



Guidance for Conducting Ridge to Reef Rapid Assessment of Priority Coastal Areas (RapCA)

*{RapCA Standard Consultancy Template}*

**GUIDANCE FOR CONDUCTING RIDGE TO REEF RAPID
ASSESSMENT OF PRIORITY COASTAL AREA**

***1.0 RIDGE TO REEF (R2R) INTERNATIONAL (IW) PROJECT***

The GEF Pacific R2R IW Project aims to test the mainstreaming of ‘ridge-to-reef’ (R2R), climate resilient approaches to integrate land, water, forest and coastal management in the PICs through strategic planning, capacity building and piloted local actions to sustain livelihoods and preserve ecosystem services.

This regional project provides the primary coordination vehicle for the national R2R STAR and International Water Projects that are part of the Pacific R2R Program, by building on nascent national processes from the previous GEF IWRM project. The R2R Program shall foster sustainability and resilience for each island through reforms in policy, institutions, and coordination; building capacity of local institutions to integrate land, water, and coastal management through on-site demonstrations; establishing evidence-based approaches to integrated coastal management (ICM) planning; improved consolidation of results monitoring, and information and data required to inform cross-sector R2R planning approaches.

The GEF Pacific R2R IW Project also focuses attention on harnessing support of traditional community leadership and governance structures to test the mainstreaming of R2R, and improve the relevance of R2R investments integrating land, water, forest, biodiversity, and coastal resource management, including MPAs, from ‘community to cabinet’.

***Rapid Coastal Assessments (RapCA Surveys):***

The R2R Regional Project Coordination Unit (RPCU) has identified and the RSTC/ RSC[[1]](#footnote-1) agreed on the DPSIR[[2]](#footnote-2) framework that establishes 22-indicators[[3]](#footnote-3) to give a snapshot of the status of the R2R demonstration sites around the Pacific. This is building on what data already exists from the State of the Environment (SOE) Reports and other research carried out in each of the countries. The indicator list comprises Governance, Socio-economic and Environmental parameters. The RapCA process continues to evolve and improve with trials completed in Vanuatu and results considered favourably by the RSTC.

Upon review of the indicator list against the baselines and literature that has been collected and collated, the Project Manager and the RPCU Science team would note that in the SOE Report, as well as other specific monitoring undertaken by the various agencies of government, NGOs or academia have captured much of the information. For example, the coastal fisheries survey may have been completed by the Fisheries Agency or other projects, and data is now available in a survey report.

Similarly, where there are data gaps in water quality and habitat assessments from the ridge to reef profile in an R2R demonstration site, these activities can be included in the RapCA surveys, monitoring the water quality of the river catchment and coastal areas, and looking at biological, chemical and ecological parameters. Other socio-economic type interview surveys (creels or households) can also be carried out for validation generating new primary datasets for the demonstration Site ‘X’.

|  |
| --- |
| **[[4]](#footnote-4)Key Habitat Areas** *(tick habitats covered)* |
| (i) Watershed / Forest Area (lower-upper ridge areas) |
| (ii) Wetlands such as mangroves, seagrass and other Coastal Forest Area |
| (iii) River flora and fauna |
| (iv) Hard bottom substrates such as coral reefs adjacent to the mouth of the water catchment (fish & benthos) |

**RapCA Process**

The preparatory stages of a RapCA will be undertaken concurrently with a diagnostic analysis workshop. The demonstration site will be visited and data available locally will be collated. Meetings should be held with the different agencies that could assist in the RapCA (e.g. Fisheries, Forestry, academic institutions, regional agencies and NGOs/INGOs). Local communities should be consulted and encouraged to participate in the RapCA process.

The meetings need to be organized with personnel of projects with potential synergies with the R2R project. The diagnostic analysis will help identify at least two other priority sites for assessment.

**Role of Project Manager**

The national IW R2R Project Manager should do the following groundwork before the first trip of the RapCA national team.

1. Organise meetings with project stakeholders
2. Collate all data that is available locally or know where it can be sourced
3. Organise a reconnaissance trip to the demonstration Site “X”
4. Identify local experts who could assist

Once the first site trip is completed, the national team in consultation with the RPCU Science team will be able to review the information and decide on the data gaps that exist and the fieldwork required to provide the data. Survey dates need to be confirmed well in advance, a survey team assembled and logistical arrangements for the field survey organized.

***OBJECTIVES OF THIS CONSULTANCY***

The overall goal and objective of the R2R IW Rapid Coastal Assessment (RapCA) consultancy is to conduct fieldwork/ surveys, collect the data, and report on the “biodiversity assessments” and “water quality assessments” across chosen key ecosystems and habitats for demonstration Site ‘X’. The scientific and technical reports, coupled with baseline data, photos and imageries, and lessons learned delivered from this RapCA consultancy are useful deliverables to inform policy discussion and decisions during diagnostic analyses workshops.

***Purpose:***The results of these surveys will provide critical biodiversity information, and improve understanding on the characteristics and current state of key habitats, which will all provide the basis to inform policy discussion and development of management actions and interventions within the demonstration Site ‘X’ Integrated Watershed Management Plan. At the same time, the outputs of this consultancy will fill in the data gaps in the agreed baseline indicators, which will enable the long term monitoring of the R2R project site.

***Specific Results & Activities:***

To achieve the overall objective of the RapCA surveys, the following specific activities may be included as part of the TOR, depending on the decisions taken in identifying data gaps in the demonstration Site ‘X’.

♣ *Surveys of the biodiversity, fauna, flora, and ecology in key habitats chosen completed*The surveys will primarily focus on the biodiversity, fauna, flora, and ecology in the chosen key habitats of the demonstration Site ‘X’. Specific to water catchment demonstration sites, the terrestrial surveys are extended to the avifauna in the upper and higher ridge areas of a water catchment and collect data on flying foxes and reptiles. These biota surveys may serve as indicators of climate-change induced impacts or variations.

Observations and recording of introduced / invasive species and other threats to the conservation of the hot-spot habitat sites such as forests will also be undertaken. The Consultant will coordinate the implementation, including scheduling, contact, liaison and contracting of individual scientists, organization of the field schedule, plot design and logistics at the sites, and compiling the final report.

♣ *Government staffs, local villagers and Village Committee for the Demonstration Site ‘X’ trained on surveying skills and techniques*Training of ministry staffs, local villagers and other interested groups and individuals is an integral part of the R2R IW project strategy. Training will ensure capacity building and there is transfer of knowledge, to enhance understanding and skills on the biodiversity in the catchment area and on key survey techniques and methods. In this regard, the surveying teams will include technical staff of relevant line ministries. Teams will also include selected local villagers who will act as guides and assist with the surveys as part of their capacity building to enable them to understand basic surveying skills. Where possible, university students and researchers and other interested groups and individuals will be invited to participate in the field surveys to learn new knowledge and skills.

♣ *Community involvement and participation strengthened*An integral part of the project will involve local communities; in recognition of the key stewardship role they play in forest and wetlands biodiversity conservation and sustainable use. Because of the land tenure system in most PICs, whereby land is predominantly customary owned, it is important to engage communities to get their support and commitment to the activities of the project in particular to implement the key recommendations that will arise out of the work.

One of the strategies to engage the communities is through communication and raising awareness activities targeting the different community groups in the villages where the project activities will take place. Visual and audio presentations, printed materials and seminars with the different community groups will be carried out to share information and findings from the surveys, including on the impact of climate change on forests, and also to gauge community views on ways to better conserve and sustainably manage biodiversity. In addition to this, local community members will take part in the actual field surveys to learn from the different experts, and for them to also share their knowledge of their biodiversity.

♣ *Protection and conservation management policies, and sustainability options developed for climate resilience*Based on the findings of the field surveys and analyses that will follow, it is expected that a set of recommendations will be produced which will highlight key management and policy options for the project and local communities to consider to protect the forest and mangrove biodiversity of the watershed catchment and adjacent coastal areas and lagoons. In particular, the work will establish the baselines needed to incorporate and monitor impacts on the forest and mangrove biodiversity.

All raw unprocessed data shall be entered into a pre-prepared database or Excel spreadsheet that would store the datasets for processing at later stage. All photos and related imageries shall be also stored away safely in files, and/or electronic storage folders.

***METHODOLOGY***

Recognising there may be data gaps pertaining to the agreed list of 22 governance, socio-economic and environmental indicators for State of the Coasts Report and Rapid Coastal Assessment, RapCA is aimed at collecting this missing data. The data gap is commonly do with the lack of environmental indicators in any given R2R demonstration site. The Consultant and RapCA team will consider the following methods previously employed in the conduct of RapCA, in planning work and developing implementation plans under this assignment.

Terrestrial Survey (Indicator E1 Diversity)

SPREP has carried out terrestrial surveys for most PICs using the BIORAP methodology. Generally, the plot sites are randomly selected and thus randomly located in the upper water catchment areas based on vegetation spot sighting and guided by an area map, if available. An agreed number of 500 or 1000 square metre plots can be determined and assessed over several days. Several plots can be assessed in the upper reaches and several other plots in the lower reaches of the catchments that share a common boundary. Specific protection zones and areas dominated by invasive plans can also considered in deciding location of plots to be assessed.

The relative frequency of the main invasive weedy plants can be determined. Invasive species can be assessed within a 10 x 10 meter quadrat, along a 100m transect. With the use of a hand-held GPS, coordinates are recorded for quadrats sampled and an information sheet used to assist with the identification of species.

Different tasks are normally arranged and shared between the Herbarium Officers who conducted botanical survey. One is the recorder and GPS reader, the second person measures the tree diameter at breast height (DBH), and, the third person clears tree stems from climbers (vines and
lianas) for the diameter measurement and records the tree height measurement estimation. The
team leader is responsible for tree species identification, general observation, assessment of
the status of different plant species and compiling the plant checklist.

In each plot a tape 50m or 100m long is extended and all trees within 5m either side of the transect
are identified. Diameter at Breast Height (DBH) measurements are taken for all trees ranging from 10cm DBH and above using a diameter tape. Tree heights are estimated through consensus of the Herbarium Officers or team members. The four corners of each plot are marked and pegged with four sticks and clearly tagged with red and yellow plastics for visibility.

The plot locations are marked and recorded with a Garmin GPS MAP 78 model, or similar units. Each tree is identified taxonomically and recorded in the field form together with its diameter and
height. A combined Plant Checklist is compiled that include all other plants observed within
the watershed area. Important commercial trees, those used for special purposes, endemic and
invasive plants within the area are noted.

Terrestrial Survey – Habitat Health & Revegetation (Indicator E3 Habitat Quality)

General habitat attributes that are important factors influencing habitat health and revegetation will be recorded. This includes plant species diversity, extent of tree cover, degree of shrub development, availability of old trees and associated nesting hollows, tree regeneration, amount of course woody debris (ground cover) and, proximity to water or riparian zone vegetation.

There are several methods and toolkits available in the literature which can be used and referenced during survey work. The monitoring revegetation projects in Rainforest Landscapes Toolkit by Kanowski et al. (2010) is recommended. The follow attribute and methods can be used.

|  |  |
| --- | --- |
| **Parameter** | **Methodology** |
| Ground cover | Line intercept method (transect & quadrat) |
| Canopy height | Clinometer or stick method |
| Canopy cover | Vertical photo imaging |
| Special life forms | Observation |
| Woody debris | Line intercept method |
| General comments | Observation |
| Seedlings | Line intercept method (transect & quadrat) |
| Trees & shrubs | As above |
| Stags | As above |
| Other life forms | Observation |

Coastal & Fisheries Habitat Health Surveys - Indicator E3 Habitat Quality

The following table presents candidate indicators that could be used to assess the coastal health. It is suggested that indicators be chosen that are already being measured in other aspects of the GEF Pacific R2R Programme to utilise the equipment, expertise and time involved in monitoring. Where possible project teams are encouraged to draw on the coastal fisheries programme of SPC in the design and conduct of monitoring surveys (available online).

|  |  |  |
| --- | --- | --- |
| **Indicator** | **Parameter** | **Methodology** |
| Proportional cover of key benthic groups | Coral cover | Line Intercept Transect (LIT), Point Intercept Transect (PIT) |
|  | Algal cover | LIT |
| Fish diversity | Number of different species | UVC, Point Counts |
| Fish biomass | Abundance and length data by species | Belt transect |
| Juvenile coral abundance | Abundance of coral recruits in predefined area | Quadrats along a defined transect |
| Health of target species | Abundance of juveniles in fishery refugia areas | Line intercept and observation. Creel survey |
| Frequency of harvest/ fishing  | Fishing effort | Interviews, Direct Observations, Log books |

Reef Survey (Invertebrate counts, sediment type and substrate cover) - Indicator E3 Habitat Quality

Reef survey involves SCUBA diving and the assessment of x-number of transects in the reefal area or hard bottom substrates. The transects are 50m in length and two divers simultaneously covering a 2m- wide corridor either side of the tape (total sample area of 200m2).

For each of the ‘x’ transects sampled for invertebrates, sediment type and substratum coverage are estimated using a photographic method developed by French Institute Research & Development, IRD (Noumea) to quickly and quantitatively describe contrasting reef habitats (Dumas et al. 2009)[[5]](#footnote-5).

Pictures are taken from the surface along transects using a standard digital 10 Megapixel Canon S110 camera in underwater housing, or similar, oriented perpendicular to the substratum; 25 pictures are taken per transect (i.e. one shot every two metres) and subsequently imported into image analysis software including efficient, user-friendly features for the estimation of sediment / substratum cover (CPCe “Coral Point Count with Excel extensions” software, Kohler & Gill 2006).

Surface estimates are expressed in percent cover, derived from a random stratified point count technique using nine points.m-2 ratio ensuring reliable habitat profiles with low bias and high precision. An agreed number of local habitat variables are considered, related to sediment type and substratum coverage by large, sessile organisms. Percentage cover is then aggregated at the transect level. The invertebrates targeted by local fishers are counted along each transect.

Fish counts - Indicator E3 Habitat Quality

The fish counts are done in accordance to a sampling design which aim to maximise the information collected from replicates (factors may include site away from point source and depths at each site). Where possible project teams are encouraged to draw on the coastal fisheries programme of SPC in the design and conduct of monitoring surveys (available online). Two divers who count all fish 2m either side of the tape commonly carry out the fish counts.

River Survey (Macro invertebrates Sample Collection) - Indicator E3 Habitat Quality

A single sample is collected from each site using a hand-net (mesh 0.5 mm). A hand net is used in two ways to collect the macro-invertebrates. Five stones are randomly collected from the water and washed inside the hand net detaching loosely attached organisms.

The second way in which it is used was by placing it in the ripples downstream of the water flow after disturbing the habitat to dislodge the invertebrates. Sampling of macro invertebrates is also conducted on aquatic plants on the edges of streams.

A visual survey is conducted on the edge of a slow flowing stream for taxa such as snails and
damselflies that prefer such habitats.

Other Aquatic Fauna Survey - Indicator E3 Habitat Quality

A 200 m transect line is used as a guide to document other aquatic life such as algae, aquatic
plants, snails, crustaceans, macro invertebrates and fishes. Snorkel and underwater visual observations a meter on either side of the transect, are used to document the aquatic fauna and flora. Some of the aquatic fauna are photographed *in situ* and collected for identification.

Terrestrial Fauna Survey
A visual survey method is used to record frogs, skinks, snakes, butterflies, birds, and
dragonflies by extending a 200m transect and recording taxa 1m on either side of the transect.
Another opportunistic survey method can be employed whilst walking from the village to the study
site and back. Any taxa observed a metre either side of the track are recorded. Birds are
documented based on actual sighting and on recognized bird calls.

Spotlighting is undertaken during nocturnal surveys using LED flashlights from 6:00pm to
8:00pm to look for frogs, skinks, geckos, and snakes along a 200m transect beside rivers or
streams. Frog calls and bird calls are also used to document those that are not sighted. Bats are documented at dusk when they started flying around.

Those specimens that cannot be identified in the field are collected, sorted and identified at
the accommodation using the following guides: Alison 2001 (snails), Gooderham and Tsyrlin
2002 (macro invertebrates), Polhemus et al., 2008 (Freshwater biota), Keith et al., 2010
(Freshwater Fauna), Boseto, 2011 (Freshwater biota), Dutson 2011 (Birds), Marinow and
Pikacha, 2013 (Dragronfly), and Pikacha, 2018 (Terrestrial Fauna).

Indicator E6 Water Quality
Water quality assessments use a wide range of peer reviewed and published methods. In this project, there is a choice of project countries using current practice undertaking water quality assessments or tender the work out to external parties and Consultants. Generally, where there are competent agencies and skilled personnel to do this in-country, the project could partner with them to carry water quality assessments and establish baselines and, for future monitoring of water quality in the demonstration site.

Where required, the RPCU helps project countries with the procurement of water quality assessment equipment. The RPCU science team also assists in conduct training for project staffs and others in the host agency plus other interested stakeholders in undertaking water quality assessment and developing monitoring plans. If requested, training normally covers the use and general care of the equipment and development of a monitoring plan.

For future water quality assessments, a sampling design is developed and agreed for ongoing use and monitoring. The team will visit all the sites and take physical measurements *in situ* using a hand-held multi parameter probe. Water samples are measured for total coliform count and toxicity assay.

For some project countries, the Deltatox II system is an assay used that employs a dried bacterium *Vibrio fischeri* that is reconstituted by adding to test samples and a diluent control at time t0. The samples are incubated for 15 minutes and the luminescence measured at time t1.

The difference in luminescence emitted by the reconstituted bacterium in the test and control
samples is expressed as a percentage change with the control at 100%. If the samples are
toxic, the percentage change will be a negative value ([[6]](#footnote-6)Devlin et al., 2018). Using a mobile
microbiology lab, the team assessed water samples to measure Total Coliform counts.

A list of water quality parameters and their methods is provided below. This list is not exhaustive and can be added to with relevant parameters. There are alternate methods for measuring these parameters including water quality field kits. This can be discussed within the national teams and with the RPCU.

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Field or lab analysis** | **Methodology** |
| Dissolved Oxygen (DO) | Field | YSI Pro DSS |
| Conductivity | Field | YSI Pro DSS |
| pH | Field | YSI Pro DSS |
| Biological Oxygen Demand (BOD) | Lab | YSI Pro DSS |
| Salinity | Field | YSI Pro DSS |
| Turbidity | Field | YSI Pro DSS |
| Temperature | Field | YSI Pro DSS |
| Chlorophyll | Field | YSI Pro DSS |
| Blue green algae | Field | YSI Pro DSS |
| Phosphate | Field | YSI 3000 Photometer |
| Nitrate | Field | YSI 3000 Photometer |
| Coliform | Lab | EC Compact Plate |
| Benthic Macro-invertebrates | Field and/ or lab | Observation |

Indicator SE4 Exploitation of living resources

A questionnaire is designed with questions related to habitat and fishing ground, methods of harvesting, consumption patterns and targeted fish species and economic value. The team should consult the fisheries agency staffs for guidance in determining suitable locations for the survey.

A team of enumerators is assembled who carry out the household interviews and surveys in specified locations.

Catchment Protection Measures

The following table presents some options for indicators that could be used to assess ‘improved’ management. It is suggested that one or two of the following be chosen and used across all countries for comparability. It is also suggested that indicators chosen are the ones already used and measured in other aspects of the GEF Pacific R2R Programme so as to utilise the equipment, expertise and time involved in monitoring.

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Field or lab Analysis** | **Sampling method** |
| ***Catchment Condition*** |  |  |
| Native vegetation extent | Field | Line intercept & Observation |
| Native vegetation quality | Field  | As above |
| Stream flow | Field | Flow meter |
| ***Catchment Management*** |  |  |
| Voluntary management activities by stakeholders and/or landowners | n/a | Attendance at trainings; site visits |
| On-ground operational works by the catchment authority | Na/a | Activity tracking and reports |
| Community engagement activities | n/a | Activity tracking and reports |
| Planning controls implemented  | n/a | Planning and implementation documents |
| Data collection and control | n/a | Number of continual and complete metadata sets |

**APPROACH**

***Method and approach discussions and finalisation***The Consultant will gather background information of previous research and surveys conducted in the country’s ecosystems. The Consultant should be willing to work with the technical government staffs and others who are often involved with similar surveys.

***Participatory Consultation on Community’s Biodiversity***The first step is the Participatory Consultations which seeks a general approach to request permission from communities living in the demonstration site. This will involve consultations with the local community on their natural resources and can utilise the P3D Model or any other visual maps or models if available. This information will be used to inform the next step of the Ecological Survey.

The government ministry responsible will lead this first step as part of its consultation process for the implementation of the next phase of the Baseline Ecological Surveys and RapCA generally.

***The Baseline Ecological Surveys***The Ecological Surveys will follow methodologies outline above or that have been used in the past in the site or in the country covering several ecosystems and habitats. For instance, there may have been terrestrial surveys, water quality surveys, marine and habitat surveys carried out in the past to better map out the ecological characteristics of certain sites and areas. There may be minor adjustments to the survey methods as sampling design dictates given the characteristics of certain areas. For instance, certain areas are difficult to access (too steep, substrate too soft, etc.) and therefore unable to provide the required sample sizes of replicates.

Moreover, adaptation may also be required in the estimation of size of plots or zones, and the types of measurements necessary to incorporate the climate-change factors and monitoring protocols, together with GIS mapping and analysis of all relevant climate data with the ecosystems baseline species. This will include a range of measurements to assess canopy cover, tree density, and other types to estimate the carbon offset value of various types of forest ecosystems.

***Returning the ecological survey results to the local communities***The third step of the process involves returning the ecological survey results to the local communities and stakeholders to inform their decision making in line with their respective services and potential projects/ programs. The government ministry responsible for R2R will present the results, data, graphs, maps and photographs of the survey to the community upon completion of the Final Report.

***SCOPE***

The main tasks to be undertaken for the successful delivery of the Baseline Ecological Surveys[[7]](#footnote-7) are as follows:

1. Based on methods outline above, develop and select survey methods for this assignment and a time schedule of works and deliverables for the overall study, in liaison with the national R2R Project Manager and survey teams. This shall include an implementation plan, comprising site area cover, survey methodology for each site, logistics and engagement/consultations with local communities.
2. Conduct the field surveys and baseline data collection at the sites, and their surrounding areas for assessing the biodiversity of the coastal mangroves and forest; this includes any other key habitats identified in earlier sections. Among key tasks related to the surveys, these should include, but not be limited to: -
* Collect possible new plants/weeds for identification and analysis;
* Site and record status of other forestry resource species such as birds reptiles,
flying fox etc., where necessary and provide result analysis;
* Assess and report separately on rare and endangered endemic species on the
coastal mangrove areas;
* Report on the presence of and impacts of human activities in the sites surveyed;
* Identify invasive plants/weeds and report on its impacts as well as identify
possible options for prevention, control and eradication;
* Identify areas of conservation/rehabilitation priority within the study area; and
* Types of conservation/rehabilitation methods to be used in different areas of the
watershed.
1. Data cleaning and input to pre-prepared database.
2. Analyses and reporting:-
* Perform an analysis on the Relative Erosion Potential (REP) of the Watershed Area, utilizing the Universal Soil Loss Equation (USLE) and other spatial techniques.
* Provide a detailed technical and scientific report with results and findings, including conclusions and recommendations on:
	+ the baseline for healthy ecosystems in the various types of vegetation in the forests of the catchment;
	+ management and rehabilitation of the coastal mangrove areas of the catchment area;
	+ key biota indicators that could be used for monitoring changes in forest and mangrove ecosystem of the Catchment;
	+ Current state of flora and fauna in the river ecosystem; and
	+ Health of benthic and fish communities in coastal areas away from the mouth of the river.
1. Stakeholder consultation (report back to communities):
* Assist the R2R project team in the sharing of the survey results with the local
stakeholders and village communities by providing visual material and simplified text of
results and findings for presentations.
* Provide specialized trainings and capacity building sessions for relevant government and project staff on methods to be used for the different specialist biota surveys and identification of species within the ridge to reef ecosystems of the demonstration site, including specific key habitats, as well as on the REP analysis and the use of spatial/USLE tools.

If not already established, the RapCA results must also include water quality assessments, and socio-economic surveys.

***NATIONAL TEAM COMPOSITION***

|  |  |
| --- | --- |
| Local Consultant & Team Leader GIS Specialist  | National Consultant |
| Biodiversity Specialists | National team (govt & local specialists) |
| Wetlands Audit and Coastal/ Marine Survey Specialists | National Team (govt & local specialists) |
| Watershed Management and Water Resources Team Leader | R2R Project Manager |
| Traditional Knowledge & Cultural Experts | National Team (local communities, PSC/Board members |

***PROPOSED DATES/SCHEDULE FOR ACTIVITIES***

|  |  |
| --- | --- |
| **Dates *(tbc)*** | **Activity** |
| …… | Mobilise team, go through TORs, develop and agree on field implementation plan and timelines |
| …… | Information review and compilation and spatial modelling; training national team on methods employed |
| …… | Prepare materials for visit to demonstration site – seeking permission from communities to work there |
| …… | RapCA work commences |
| …… | Data processing and management – enter into dbases and store photos and imageries in electronic folders |
| …… | Draft Scientific Reports and circulate for review |
| …… | Final Technical and Scientific Report & Consultancy Report[[8]](#footnote-8)  |
| …… | Visit to demonstration site to present key findings |
| …… | Final report on Lessons Learned |
| …… | Report Appraisal Form for Consultants (to be filled by RPCU)[[9]](#footnote-9) |

***EXPECTED OUTCOMES AND DELIVERABLES***

The main deliverables required for the satisfactory completion of the Baseline Ecological Surveys from the Consultant are as follows:-

1. A detailed field **implementation plan** for the baseline survey including scientific team, methodology and timeframe, mapping of transects/plots, and a preliminary final report content and template;
2. **Field survey notes** from the Team Leader at the completion of the field surveys;
3. Draft **scientific reports** on results and findings for each biota/taxa surveyed, together with
preliminary analysis of results and findings;
4. Material, including **maps, photos and presentation slides** provided to the assignment team for final consultations with local communities;
5. **Final technical and scientific report** fully edited by the Team Leader and reviewed by the assignment team addressing all the tasks of the surveys; and
6. A **final report on lessons learned** from the Baseline Ecological Surveys

***INSTITUTIONAL ARRANGEMENT***

The Consultant will work closely and be under the supervision of the national R2R Project Manager and the Head of the R2R IW host Government Agency. The host agency will make available working space for the Consultant under this assignment.

***DURATION OF THE WORK:***

The total number of days of the consultancy is expected to be 30 working days.

***COMPETENCIES:-***

**Corporate Competencies:**• Demonstrates commitment to the Government’s mission, vision and values.
• Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability.

**Functional Competencies:***Knowledge Management and Learning*• Shares knowledge and experience.
• Actively works towards continuing personal learning, acts on learning plan and applies newly acquired skills.

*Development and Operational Effectiveness*• Ability to perform a variety of specialized tasks related to administrative supports, including project data management support, reporting, and logistics for project implementation.
• Ability to provide input to business processes re-engineering, implementation of new system, including new IT based systems.

*Leadership and Self-Management*• Focuses on result for the client and responds positively to feedback.
• Consistently approaches work with energy and a positive, constructive attitude.
• Remains calm, in control and good humoured even under pressure.
• Demonstrates openness to change and ability to manage complexities.
• Good inter-personal and teamwork skills, networking aptitude, ability to work in multicultural environment.

***QUALIFICATIONS:***

The local Consultant shall:

1. Have demonstrated experience and skills in conducting and reporting on Ecological, Biodiversity and Socio-Economic surveys in one or more Pacific Island Countries (PICs), including the coordination and contracting of international and local scientists for the implementation of both field surveys and the drafting of scientific reports on results and findings.
2. Have extensive record of relevant publications and experience in natural resource ecology and management; and with relevant applied experiences in field research on ecosystems and/or biodiversity resources, governance and socio-economic aspects, an applied knowledge on natural resource conservation work and should have good exposure to participatory aspects of adaptive and protected areas management.
3. Have natural resource modelling skills, GIS mapping or equivalent capabilities.
4. Have proven coordination and management skills in team-work and good professional
contacts with international biodiversity conservation resource persons/institutes.
5. Have the ability to train communities, students, researchers, interested persons and conservationists in the field of ecosystem based management, biodiversity use and management. (i.e. flora and fauna species identification and appropriate ways to protect endangered species);
6. Be able to work effectively in multi-cultural situations and show sensitivity to local cultural values.

***DELIVERABLES:***

|  |  |  |
| --- | --- | --- |
| **DELIVERABLES**  | **DUE DATE & WEIGHTING (%)** | **AMOUNT TO BE PAID BY R2R RPCU (USD)** |
| 1. A detailed field implementation plan for the baseline survey including scientific team, methodology and timeframe, training delivery mapping of transects/ plots, together with a preliminary final report content and template. | Upon signing of contract (30%) |  |
| 2. Draft scientific reports on results and findings for each biota/ taxa surveyed, together with preliminary analysis of results and findings including well documented field survey diary and notes for each of the key biodiversity area sites; | 2 weeks following completion of surveys (30%) |  |
| 3. A Final Scientific report and the report on lessons learnt from the Baseline Ecological Surveys | 6 weeks from signing ofcontract (40%) |  |
| TOTAL (30 working days)  |  |  |

***IF REQUIRED,* ADDITIONAL IMPORTANT CLAUSES TO THE TERMS OF REFERENCE ABOVE**

***Item B - Required Contract Material***The Consultant shall provide to the ***(tbc)*** the following materials if not already stated in
the Terms of Reference above:

***Item C - Time Frame***This Contract commenced on the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (“the Commencement
Date”) and must be completed no later than **60 days** from the date of execution (“the
Completion Date”) or as otherwise agreed in writing between the Parties.

|  |  |
| --- | --- |
| **OUTPUTS/ DELIVERABLES**  | **Due Dates** |
| Draft Report on biota/ taxa surveyed inclusive of analysis offindings and field survey diary for each of the key biodiversity area sites; | 2 weeks after completionof surveys |
| Final Report including lessons learned from Baseline Ecological Surveys and the application of RapCA generally. | 6 weeks after contractsigning |

***Item D - Payment of Consultancy Fee***This Contract may be subject to taxation in Country ‘X’. The Consultant is responsible for checking with the appropriate authority as to requirements. The ***(tbc)*** may reserve the right to exclude the value of the tax (s) charged by the Consultant on the Consultancy Fee from any payments made
under this Contract and pay these direct to the appropriate authority ***(tbc)***.

*D1.1 Consultancy Fee*

|  |
| --- |
| **Consultancy Fee USD $........** |
| Consultancy Fee |
| **Total Consultancy Fee** (*inclusive of tax)*  | **USD $.........** |

The maximum amount of the Consultancy Fee shall not exceed **USD $...........,** *inclusive* of tax.

*D1.2 Payments
D1.2.1* The Consultancy Fee shall be paid in accordance with the following Milestone Table:

|  |  |  |
| --- | --- | --- |
| ***Milestone***  | ***Outcomes and Due Dates***  | ***PaymentConditions*** |
| A detailed field implementation plan for the baseline survey including scientific team, methodology and timeframe, training delivery mapping of transects /plots, together with a preliminary final report content and template. | Upon signing of contract  | 30% |
| **Draft scientific reports** on results and findings for each biota/taxa surveyed, together with preliminary analysis of results and findings including welldocumented field survey diary and notes for each of the key biodiversity area sites; | Draft Report; (2 weeks after completion ofsurveys) | 30% |
| A **Final Scientific report** and the **report on lessons learned** from the Baseline Ecological Surveys and the application of the RapCA methodology generally | Final Report; (6 weeks from signing of contract) | 40% |

*D1.2.2* An invoice is correctly rendered if:

|  |  |
| --- | --- |
| (a)  | the amount claimed and specified in the invoice is correctly calculated in accordance with this Contract; |
| (b)  | it correctly identifies the Consultancy Services provided and for which payment is claimed; |
| (c)  | it includes sufficient detail to allow the ***(tbc)*** to assess progress against themilestones set out in ***Items C and D of the Schedule***; and  |
| (d)  | it is correctly addressed to the ***(tbc)***. |

*D1.2.3* The ***(tbc)*** will notify the Consultant within seven (7) days after the receipt of an invoice found not to be correctly rendered.

*D1.2.4* If an invoice is found, after the ***(tbc)*** has paid the invoiced amount to the Consultant, not to have been correctly rendered, the Principal will, as the case requires:

|  |  |
| --- | --- |
| (a)  | pay any amount owed to the Consultant within the timeframe noted in Item 4.3 of Schedule 2 of receipt of a correctly rendered invoice; or |
| (b)  | deduct any amount owed to the Principal from the next invoiced payment or, if no other payment is due to the Consultant pursuant to this Contract, recover the amount from the Consultant as a debt due to the Principal. |

*D1.2.*5 Payment must to be made to the following bank account as nominated by the
Consultant:

|  |  |  |
| --- | --- | --- |
| Account Name  | -  |  |
| Bank Name  | -  |  |
| Branch  | -  |  |
| Account Number  | -  |  |
| Bank Address  | -  |  |

***ITEM E. Delegate***

The Delegate has responsibility under the Contract for general liaison with the Consultant,
supervising the Consultant’s performance, approving payment of the Consultant's costs (if
applicable), and accepting and issuing any written notification under this Contract. The
Principal reserves the right to cancel or modify, within the terms and conditions of this
Contract, any approach or activity of the Consultant in relation to this consultancy that the
Principal requires to ensure that such approach or activity is in line with the objectives of the
Contract.

The Principle is also required to seek endorsement from the RPCU on the delivery of milestone outputs before approving payments of the invoice. The RPCU reserves the right to review and comment on the technical reports to ensure such submissions satisfy the requirements of the consultancy outputs and deliverables.

|  |  |
| --- | --- |
| The Delegate is:  |  |
| Position and Address is (Head of the R2R IW Government Host Agency):  |  |

***ITEM F. Use of Contract Material***The Consultant shall ensure that New Contract Material used, including title to and ownership of intellectual property, shall vest upon its creation in the Principal. On the completion or earlier termination of this Contract, the Consultant shall deliver to the Principal all Contract Material. The Consultant shall ensure that the Contract Material is used, copied, supplied or reproduced only for the purposes of this Contract.

***ITEM G. Existing Material***

The Consultant shall inform the Principal of any pre-existing Contract Material for which
intellectual property is ***not*** to vest in the Principal. This would arise typically in relation to
Material owned by the Consultant, although it may also arise in relation to Material owned by
a third party. The Consultant must grant or procure the grant to the Principal of a licence to
use the Material in accordance with Clause 8.

***ITEM H. Principal’s Address for Notices***The Principal’s Address for Notices is:

***ITEM I. Consultant’s Address for Notices***The Consultant’s Address for Notice is:

**For Specific Conditions of the Contract:**

|  |  |
| --- | --- |
| **Clause**  | **Information Required** |
| **Currency** | US Dollars |
| **Payment of ConsultancyFee**  |

|  |  |  |
| --- | --- | --- |
| **DELIVERABLES**  | **DUE DATE& WEIGHTING (%)** | **AMOUNT TO BEPAID BY R2R (USD)** |
| 1. A detailed field implementation plan for the baseline surveyincluding scientific team, methodology and timeframe, training delivery mapping oftransects/plots, together with a preliminary final report content and template. | Upon signing of contract (30%) |  |
| 2. Draft scientific reports on results and findings for each biota/taxa surveyed, together with preliminary analysis of results and findings including well documented field survey diary and notesfor each of the four KBA sites; | 2 weeks followingcompletion of surveys (30%) |  |
| 3. A Final Scientific report and the report on lessons learnt from the Baseline Ecological Surveys | 6 weeks from signing of contract (40%) |  |
| TOTAL (30 working days) |  |  |

 |
| **Dispute Resolution** | 7 days |
| **Termination byConsultant**  | 14 days |
| **Termination for Default** | 7 days |
| **Force Majeure** | 14 days |
| **Applicable Law** | The laws of Country ‘X’ |
| **Notices**  | 3 days |
| **Skills Transfer** | R2R IW Government Host Agency |

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The following annexes shall form part of the TOR in which the Consultant is expected to understand and comply with in the duration of the consultancy.

**Annex 1: Consultancy Report Template**

*The Consultant must fill in this report template in submitting the final draft report.*

**Annex 2: List of governance, socio-economic & environmental indicators for Ridge to Reef – State of the Coast Report**

*The consultant is expected to read and understand the list of indicators recognising the parameters needed data on from the surveys, which is not currently available.*

**Annex 3: Report Appraisal Form for Consultants**

*The RPCU shall review the Consultant’s final draft report or final report with clear recommendations and instructions. On the one hand, the appraisal may suggest more work on the draft report highlighting specific sections to work on, and in doing so holding off payments till revised version of the report is submitted and meets the expectations. On the other hand, the appraisal may find the the number and quality of all deliverables meet the requirements of the contract and therefore recommend to proceed with final payments.*

1. Regional Science and Technical Committee (RSTC); Regional Science Committee (RSC) [↑](#footnote-ref-1)
2. Drivers, Pressures, Strength, Impact and Response model of intervention – is a causal framework for describing the interactions between society and the environment: human impact on the environment and vice versa because of the interdependence of the components. [↑](#footnote-ref-2)
3. List of governance, socio-economic & environmental indicators for Ridge to Reef – State of the Coast report is appended to this document. The list was the result of experts’ discussion selecting the important indicators and the rationale for their selection – i.e., core or minimum datasets that will sufficiently describe the location, size, special features, management issues and ecological characteristics of the sites. The assessment of these indicators at any one demonstration site will be largely dependent on: - datasets available locally; scope of the exercise; expertise available in country; and costs involved. [↑](#footnote-ref-3)
4. Not all project countries are interested in all the habitats especially those demonstration sites that have no water catchments. The surveys would be focusing only on coastal areas and wetlands (e.g. mangroves, seagrass & coral reefs). Where there are water catchments, then additional habitats may be covered, if there are data gaps on river ecosystem, upper/higher ridge terrestrial forests and other biodiversity. Therefore, RapCA should only focus on habitats and ecosystems where there is current data gap. [↑](#footnote-ref-4)
5. Dumas, P., Bertaud, A., Peignon, C., Leopold M. and Pelletier D. (2009). A "quick and clean" photographic method for the description of coral reef habitats. Journal of Experimental Marine Biology and Ecology 368(2): 161-168. [↑](#footnote-ref-5)
6. Devlin, M., Bacon, J., Haverson, D., Graham, J., Smith, A., Bremner, J., Petus, C., Twonhill, B., Howes, E., Dieter, T., Lincoln, S., Vannoni, M, Benson, L. 2018. Pacific water Quality and Resilience Framework – year 2 report. Cefas, UK. 94p. [↑](#footnote-ref-6)
7. Depending on current state of data gaps in a demonstration site, a decision can be made whether to extend RapCA to water quality assessments and socio-economic surveys (incl. ecosystem goods and services valuation). Noting that all these assessments, other than that of ecological surveys, can be carried out as standalone consultancies. [↑](#footnote-ref-7)
8. The Consultant is required to fill the consultancy report template in addition to the final technical and scientific report – template appended to the TOR [↑](#footnote-ref-8)
9. The Consultant deliverables as final report is reviewed by the RPCU and the Appraisal Form for Consultants is filled by the RPCU and send to the Consultant through the Project Manager – template appended to the TOR [↑](#footnote-ref-9)