threats and opportunities for restoration (1.5)	2
• Progress in assessing equitable sharing of benefits (2.1)	1
• Progress in assessing protected area governance (2.1)	1
• Progress in assessing the participation of indigenous and local communities in key protected area decisions (2.2)	1
• Progress in assessing the policy environment for establishing and managing protected areas (3.1)	3
• Progress in assessing the values of protected areas (3.1)	1
• Progress in assessing protected area capacity needs (3.2)	1-2
• Progress in assessing the appropriate technology needs (3.3)	1-2
• Progress in assessing protected area sustainable finance needs (3.4)	2
• Progress in conducting public awareness campaigns (3.5)	3
• Progress in developing best practices and minimum standards (4.1)	2
• Progress in assessing management effectiveness (4.2)	1
• Progress in establishing an effective PA monitoring system (4.3)	2
• Progress in developing a research program for protected areas (4.4)	2
• Progress in assessing opportunities for marine protection	2
• Progress in incorporating climate change aspects into protected areas	1

Status: 0 = no work, 1 = just started, 2 = partially complete, 3 = nearly complete, 4 = complete

(Insert notes as appropriate)

Priority actions for fully implementing the Programme of Work on Protected Areas:

(Insert priority actions)

1. Complete the boundary demarcation of Protected areas
2. Effectively implement the land-use policy plan
3. Formulate and implement a sustainable financial mechanism to reinvest revenue for conservation financing
4. Develop community based and public private partnership programs for ecotourism / nature tourism
5. Recruit sufficient personnel for protection and conservation activities
6. Complete the declaration of protected area and draw appropriate management plans for the respective sites and implement them effectively.
7. Update the Protected area gap analysis
8. Conduct assessments for biodiversity important areas
9. Practice participatory resource management whenever it is possible
10. Involve private sector in conservation and ecotourism activities whenever it is possible

Timeline for completion of key actions

(Insert timeline)

All these actions should be completed by 2020 as the Sri Lanka National Development Policy framework work respective sectors to do so.

Action Plans for completing priority actions of the Programme of Work on Protected Areas

(Insert detailed action plans)

Action 1: updating the present gap analysis and incorporating climate change to the gap analysis for identification of gaps in protected area network

(Describe action)

Key steps	Timeline	Responsible parties	Indicative budget
Identification of most vulnerable and most resistance species	2013	BDS	150,00,000

Taking more representative sampling			
Gathering data and analysis	2 013	BDS	50,00,000
Reporting	2014	BDS	25,00,000

Action 2 : Further identification of ecologically and economically important representative ecosystem and declare for conservation
(Describe action)

Key steps	Timeline	Responsible parties	Indicative budget
Identification of new biodiversity and economically rich areas by the gap assessment	2013/14	FD/ DWLC	200,00,000
Conducting economic valuation for already identified and new areas	2013/14	FD/ DWLC	150,00,000
Assess and prioritize the areas identified based on their economic and ecological sensitivity	2013/14	Committee established by the Stakeholders	200,00,000
Preparation of Management plans	2013/2020	BDS, CEA, FD, DWLC	40,00,000
Implementing the above Mgt. Plans	2013/2020	BDS, CEA, FD, DWLC	400,00,000
Form stakeholder committees for individual protected areas	2013	FD/ DWLC	10,00,000
Take legal / policy measures	2013 /16	FD/ DWLC	10,00,000

Action 3: Establishment of micro biodiversity hotspots and connected among those with natural or manmade corridors
(Describe action)

Key steps	Timeline	Responsible parties	Indicative budget
Gathering data from the database on Fauna and Flora of the country	2013 /15	BDS, CEA, FD, DWLC	200,00,000
Overlaying the species data over the protected area map to identify the in-country micro biodiversity hotspots.	2013/15	BDS, CEA, FD, DWLC	150,00,000
Identification of the governance types of the micro hotspots and the corridors connecting.	2013/15	BDS, CEA, FD, DWLC	100,00,000
Form stakeholder committees for individual protected areas	2013/18	BDS, CEA, FD, DWLC	10,00,000
Preparation of Management plans	2013/2020	BDS, CEA, FD, DWLC	40,00,000
Implementing the above Mgt. Plans	2013/2020	BDS, CEA, FD,	400,00,000

		DWLC	
Take legal / policy measures	2013/16	BDS, CEA, FD, DWLC	20,00,000

Action 4: do a detailed assessment on the prospective protected areas which are not governed by government and legal identification

Key steps	Timeline	Responsible parties	Indicative budget
Identification of protected areas which are not governed by government	2013/15	BDS, CEA, FD, DWLC	85,00,000
Do the assessment on governance types in detail	2013 15	BDS, CEA, FD, DWLC	20,00,000
Form small stakeholder committees on private governed lands	2013	BDS, CEA, FD, DWLC	10,00,000
Preparation of Management Plans	2013/18	BDS, CEA, FD, DWLC	200,00,000
Implementing the above Management Plans	2014/20	BDS, CEA, FD, DWLC	300,00,000
Take legal /policy measures	2013/16	BDS, CEA, FD, DWLC	20,00,000

(Insert more as needed)

Key assessment results

Ecological gap assessment (insert summary findings if available)

It is within these national policies and recommendations that a protected area gap analysis in Sri Lanka was designed in order to assemble an optimum portfolio of strategic conservation sites. The project was activated under the **Component C** of the **Protected Area Management & Wildlife Conservation Project** (PAM&WCP) that supports the Biodiversity Conservation Secretariat (BDCS) of the Ministry of Environment & Natural Resources (MENR).

The aim of this project was to assemble a portfolio of strategic conservation sites for Sri Lanka that better represents the biological diversity and ecological systems and replicates sites to provide added protection for biodiversity values. All PAs by definition were included in the portfolio. Other sites recommended for the portfolio falling outside the existing PA system were also included because they contain conservation targets that are currently not well represented or replicated, or which are required to be added to the existing PA system to provide landscape functional integrity to connect existing PAs, or to provide buffer zones. Although the process was required to utilize existing information, some such information was not always available and they had to be freshly generated to be used for the project. Further, the process actively involved a wide range of stakeholders and expert review teams. The approach was a modification of the methodology described for ecoregional conservation planning in *The Nature Conservancy*.

The PA gap analysis constituted two main parts; first, to identify and describe a portfolio of strategic conservation sites for Sri Lanka and secondly, to compare the existing PA system with this portfolio and describe areas of conservation importance that are not in the existing PA system (gaps). The identification of the portfolio was guided by several fundamental steps; they are as follows, in logical order:

Selected conservation targets: A manageable set consisting of forty one conservation targets were identified and mapped (at the same projection). They belonged to three categories, viz. Ecological System Targets (e.g. major climatic zones and river systems etc.), Community Targets (e.g. natural vegetation types and floristic regions etc.) and Taxonomic Overlay Targets (e.g. threatened flora and fauna groups).

Setting of conservation goals: Setting of goals for various conservation targets depends on how widespread / restricted is the target, patch size and fragility to existing or future threats; an example was a goal of 100% for Montane Evergreen Forest, a highly important watershed conservation component that is also a fragile and threatened ecosystem.

Ecological stratification of the landscape: The portfolio has taken into account the notion that “the long-term survival of the conservation targets requires functional conservation sites or stratigraphic units (SUs) with intact ecological processes and patterns”. Therefore, the island’s landscape was stratified into five units based on river basins. The advantage of this stratification was that it ensured that major ecological and/or geophysical/climatic patterns which effect biodiversity patterns are represented in the portfolio and that targets are replicated over their broad distributions. Additionally, within strata, it was possible to ensure that other subsets of the environment or landscape are represented. For example, if the strata boundaries are based on those of the major catchments, the target sites could be allocated within each unit so that they represent the major rainfall zones (wet, intermediate and dry) in these units.

Assessment of viability: The natural vegetation cover is regarded as the main host of natural biodiversity. Therefore, the patches (polygons) of all natural vegetation types were assessed for their viability. For a given vegetation patch, the viability was calculated in consideration of five factors, viz. condition, area, wilderness, shape and isolation relevant to that patch. One of the most important determinants of viability is an assessment of threats that are connected to the impact of socio-economic factors. Land use and land ownership could be linked to the sites that emerge from the biodiversity analysis. The long-term conservation of a given site, to a great deal, depends on its viability status; thus the conservation potential of a gap component, e.g. corridor, will be high if most of its constituent patches are of good viability. Furthermore, the viability status will be a useful tool for the relevant stakeholders in rehabilitation of conservation sites.

Checking the accuracy of target recognition and viability: This was carried out in two ways in order to enhance the integrity of the gap analysis process; first, by ground-truthing some sample sites and secondly, by using quantified data on disturbance in vegetation patches recorded during recent investigations. Over 75% agreement between predicted (calculated) viability and ground-truthed results confirmed the high level of accuracy of the gap analysis process.

Portfolio assembly and gap analysis: A portfolio of High Conservation Value Areas (HCVAs) was progressively assembled following a series of steps. The first step was to lay a foundation for the portfolio with the existing PA system, as an *a priori*. This was followed by the use of various conservation targets as coarse and fine filters to elucidate conservation gaps that were cumulated into the portfolio in consideration of the viability status of the vegetation patches that are involved. The process was conducted separately for each of the five SUs which were finally united into a national portfolio in consideration of goals for each conservation target. Thus a portfolio of most viable sites was assembled in such a way that it meets the multiple objective of reaching the conservation goals for each of the conservation targets, replicates these targets in each SU and assembles the target systems in such a way that ensures at least one functional landscape is represented in each SU. Further, sites were selected to represent major

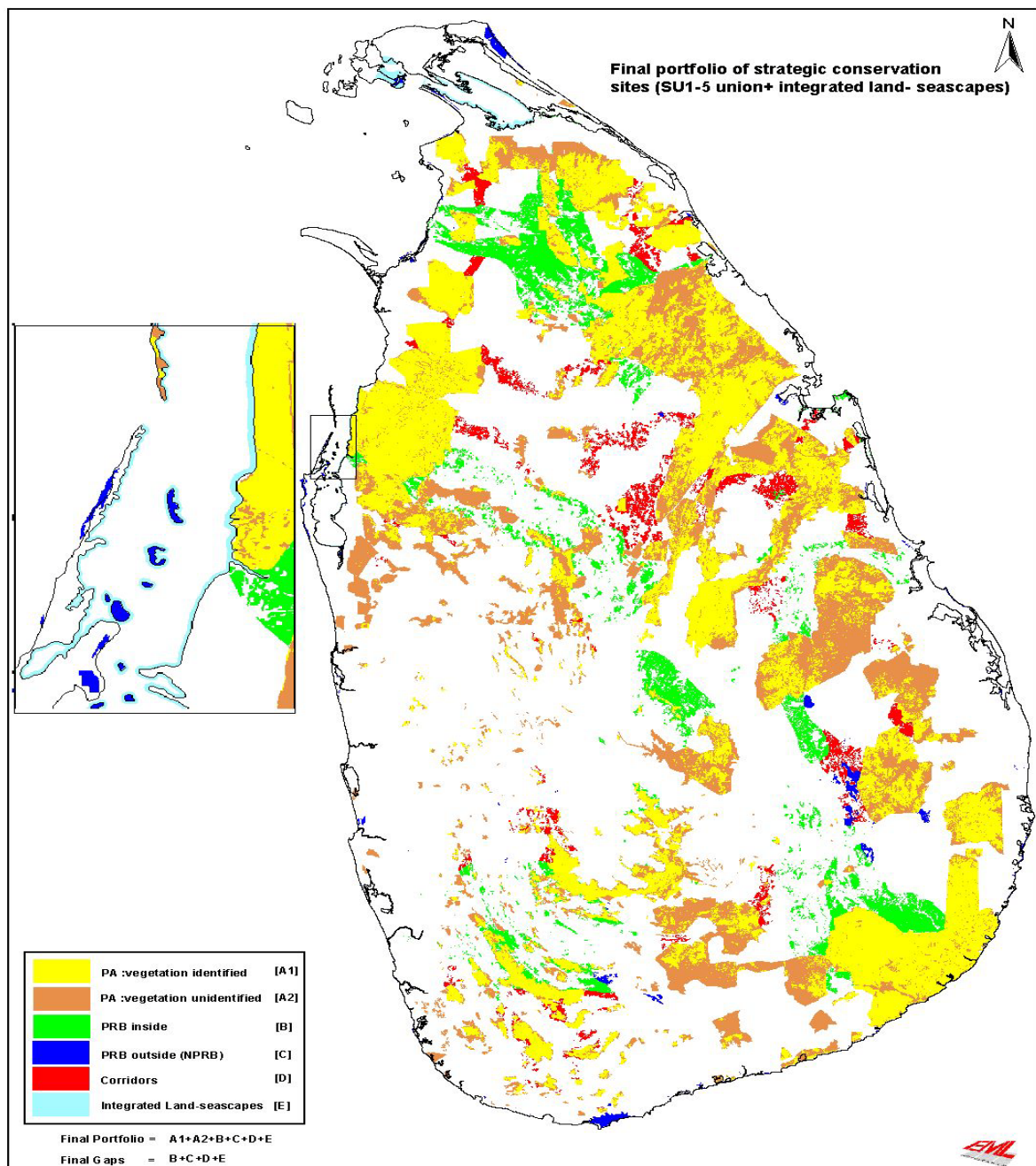
environmental gradients within each SU. The contiguity between sites or site groups was created by linking them wherever possible through natural vegetation patches and sometimes anthropogenic landscape patches such as plantations (corridors). Whenever, sufficient information is available to consider some seascapes as HCVAAs, such areas, or their selected portions, were integrated with associated landscapes and added to the portfolio (e.g. Wilpattu NP-Puttalam Lagoon-Kalpitiya Peninsula complex). As such seascapes are not contained within the SU system, the integration of land-seascapes was carried out as the last step after the union of the SUs.

Recommendations: A conceptual shift from a *system of PAs* to a *network of PAs* is recommended with means to achieve it. The identification of gaps consisting of corridors, extensions to PAs, buffer zones, integrated landscape-seascape areas and special HCVAAs will fulfill this objective. As the corridors represent mosaics of heterogeneous land use systems, they will require a variety of management strategies that are detailed in the recommendation chapter. Concurrently, they also require appropriate policies and legislation. The *Ecosystem Approach*, a globally accepted concept in managing PAs and their gaps, will be expected to add new dimensions to the implementation of the proposed portfolio.

Even though an endpoint is reached in the process of assembling a portfolio where products are made available to the users, the gap analysis process should be considered dynamic. It is envisioned that maps will be refined and updated on a regular schedule. The assessment data will be used to refine gap maps iteratively by where the land cover map is inaccurate and where more effort is required to bring the maps up to accuracy standards. In this regard, post-GAP research will be essential to generate new information. Site-based biodiversity inventories and the identification of biodiversity refugia for intensive investigation are recommended. The access to GAP information should be made available to *bona fide* researchers, preferably with stakeholder partnership, and they should be encouraged to contribute new and refined inputs to the portfolio. Furthermore, it is suggested that the GAP report is published in the form of a textbook to enable the universities to add this component to the curriculum dealing with nature conservation and allied fields and also to promote the relevant researchers to involve themselves in further research on biological conservation.

The MENR, the national focal point for the biodiversity conservation, should enhance its authority in coordinating biodiversity-related matters. The establishment of a single agency to deal with PAs should be explored to prevent duplication of functions and sectoral polarization, e.g. wildlife and forest ‘sectors’. The MENR is also encouraged to enhance inter-sectoral cooperation in considering pragmatic ways of addressing the conservation priorities emanating from this study. The recommendations detailed in this study should be considered in collaboration with those stated in the BCAP (Biodiversity Conservation Action Plan) Section *In situ Conservation and National Conservation Review (NCR)*.

The GAP considers the cult of hoarding biodiversity information and imposing unreasonable restrictions on the issue of such information to the *bona fide* users as detrimental to national development on the one hand, and wastage of resources that have gone into the build up of such data bases on the other. Databases become ‘frozen assets’ under introvert custody and lose their value with time to the point of obsolescence. Therefore the GAP proposes the formulation of a national policy on biodiversity information management within the greater national biodiversity policy. The establishment of a Biodiversity Information Management Unit (BIMU) along with a committee on Biodiversity Information Management (CBIM) within the BS/MENR with necessary capacity building is recommended.



Management effectiveness assessment (Insert summary findings if available)

The respective Ministries do their monitoring , evaluation activities separately and they also do the Monthly progress reviews regularly.

Sustainable finance assessment (Insert summary findings if available)

Wildlife Preservation fund is now in operation under the Dept. of Wildlife Conservation.

Capacity needs assessment (Insert summary findings if available)

Policy environment assessment (Insert summary findings if available)

The policies of the respective Ministries under which the protection and conservation agencies (Forest Department, Dept. of Wildlife Conservation and the Central Environment Authority) coming down has given clear mandates and guidance to Identify, declare and Manage protected area. Also the Umbrella policy framework of the country also given clear mandates to respective agencies to manage and improve protected area network of the country.

Protected area integration and mainstreaming assessment (Insert summary findings if available)

The Forest Department, Dept. of Wildlife Conservation and the Central Environment Authority have the mandate to assess prospective areas and declare the under the National Protected Area Network by Gazetting them with the approval of the Parliament. The Respective Ministries are facilitating the process.

Protected area valuation assessment (Insert summary findings if available)

The Ministry of Environment has initiated some of these activities in this year. The respective reports will be available in December / 2012

Climate change resilience and adaptation assessment (Insert summary findings if available)

The Ministry of Environment has prepared the National Climate Change Policy and the National Climate Change Adaptation Strategy in Which Forestry and Wildlife sector has a big Emphasis

(Insert other assessment results if available)