

## 5.2 Project Idea for Technology 1: Restoration of degraded areas inside and outside the protected area network to enhance resilience.

Project Idea:

*'Study on identifying and prioritizing critical areas for restoration'*

### 5.2.1 Introduction/Background

This project – 'Study on identifying and prioritizing critical areas for rehabilitation and restoration', is an action identified under 'Technology 1: Restoration of degraded areas inside and outside the protected area network to enhance resilience'.

The ability of degraded ecosystems to cope with the effects of climate change is low. Furthermore, the existing threats that these systems face are likely to be exacerbated in the future due to the stresses of climate change. Therefore, the restoration of degraded ecosystems is a key strategy to enhance the resilience of these ecosystems to climate change, and mitigate the impacts of changing climatic conditions. The restoration of habitats will result in an increase in biodiversity, which will further strengthen the ability of the ecosystem to cope with changing climatic conditions.

However, given that such rehabilitation and restoration work is often costly in terms of financial and spatial resources, as well as manpower, it is vital that these activities are carefully planned and coordinated. As such, in order to ensure that restoration work is carried out in a systematic manner, and thereby maximize the efficiency and effectiveness of such measures, it is essential that critical areas for restoration work are identified and prioritized.

At present, there is no prioritized list of critical areas to be restored in Sri Lanka. Furthermore, there is no national mechanism in place to identify and prioritize such areas. As such, it is vital that this work is carried out in order to avoid a waste of resources and the haphazard implementation of restoration activities.

Climate change modeling tools can be used to identify critical areas that are likely to be impacted significantly due to climate change. These areas can then be prioritized, so as to allow for the organization of conservation activities first in areas for which restoration work is essential and urgent.

The identification and prioritization of critical areas for restoration will be immensely useful in planning such work. However, it is crucial that a mechanism to share this information publicly is in place. Given that such a mechanism does not exist in Sri Lanka at present, the development of an appropriate platform for this purpose will be a key component of the project.

## **5.2.2 Objectives**

1. To identify and prioritize critical areas for rehabilitation and restoration.
2. Demonstration of rehabilitation and restoration through pilot interventions

## **5.2.3 Outputs of the Proposed Project**

- A comprehensive study indentifying and prioritizing critical areas for rehabilitation and restoration covering terrestrial, inland aquatic and coastal and marine areas.
- A prioritized list of critical areas for rehabilitation and restoration.
- Public availability of the prioritized list of critical areas for rehabilitation and restoration and updated information on rehabilitation and restoration work.
- Demonstration of pilot activities at least in three representative habitats

## **5.2.4 Relationship to the country's sustainable development priorities**

The importance of considering and researching the impact of climate change on biodiversity in Sri Lanka is recognized in both the National Biodiversity Strategy and Action Plan - 'Biodiversity Conservation in Sri Lanka: A Framework for Action' (1999) and its Addendum (2007). Work on climate change is also identified as a high priority recommendation in this Addendum. 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.

## **5.2.5 Project Deliverables**

- A comprehensive report on the study to identify and prioritized critical areas for rehabilitation and restoration, including maps and data developed through the study by Year 3.
- A prioritized list of critical areas for rehabilitation and restoration by Year 3.
- A website providing the prioritized list of critical areas for rehabilitation and restoration, and updated information on restoration work.
- Three pilot projects on ground

## 5.2.6 Project Scope and Possible Implementation

The project will produce a prioritized list of critical areas for rehabilitation and restoration, which can be used to plan future rehabilitation and restoration work. Given that this information will also be accessible publicly, it will also allow other organizations, such as environmental organizations and community-based organizations, to carry small scale restoration work, in coordination with national efforts. Updates and modifications to the list can be added, along with information about recent restoration activities, through the same platform. This will maximize efforts to restore these critical areas and ecosystems.

## 5.2.7 Project Activities

Climate change modeling will be used to identify critical areas for rehabilitation and restoration. Through simulations of different climate change scenarios, as well as through a climate change vulnerability assessment, it will be possible to identify critical areas that are vulnerable to, or will be impacted by, climate change, and therefore require rehabilitation and restoration actions.

Based on the analysis of the results of this research, areas will be prioritized objectively using a points-based system, which will consider key criteria including presence within or outside a protected area, ecosystem services provided, the presence of Critically Endangered or point endemic species, the extent to which it is damaged or degraded, and potential for restoration.

Areas that obtain a high score based on the selected criteria will be identified and used to compile the priority list of areas to be restored. Based on this list, a website will be developed so as to establish a platform and mechanism for sharing this information publicly. This website will provide access to an updated prioritized list of critical areas for restoration, as well as up-to-date information on restorations activities.

At least three pilot projects will be implemented for demonstration and learning and sharing purposes.

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

- Literature survey and development of appropriate climate change modeling
- Analysis of results of climate change modeling
- Ground truthing and identification of areas for rehabilitation and restoration
- Prioritization of areas for rehabilitation and restoration
- Development of list of representative priority areas for rehabilitation and restoration in consultation with sector experts
- Pilot implementation of rehabilitation and restoration of three sites
- Development of website giving information on priority list of areas for restoration

## 5.2.8 Timelines for Proposed Activities

Table 5.2: Proposed Timelines for Implementation of the Activities of Project 1

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 modeling	■	■										
2. Analysis of results of climate change modeling			■									
3. Ground truthing and identification of areas for rehabilitation and restoration				■								
4. Prioritization of areas for rehabilitation and restoration					■	■						
5. Development of list of representative priority areas for rehabilitation and restoration						■						
6. Pilot implementation of rehabilitation and restoration of three sites							■	■	■	■	■	■
7. Development of website giving information on priority list of areas for restoration											■	■

The project will be carried out over a period of three years.

## 5.2.9 Budget/Resource requirements

Table 5.3: Approximate Cost for Implementation of the Proposed Activities of Project 1

Activity	Proposed Budget (US \$)
1. Literature survey and development of appropriate climate change modeling	500,000
2. Analysis of results of climate change modeling	100,000
3. Ground truthing and identification of areas for rehabilitation and restoration	200 000
4. Prioritization of areas for rehabilitation and restoration	150,000
5. Development of list of representative priority areas for rehabilitation and restoration in consultation with sector experts	100,000
6. Pilot implementation of rehabilitation and restoration of three sites	900,000
7. Development of website giving information on priority list of areas for restoration	50,000
<b>Total</b>	<b>2,000,000</b>

**Total activity cost US \$ 1,700,000**

**Project Management including M&E Cost (15%) US \$ 300,000**

**Total Cost US \$ 2,000,000**

Source of funding: Donor 90% by Donor

Co-financing: 10% to be sourced

### **5.2.10 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.

### **5.2.11 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.

### **5.2.12 Responsibilities and Coordination**

The project will be coordinated by a committee consisting of representatives of the Department of Wildlife Conservation, the Forest Department, the Climate Change Secretariat of the Ministry of Environment, leading universities in Sri Lanka and relevant environmental organizations. The studies will be carried out by suitable universities, National Aquatic Resources Research and Development Agency (NARA), Ministry of Fisheries and Aquatic Resources Development and environmental organizations, as agreed upon by the committee.

A panel of selected 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 Executing Agency.

### 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.