

5.2.13 List of References

1. Biodiversity Conservation in Sri Lanka: A Framework for Action (1999) <http://www.cbd.int/doc/world/lk/lk-nbsap-01-en.pdf> (Last accessed: 16/10/2012)
2. Biodiversity Conservation in Sri Lanka: A Framework for Action: Addendum (2007) <http://www.cbd.int/doc/world/lk/lk-nbsap-oth-en.pdf> (Last accessed: 16/10/2012)
3. Portfolio of Strategic Conservation Sites/Protected are Gap Analysis in Sri Lanka, Ministry of Environment and Natural Resources, 2006
4. The Strategic Plan for Biodiversity 2011- 2020 and the Aichi Targets <http://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-en.pdf> (Last accessed: 16/10/2012)

5.3 Project Idea for Technology 2: Increasing connectivity through corridors, landscape/matrix improvement and management

Project Idea:

'Identification of critical areas to be connected and prioritization of required corridors'

5.3.1 Introduction/Background

This project – 'Identification of critical areas to be connected and prioritization of required corridors' – is an action identified under 'Technology 2: Increasing connectivity through corridors, landscape/matrix improvement and management'.

Apart from the direct destruction of habitats, development activities affect biodiversity by fragmenting existing natural habitats. This fragmentation results in the creation of 'islands' or pockets of natural habitat which are spatially and functionally isolated from each other. The developed areas separating these fragments are then a barrier to the free movement of biodiversity between these natural areas. Habitat fragmentation can also occur as a result of habitat loss or degradation due to the effects of climate change. The impacts of habitat fragmentation are often significant. The dispersal of seeds and pollen from flora is likely to be hindered. Furthermore, the small habitats created by fragmentation will have a low carrying capacity and will not have the space and resources necessary to support a high number of individuals. As for flora, fragmentation can result in reduced reproduction or inbreeding within isolated fauna populations. The geographic isolation of species can also lead to reduced genetic biodiversity (Frankham et al, 2010). Portfolio of strategic conservation sites: proposed corridors to connect PAs (MENR, 2006) identified a priority list of corridors. Changing climatic conditions can be brought in to prioritise the existing list and to introduce any new areas of importance.

These impacts of fragmentation can be mitigated by enhancing connectivity between fragments of natural habitat, and thereby reducing their isolation. This can be done by establishing wildlife corridors. Such corridors will facilitate the migration and free movement of biodiversity. This is particularly important for species that occupy isolated areas where climate change is likely to result in the loss, damage or degradation of their native habitats.

While the establishment of corridors is essential, the protection of existing corridors is also vital in ensuring that they are secure, and of a suitable standard to facilitate the free migration of biodiversity.

At present, there is no formal list of identified critical areas to be connected. Furthermore, there is no mechanism by which corridors are prioritized. While small-scale restoration activities carried provide some connectivity, such initiatives often have a limited impact as they are not coordinated on a larger scale, and without a scientific basis. In addition, resources are sometimes spent on creating and maintaining less important corridors due to a lack of prioritization. However, in order to maximize the efficiency of conservation efforts and prevent the waste of resources, it is necessary to first identify critical areas that need to be connected, and then to prioritize the required corridors. Once a prioritized list of such corridors is developed, resources can be channeled into the most important and urgent of these corridors first. Similarly, through the project, it will be possible to identify corridors that can, and should, be included in the protected areas network.

5.3.2 Objectives

1. To identify and prioritize critical areas to be connected in light of climate change impacts.
2. To facilitate the inclusion of four critical areas in the protected area network.

5.3.3 Outputs of the Proposed Project

- Climate change modeling data.
- Critical areas to be connected identified.
- Required corridors prioritized.
- Four critical areas included into the protected area network.

5.3.4 Relationship to the country's sustainable development priorities

The importance of the conservation of biodiversity, and research into the impacts of climate change, are recognized in both the National Biodiversity Strategy and Action Plan - 'Biodiversity Conservation in Sri Lanka: A Framework for Action' (1999) and its Addendum (2007). Furthermore, the importance of the creation of awareness about these topics is also highlighted in this document.

The Action Plan for Haritha Lanka Programme has identified its Mission 2 to be 'Saving the Fauna, Flora and Ecosystems' and Mission 3 to be 'Meeting the Challenges of Climate Change'. The Mahinda Chintana - Vision for the Future, which is the Development Policy Framework of the Government of Sri Lanka has identified that the conservation of fauna and flora is important in Chapter 7.

As such, the project is in line with national interests and priorities.

Sri Lanka is signatory to the Convention of Biological Diversity (CBD). The conservation of biodiversity and adaptation to climate change are included in the Convention on Biological Diversity (CBD) and the Aichi Biodiversity Targets for 2011-2020. As such, the project also contributes to national efforts to meet these targets and fulfill obligations arising from Sri Lanka's involvement in the CBD.

5.3.5 Project Deliverables

- A detailed report on the activities carried out during the project and its outputs, including the climate change modeling maps and data.
- A list of critical areas to be connected.
- A prioritized list of corridors.
- The inclusion of four critical areas in the protected area network.

5.3.6 Project Scope and Possible Implementation

The identification of critical areas that need to be connected and the prioritization of the required corridors can be used in the allocation of resources to establish or restore these corridors. Furthermore, the identification priority corridors can facilitate the protection of these areas.

5.3.7 Project activities

Climate change modeling will be used to identify critical areas that need to be connected, in order to enhance the resilience of their biodiversity to changing climatic conditions.

Based on the analysis of the results of this research, areas will be prioritized objectively using a points-based system, which will consider key relevant criteria as decided upon by the committee coordinating the project.

Corridors connecting critical areas that obtain a high score based on the selected criteria will be included in the priority list of corridors required.

The corridors that emerge at the top of this prioritized list will be considered for inclusion in the protected areas network by the relevant authorities, the Forest Department and the Department of Wildlife Conservation.

A panel of select climate change and biodiversity experts will review the outputs of the project, along with the coordinating committee.

List of project activities

1. Literature survey and development of appropriate climate change modeling
2. Analysis of modeling results and identification of critical areas to be connected
3. Ground truthing and prioritization of corridors required for connection of the identified critical areas
4. Development of a list of priority areas for corridors
5. Pilot implementation of interventions at least three corridors

5.3.8 Timelines for the Proposed Activities

Table 5.4: Proposed Timelines for Implementation of the Activities of Project 2

| Activity | Year 1 | | | | Year 1 | | | | Year 1 | | | |
|---|---------|---|---|---|--------|---|---|---|--------|---|---|---|
| | Quarter | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1.Literature survey and development of appropriate climate change modeling | | | | | | | | | | | | |
| 2.Analysis of modeling results and identification of critical areas to be connected | | | | | | | | | | | | |
| 3.Ground truthing and prioritization of corridors required for connection of critical areas | | | | | | | | | | | | |
| 4.Development of a list of priority areas for corridors | | | | | | | | | | | | |
| 5.Pilot implementation of interventions at least three corridors | | | | | | | | | | | | |

5.3.9 Budget/Resource requirements

Table 5.5: Approximate Cost for Implementation of the Proposed Activities of Project 2

| Activity | Proposed Budget (US\$) |
|--|------------------------|
| 1. Literature survey and development of appropriate climate change modeling | 500,000 |
| 2. Analysis of modeling results and identification of critical areas to be connected | 200,000 |
| 3. Ground truthing and prioritization of corridors required for connection of the | 200,000 |

| | |
|---|-------------------|
| identified critical areas | |
| 4. Development of a list of priority areas for corridors | 100,000 |
| 5. Pilot implementation of interventions at least three corridors | 850,000 |
| Total | 1, 850,000 |

Total activity cost 1,575,500

Project Management and M&E Cost (15%) 277,500

Total Cost US \$ 1,850,000

Source of funding: 90% by Donor

Co-financing: 10% to be sourced

Necessary funding will be obtained from domestic and international sources.

5.3.10 Measurement/Evaluation

Biodiversity Secretariat of the Ministry of Environment in partnership with the Climate Change Secretariat will develop a monitoring and evaluation framework and appoint a suitable entity to do the periodic monitoring and evaluation to be used in learning and sharing.

5.3.11 Possible Complications/Challenges

- There may be inaccuracies in the predictions made through climate change modeling which will be used to identify critical areas for restoration.
- Some areas that are in urgent need of restoration work may be missed or overlooked due to unforeseen problems in the prioritization process.
- There may be difficulties or delays in including the selected critical areas in the protected areas network.

5.3.12 Responsibilities and Coordination

The project will be coordinated by a committee consisting of representatives of the Forest Department, the Department of Wildlife Conservation, Climate Change Secretariat and Biodiversity Secretariat of the Ministry of Environment. Implementation of the project activities will be by these organizations, in conjunction with universities, NARA and Ministry of Fisheries and Aquatic Resources and relevant environmental groups including collaboration with international agencies on climate change modeling.

A panel of select climate change and biodiversity experts will review the outputs of the project, along with the coordinating committee.

Key implementing agencies will be Department of Wildlife Conservation, Forest Department and NARA with technical inputs from Universities and conservation agencies. Biodiversity Secretariat of the Ministry of Environment will be the Project Execution Agency.

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2. Biodiversity Conservation in Sri Lanka: A Framework for Action: Addendum (2007) <http://www.cbd.int/doc/world/lk/lk-nbsap-oth-en.pdf> (Last accessed: 16/10/2012)
3. Frankham, R., Ballou, J. and Briscoe, D (2010) Introduction to Conservation Genetics: Second Edition. Cambridge University Press, New York.
4. Portfolio of Strategic Conservation Sites/Protected are Gap Analysis in Sri Lanka, Ministry of Environment and Natural Resources, 2006
5. The Strategic Plan for Biodiversity 2011- 2020 and the Aichi Targets <http://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-en.pdf> (Last accessed: 16/10/2012)

5.4 Project Idea for Technology 3: Improve management, and possibly increase extent of protected areas, buffer zones and create new areas in vulnerable zones

Project Idea:

'Awareness programme, capacity building and development of materials to promote coexistence with biodiversity'

5.4.1 Introduction/Background

This project – 'Create awareness, build capacity and provide material to promote coexisting with biodiversity' – is an action identified under 'Technology 3: Improve management, and possibly increase extent of protected areas, buffer zones and create new areas in vulnerable zones'.

With increasing human populations and the associated increase in the need for land, communities often come in to conflict with the local biodiversity. In many areas, conflicts with macro faunal species, such as elephants, result not only in the destruction of property but also loss of life. Similarly, species such as wild boar, hares, porcupines and monkeys can cause significant damages to crops, resulting in a loss of income for local communities.