

For Nature and People - A Helping Hand to Rise from the Debris

Kumudini Ekaratne and Shamen P. Vidanage



March 2008



Financed by



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The garden of R P Mangalika (Kumudini Ekaratne © IUCN)

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Thank you all.

1. Introduction

.....Fish Ambulthiyal when we head south across the Bentota river, buffalo curd with coconut treacle in the deep south, piping hot samosas with spicy mutton curry filling in Pottuvil, Babujee's ice-cold faluda in Kalmunai, soft Muscat in Kattankudy and freshly roasted cashew nuts in Kaluwanchikudy..... Never did we miss out on relishing these delicacies, whenever we were there....

.... Cruising through flood waters in Pottuvil, running for cover to evade a claymore mine exploding nearby in Panama, offering a silent prayer for a gunned down soldier as we sped by in Thirukkivil, bruising a knee in an attempt to cross a ditch in Lahugala, being reprimanded by a grantee for being late for a site visit and then being garlanded by the very person immediately after his "lecture".... Memories crowd in as we look back on the many visits to project sites of the Small Grants Facility of the Green Coast Project over the past 33 months

Green Coast Project

The four organizations, Both ENDS, World Wide Fund for Nature, Wetlands International and IUCN Netherlands Committee, implemented 'Green Coast: for nature and people after the Tsunami', from July 2005 to March 2008. This project funded by Oxfam Novib, focused on the Tsunami-affected countries in Asia: India, Indonesia, Sri Lanka, Thailand and Malaysia. In Sri Lanka, responsibility for implementation was vested with the IUCN Sri Lanka Country Office.

The overall goal of the project was to recover and support local livelihoods in the Tsunami-affected regions through the rehabilitation and sustainable management of coastal ecosystems. This goal was pursued through three interrelated components:

- Environmental and socio-economic assessments with dual objectives - to guide policies and strategies at various levels for sustainable coastal rehabilitation, and to identify high priority areas for community based rehabilitation activities/projects;
- Influencing policies and strategies for coastal rehabilitation and management, particularly to support the Green Coast concept; and
- Implementation of community based rehabilitation projects with support from the Small Grants Facility.

Small Grants Facility

The Small Grants Facility (SGF) enabled local organisations [Non Governmental Organizations (NGOs), Community Based Organizations (CBOs) and small-scale enterprises] to implement projects related to ecosystem management and restoration, in the Tsunami affected areas in Sri Lanka. The goal of the SGF was to support projects that promote the restoration of coastal ecosystems and ecologically sustainable reconstruction efforts.

Based on the environmental and socio-economic assessments, six priority coastal stretches (Figure 1) were identified to implement SGF projects. The stretches were:

- Region 1 - Hikkaduwa to Unawatuna
- Region 2 - Rekawa to Godawaya
- Region 3 - Pallemalala to Kirinda
- Region 4 - Arugambay to Thirukkivil
- Region 5 - Akkaraipattu to Kalmunai
- Region 6 - Kalmunai to Batticaloa

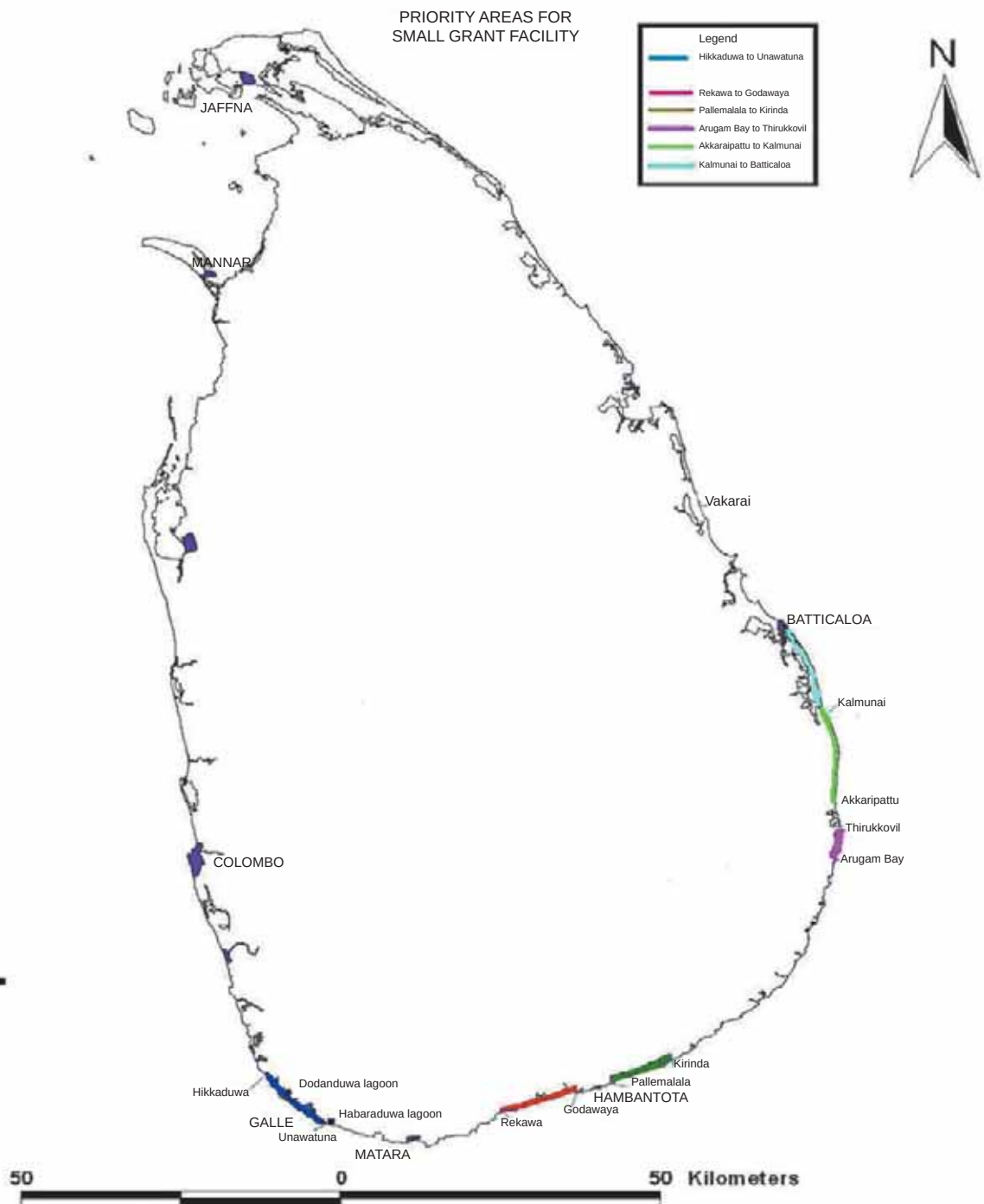


Figure 1 – Map depicting the six coastal stretches identified for SGF projects

SGF projects were divided into three classes according to their monetary value:

- Micro grants < € 5000
- Small grants € 5.000 - 15.000
- Macro grants € 15.000 - 85.000

In Sri Lanka, 29 CBOs, NGOs and a University were awarded SGF grants. After completion of the initial phase, 10 of the 29 grantees received further funding to either expand their project activities or to maintain the ongoing activities.

Mangrove rehabilitation, establishment of coastal greenbelts, sand dune restoration, greening of resettlement sites, establishment of plant nurseries, restoration of home gardens, lagoon cleaning, beach cleaning, enhancement of ecotourism activities, bioremediation, establishment of reed beds, restoration of inland coral mines, restocking water bodies for fishery purposes, establishment of revolving loan funds and introduction of pension scheme for farmers were the main activities implemented.

Likely outcomes of the small grants projects are categorised under five headings, as follows:

Ecosystem restoration

1. Protection from wave surges and corrosive coastal winds through the establishment of 44 hectares of coastal greenbelt.
2. Bio-shielding and enhanced lagoon fishery through the rehabilitation of approximately 44 hectares of mangroves.
3. Protection from wave surges through the restoration of sand dunes, totalling about 750 m in length.
4. Improved water quality through ecosystem rehabilitation of 44 coral-mined pits covering an area of 30 hectares.
5. Enhancement of the ecosystem of 343 housing units, in four Tsunami re-settlement sites, through "greening".
6. Popularizing ecological farming through the establishment of 115 kitchen gardens and 20 demonstration models in Kalmunai.

Livelihood enhancement

1. Food security and additional income for 2263 families (€ 6/month/family) through the development of home gardens.
2. Further enhancement in the income of the ecotourism venture (presently € 200/month), initiated and developed by a group of unemployed youths, with guidance and support from the project.
3. Increased income of lagoon fishermen (€ 7/day/person - during the season) through restocking of Negombo lagoon with *Penaeus monodon*.

4. Additional incomes for 29 families who will utilize the abandoned coral-mine pits now re-stocked with fresh water fish species.
5. Regular livelihood activities of 45 coir makers and 6 lace makers and their incomes restored to pre-tsunami levels (€ 14/month/person) through provision of necessary equipments.
6. Incomes of 300 lagoon fishery families restored to pre-tsunami levels (€ 30/month) through the clearing of six lagoons.
7. Restored livelihoods of 35 reed weavers through the rehabilitation of four hectares of reed beds damaged by the Tsunami.
8. Increased income of 154 families through revolving loan fund schemes.
9. Forty families receiving benefits from “farmer pension scheme”.

Enhancing drinking water facilities

1. Safe drinking water for 1001 families through application of bioremediation technique.
2. A more reliable supply of water to 221 households in the “arid zone” (who had a limited, intermittent supply of pipe borne water) through the provision of overhead water storage tanks.
3. Conservation of water through the adoption of rainwater harvesting and drip irrigation methods by 145 families.

Assisting in counteracting global warming

1. Contribution to reducing global warming by encouraging 200 families to use fuel efficient stoves and cut fire wood usage by 50%.
2. Contribution to off set carbon dioxide emissions by planting about 106,000 trees.

Awareness raising

1. Knowledge enhancement for about 8,000 families through conduct of many awareness programmes
2. About 1,800 families are gainfully engaged in income generating activities through technical training in nursery maintenance, food technology/cookery, handicraft and dress making.

Many were the lessons learnt during implementation of the Green Coast project in Sri Lanka. They are documented in “Proceedings of the National Workshop on the Lessons Learnt from the Green Coast Project”, held in February 2008. The purpose of this document is to share with you some stories from the projects supported by the Small Grants Facility.

2. Stories from Small Grants Projects

Stories galore. Stories of indomitable people with indomitable spirit, indomitable courage. Shattered by the Tsunami they have picked up the pieces and risen from the debris. While we salute all of them, this story-book, regrettably, is an abridged version. And, so it was that we had to limit ourselves to just the 12 projects listed below. We trust the others will understand and forgive us. The stories draw on material in grantees' progress reports to IUCN, and insights gained during our discussions with beneficiaries and grantees during visits to project sites.

1. **Improving Livelihoods of the Community Associated with Contiguous Areas of Mahawela Wetland** implemented by Development Education Institute for Human and Environmental Resource Management.
2. **Rehabilitation of the Abandoned Coral Mines and Re-greening the Coastal Zone in the Hikkaduwa DS Division with Participation from the Community and the Mining Regulatory Authority to Ensure Sustainable Coastal Ecosystem Enhancement (Phase 1, 2 & 3)** implemented by International Centre for Geoinformatics Applications and Training of the University of Moratuwa.
3. **Participatory Greening of the Tsunami Housing Construction Site in Kurunduwatta, Galle and Establishment of an Environmental Information Centre in Galle Fort** implemented by Ecocare Centre for Environmental Education and Conservation.
4. **Valuation, Rehabilitation and Conservation of Mangroves in the Tsunami Affected Areas** implemented by Social Economic and Environmental Development Organization, Sri Lanka.
5. **Livelihood Development for Youth Affected by the Tsunami through Ecotourism Operations in the Ruk Area in the Deep South of Sri Lanka** implemented by RUK Diya Eco Holidays.
6. **Creating a Greenish Ecosystem in the Man Made Environment** implemented by Youth Enterprise Information Centre.
7. **Restoration of Lagoon Ecosystems Providing Livelihood Services to Local Communities in Lahugala DS Division, Ampara District** implemented by Green Movement of Sri Lanka.
8. **Establishment and Protection of the Greenbelt in the Coastal Area Affected by the Tsunami – Panama and Strengthening the Economy of the Women of South Panama Ladies' Friendship Society** implemented by National Ethnic Unity Foundation.
9. **Ecological Restoration of Selected Sites in Kalmunai** implemented by Neo Synthesis Research Centre.
10. **Protect the Tsunami-affected People by Cultivating the Land and Generating Self Employment Opportunities Through Food Processing Techniques** implemented by Organization for Protecting and Ensuring Democracy.
11. **Rehabilitation of the Sand Dune and the Negombo Estuary after the Tsunami damage** implemented by Negombo Lagoon Management Authority.
12. **The Greenbelt Reports: Showcasing Nature's Protection Against Disasters and Climate Change Impact Using Television and Video** implemented by TVE Asia Pacific.

2.1 For the People by the People

I clicked my camera to capture the beautiful pink Lotus flowers sprouting above the crystal clear waters of the interconnected canal system in Mahawela, a village on the southern coast of Sri Lanka. A shoal of Horadandiya (*Rasboroides atukorali*) moving slowly in the gently flowing water comes into my view.

My mind goes back to the day, nearly 12 months ago, when I photographed the same location. A broken plastic chair and a refrigerator door were among the pile of tsunami debris that had finally settled in this water body. The water was turbid and dark brown in colour. Apart from the canals being polluted, the damage to infrastructure was so severe that the villagers' livelihoods were badly disrupted.

The villagers needed external assistance to get back on their feet, and the damaged ecosystem needed restoration. Through a project titled **"Improving Livelihoods of the Community Associated with Contiguous Areas of Mahawela Wetland"** the Development Education Institute for Human and Environmental Resource Management (DEIHERM) wasted no time in fulfilling these needs.



The project objectives were to:

- Facilitate the free flow of water by clearing the canals
- Restore the damaged vegetation by replanting
- Enhance livelihoods

"The project kicked off by clearing the canal system of the Tsunami debris. Four km of the canal system were cleared and the rocks, masonry items and logs salvaged from the water were used to reinforce the canal banks. The banks were further strengthened by planting Kaduru (*Cerbera mangus*), a back mangrove species," explained Neshad Mandalawatte, Managing Director of DEIHERM.

Mahawela wetland is home to a variety of reeds. However, these fragile plants could not bear the brunt of the surging water and the reed beds were completely destroyed. The 35 families in Mahawela who were engaged in manufacturing reed-based handicrafts were deprived of their only source of income. The project not only ensured the rehabilitation of four hectares of reed beds, but also provided training to enhance their skills and capacity to produce reed-based items. A training centre for reed weavers was established with project funds, and is now maintained with contributions from the sales income of the 35 reed weavers.

"My students have picked up new designs, and they now turn out beautiful products. I am delighted to say that we have secured an order from Lak Sala, a government-owned handicraft outlet catering mainly to tourists" says Ranjanie Kariyawasam, the trainer, showing us colourful hand bags, hats, and mats ready for dispatch to Lak Sala.

Another 35 beneficiaries were helped to develop their home gardens, which were destroyed by the Tsunami. Each person received at least ten varieties of fruit and vegetable seedlings/seeds. Mr H A Jayawansha is the proud owner of such a garden. His banana trees are brimming with fruits and are nearly ready for harvesting. He proudly shows us the neatly prepared vegetable beds of capsicum, brinjal, snake gourd, ridged gourd, tomatoes, chilies, and spinach. His garden brings an average monthly income of around € 150.00. 'DEIHERM not only provided assistance in kind, but also provided technical assistance in agricultural practices through an Agricultural Officer who still visits us on a regular basis" said Jayawansha, adjusting a pole of the protective fence around his garden.

Having implemented the project successfully, DIEHERM was able to secure a second grant (phase 2). This fund enabled the purchase of an energy efficient stove to boil reeds and save on fuel wood. Two sewing machines were also purchased to increase the turnover. A revolving loan fund was set up with € 5000 and 35 people are presently receiving its benefits. Carpentry, coir industry, grocery stores, fresh water fish farming, ornamental fish trade and reed cultivation are some of the activities for which the loans are being utilized.

DIEHERM has brought sunshine back to Mahawela, I thought!.



Rehabilitated reed beds (Kumudini Ekaratne © IUCN)



Home garden in Mahawela (Kumudini Ekaratne © IUCN)



Weavers in action producing reed-based handicrafts (Kumudini Ekaratne © IUCN)

Grantee	: Development Education Institute for Human and Environmental Resource Management (DEIHERM).
Project	: Improving Livelihoods of the Community Associated with Contiguous Areas of Mahawela Wetland – Phases 1 and 2
Period/Duration:	
• Phase 1	: 1.10.2006 – 28.2.2007 (5 months)
• Phase 2	: 15.8.2007 – 15.2.2008 (6 months)
Grant size:	
• Phase 1	: € 8,700.00
• Phase 2	: € 5,000.00

2.2 Akurala Smiles Again

“The ban on coral mining in the coastal belt imposed in 1981 (Coast Conservation Act No: 57 of 1981 and subsequent amendments) and its strict enforcement by the Geological Survey and Mines Bureau (GSMB), has brought inland coral mining to a halt. The abandoned inland coral mining sites, now stagnant water ponds, some very deep, have become a serious health hazard” explains Mr Weerawarnakula, a Geologist of the University of Moratuwa, who was showing us around.

There are 44 such abandoned inland coral mines along the 3 km long, 100 m wide stretch of Akurala, on the southwestern coast of Sri Lanka. Dumping of solid waste has polluted the stagnant water in the abandoned mines and created many environmental problems. The situation was compounded by the Tsunami of 2004 which deposited large quantities of debris in these mine pits. The vegetation in the area and the water quality in these mines were also affected by the salt intrusion due to the Tsunami. The 80 families still living in the area mainly consist of fishing folk and daily paid casual workers.



A macro project **“Rehabilitation of the Abandoned Coral Mines and Re-greening the Coastal Zone in the Hikkaduwa DS Division with Participation from the Community and the Mining Regulatory Authority to Ensure Sustainable Coastal Ecosystem Enhancement”** implemented by International Centre for Geoinformatics Applications and Training (IcGAT) of the University of Moratuwa, had following aims:

- Rehabilitate the abandoned coral mines
- Re-green the selected coastal environment to serve as a model and influence policy makers
- Improve water quality and maintain the quality of these abandoned mines through the provision of alternative sustainable livelihoods
- Coordinate efforts between the community, technical experts and regulating authorities
- Train and raise awareness of locals and decision makers

Addressing a workshop in March 2007, Professor Sohan Wijesekera, Project Manager and Chairman of IcGAT, revealed the novel approach used for implementing the Akurala project, which involved a strong collaborative partnership dubbed the Community, University, Regulator Partnership (CURP), led by the University.

The project was executed in three stages. In the initial stage, rehabilitation and re-greening the project area was carried out in about seven months.

The second stage included an evaluation of the previous work, identification of shortfalls and maintenance of the plantings, including gap-filling. Awareness enhancement, which included the establishment of the Green Coast Visitor Centre, conducting a stakeholder awareness workshop, preparation of an information video and a publication giving a detailed description of the project were carried out in the third stage.

The Visitor Centre was handed over to Rathgama Pradeshiya Sabha (Local Authority) on 23 January 2008 by the Minister of Agriculture Development and Agrarian Services, Honourable Maithreepala Sirisena, amidst a large gathering of invitees and the community.

The achievements of this unique model are many:

Resurgence

1. Rehabilitation of coral mines and re-greening, gap-filling and maintenance was completed in 30 ha, on schedule.
2. 5200 square meters of land was cleaned of debris.
3. Road side strips, areas surrounding water ponds and home gardens were re-greened with 4654 plants.
4. 35 abandoned mines were rehabilitated by cleaning and removal of debris. The debris removed was used to fill 6 selected small polluted ponds.

Refinement

5. A drainage length of 2500 m within the project area and a drainage length of 900 m outside the project area were developed and cleaned with machinery.
6. 1150 m of small bunds, approximately 0.8 meters high, were constructed around the mine pits.
7. Maintenance of the plantations, including placement of a protective cover, watering and adding fertilizer.

Rewards

8. Valuable trees such as Teak, Mahogany and Pihimbiya were distributed to 41 home gardens in the project area and others nearby.
9. 34,500 fresh water fish fingerlings were released to 29 rehabilitated water bodies managed by the community.
10. Sixty seven compost bins were distributed among the stakeholders.
11. A sample waste disposal unit was constructed and handed over to the local administration.

Revelation

12. Twenty events including group discussions, seminars and field visits were held for awareness enhancement.
13. Sixteen technical reports and detailed maps, one Sinhala and one English documentary video, five posters and five information leaflets were prepared for stakeholder awareness enhancement.
14. A supplementary reading book titled “Re-greening and Environmental Enhancement at Akurala, Sri Lanka”, was published.
15. A visitor centre was constructed and handed over to the local government administration. This centre has been provided with information posters, leaflets, and an informative hoarding.

Recreation

16. Two locations within the project area were developed for vehicles that pass by to stop and enjoy the natural environment and the sea beach.
17. A coral pit area near Akurala Bridge has been developed as an eco park for visitors to take a peek at the water and the green.

The sun is setting, a lone fisherman, with his rod and line, is on the bank of a re-stocked pit with crystal clear water, a white-breasted kingfisher perched on a nearby tree is monitoring the fisherman's progress.....

A unique approach, a unique model, a unique team... and Akurala is definitely smiling.



The Eco Park (IcGAT)



Fishing in a re-stocked mine pit (Kumudini Ekaratne

© IUCN)

Grantee: International Centre for Geoinformatics Applications and Training (IcGAT) of the University of Moratuwa.

Project:

Phase 1: Rehabilitation of the Abandoned Coral Mines and Re-greening the Coastal Zone in the Hikkaduwa DS Division with Participation from the Community and the Mining Regulatory Authority to Ensure Sustainable Coastal Ecosystem Enhancement.

Phase 2: Maintenance of the Re-greening Efforts of the Coastal Zone in the Hikkaduwa DS Division with Community and Mining Regulatory Authority Participation to Ensure Sustainable Coastal Ecosystem Enhancement and Enhancement of Public Awareness.

Phase 3: Maintenance of the Re-greening Efforts of the Coastal Zone in the Hikkaduwa DS Division with Community and Mining Regulatory Authority Participation to Ensure Sustainable Coastal Ecosystem Enhancement and Enhancement of Public Awareness - Supplementary Estimate for Project Publication Preparation and Dissemination Workshop,

Period/Duration:

Phase 1: 1.9. 2006 – 15. 3.2007 (7 months)

Phase 2: 1.4. 2007 – 31.12.2007 (9 months)

Phase 3: 1.9.2007 – 31.12.2007 (4 months)

Grant size:

Phase 1 : € 39,960.00

Phase 2 : € 15,000.00

Phase 3 : € 5,000.00

2.3 A Green Canopy for Kurunduwatta

A Tsunami re-settlement housing scheme was under construction in Kurunduwatta, Galle in southern Sri Lanka. However, there was no plan or provision to re-green the construction site or to prevent erosion and conserve its soil. Construction activities had denuded the area of its natural vegetation and soil cover. This site on sloping terrain, already subject to erosion, called for the application of well-planned soil conservation measures.

Ecocare Centre for Environmental Education and Conservation undertook to green this settlement through the project: **“Participatory Greening of the Tsunami Housing Construction Site in Kurunduwatta, Galle.”**

Project objectives were:

- re-establish the green cover, damaged by construction work, with plants that are useful in the day-to-day life of the households, and promote cottage industries
- adopt appropriate soil conservation measures
- guide the community to adopt an environment-friendly lifestyle through environmental education.



I vividly recall the words of Mr. Cecil Surasena, President of the Ecocare Centre during our first visit to the site. “The householders are from the coastal towns in the Galle district, and had been engaged mainly in the fishing industry. Their knowledge of gardening was at best elementary and will need continuous guidance to accustom them to their new way of life.” That was in July 2006, and I captured on camera what I saw then - rows of houses on open, bare land.

Exactly 12 months later, I stood at the same location to capture the “after” scenario. Avenues of healthy Iron wood (*Mesua ferrea*) and Indian laburnum (*Cassia distula*) trees between the houses, and already taller than me! And they will soon dwarf the houses.

A total of 80 housing units (50 in the first phase and 30 in the second), were “greened” using vegetable cultivations, fruit trees, medicinal plants, and other ornamental and shade trees. Each house received a compost basket and the beneficiaries were trained in composting, which yielded a continuous, free supply of fertilizer for their plants. The first objective was realized through these activities.

Citronella (*Cymbopogon winterianus*) and Khas-khas (*Vetiveria zizanioides*) were planted on slopes to prevent soil erosion. The regeneration of native grasses further assisted in binding the soil.

Workshops on home gardening, soil management, potential cottage industries, waste management, preparation of organic fertilizer, living in harmony with the environment and disaster management were conducted, for the beneficiaries and schoolchildren, towards achieving the third objective.

Ecocare Centre, with community participation, maintained a small-scale nursery to raise plants that are not available in the local market. Income generated by the nursery was utilized to continue the educational activities.

Having successfully completed both phases of the greening project, Ecocare Centre obtained a third grant for the **Establishment of an Environmental Information Centre in Galle Fort**. This centre has become an important source of information for schoolchildren, teachers and the general

public. Its library is widely used by visitors, and the centre also provides consulting and coordinating services in environmental related work.

Ecocare Centre is the first NGO in the Galle district authorized by the Central Environmental Authority and the Department of Education to conduct awareness programmes in schools in the district. The centre has taken steps to expand this valuable service. As outreach materials, a booklet on mosquitoes, and a series of brochures on several environmental topics have been produced.

Funds for the upkeep of the information centre are generated from sales of educational material produced by Ecocare Centre and the conduct of training programmes.



Kurunduwatte – before “greening” (Kumudini Ekaratne © IUCN)



Kurunduwatte - after “greening” (Kumudini Ekaratne © IUCN)

A research project on dealing with oil spills in the sea carried out by a team of students from a leading girl's school in Galle, with guidance from the Ecocare Centre, was selected as the first runner-up in the Stockholm Junior Water Prize, 2007. This team also received the award for the Schools Category from the Sri Lanka Association for the Advancement of Science, in 2007.

What a great achievement, I thought!

Grantee	: Ecocare Centre for Environmental Education and Conservation
Project:	
Phase 1 & 2	: Participatory Greening of the Tsunami Housing Construction Site in Kurunduwatta, Galle,
Phase 3	: Establishment of an Environmental Information Centre in Galle Fort.
Period/Duration:	
• Phase 1 & 2	: 1.7.2006 – 31.5.2007 (11 months)
• Phase 3	: 15.8.2007 – 15.12.2007 (4 months)
Grant size:	
• Phase 1 & 2	: € 20,500.00
• Phase 3	: € 6,500.00

2.4 Mangroves Truly Support Life

Located in the Deep South of Sri Lanka, Tangalle district is one of the most dynamic coastal areas in the country. Rich in biodiversity, its coastal villages are blessed with healthy mangrove stands. But unfortunately, these mangroves are under constant pressure from over exploitation and clear cutting for alternative land use. This regrettable situation was compounded by the Tsunami causing severe destruction to these mangroves.

Rehabilitation of 35 hectares of mangroves in the villages of Medilla, Medagama, Rekawa-west, Kahandamodera and Netolpitiya-south in Tangalle district was undertaken by Social Economic and Environmental Development Organisation (SEEDO) Sri Lanka through the project: **“Valuation, Rehabilitation and Conservation of Mangroves in the Tsunami Affected Areas”**.

The overall objective was to restore coastal livelihoods through participatory mangrove rehabilitation and co-management.

This was to be achieved through:

- Facilitating the restoration of local livelihoods in the Tsunami affected areas through mangrove rehabilitation and sustainable use
- Improving awareness of the economic value of mangroves in order to justify mangrove rehabilitation and conservation as well as to minimize ecosystem damage in the Tsunami reconstruction process

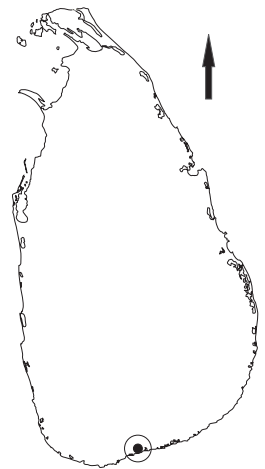
The project implementation commenced with a series of discussions to introduce the project activities to the community. Forty two community groups were formed to cover the 35 hectare area of mangroves selected for rehabilitation.

The debris in the mangroves were removed to facilitate natural regeneration and to infill vacancies. The mangrove saplings required for restoration were raised by the community under technical guidance. A total of 80,500 mangrove saplings of *Rhizophora mucronata*, *Bruguiera gymnorhiza* and *Aegiceras corniculata* were planted in the five villages with community participation. The main activities such as debris removal, nursery management and planting saplings were done by the community enabling them to earn an additional income.

Prominent display boards depicting the locality, species planted and the number of saplings, the implementing organization with the donor and partners were erected at the rehabilitation sites. “These display boards served two purposes: primarily to create awareness and a sense of achievement among the community and secondly to prevent questionable agencies laying bogus claims to SEEDO outputs” said Douglas Kumarathunga, Executive Director of SEEDO explaining that the rush to rehabilitate mangroves by several Community Based Organizations and Non Governmental Organizations at times lead to unethical practices.

One of the key lessons learnt in this project was the superiority of facilitating natural regeneration of mangroves over large scale mangrove replanting.

An economic valuation of mangroves, in order to justify the rehabilitation work, was also conducted in four villages: Medagama, Medilla, Rekawa-west and Netolpitiya-south. The study valued the



environmental goods and services provided by mangroves. The mangrove goods valued were timber and poles, as well as non-timber forest products such as fish, shellfish, fuel wood, wild vegetables, herbs, fodder, coconut leaves, husks and coir. Fish nurseries and breeding grounds, restocking of near-shore fisheries and shoreline protection were the mangrove services considered in this study. The annual net direct use value, for households collecting mangrove goods, were € 1,107 for Medagama (160 households), € 939 for Medilla (326 households), € 919 for Rekawa-west (303 households) and € 92 for Netolpitiya-south (412 households). The value of mangrove goods extracted by the households in Netolpitiya-south is relatively very low, and the reasons for this are related to its location. The access to the mangroves from Netolpitiya-south is restricted and being near the main road households have other major income sources and livelihoods options (Ranasinghe and Kallesoe, 2006). A policy brief on valuation, rehabilitation and conservation of mangroves in the Tsunami affected areas of Hambantota was prepared in English, Sinhala and Tamil languages, and widely distributed.

ශ්‍රී ලංකාවේ, හම්බන්තොට දිස්ත්‍රික්කයේ සුනාමි ආපදාවට ලක් වූ ප්‍රදේශයන්හි කඩොලාන ඇගයීම, පුනරුත්ථාපනය සහ සංරක්ෂණය කිරීමේ වැඩසටහන

Valuation, rehabilitation and conservation of mangroves in tsunami affected areas of Hambantota, Sri Lanka

නැවත සිටවන ලද පැළ සංඛ්‍යාව	22000
අක්කර ප්‍රමාණය	25
සිටවන ලද දිනය	2006.04.25

ශාක විර්ග	මහ කඩොල්	3000
Species	<i>Rhizophora mucronata</i>	
	හී කඩොල්	18000
	<i>Bruguiera gymnorhiza</i>	
	මල් කඩොල්	1000
	<i>Aegiceras corniculata</i>	





මඩිලා
Medilla





for a living planet



Environment and Development Service



The World Conservation Union

Financed by:





Rehabilitation with community participation (Kumudini Ekaratne © IUCN)

Grantee	: Social Economic and Environmental Development Organization (SEEDO) Sri Lanka
Project	: Valuation, Rehabilitation and Conservation of Mangroves in the Tsunami Affected Areas.
Period/Duration	: 1 December 2005 – 31 December 2006 (13 months)
Grant size	: € 61,439.00

2.5 A Boost for a Community Based Ecotourism Venture

We were warmly received at the RUK Diya Eco Holidays by charming Nilantha with the traditional greeting, “Ayubowan” - may you enjoy the gift of long life. Nilantha’s husband Sudath Andaraweera is the Team Leader of this ecotourism operation in Rekawa, Ussangoda and Kalametiya (RUK), three coastal villages in the Deep South of Sri Lanka.

RUK area is rich in biodiversity. Rekawa is a declared turtle sanctuary famous for turtle nesting, while Ussangoda plateau is an archaeological site. The interconnected Kalametiya and Lunama lagoons, and the environs, abound in bird life.

RUK Diya Eco Holidays, grew out of a community based tourism initiative in the RUK area facilitated by Mr Renton de Alwis the present Chairman of Sri Lanka Tourism and former Vice President (Asia) of the Pacific Asia Travel Association (PATA). Managed by a group of local youth, also advised by Professor Sarath Kotagama, Ruk Diya Eco Holidays runs an accommodation facility called Ruk Diya Eco Stop. They succeeded in securing a micro grant from the Green Coast Project on **“Livelihood Development for Youth Affected by the Tsunami through Ecotourism Operations in the Ruk Area in the Deep South of Sri Lanka”**.



The project objectives were:

- Develop environmentally friendly eco-tourism practices, and ensure quality operations for the customers
- Assist re-vegetation in areas affected by the tsunami

Towards the first objective, a large solar panel for water heating and two small panels for electrical lighting purposes were installed at RUK Diya Eco Stop. This eco friendly, energy saving option also serves as a demonstration of the practical use of alternative energy sources to the RUK community. A non-motorized catamaran (rowing boat) was constructed for lagoon transport. It is now in operation in the Lunama lagoon, and is patronized especially by bird watchers. To assist in the mitigation of climate change, visitors are encouraged to use non-motorized vehicles for sight seeing, and RUK Diya Eco Holidays operate four (4) mountain bikes for this purpose. Safety of its customers is well taken care of - life jackets for those on boat rides and riding helmets for cyclists are available on the house.

Those who love to have a meal outdoors will not be disappointed. They can enjoy a tasty home cooked meal in the garden, served at a spot of their choice. Handy, portable picnic tables, chairs and warm/cool boxes, all purchased through project funds, are available to meet their needs.

To meet the second objective, a mangrove was planted on the periphery of Lunama lagoon. For this purpose they used a common mangrove species known locally as kirala (*Sonneratia caseolaris*). The plants were raised in a nursery established with their own funds. The nursery is still in operation but they have now diversified their products to medicinal and ornamental plants, which are now in demand.

Nilantha was showing us around their cosy guesthouse. “Business is good after the improvements to the facility with Green Coast project funds” says Nilantha in a tone of gratitude. “Ours is the only guest house in Lunama with hot water on tap in the bathrooms, and therefore, our rooms are in demand” adds Sudath, with pride, the live wire behind this project.

The brochures printed through project funds have greatly helped to market RUK Diya Eco Holidays. “The guesthouse which started with three (3) bed rooms has now expanded to six rooms (6) since the implementation of the project. The income generated from the diversified activities funded by the Green Coast Project enabled this steady expansion. Our average monthly income is € 350. We are now in the process of registering RUK Diya Eco Holidays with the Sri Lanka Tourism Development Authority to add value to our facility” summed up Sudath.

Grantee	: RUK Diya Eco Holidays
Project	: Livelihood Development for Youth Affected by the Tsunami through Ecotourism Operations in the Ruk Area in the Deep South of Sri Lanka.
Period/Duration	: 1.3.2006 – 31.8.2006 (6 months)
Grant size	: € 4000.00



Non-motorized Catamaran (Kumudini Ekaratne © IUCN))



Guests enjoying a meal outdoors (Kumudini Ekaratne © IUCN))

2.6 A Green Carpet for Uhapitagoda

Immediately after the Tsunami, the Government of Sri Lanka enforced coastal set back limits of 100 m and 200 m on the west and east coasts, respectively. Families living within this zone in Ambalantota were re-located in Uhapitagoda, safe from future wave surges. Uhapitagoda Tsunami re-settlement site known as “Samadhigama” is in Ambalantota, in the Southern Province of Sri Lanka.

In the rush to meet deadlines, the original scrub jungle was bulldozed to make way for the new houses. The situation was compounded by relatively high temperatures experienced in this arid zone, which made life most uncomfortable. The Uhapitagoda project, **“Creating a Greenish Ecosystem in the Man Made Environment”** implemented by the Youth Enterprise Information Centre (YEIC),” set out to “provide a green canopy for the “Samadhigama” Tsunami re-settlement site”.



“One hundred and eighty four (184) families (80 in the first phase and 104 in the second) benefited from this project” says Ajith Priyantha, Project Manager of the YEIC. He added that in addition to seedlings of four fruit and five vegetable varieties, fencing material to keep off stray cattle and drip irrigation facilities to conserve water, the beneficiaries received training on compost production, planting techniques and food processing techniques. “Eighty percent of the beneficiaries are ladies. We are delighted to see the green carpet within a span of 18 months, and most of all, the empowerment of the ladies,” said Ajith Priyantha introducing us to R P Mangalika.

Mangalika proudly showed us around her garden. It is brimming with fruits and vegetables, which ensures her family not only a healthy diet, but also an additional income.

“When we first came to this site in November 2005, it was like a desert with only rows of newly built houses with a few bushes here and there. Supported by the Green Coast Project, we were able to transform this desert to an oasis,” says Mangalika.

This 38-year-old mother of six children now uses the produce from her garden to feed her relatively large family. “My family gets fresh vegetables and fruits, and I am now able to save about € 20 which I would otherwise spend buying these items from the market” says Mangalika as she strolls among brinjals, ladies’ fingers, chilies, tomatoes, pomegranate, mango, guava and banana plants laden with fruit.

Following the successful completion of the first two phases of the project, 40 of the 184 families were selected for further assistance through the project, **Micro Financing for Income Generating Activities**. With a revolving loan fund of € 4500 the loans varied from € 65-140 and enabled members to engage in banana, paddy and vegetable cultivations, undertake tailoring, hair dressing, carpentry, fishing and catering operations. Mangalika is one of the proud recipients. She obtained a loan of € 140 to establish a mushroom cultivation facility. “There is a big demand for mushroom from the nearby tourist hotels, and whilst repaying the loan installments on time, I hope to uplift the living conditions of my family with this additional income” sums up Mangalika in a determined tone.

Grantee: Youth Enterprise Information Centre (YEIC)

Project:

Phase 1 & 2 : Creating a Greenish Ecosystem in the Man Made Environment

Phase 3 : Micro Financing for Income Generating Activities

Grant size:

Phase 1 & 2 : € 20,000.00

Phase 3 : € 5,000.00

Period/Duration:

Phase 1 & 2 : 1.11.2005 - 31.3.2007 (17 months)

Phase 3 : 15. 9. 2007 - 15.12.2007 (3 months)



Uhapitagoda – before “greening” (Kumudini Ekaratne © IUCN)



Uhapitagoda – after “greening” (Kumudini Ekaratne © IUCN)

2.7 Panama Ladies – Winners All the Way

Bang! A loud explosion followed by an exchange of gunfire! We were on the open beach in Panama monitoring the progress of a five-hectare coastal greenbelt plantation. “Let’s get some cover,” said Mr B W Gunasekera, Chairman of the National Ethnic Unity Foundation (NEUF) beckoning us to follow him.

The coastal belt in Panama in Ampara district, on the eastern seaboard, was badly hit by the Tsunami. The well-established sand dunes along the coast took the brunt of the force of incoming water. However, the sand dune breached at a weak point killing one person and destroying the coastal vegetation in the immediate vicinity.

NEUF came forward to re-establish the damaged vegetation through the project: **Establishment and Protection of the Greenbelt in the Coastal Area Affected by the Tsunami - Panama**. The project goal was to enable the community to restore the beach forest, while utilizing the natural resources in the area in a sustainable manner. When the greenbelt is in place, it would also facilitate the natural re-establishment of the breached dune.



South Panama Ladies’ Friendship Society was established by the project as a Community Based Organization. The members, 54 in all, were trained in nursery management, planting techniques, and enterprise development techniques. As roaming elephants are regular visitors to this area of the beach, the members helped in erecting a protective fence. According to the planting plan 13,750 plants were required for the five hectare greenbelt. The plants were raised by the members, in their own nurseries, and this brought them an additional income. The plant mix selected for the greenbelt was comprised of 5000 *Casuarina equisetifolia*, 3750 each of *Terminalia catappa* and *Thespesia populnea* and 1900 *Calotropis gigantea*.

NEUF used a different approach to carry out the beach planting. The five hectare beach forest was divided into one hectare plots. As this part of the country receives very little rain and the plants would have to be watered, a hume pipe well was constructed in each plot. The members were assigned to five groups: Pubudu, Rankekulu, Dilena tharu, Eksath and Praveena. The first four groups had 11 members each while Praveena had 10. Each group was assigned a one hectare plot and the members were responsible for planting, watering, weeding and gap filling. “I thought fostering a healthy spirit of competition amongst the groups would encourage them to tend their plots better and outdo the others. Of course, the ultimate goal, or some might say the ulterior motive, was to end up with a well established and thriving greenbelt. And that is exactly what we achieved” said Mr Gunasekera.

The group leaders maintained a record of each member’s activities, and at the end of the month, the members received an allowance based on their participation. “I managed to save this additional income to purchase a pair of gold ear studs” said Wasanthi Dhammika, a member of Pubudu, while walking us around their plot to show us how well the plants are doing. Wasanthi was justly proud of her plants and the ear studs.

Whilst the beach plantation was nurtured by the ladies, NEUF secured the second grant to implement the project on **Strengthening the Economy of the Members of South Panama Ladies’ Friendship Society**.

The objective of this project was to ensure the continuing maintenance of the greenbelt by the Friendship Society and to increase the income of the members through a revolving loan fund (RLF).



Peanut grower - recipient of a RLF (Kumudini Ekaratne © IUCN)



The fund started off with a grant of € 3,600 as seed money. Members, all of them, have now obtained loans for varied purposes such as agriculture (maize, peanut, paddy and vegetable cultivation), poultry farming and small scale business ventures, for example, grocery stores. A monthly interest of 1.5% is levied and the CBO sets aside 10% of the accrued interest to maintain the greenbelt. This money will of course return to the members as payment for their services.

Grantee: National Ethnic Unity Foundation (NEUF)

Project:

Phase 1 : Establishment and Protection of the Greenbelt in the Coastal Area Affected by the Tsunami Panama.

Phase 2 : Strengthening the Economy of the Women of South Panama Ladies' Friendship Society.

Grant size:

Phase 1 : € 15,000.00

Phase 2 : € 5,000.00

Period/Duration:

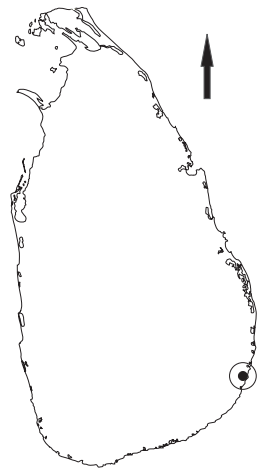
Phase 1 : 1 .1. 2006 to 31.12.2006 (12 months)

Phase 2 : 15.9. 2007 to 15.12. 2007(3 months)

2.8 Fishermen's Delight

The lagoon system in Lahugala, on Sri Lanka's east coast, consists of five brackish water lagoons Panakala, Panama, Kunukala, Solomba, Helawa and one predominantly fresh water body known as Raganwila. Apart from the Panama lagoon, the other water bodies do not have a widespread mangrove system. In lieu of this, extensive dry zone scrub jungle surround the lagoons. Famous for fishery, these lagoons provide a rich supply of prawns, crabs, and 20 odd species of fish.

The lagoon ecosystems faced two main post-tsunami challenges. The debris left in the lagoons by the retreating Tsunami waves, and the mechanical destruction of the coastal forests by the advancing Tsunami waves. As these lagoons are mostly situated in sparsely populated areas, the debris was almost exclusively composed of biological matter such as trees and shrubs. Despite its biodegradable nature the debris posed a problem for fishermen entangling and inflicting costly damage to their fishing nets.



In order to rectify this situation the Green Movement of Sri Lanka (GMSL) implemented the project: **Restoration of Lagoon Ecosystems Providing Livelihood Services to Local Communities in Lahugala DS Division, Ampara District.**

The project had two main objectives. Firstly, to restore ecosystems that can serve as vital natural resources for local communities and secondly, to build stakeholder capacity to re-establish and improve their access to sustainable livelihood sources.

The first objective was achieved through cleaning the lagoons followed by restoration of damaged coastal vegetation. The Tsunami debris in the lagoons was cleared using labour intensive methods with the participation of 12 local villagers. They were paid a daily wage to supplement their household income. The boat and the tractor used for the clean up operation were also leased from the community.

Except for the very large logs and trees, the rest of the biodegradable items were piled up at strategic locations in the lagoons to serve as nursery grounds for lagoon fauna and resting points for migratory birds. All non-biodegradable debris was taken to waste dumping sites designated by the Central Environmental Authority and the Divisional Secretary of Lahugala.

“Within five months the team had completely cleared 1371 hectares of lagoon. We are proud of our team,” said Bandu Ranga Kariyawasam, the dynamic Project Manager of GMSL while accompanying us to Solomba. He continued, “whilst facilitating more fishing activities in the lagoons, and reducing damage to fishing nets from debris, the cleaning also facilitated natural regeneration of mangroves and other coastal flora. The outcome being, increased income for lagoon fishermen and providing income-generating opportunities for women through post harvest activities”.

In order to restore the coastal scrub jungle around the lagoon ecosystems, which were dominated by damba (*Syzygium assimile*), wood apple (*Limonia acidissima*), neem (*Azadirachta indica*), tamarind (*Tamarindus indica*) and ebony (*Diospyros ebenum*) before the Tsunami, GMSL planted around 11,000 saplings. Native fruit plants and those with medicinal value, were also added to the new list. “Despite the terrain that had been rendered tricky due to torrential rains and the danger of being caught in the cross-fire of the escalating violence in the region, Ananda and his die-hard team of men completed planting as scheduled” added Bandu Ranga while introducing Ananda and his team to us.



Kunukola lagoon being cleaned (GMSL)



A display board at Helawa (Kumudini Ekaratne © IUCN)

A network of local volunteer youth (Green Brigade), established under another GMSL project, was pressed into service to achieve the second objective. Several awareness raising campaigns were conducted for students of six schools in the area, and members of six fisheries cooperative societies. Twelve signboards carrying messages on good environmental practices and information on project activities were also erected at strategic points.

Sinnapillai Ranjan, is a 41-year-old fishermen from Panama South who fished in the Helawa lagoon along with 12 others from nearby, said “Our only mode of income came to a standstill immediately after the Tsunami due to the debris in Helawa. Thanks to the GMSL interventions, our income is back at the pre-tsunami level. Around 1.5 - 2.0 kg of shrimp and 6-10 kg of fish is the average catch for a day. The net profit is around € 30 per month. We are happy with that” he concluded in a tone of gratitude.

Grantee	: Green Movement of Sri Lanka (GMSL)
Project	: Restoration of Lagoon Ecosystems Providing Livelihood Services to Local Communities in Lahugala DS Division, Ampara District
Period/Duration	: 1.1.2006 – 30.11.2006 (11 months)
Grant size	: € 26,081

2.9 A Greenbelt Like no Other

Communities living in Kalmunai on the east coast of Sri Lanka, though affected by the long drawn out civil unrest, were fairly affluent. However, the Tsunami destroyed all their means of income, machines and equipment, and generally, all their belongings including house and property.

Kalmunai has a highly dense population and to meet their needs houses had been constructed right up to the fringe of the beach. The removal of all beach vegetation to make way for the houses is the prime cause for the severity of the Tsunami damage. Sea water inundation has rendered almost 80% of the drinking water wells highly saline, and contamination with sewage and other organic pollutants has raised conductivity levels beyond the norms set by the World Health Organization.



Having implemented several post-tsunami relief projects in Kalmunai, the Neo Synthesis Research Centre (NSRC) took up the challenge of building a greenbelt using analog forestry principles through the project: **Ecological Restoration of Selected Sites in Kalmunai.**

Project objectives were to:

- establish a beach forest in the nature of a “Greenbelt” in Periyakallar, Periyaneelavanai, Pandiruppu and Kalmunai
- purify well water by means of “bio-remediation” through a programme for planting forests (phytoremediation) around drinking water wells.

The 3.5 km long greenbelt was established in Periyakallar, Periyaneelavanai, Pandiruppu and Kalmunai. In selecting plant species for the greenbelt, NSRC ensured that vegetation similar to the littoral scrub forests found in the area were used. This was in accordance with the principles of analog forestry. A few native and exotic species, recommended by the Coast Conservation Department, were also included. A total of 6945 trees and shrubs belonging to 23 species were planted. The plants were established within protective enclosures to shield them from salt laden high winds and grazing animals. The average size of an enclosure was 15' x 30', accommodating four to five rows of plants. In all, 75 protective enclosures were built. The plants were nurtured with continuous mulching and watering and 12 wells were dug for the purpose.

“Already the fast developing greenbelt has become a favourite perching spot for Indian Broad Billed Rollers and many Red Vented Bulbuls. The common garden lizard is rampant and many butterflies like the Lime Butterfly and the Common Tigers frequent the enclosures” says Kamal Melvani Managing Director of NSRC, showing us around the greenbelt in Periyaneelavanai.

Thirty four community groups were formed and their 586-strong membership was trained in the dynamics of group formation, organic agriculture, environment-friendly waste disposal and thrift and savings. They were actively involved in planting and after-care of the plants. The savings scheme commenced operations on 1 June 2006.

1001 families from Periyaneelavanai, Pandiruppu, Marathamunai, Kalmunai and Kalmunai Kudy were engaged in the forestry programme to effect bio-remediation (phytoremediation) of drinking water wells. Debris, silt and contaminated water were removed from the wells before planting the trees. Diverse deep-rooted species of native trees and shrubs were planted around the drinking wells. The fence and production area around the house were also planted but with species of utility value to the household. A total of 25,417 plants, drawn from 88 species, were utilized for this activity.

Bio-remediation

The use of biological agents, such as bacteria, fungi, or green plants, to remove or neutralize contaminants, as in polluted soil or water. Bacteria and fungi generally work by breaking down contaminants such as petroleum into less harmful substances. Plants can be used to aerate polluted soil and stimulate microbial action. They can also absorb contaminants such as salts and metals into their tissues, which are then harvested and disposed of. The use of green plants to decontaminate polluted soil or water is called phytoremediation.

Source: <http://biobasics.gc.ca>

The bio-remediation planting was carried out in December 2005. and water quality in the wells was monitored in June and December 2006. Water quality readings taken in June 2005, prior to the project, were also available. Water samples were tested for nitrate, nitrite, iron, chloride, hardness, alkalinity conductivity, pH, turbidity and colour. The 39 water samples taken in December definitely showed a downward trend in contaminant levels. Though the relationship between improved water quality in the wells and the plantings is not clear, the effort to establish useful plants around wells was appreciated by the housewives.

NSRC secured a second grant to implement the project: **Continuation of the Project to Ecologically Restore Selected Sites in Kalmunai.**

Project objectives were to:

- continue the ecological restoration of selected areas in Kalmunai by consolidating the work done in Phase 1 (2005/2006)
- continue the mobilisation and strengthening of the community groups formed under Phase 1
- establish 115 kitchen gardens in the premises of selected members of the community groups
- establish 20 demonstration models in ecological farming in the premises of members who seek to practice it as a means of livelihood support
- create awareness amongst the general populace of Kalmunai including school children, religious leaders, house wives, farmers and officers of the local administration on issues regarding the environment, health, sanitation, waste management and open space planning.

Vacancies in the coastal greenbelt were infilled with 2648 plants of 22 species. Mulching and watering of plants and repairing the protective enclosures were done on a regular basis.

Kitchen gardens and demonstration models were established in Periyaneelavanai, Pandiruppu, Kuruntheyadi, Kalmunai, Kalmunai kudy, and Marathamunai.

Exceeding the planned output, 123 kitchen gardens were established. Both perennials and annual crops were planted and operations such as composting, mulching, applying liquid fertilizer and biological pesticides were carried out, as required. The income generated from the 123 gardens, for the period October to December 2007, amounted to € 823.

N. Chandrakala from Kuruntheyady is one of the proud owners of a kitchen garden. She has established 10 varieties of trees around her well and 12 varieties of fruit trees in the production area. Several timber trees stand tall in her garden. She informed us that the choice of trees was



Greenbelt in Periyaneelavanai – before (Kumudini Ekaratne © IUCN)



Greenbelt in Periyaneelavanai – before (Kumudini Ekaratne © IUCN)

hers, and her total income from October to December 2007 was € 27. “The project provided us with nutrition, food security and above all, an additional income,” said Chandrakala showing us the book in which she meticulously records all activities related to her kitchen garden.

In selecting the beneficiaries for demonstration models in ecological farming, criteria such as availability of a water source, a minimum area of 0.25 acres and a protective fence around the plot were considered. Twenty demonstration models were established by end December 2007. The income from all 20 demonstration models, for the period October to December 2007, was € 547.

Of the initial 34 groups established by the project 12 are now defunct. At the end of nearly two years, 22 groups with a membership of 330 are functioning actively. The thrift and savings scheme was operating successfully. Over a 12 month period, 25 group meetings have been held and the discussions centred on micro finance, savings, organic agriculture and coastal forest planting. At the end of November 2007, each group received a contribution from the project to match the amount in their saving accounts, which amounted to a total of € 2,055. With the accumulation of savings and the contribution given by the project, the membership now has a sizeable fund to draw on. The loan scheme enabled members to engage in small pursuits related to agriculture, livestock rearing, tailoring, small businesses in marketing/sales of vegetables, rice, fish and other items. The operation of a savings cum micro finance activity has enabled the Groups to increase their revenue three fold.

The project under able leadership and with a dedicated team, drawn from three different ethnic groups, has brought sunshine back to Kalmunai.

Grantee: Neo Synthesis Research Centre (NSRC)

Project:

Phase 1: Ecological Restoration of Selected Sites in Kalmunai.

Phase 2: Continuation of the project to Ecologically Restore Selected Sites in Kalmunai.

Period/Duration:

- Phase 1: 1.11.2005 – 31.12.2006 (13 months)
- Phase 2: 1.1.2007 – 29. 2.2008 (14 months)

Grant size:

- Phase 1: € 77,045.43
- Phase 2: € 72,600.00

2.10 Kattankudy Farmers Have Picked Up the Pieces and are Forging Ahead

The Grama Sevaka Division (GSD) of Kattankudy, in the Batticaloa District on the east coast of Sri Lanka, was badly affected by the Tsunami. A GSD is the smallest administrative unit in Sri Lanka. One hundred and forty farmers lost their agricultural plots and as a consequence, their daily income. Organization for Protecting and Ensuring Democracy (OPED) stepped in to help the most affected 40 farmers through the project titled: Protect the Tsunami-affected People by Cultivating the Land.

The objective of the project was to uplift the Tsunami-affected area and its people through micro projects in agriculture. Although the beneficiaries had a sound knowledge of farming, the project started by providing a systematic training on land preparation, nursery maintenance, composting, organic farming including preparation of liquid biofertilizer and biopesticide application and marketing techniques.



Four types of plantations were planned: banana, mixed fruit, intercropping and potted plants. The 40 farmers were grouped according to their preferences, and the farmers were provided with the necessary seedlings.

Ten banana cultivators planted a minimum of four varieties of banana while the mixed fruit cultivations consisted mainly of mango, pomegranate, guava, banana, and local fruits such as ambarella and jambu. Peanuts, pineapple and pulses were intercropped with coconut and papaw. Those who wanted to try their hands on modern agricultural systems opted for potted planting.

“Green Coast Project helped us to get our feet back on the ground” said Ms. Hinaya Hilmiya adjusting her traditional head scarf. This 40-year-old lady had opted for mixed fruit planting. She is now able to provide her family with fresh fruits and also get an average monthly income of about €15.00.

Awareness programmes on disaster management were conducted for five hundred students from 10 schools in Kattankudy. A programme on food security and nutrition was carried out for 160 villagers.

“By the end of 9 months a total of 10 acres had been cultivated. With each beneficiary cultivating at least a quarter acre of land, the production exceeds their consumption needs and they were able to sell the excess. However, due to security concerns, taking the produce to the market was hampered at times, resulting in wastage. In order to prevent this, we decided to assist them in preserving the produce by securing a second grant for the project: Generating Self Employment Opportunities Through Food Processing Techniques” explained Mr M Mansoor, Chairman and Executive Director of OPED.

The beneficiaries received hands-on training in food preservation techniques and turning out sweet meats and other food preparations using their produce such as papaw, beans, chillies, gram, peanut, maize, gingely, tomato, and lentil. To facilitate the preparation of these products, an industrial grinding machine was purchased through project funds. The beneficiaries now produce papaw jam, curd chillie, tomato sauce, peanut cake, peanut toffee, devilled peanut, gingely toffee, devilled gram, gram flour, maize flour and pop corn. Training on packaging methods and the provision of sealing machines have assisted them in presenting their products in hygienic and attractive packages.

For the first time in Batticaloa district, mushroom cultivation was introduced to the 40 beneficiaries. This nutritious food, which has a high demand in Kattankudy contributes to further enhance the income of these farmers.

To add value to their products, the 25 ladies who are actively involved in preparing food items formed an organization called Women Agricultural Industrial Producers and obtained a Trade/Industrial license issued by Kattankudy Urban Council. To prevent exploitation by middle men, OPED entered into an agreement with Kattankudy Multipurpose Co-operative Society (KMPCS) Ltd to purchase, display and sell the produce of this organization.

A farmers' pension scheme was introduced by the Green Coast Project for its beneficiaries through the Agricultural and Agrarian Insurance Board. This was another first in Kattankudy. Upon reaching 55 years, a farmer will receive a monthly pension, and after pensioner's death the spouse would receive a pension until the age of 80 years.

"Thanks to the Green Coast Project, our future is now secure. We are also grateful to OPED for taking us this far" said 45-year-old Yusoof Lebbe with a smile on his face.

Grantee: Organization for Protecting and Ensuring Democracy (OPED)

Phase 1: Protect the Tsunami-affected People by Cultivating the Land.

Phase 2: Generating Self Employment Opportunities Through Food Processing Techniques

Grant size:

Phase 1: € 11,660.00

Phase 2: € 5,000.00

Period/Duration:

Phase 1: 1. 4.2006 - 31.12.2006 (9 months)

Phase 2: 15.10.2007 - 15.12.2007 (2 months)



Papaws in Ms Hilmiya's garden (Kumudini Ekaratne @ IUCN)

2.11 Sand Dunes are Forever

The Tsunami waves played havoc in the Negombo estuary located in the south-west coast of Sri Lanka. The waves which entered the estuary mouth from the south-west brought in significant amounts of debris causing mechanical damage to mangroves and sea grass beds and making an adverse impact on the hydrology and canal system of the estuary.

However, the impact on human life and infrastructure was minimized by the sand dunes running parallel to the sea and estuary. According to the geomorphology of the area, the lands situated between the sand dunes and the estuary are below sea level and nearly 20,000 houses are located between sand dunes and the estuary area.

There is a huge demand for sand to reconstruct the houses damaged by the Tsunami. To meet this demand many people are engaged in the illegal mining of the precious sand dunes. Continuation of this indiscriminate activity would result in a major catastrophe in the event of a future disaster like a tsunami or cyclone. If the weakened dune is breached the entire area will be inundated with sea water with frightening consequences.

In order to minimize these threats the project titled: **Rehabilitation of the Sand Dune and the Negombo Estuary after the Tsunami damage** was implemented by the Negombo Lagoon Management Authority (NLMA).

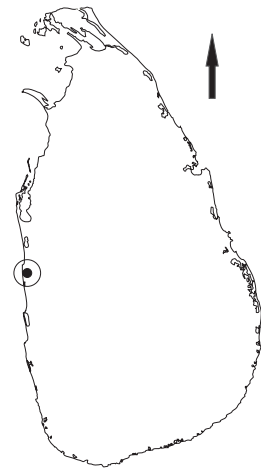
The main goal of this project was to enhance the quality of life of the people who are living in the area by improving coastal ecosystems, and the objectives to be achieved were:

- Improving coastal ecosystems to provide livelihoods to people who depend on such ecosystems
- Providing a safe environment for people living along the sand dune area
- Enhancing sustainable resource management capacity of the resource users

The first objective was achieved through several cleaning programs to remove solid waste accumulated in the Negombo estuary, and stocking the lagoon with 300,000 *Penaeus monodon* fries. This resulted in increased incomes for lagoon fishermen. Debris from mangrove areas were also removed to facilitate natural re-generation.

“The second objective was achieved through the rehabilitation of the sand dune under the technical guidance of the Coast Conservation Department. An eight kilometre length of sand dune was surveyed and GIS maps were prepared. Based on the maps, the dune areas less than 3 meters above MSL (mean sea level) were selected for restoration. Eight points of the dune covering a total length of 750 m were restored” explained Mr Ranjith Fernando, an experienced fisherman who chairs the NLMA. He went on to say that sand dredged from the Negombo lagoon (under another project) was to be used for this restoration. However, when this project did not take off as expected, sand had to be purchased from other sources putting a strain on the budget and limiting the area to be restored. To facilitate further strengthening of the dune native plants were planted along the dune.

In order to achieve the third objective eight awareness programs on coastal habitat protection and sustainable use of coastal resources were conducted for fishing communities, teachers, students, police, navy and officers of the Disaster Management Centre in the area. Six sign boards depicting conservation messages on coastal resources management were also erected.



"We have formed a 'vigilance group' to maintain the sand dune and also to ensure protection of the sand dune from illegal sand mining" concluded Ranjith.

Grantee: Negombo Lagoon Management Authority (NLMA).

Project: Rehabilitation of the Sand Dune and the Negombo Estuary after the Tsunami Damage

Period/Duration: 1.3.2006 - 30.6.2007 (16 months)

Grant size: € 53,038.00



Rehabilitated sand dune (Kumudini Ekaratne © IUCN)

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A display board (Kumudini Ekaratne © IUCN)

2.12 The Greenbelt Reports: A New TV Series Revisits the Asian Tsunami's Environmental Lessons

Two years after the devastating Tsunami, are Asian countries managing their coastal resources more rationally and scientifically?

As the memories of the mega-disaster fade, is there a danger that its important environmental lessons might soon be forgotten?

Why do communities battle bureaucracies and vested interests to save, restore and manage Asian coral reefs, mangroves and sand dunes?

On the eve of the Asian Tsunami's second anniversary, an investigative new TV series from TVE Asia Pacific (TVEAP) raises these and other pertinent questions. In search of answers, it returns to many locations in South and Southeast Asia battered by the disaster, and talks to a cross section of scientists, activists and local community groups.



The Greenbelt Reports was filmed in mid 2006 in several coastal locations in India, Indonesia, Sri Lanka and Thailand – countries that were hardest hit by the Tsunami on 26 December 2004.

The series consists of:

- Greenbelt Reports 12 x 5 minute short films
- Armed by Nature 1 x 27 minute documentary

The Sri Lankan component of this series was implemented through a project titled **The Greenbelt Reports: Showcasing Nature's Protection Against Disasters and Climate Change Impact Using Television and Video.**

The goal of the project was a better-informed Sri Lankan public. People in coastal areas especially, to become more aware of the multiple benefits and ecosystem services provided by greenbelts - mangroves, coral reefs and sand dunes leading to community action to preserve remaining green belts, as well as to restore degraded greenbelts, where such recovery is still ecologically feasible.

The outputs of this effort were:

1. Four short video films:

- Reef relief (Rumassala, Galle)
- Trees of Life (Kalmunai, Ampara)
- Mangroves Are Forever (Kalpitiya, Puttalam)
- Saved by Sand (Panama, Arugam Bay)

Produced originally in English, the above four video films became part of the Asian regional series: Greenbelt Reports.

2. Conservation management of coastal greenbelts – mangroves, sand dunes and coral reefs - in accessible coastal areas of Sri Lanka being included in the regional documentary Armed by Nature.

3. The four Sri Lanka stories and the regional video documentary were versioned into Sinhala and Tamil and promotional print material were produced in both languages.
4. A series of 15 public outreach events were held in selected locations in the coastal districts of Galle, Matara, Hambantota, Kalutara, Puttalam and Gampaha.
5. Greenbelt Reports and the documentary being broadcast over ETV, the premier English language channel in Sri Lanka on 26 and 27 December 2006 as a part of their “Two years after the Asian Tsunami” programme line-up.
6. Online promotion of the material carried out through several new items on TVEAP website: www.tveap.org.

Grantee: TVE Asia Pacific (TVEAP)

Project: Greenbelt Reports: Showcasing Nature’s Protection Against Disasters and Climate Change Impact Using Television and Video

Period/Duration: 1 July 2006 – 31 December 2006 (6 months)

Grant size: € 39,760.00

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