



## The GEF Dugong and Seagrass Conservation Project

### Project Progress Report

Reporting Period                      From:    1st January 2016    To:    31st June 2016

#### 1. PROJECT GENERAL INFORMATION

|  |  |   |              |
|--|--|---|--------------|
| <b>National Project Code &amp; Title:</b>  | LK6 - 2132<br><b>Increasing knowledge on sea grass habitats and dugong distribution at selected sites in North Western Sri Lanka</b>   |   |              |
| <b>Project Partner(s):</b>   | Ocean Resources Conservation Association - ORCA  |   |              |
| <b>Location (country, region/ district and commune/ city/ village/ region etc.)</b>  | Sri Lanka, North western and Northern Provinces, coast and sea areas from Kalpitiya Northward to Jaffna.   |   |              |
| <b>Of which areas under protection (please indicate the name and size of protected areas or locally managed marine areas, if applicable)</b> | Kalpitiya Bar-reef Marine Sanctuary. (307,7km <sup>2</sup> )<br>Adams Bridge Marine National Park<br>Vankalai sanctuary (RAMSAR site)<br>Villpatthu National Park (RAMSAR site)<br>Delft National Park<br>North Western fishery Management area. |   |              |
| <b>Project start date</b>  | 1st June 2015  | <b>Project intended completion date</b> | 31 July 2017 |

## 2. PROJECT PROGRESS

### 2.1. Narrative of project progress during the past semester by Project Activity<sup>1</sup>

\*\*\* Please see annex:1 \*\*\* (end of document)

### 2.2. Project implementation progress<sup>2</sup>

| Outputs & Activities <sup>3</sup>           | Expected completion date | Implementation status as of end of reporting period expressed in % | Describe any problems in delivery and any changes/mitigation action required.  |
|---|--------------------------|--|--|
| <b>Output 1 Purchasing of Equipment</b>     | Dec 2016                 | 90%  | Some funds retained for additional equipment that may become necessary as the field activities progress. Some funds held back as an assessment is underway of how to improve field practices |
| <b>Activity 1:</b>                          |                          |  |  |
| <b>Output 2: surveys</b>                    |                          |  |  |
| <b>Activity 1:</b> training of field staff. | Completed                | 100%   | A training activity was carried out in identification of Sea grasses, Sea grass ecosystem survey and preservation of sea grass specimens carried out by an external trainer.                 |
| <b>Activity 2:</b> Conducting of community  | july 2017                | 50%  | Activity will continue throughout survey to provide  |

<sup>1</sup> Briefly describe progress made during the previous six months highlighting major outcomes/benchmarks achieved during the period.

<sup>2</sup> Information provided in “Quarterly Expenditure Report” should be in line with output/activity progress reported in this table.

<sup>3</sup> Outputs and activities as described in the project proposal or in any updated project revision. Expand table as necessary.

| Outputs & Activities <sup>3</sup>               | Expected completion date | Implementation status as of end of reporting period expressed in % | Describe any problems in delivery and any changes/mitigation action required.   |
|---|--------------------------|--|---|
| interviews based field surveys                  |                          |  | additional recon of sightings and making contacts.  |
| <b>Activity 3</b> : conducting of Field surveys | May 2017                 | 35%  | Need improvements in methodology to have higher chance of detection of Dugongs. The distances of travel to survey sites and the type of Boats available restrict number of surveys that can be carried out per field day. |
|   |                          |  |   |
|   |                          |  |   |
|   |                          |  |   |
|   |                          |  |   |

### 2.3. Risk and risk management

Please describe internal and external risks (examples included in brackets) that could affect successful implementation of project activities and the proposed risk mitigation measures.

| Risk group   | Description   | Risk level (Low/ Medium/ High) | Mitigation measures   |
|--|---|--------------------------------|---|
| <b>Project Management</b> (team capacity, internal communication, co-financing, budget, financial management, reporting, etc.) | Team training needs, need for Tamil translators etc.  | low                            | Changes to program plans and team composition.  |
| <b>Socio-cultural issues</b> (external communications, capacity of and work with stakeholders, cultural aspects)               | The reservations of the local communities in providing information about Dugong encounters due to legal problems if linked with captures restrict gathering location information. | medium                         | Need to spend extra time in the field to let them get familiar with the crews before information becomes forthcoming, efficiency of data gathering reduced. making local contacts |
| <b>Political risks</b> (Political stability in country, political impacts on the project)                                      | Local safety issues. Possible political instabilities.  | medium                         | Political instability and possible racial tensions.   |
| <b>Environmental risks</b> (severe weather events/ disasters,  | Climatic conditions. the unpredictable environmental factor as the year is influenced by  | medium                         | Rescheduling of disrupted activities to when weather stabilizes   |

|  |  |        |  |
|--|--|--------|--|
| natural causes negatively affecting project areas, habitats and species) | El-nino conditions. risk of severe weather events and bad sea conditions. Severe weather could hamper sea bourn operations as well as travelling through some of the land access areas as they are prone to inundation |        |  |
| <b>Equipment and Methodology</b>   | Inadequacy of available technology which hampers efficiency of surveys.  | medium | Possible securing additional equipment to fix problems |

### 3. MONITORING AND EVALUATION

#### 3.1. Please describe activities for monitoring and evaluation carried out during the reporting period.

Examples include: baseline data collection, stakeholder surveys, field surveys, steering committee meetings to assess project progress, peer review of documentation to ensure quality, mid-term review, etc.

Do not include routine project reporting.

- 12 days of field surveys were carried out on 15 coastal locations with personal interviews conducted with over 40+ community members. - Data sets collected
- 24 days of field surveys carried out, survey reports, samples collected and data, photo and video collected.
- Equipment and items secured. invoices, outfitting of equipment for surveys.
- Team training carried out and formulation of survey plan
- Administrative activities including securing of needed permits and clearances. purchasing and construction of equipment
- Communication of data to project partners for use in their activities of planning future management and conservation activities.

#### 4. OTHER INFORMATION

##### 4.1. Meetings<sup>4</sup>

| Meeting type <sup>5</sup>   | Title | Venue  | Dates         | Convened by | Organised by | No. of participants | Report issued Y/N | Language | Dated |
|---|-------|--|---------------|-------------|--------------|---------------------|-------------------|----------|-------|
| The field surveys carried out was in a informal setting on a individual basis at many locations |       | 26 Beaches and coastal locations along the survey area | 20 field days | NA          | NA           | 82                  |                   |          |       |

##### 4.2. List(s) of meeting participants<sup>6</sup>

| No. | Name of participant | Nationality |
|-----|---------------------|-------------|
|     | NA                  |             |

##### 4.3. Documents, other printed materials, videos, and soft products (such as CDs or websites)

| No | Type <sup>7</sup> | Title | Author(s) Editor(s) | Publisher | ISBN | Publication date |
|----|-------------------|-------|---------------------|-----------|------|------------------|
|    | NA                |       |                     |           |      |                  |

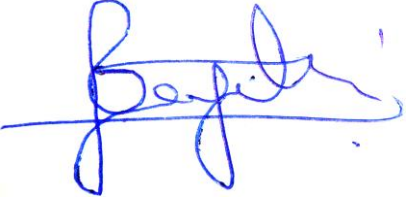

|  |   |
|--|---|
| <b>Name of Project Manager:</b><br>Sajith Subhashana | <b>Name of Project Manager Supervisor:</b><br>Prasanna Weerakkody |
|--|---|

<sup>4</sup> Expand table as necessary

<sup>5</sup> Meeting types: e.g. expert group meeting, project inception workshop, training workshop/seminar, partners consultation workshop, project Steering Committee meeting etc.

<sup>6</sup> Expand table as necessary

<sup>7</sup> Documents and printed material types: e.g. technical publication, meeting report, technical/substantive report, brochures, media releases, etc.

|  |                             |  |                             |
|--|-----------------------------|--|-----------------------------|
| <b>Signature:</b><br> | <b>Date:</b><br>08 Jan 2015 | <b>Signature:</b><br> | <b>Date:</b><br>08 Jan 2015 |
|--|-----------------------------|--|-----------------------------|

## **Annexes**

## **Annex 1: (2.2 Project implementation Progress)**

### **ORCA Report of activity carried out During Period January -June 2016**

With the beginning of the Diving season and completion of securing necessary equipment and security clearances the team had to engage in setting up and streamlining the field procedures for surveys and construction of methods for transport and mounting of equipment on boats etc.

Based on the CMS/UNEP data and the significant data sets collected by ORCA through field community surveys and the analysis of aerial images and past data, a base plan was formulated for identification of priority areas for conducting field surveys. The area south of Mannar was focused on initially as more facilities were available within this area and sea conditions were also better.

A botanist Dr. Samantha Suranjan was engaged to conduct a training to the team in identification and sea grass surveys as the main team experience had been primarily in coral reef surveys. post to the training activities Dr. Suranjan agreed to be part of the program as the value of the opportunity to carry out surveys where no previous data exists was not to be underestimated.

most previous surveys carried out on sea grasses in Sri Lanka have been carried out in the near shore shallow coastal belt only. The present study would conduct surveys far out to sea in areas that are severely data deficient previously.

The national plant repository at the Herbarium in Peradeniya contain very limited number of sea grass specimens and as Dr. Suranjan worked closely with the Herbarium it was decided to deposit the collected specimens at the Peradeniya Herbarium as part of the National collection. up to present about 54+ herbarium specimens of Sea-grass and Algae have been deposited in the National Herbarium Sri Lanka (PDA) as voucher specimens (photo...) under the current project name and ORCA. Another 40+ specimens are under preparation for depositing at the national herbarium representing various surveyed locations.

The overall predicted dugong area south of Mannar Is. is about 1500sq km. and 2500 sq km. North of Mannar Island in extent. most of these areas are un-surveyed. and in scope beyond significant sampling under current project. The team formulated a survey plan on identified high probability areas within the region based on available sighting/ capture records and possible sea grass area.

24 number of field surveys carried out between the area from kudiramale to Illuppaikadavi North of Mannar island during the period January to April 2016. The surveys were carried out on small 19ft FRP dinghies used for fishing by the locals, along the track side scan sonar was used to identify probable areas of sea grass from sandy or rocky substrates and a small grab hook was used to carry out spot check samples for substrates. when a good site was located snorkel or SCUBA survey dives were carried out to collect data. Diver Manta tows were operated in areas of higher probability of Dugong sightings and to assess extensive sea grass fields when



water quality allowed for it. At selected sampling sites general data on bio-diversity and substrate Quadrats samples were carried out. 12 days of community interview surveys were also carried out from Kalpitiya, Serakkuliya, Vanthawilluwa, Gangewadiya, Eluwankulam, Mannar, Vedithalathivu, Illuppankadavi, Veravil to Devils point.

### **Sea grass vegetation**

During the surveys on the sea grass areas the team collected a diversity of 9 species of Sea grasses within the survey area. The species abundance and composition at sites changed significantly based on the distance from shore and depth and on a North-South transition through the survey area.

The East Cheval banks ridge is composed primarily of sea grass beds dominated by *Cymodoce serrulata* with *Syringodium isoetifolium*. Though species important for Dugongs like *Halophila* and *Halodule* were found, their populations were insignificant and spread as an undergrowth within the *Cymodoce* beds.

The area between the East and West Cheval banks dips in to a depression in the sea bed with sandy floors interspersed with sea grass areas that are dominated by *Halophila ovalis*, the area also contains *Syringodium*, *Cymodoce* and small populations of *Halophila decipiens*. In addition the area contains significant populations of the algae *Caulerpa taxifolia* which is identified as an invasive species on sea grass environments in other parts of the world - while no data exists on the status of this species within the sea grass environments in the region it is probably important to monitor this species to see if it is becoming invasive on the sea grasses. The area is important for conservation of Dugongs as it contains high incidence of sea grass species preferred as food plants by Dugong.

The extensive sea grass meadow along the inner edge of the Vankale banks is dominated by *Syringodium* with *Halophila spp.* and *Cymodoce serrulata*.

On the Northern side of the Mannar Island the vast coastal sea grass meadows of Pallimunei and along the shore of Vedithalathivu extending up to Illuppankadavi is dominated by *Enhalus acoroides* and had a high biodiversity with almost all the species recorded within the survey.

Among the sea grass species found in the area, *Halophila stipulacea* (Forssk.) Asch. was a new record to the Sri Lankan floral list. A publication of new site record discovery under preparation.

Two morphological variants of *Halodule uninervis* (Forssk.) Boiss. was found during the survey. Leaves of one variety relatively broad and the other one relatively thin and slender.

### **Species diversity recorded:**

During the survey 9 species were found in various depths from 0.5 m to 14m

- Cymodocea serrulata* (R.Br.) Asch. & Magnus
- Cymodocea rotundata* Asch. & Schweinf.
- Syringodium isoetifolium* (Asch.) Dandy
- Halophila ovalis* (R.Br.) Hook.f.
- Halophila decipiens* Ostenf.
- Halophila stipulacea* (Forssk.) Asch.
- Halodule uninervis* (Forssk.) Boiss.
- Thalassia hemprichii* (Ehrenb. ex Solms) Asch.
- Enhalus acoroides* (L.f.) Royle

### **The Dugong**

The continued program of interviews with local communities had to be built up using local contacts and spending significant time in the area to gain sufficient trust of the locals to provide access to information. there were more success in the area South of Mannar where a larger population of Sinhala fishermen are found. the area North of Mannar and specially towards Jaffna work was getting significantly more difficult as the locals are antagonistic towards outsiders and specially towards the Sinhalese crew and even using Tamil persons to collect info proved less productive than in the south of Mannar area.

Based on the information available on average one dugong is captured and sold for meat per month within the area. There are significant number of young animals being caught or reported which may mean that there is still a good breeding population surviving. All attempts were made to get as good as possible location data for where the animals were taken and a base assessment was made of the high probability areas of dugong occurrences.

Based on the available data it is probable that the core area of Dugongs in the Gulf of Mannar is in the area of the West Cheval Banks and Periya-paar located North of Battalangundu Island and 15-20 km. West of the coast at Mollikulam. A high incidence of Dugong takes are also recorded from the outer area of the Vankale reef. While the area contain some good areas of *Halophila ovalis* sea grass there may be a bias in the popularity of reports here due to the fact there is a high density of fishing activity here ranging from Bottom

set nets, Blast fishing to Trap nets set up 10-12 km off shore over the vankale banks. some records of dugong are found in the area between Battalangundu Island and Kudiramale point at the entrance to the puttalam lagoon.

very few records of Dugong entering the Puttalam lagoon are found mostly among early records. it is highly likely that Dugongs entering the Puttalam lagoon are rare and would rarely move further south than Kalpitiya. The most recent record within the lagoon is a Dugong kill reported near mampuri within the Puttalam lagoon in mid may2016 -This record may be attributable to an Indo-pacific Humpback Dolphin rather than a Dugong. The resident pod of Hump backed dolphins within the lagoon is regularly mistaken for Dugong by less informed individuals. Dugongs that may enter the lagoon would now be considered stragglers and no resident population is believed to be present within the lagoon area.

Most of the Dugong killed are caught as by catch in the Bottom set gill net fishery for Rays (madu-dal). the nets are on average 2km long and stand 10-15 feet high in the water column. this net is considered highly destructive and is reported to kill on average 50 sea turtles per day within the Battalangundu area alone, Some instances of direct hunting was also reported using dynamite. The large trap-nets "Ja-kotu" found in the area close to Mannar from Vankale and on the North side of the Island is also reported to be a fishing gear of significant concern. the difference being that; the individuals caught in these traps are not harmed in the net and stay in the pen till the fishermen arrive. if the animal is killed in this situation it becomes the result of direct hunting and not taking an animal killed as by-catch. With the assistance of the Sri Lanka Navy the team was able to document a killed dugong on the 30th April 2016. The team coordinated to hand over the carcass to the Department of Wildlife Conservation which was consequently taken to DWC Girithale facility for necropsy.

The killed dugongs are taken to specific areas where they are regularly processed including The Battalangundu island, Palugahathurai fishing camp within Wilpattu National Park and South Bar in Mannar.

The trade in Dugong meat is very lucrative. the high demand for Dugong meat make it easy to sell as well as fetching high prices. a Large individual can fetch up-to Rs.600,000 at the point of selling it off on the beach. Apparently most turtles that drown in the nets are thrown away and not butchered as the risk of getting caught does not make it worthwhile. (This is corroborated by the numbers of dead turtle carcasses found adrift at sea or washed up on beaches.) but Dugongs when caught are almost always brought ashore for sale. The greatest threat to Dugongs come from the gill net fishery for Rays and as this is one of the primary fisheries of the area contributing significantly to the local economy it would be difficult to ban the use of it without a significant effort to promote an alternative and less destructive fishery practice. Such efforts in promoting alternative livelihood must focus on the fishermen in the area of Battalangundu Island, and North along the coast from Mollikulam to Mannar Island with prominence given to South Bar area.

The illegal poaching in the area by large Indian trawlers are of serious concern both for sea grass beds as well as the Dugongs. every night it is reported over 1000 large trawlers enter Sri Lankan territorial waters and according to local fishermen sometimes coming almost 3 km. to the coast and deploy their bottom trawls and run back towards Indian waters clearing large tracts of all marine life in the area, This illegal practice must be stopped at all costs as the harm to the marine environment, fishery resources, Sea grass beds and Dugong populations is high.

**Awareness and dissemination of information.**

The project findings were presented to GEF Dugong and Sea-grass Conservation Project partners including identified range of Dugongs and possible hotspots for management and Distribution and status of sea grass areas. the collection of sea grasses deposited at the National Herbarium in Peradeniya is a major contribution to the knowledge of sea grasses in Sri Lanka.