



PROJECT DOCUMENTATION

FINAL DRAFT REPORT

Continuation and Strengthening Sustainable Livelihood Enhancement and Development Process being Implemented in the Villages in the Vicinity of Bar Reef, Kalpitiya Sri Lanka

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1. Introduction

1.1. Purpose of Document

The purpose of this document is to provide a narrative report of the “Continuation and Strengthening of Sustainable Livelihood Enhancement and Development Process being implemented in the villages in the vicinity of Bar Reef, Kalpitiya, Sri Lanka” Project, the activities that were undertaken, an analysis of project along with Lessons Learnt that can be applied to other projects in future.

This document draws on final reports that were written for the project donor during the period when project activities were undertaken. .

1.2. Details of Organisation

Name of the Organisation	Marine & Coastal Resources Conservation Foundation
Address of the Organisation	No. 5/5, Hill Street, Kalpitiya, Sri Lanka
Web site	WWW. mcrcf.org
Contact Person’s Name and Position in Organisation	Chairman, Upali Mallikaarachchi
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1.3. Project Origins /Background

The Kalpitiya peninsular is located on the north-western coastal segment of Sri Lanka within the Puttalam District. The Peninsular is approximately 100 kilometres in length and borders the Puttalam Lagoon on the western side, which is the second largest lagoon in Sri Lanka. The surrounding environment is enriched with a range of different ecosystems, including sandy beaches, lagoons, mangrove vegetation, sand dunes, sea grass beds and salt marshes as well as famous Bar Reef Marine Sanctuary; the most extensive coral reef complex in Sri Lanka.

Fishing is the most common commercial livelihood activity in the area and the community is highly depended on the coral reef ecosystem located between 2 and 8 km away from the shoreline. The coastal communities in Kandakuliya, Kudawa, Kalpitiya, Anawasala, Uchchimunai, Baththalangunduwa, and Dutch Bay villages are mainly engaged in fishing in the Bar reef area.

In the past the Bar Reef possessed a high level of biodiversity until that mass Coral beaching event was occurred in 1998. Apart from natural causes, human activities posed considerable amount of pressure on the reef ecosystem and associated environment. A combination of destructive fishing methods, overfishing and lack of enforcement and awareness on the important and ecology of the reef and the other coastal habitats poses a constant threat to many species inhabiting this area. It is natural when resources degradation happened by either naturally or human interferences if there is no other supplementary or alternative livelihood for resources users to depend on, thus the resource degradation is over accelerated. Although the Bar Reef is declared as a marine sanctuary under the Department of Wildlife Conservation (DWLC) an area of 306.7 sq. km. in 1992 to protect it, no sustainable management effort has been implemented so far. Bar Reef was one of the SAM sites identified through the 1997 Coastal Zone Management Plan (CZM plan) and since 2001

Special Area Management Programme was being carried out by ADB funded Coastal Resources Management Project in 2001.

Though, many management efforts have been implemented, it is difficult to establish sustainable mechanism to reduce the degree of pressure on the Bar reef ecosystem as expected so far. This is mainly due to high dependency on the reef system and the prevailing poverty condition among the coastal communities in the area. Besides the ongoing other management interventions, it is important to focus more on livelihood enhancement and development of the communities and alleviate poverty to ensure the sustainable utilization of the reef system.

In the view of the situation described in the previous section, to reduce the pressure on the Bar Reef ecosystem, Sustainable Livelihoods Enhancement and Diversification (SLED) programme has already implemented in Kudawa fishing village in Kalpitiya, which is adjacent to the Bar Reef area and as a result for the first time fisher community has identified other ways to depend on other than the coastal resources. In view of the social, economic, environmental and security situation prevailed within the pilot site and considering the previous attempts made on coastal livelihoods at the same location, the study team placed much emphasis on adopting a systematic approach to livelihood development, enhancement and diversification that build on an understanding on the complicity of coastal community livelihoods. To fulfil this requirement and to achieve the desired output of the pilot project the SLED framework initiated and all three phases such as Discovery, Direction and Doing phases of the SLED framework had been implemented. In doing phase it was found that the Marine & Coastal Resources Conservation Foundation (MCRCF), which is the existing environmental enthusiastic organisation in the Kalpitiya and has been doing the SLED process in the Kalpitiya area, could expand and strengthen the sustainable livelihood development program from Kudawa to the other fishing villages which are highly depend on the resources of the Bar Reef ecosystem with the support of various donors. Considering the success of the above mentioned programme the following activities were implemented to enhance the socio economic status of the poorest sector of the coastal villages that create and impact of the Bar Reef.

2.2 Purpose of the Project

As a result of releasing all the restriction imposed on the fisheries activities as a result of the end up of long lasted 30 years conflict situation it has been started more and more people involving in fishing practices in the north eastern and north western coastal segments in the county, where Bar Reef also located and affected. This situation has been tended to extract marine resources heavily in the Bar Reef ecosystem, which has directly created negative impact on the individual household income by reducing per capita catch while poverty levels also were being increased. Considering that situation it was decided to expand and strengthen the tested alternative /supplementary livelihoods in a systematic manner to ensure sustainable management of marine and coastal resources in the Bar Reef area and also uplift their income levels. At the same time it was decided to enhance the level of education and awareness of the communities to ensure sustainability of the their livelihoods and the management of the marine and coastal resources

2.3 Objective of the Project

- To uplift socio-economic status of the productive poor of the coastal communities living in the vicinity of the Bar reef area by expanding and strengthening sustainable livelihood activities
- To ensure sustainability of the livelihoods of the communities and conserve the marine resources in the Bar reef area by means of enhancing level of community awareness and education
- To empower the social and economic status of the fisher women in the area.

2.4 Expected Project Results and Outcomes

1. Expand at least 10 home garden improvement programmes within the influence area of the Bar Reef.
2. Seaweed farming and processing for five beneficiaries
3. Introduce Ornamental fish farming initially for five beneficiaries and expand up to ten beneficiaries
4. Provide fingerlings and feed for existing red Tilapia farmer and to provide assistance to additional beneficiary to commence Red Tilapia farming
5. Conduct three one day workshop on the theme “Coastal Environment and Livelihoods”
6. Prepare and install three awareness boards on “Environment and Livelihoods”

2. Project Approach

2.1 Selection of Location and beneficiaries

The areas, Kandakuliya, Kudawa, Anawasala Uchchamunai in Kalpitiya, where the more coastal resources depended communities are located were selected. Coastal resources depended fisher communities were selected through SLED process with the assistance of the existing fisheries societies to carry out the activities.

2.2 Project Delivery

This project was developed after discussion with the beneficiaries that have been carrying out the SLED process to ensure the sustainability, leaders of the fisheries societies, community leaders, government officials etc. The leaders of the fisheries cooperative societies, which are established in the villages in the vicinity of the Bar Reef, played a significant role when ensuring the selection of the beneficiaries and also monitoring the activities.

3 Activities Undertaken

After signing agreements MCRCF started the project. As a result of that, the following activities were undertaken.

3.1. Activity Amendment

In considering the difficulties confronted with obtaining imported fingerlings, proposed livelihood intervention (Activity No. 2) on sea-bass culturing programme was terminated and the allocated funds were added to the Ornamental Fish culture programme (Activity No 4) with prior notification.

3.2. Expand at least 10 home garden improvement programmes within the influence area of the Bar Reef.

With a view to reduce household expenditure of the coral reef dependent communities around the Bar reef, home garden improvement was one of the intervention proposed under this project and was designed based on the experience gained during the pilot project implemented through CORALI in 2007/2008, which was implemented by MCRCF. At the outset, beneficiary selection was carried out through SLED process with the

assistance of fisheries cooperative societies. The list of beneficiaries was received and individual site inspections was carried out by the agricultural specialist and the coordinator appointed by the MCRCF for this project. During the field inspections, necessary guidance was given to the beneficiaries such as how to prepare lands/plots for cultivation, how to select suitable varieties of vegetables and fruits to be planted, preparation of plant nurseries, the value of using organic manures, the way of watering, how to propagate seeds for next cycles etc. Out of the agreement one more beneficiary included in to the list out of 10 hence altogether 11 beneficiaries were selected as indicated in the following Table 1.

After completion of the preliminary work, necessary materials and substance such as compost fertilizer, seeds and other basic equipments were distributed among each beneficiary. With the close supervision of the agriculture specialist and the coordinator, home garden improvement was successfully completed. Almost every family could get good harvest and they used them for their house hold consumption. Except one family the other all families have been continuing the activity. They really enjoyed this activity and adapted to do the cultivation which they had never done as family team work. In home garden cultivation the plants/vegetation can be divided in three categories they are the

- Long term crops such as (Perennial crops) Coconut, Lemon, Drumstick, Mango and other long lasting fruit trees etc
- Midterm crops such as Banana, Papaya, edible leaves, etc.
- Short term crops such as (seasonal crops) chillies, ladies fingers, tomato, pumpkins etc.

Cultivation was carried out considering the above mentioned plant categories. Although the short term plants cannot be seen during the off season or in the dry season or after harvesting period the long term and midterm plants are existed and beneficiary can get continuous harvest. Through this activity they could save day to day expenditure. They were given locally purchased seeds for the first cycle. Hence though they taught how to do the propagation using fruits/crops from their harvest, majority of those seeds were not succeeded. Due to that reason the beneficiaries got disappointed and it can be affected for the continuation of the programme. Hence MCRCF did the field investigation to find out proper seeds that can be replicated. With the guidance of various organisations it was found some seeds from indigenous varieties. Seeds were distributed among the beneficiaries. Now the beneficiaries are getting ready for the next cycle with the indigenous seeds provided by MCRCF.

Please see the No. 6 annexure for the photographs of the activity

Table 1: List of Beneficiaries of the home gardening programme

	Name	Address	Remarks
1	Annamma Wathsala	Janasavipura, Anawasala	Fisher family
2	Pathima Shanthi	Janasavipura, Anawasala	Fisher family
3	A Jayanthi Croos	Janasavipura, Anawasala	Fisher family
4	Lalitha Kumari	Janasavipura, Anawasala	Fisher family,
5	Mariya Velankanni Soysa	Janasavipura, Anawasala	Fisher family. Doing fishing in one of the island
6	G.G.D Ganga Subhashini	Kurakkanhena, Kalpitiya	Widower living with a daughter without a job
7	W G Kanthi Wijetunga	Singhepura camp, Kurakkanhena, Kalpitiya	Disabled. Husband is a fisherman.
8	T Letchumi	Kurakkanhena, Kalpitiya	Fisher family and husband is a labour and both are overage
9	D K Nilani	Kurakkanhena	Fisher family
10	W A Mari Reeta	Kurakkanhena	Fisher family
11	Selin Arunolda	Kurakkanhena	Fisher family

3.3 Seaweed faming and processing for five beneficiaries

During the implementation of SLED process in Bar Reef area, seaweed farming was proposed as one of the livelihood opportunities by the community. Accordingly suitability of the proposed intervention was tested.

Prior to commencement of the intervention in full scale, cages were constructed and wild variety of *Gracilaria edulis* (Ceylon moss) were collected from the lagoon and placed them in the cages and then the cages were placed in the lagoon near the Anawasala Fisheries Village in Kalpitiya. Continues monitoring of the growth rate of the seaweeds and water quality such as salinity and temperature had been carried out and recorded by one of the field team members with the assistance of beneficiaries.

The period that the sea weed culturing programme was started was not the optimal season for the seaweeds growth. It was an off season and salinity recorded above 40 ppt. The initial samples were first eaten by rabbit fish. Then the cages were covered with the small mesh net as a prevention measure. However all the samples were decayed or not grown. The expected rainy season, which normally starts from end of July /August, has not been occurred in this season. Due to that reason the salinity levels also remains high level, around 40ppt, which is not favourable for *Gracilaria edulis* (Ceylon moss) growth. Similarly natural socks also have not been appeared in time. Several attempts were taken find out the natural sample to reintroduction but failed. As a result of that some of the beneficiaries were disappointed due to decaying their samples and not able to find wild seaweeds for replacement. Now the climate is changing favourably and they have reactivated and readjusting the cages to renew seaweed samples. Further, this programme is continuing with the UNDP programme while introducing sea weed processing techniques to find better market with the MCRCF supervision. Currently, processed sea weed are exporting form other counties and on the other hand they are not up to the standard.

Please see the No. 6 annexure for the photographs of the activity.

Table 2: List of beneficiaries of sea weed farming

	Name	Address	Remarks
1	Marlon Andrews	Anawasala, Kalpitiya	Fisherman,
2	Joshep Denis Victor	Janasavipura, Anawasala	Fisherman
3	Human Fernando	Anawasala, Kalpitiya	Fisherman and the president of fisheries society in Anawasala
4	Kensy Ranjith Croos	Janasavipura, Anawasala	Fisherman.
5	W Antony Frankasius <u>Thisera</u>	Anawasala mune, Kalpitiya	Fisherman, worked with the seaweed culturing that conducted by one of the GTZ programme

3.4. Introduction of Ornamental fish farming for five beneficiaries and expand it up to ten beneficiaries

As a new activity ornamental fish farming were introduced to the Kalpitiya area that adjacent the Bar reef. Beneficiaries were selected according to the usual criteria specially members in the society of ornamental fish society which was formed by the group trained by NARA. This project was commenced with the assistances of aqua culture consultant. Twenty five tanks with the measurements of 70x110 cm constructed by one of the beneficiaries who has already involved in ornamental fish farming as a hobby. He was selected as the focal point of the ornamental fish farming project. He visited some of the leading export farm sites with the assistance of the consultant to check the existing market and select the suitable fish species for farming. They could build up a good collaboration with the large scale exporters.

All the five beneficiaries were given 5 cement tanks, shading net, fish brood stock and feed packets to start the business as an initial step. Molly fish species were recommended as an initial farming which is suitable for the water condition of Kalpitiya area and also due to not essentially required live feed for fries. Brood stocks were purchased from one of the leading export farm sites and the fish were stocked in one tank that were given to the beneficiaries according to the consultant's advice. It was recommended to stock 3 fish per one foot at a 3♀:1♂ ratio. Hence 28 fish were stocked each tank. Initially the following mentioned (table 3) five members have started the programme as experimental level to get experience.

With the result it is planning to expand it to the other 5 members as as out growers. It is recommended to stock 7 fish fingerling per square foot in the growing stage. If the fish has enough apace it shows fast growth.

Hence it is recommended to construct 10' X 10' tanks for fish growing stage. In the mean time one of the 5 members can be trained as a brooder and he or she can distribute fish fingerlings to others for growing and one or two beneficiary can do the delivery of fish to the exporters. The consultant conducted an awareness training programme and given technical support.

Please see the No. 6 annexure for the photographs of the activity.

Table 3. The list of beneficiaries of Ornamental fish farming

	Name	Address	Remarks
1	A B M Saleem	Kalpantain Gama, Kalpitiya.	He is rearing ornamental fish as a hobby and selling fish in house hold level.
2	Suramya Fernando	Kudawa, Kandakuliya	Fisher family
3	W A S Mangalika	Kudawa, Kandakuliya	Fisher family
4	A C M Niyas	Vellankarai, Palliwasalthurai, Kalpitiya	Environmental lover
5	Anet Susantha	Kudawa, Kandakuliya	A widower, she lost her husband(fisherman) in the sea during the civil war period

3.5. Provide fingerling and feed for existing Tilapia farmer and to provide assistance to additional beneficiary to commence Tilapia farming

In considering the need to promote other feasible opportunities it was proposed to provide fingerlings to the existing farmer and further to expand this intervention by providing assistance for one additional house hold as demonstration. There are plenty of bare lands in Kalpitiya peninsular. Due to the poor water quality most of those lands cannot be used. Hence this intervention will be a good example for the unproductive lands.

The selected beneficiary is a widower; her husband was attached to the Red Tilapia farming programme that was conducted under the SLED programme which was conducted by MCRCF. After his death the programme was abandoned due to lack of assistant and know how. The beneficiary was provided 1500 fingerlings, cost of pond construction and required feed. Beneficiary contributed labour for pond renovation and maintaining the pond and additionally feeding the fish. MCRCF provided technical assistant through an aquaculture specialist.

The second beneficiary was supported to construct the pond in his land. However unfortunately it was getting delay due to broken down of the dredger machine while excavating the pond. As a result of the delay of the construction the allocated 500 Tilapia fingerlings were stocked in the former tank until finish the construction.

The bottoms of the both first and second tanks are covered with soft clay and the salinity levels 0.0ppt and 10.0ppt respectively. The list of beneficiaries is mentioned in table 4.

Please see the No. 6 annexure for the photographs of the activity.

Table 4: List of beneficiaries of Red Tilapia fish culture

	Name	Address	Remarks
1	Ummu Lathifa	Vellankarai, Pallivasalthurai, Kalpitiya	Widow, her husband was a beneficiary of red Tilapia culture programme under SLED
2	A.C.M Rameez	Vellankarai, Pallivasalthurai, Kalpitiya	He is an environmental lover and a land owner.

3.6. Conduct three one day workshop on the theme “Coastal Environment and Livelihood

In considering the importance of public education and awareness creation the awareness and discussion was carried out focusing the following areas. They are the importance of coastal resources and especially Bar

Reef ecosystem, the benefit being protected the resources, the effect of using destructive fishing methods and results of overfishing, the ways of minimise the fishing pressure (alternative livelihood methods) were discussed during the three awareness workshops. In accordance with the programme, following target groups were selected.

- Fishermen engage in fishing in Bar reef and the peripheral area
- Divers engage in ornamental fish, sea cucumber and chank collection
- School children
- Fisher women

One programme was conducted for the school children and the other two were conducted for two different fisher communities. To facilitate the awareness programme, multimedia equipment was used. Three awareness programmes were conducted with adequate participation of the target groups. Almost all were interested in the alternative livelihood options and the discussions were held the possibilities of using the existing resources other than the fishing. The below mentioned Table 5 shows the details of awareness programmes conducted such as date, location, venue and the number of participants. School children were asked to write livelihood option that they known before the programme and after the workshop.

Please see the No. 6 annexure for the photographs of the activity.

Table 5: The list of awareness programmes with dates and locations

	Date	Location	Venue	No. of Participants attended
1.	06.08.2010	Kandakuliya, Kalpitiya.	Kandakuliya Mune Sinhala Government School,	59
2.	10.08.2010	Eachchankaduwa, Kalpitiya	Indikele Fisheries co-operative society,	48
3.	17.08.2010	Uchchamune, Kalpitiya	Holly Cross Fisheries Co-operative society,	24

4.7. Installation of three awareness boards

As per the proposal submitted by MCRCF and the agreement signed, contract was awarded to private entity to construct 3 numbers of 2.5' x 4.5' display boards. The layouts of the alternative livelihood messages have been designed by MCRCF after discussing with community leaders. Boards were designed using both Sinhala and Tamil languages and English language used as a second language in all boards. The boards were installed within the particular language speaking areas. Soon after fixing the boards people have started highly taking about the alternative livelihood options.

To ensure the quality of the boards, being fabricated using sink aluminium and Galvanise Iron pipes. Installation of the boards has been completed at 3 selected landing sites which use mostly to go fishing at Bar Reef area

Please see the No. 6 annexure for the photographs of the activity.

5 Degree of changers due to the Project Delivery

Activity	Prior to implementation	After the implementation
Home gardening programme	Majority were not involve in home gardening and only few practiced but not in a systematic way	They understood and trust that the ability and provision for cultivation. Whole family involved in cultivation and enjoyed. Recognise the taste differences in between marketed and home garden vegetables. Women used allocated money for vegetables for the other house hold activities specially for child education. Taught different

		techniques and systematic way of cultivation. They were given perennial crops.
Sea weed programme	Specially Muslim community use the wild collection	First they understood that they can cultivate sea weeds and if success they know that they can use them as value added marketable product
Ornamental fish culture programme	No experience of doing as a business and systematic way	Practicing how to rare fish for markets. Learning different kind of techniques for cost cutting and get better growth within a short period. Now they are practicing to do collective business
Tilapia fish culture programme	Limited experience	Getting experience
Awareness programme	Little knowledge on conservation and prevention measures	Learn about the value of their natural ecosystem. Got to know that there is other income sources. Discussed openly the destructive fishing practices and the effects.
Sing boards	Majority not knowing the other livelihood methods and the processes	Majority of people got to know about the programme

6 Constrains and Lessons Learnt

Deep analysis of the ground situation and direct communicating should be made with all the stake holders regarding the consequences of the project delivery before starting projects

The project delivery period was mismatch with the selected activities due to the natural seasonal condition and also due to the unexpected seasonal changes. Specially working with the natural resources and with the community it should be prepared the risk analysis before starting the project and should be prepared precautions and alternative steps accordingly. At the same time the situation and issues need to be fully addressed as soon as possible, and decisions and actions need to be communicated to all key stakeholders. This project also planned for 8 months however it was limited to five months and the funds was given lately. As a result of that the suitable seasons was missed

Importance of getting involvement from existing societies and leaders

Relevant society leaders have to be fully informed from the beginning and every project should start with a common level of understanding and beneficiaries also should be selected with the support of the societies. Almost all the beneficiaries were selected through the SLED process with sense of existing fisheries societies, hence the leaders of the societies supported to the programme during the project delivery. Further it was noticed the society automatically took the responsibility/ownership to run the project successfully.

Use of appropriate resources in cultivation

Seeds - Different kind of hybrid and imported seeds (F1 seed) are available in the market and most of seed cannot be propagated. Hence although the beneficiaries of the home gardening programme were asked to propagate seeds from the first harvest it was failed and caused for disappointing the beneficiaries. After consulting the various sources MCRCF was asked to use seeds from indigenous species and were found some seed varieties, those were distributed among the beneficiaries.

Water – Kalpitiya community normally do not use ground water due to the salinity effect. Therefore if they do not get rains in time or changing usual rainy seasons may face difficulties with water supply. They are provided pipe line water and during the drought season the water supply is interrupted due to limited water. And sometimes water became saline. As a result of that some beneficiaries are reluctant to use pipe water because of the cost. However majority were used pipe water after understanding the importance of having a home garden.

7 Annexure – Photographs of the activities

*Please double click the icon

a. Home Gardening Programme



Home gardening.doc

b. Seaweed Culture Programme



Sea weeds culture
programme.doc

c. Ornamental Fish Culture Programme



Ornamental fish
programme .doc

d. Tilapia Fish Culture Programme



Fish culture
programme .doc

e. Awareness workshops



Awareness
programme .doc

f. Displaying Awareness Boards



Awareness
boards.doc

Home gardening

(Preparation of the garden, watering, monitoring and harvesting)



Sea weed Culture Programme

(Preparation of cages and monitoring – removing impurities, checking salinity)



Ornamental fish programme

(Preparation of tanks, seasoning the tanks for stocking and rearing fish)



Ornamental fish programme

(Preparation of tanks, releasing fish to the tank, feeding and monitoring)



**Awareness programme (Three one day programmes were conducted)
(One for school children and teachers and the other two for two different fishing societies)**

Conducting awareness Programme at Kandakuliya school



Conducting awareness Programme for Uchchamunai fisheries society



How Eachchankaduwa fishermen and fisherwomen were participated to the awareness programme



Displaying Awareness Boards

(Three awareness boards were displayed in three different fisheries landing sites)



Board displayed in Kudawa village

