



GEF R2R/ RSTC/TC 7/IP.8

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IW R2R National Demonstrations Stress Reduction Targets – An update

Summary:

The paper provides verification and assessment of the achievements of the update end of project stress reduction targets. The paper also provides details on the National IW Project countries and the final implementation of specific activities towards achieving their stress reduction targets in five key areas namely:

- i) Municipal Waste Pollution Reduction
- ii) Aquifer Pollution Reduction
- iii) Habitat Restoration
- iv) Catchment Protection
- v) Conserved/Protected Fish Refugia

The original targets highlighted as per the GEF IW R2R Project Document (2015) has since changed to suit national priorities, sites, personnel and opportunities. This paper provides details on how the national demonstrations achieve the above-mentioned stress reduction measures.

The meeting is invited to note the paper.

IW R2R National Demonstrations

Purpose & Intent

1. Component 1 of the GEF Regional International Waters Ridge to Reef Projects, National IW Projects will be contributing to benefits of stress reduction measures. The original anticipated benefits as a result of the implementation of the identified pilot activities include municipal waste pollution reduction of 5,775 kg N/yr (6 sites); aquifer pollution reduced by 23 kg N/ha/yr (2 sites); 6,838ha of restored habitat (4 sites; 290ha of conserved/protected wetland (2 sites) and 25,860ha of catchment under improved management (7 sites).
2. Over the years to suit national priorities, sites, change in personnel and opportunities, changes were made to the above-mentioned figures to deliver realistically on the [stress reduction targets](#) (also see Attachment 1). This paper presents the latest documented progress of the IW R2R national demonstrations, in the process of achieving their stress reduction targets.
3. This paper provides the 'actual' and verified end of project national demonstrations' stress reduction targets, and the brief explanations on how such targets were achieved by the project.

Rationale

4. The GEF Pacific Ridge to Reef (R2R) Program Initiative is working with project countries in the Pacific region to test and mainstream innovative solutions, integrated and climate resilient approaches to land, water, forest, biodiversity, and coastal resource management. Establishing baselines is important to understand the condition prior to implementation and the attributable intervention of the project is a key step in the monitoring and evaluation process. This supports good governance, accountability, adaptive management and generate knowledge to support future evidence-based decisions.

Scope

5. The implementation to achieve stress reduction targets differs for each of the project countries. It is important to understand the context of each country and the unique setbacks that each have faced in the implementation period of the project.

Status of IW R2R National Demonstrations

6. Below are the brief updates of the current status of IW R2R national demonstrations, with particular focus on working towards meeting stress reduction targets.

Table 1: IW R2R national demonstrations end of project stress reduction targets (as of Q4 2021).

Fiji
<p>Fiji's environmental stress reduction is 500ha protected and managed areas of watershed catchment.</p> <p>The Fiji IW R2R project plans to prepare the Waimanu integrated catchment plan and a 'guide' to preparing ICM plans and supported by several technical studies on the terrestrial and freshwater flora and fauna, human impacts, use and valuation of ecosystem goods and services, and other traditional-ecological knowledge data and baselines collection.</p> <p>Because of COVID-19, it was not possible to undertake proper and rigorous scientific field work and prepare analysis to understand better biodiversity and activities occurring in the Waimanu catchment. The local procurement process has taken over 4 months to recruit local consultants to do the work. These delays of hiring local consultants have greatly impacted timely implementation of consultancies and therefore further impacting on delivering on results and reports.</p> <p><u>Update:</u> After several internal discussion and negotiations, the DoE offered the tenders to Conservation International, and contracts finally signed on July 2021.</p> <p>Consultancy by Conservation International have provided a draft Rapid Resource Assessment report after extensive desktop study as well as a Site Diagnostic Analysis report. A Management Plan has been published. Upon its approval for implementation, the Waimanu integrated management plan measures would protect an area larger than the target of 500ha.</p> <p>Management Plan protects up to 19,900ha of the Waimanu catchment.</p>
Federated States of Micronesia
<p>For catchment protection measures of 200ha, the development of the Tofol Integrated Catchment Management Plan was initiated. The implementation of protection measures in the plan is unlikely going to have full impact known within the life of this project. It was also reported a reduction of effluents released into the Mutunnenea Channel due to the dry litter piggery technology. Upon extension of the project, there are plans to establish another dry litter piggery unit. Local procurement is taking close to 4 months and still no consultants.</p> <p><u>Update:</u> Four consultancies were commissioned aimed at delivering on FSM IW R2R stress reduction target of 200ha.</p> <ol style="list-style-type: none"> i. Completed the biological assessment of Tofol watershed ii. Completed the hydrological and geological assessment of Tofol watershed iii. Completed diagnostic analysis consultations and reporting for both Tofol demonstration site and the IDA for the whole of Kosrae State iv. The Tofol integrated catchment management plan was abandoned following the departure of the local consultant even before work commences.

Technical and diagnostic reports support implementing of measures and reform. A lot of work done in country which would support the management plan for catchment protection measures of **160ha**.

Kiribati

The Kiribati IW R2R project is implementing its MYCWP aimed at progressing project outputs and activities, which in turn assist delivery on a stress reduction target of 955 TN kg/yr. The construction and operation of 30 DLT piggery units would correspond to achieving the above-mentioned stress reduction target of municipal waste pollution.

Several local consultants were hired to assist with the technical streams of work, namely: -

(i) Design and construction of the dry litter piggens for the reduction of municipal waste pollution of 955 TN kg/yr.

(ii) Communications and awareness raising

(iii) Diagnostic analysis, State of the Coast and Strategic Action Framework

The monitoring of bore holes and household wells have commenced following its environmental monitoring plan. The baseline data is available, and monitoring would allow the determination of the end of project stress reduction target and see if the R2R interventions contributed to stress reduction and minimize underground contamination. At this stage, there appears to be slow progress to agree on a design and construct of DLT piggery units. This also means it is getting difficult to establish clear determination

Update:

Completed the construction of 30 Dry Litter Technology piggery units which in turn should work to achieve stress reduction of **955.35 TN kg/year**.

Nauru

Initial steps taken in the identification of relevant sites to be revegetated with endemic salt and drought tolerant species including the identification of nursery areas for the hardening of collected planting materials prior to field planting. This is to achieve 10 ha of restored habitat through vegetation.

Relevant planning documents, policies and regulations have been collected that will be needed to assess priority areas for actions in integrating coastal revegetation. A documentation report was made available; however, there were delays during the reporting period. Initial interviews conducted with the Nauru Utility Corporation regarding power pole regulations and policies along coastal shorelines for rehabilitation and vegetation.

A lot of time appears wasted on planning, but little actions seen on revegetation efforts by IW R2R project.

Update:

Landowners agree to revegetation and great efforts and initiatives to do so are done. There is significant political support and will regarding this activity and collaboration with the Nauru STAR Project. Revegetated site adds up to **8ha**.

Niue
<p>IW R2R Niue project have been in close and active communication with the RPCU to guide the revision of the MYCWP to ensure that activities must still contribute to achieve stress reduction targets i.e. ICM planning</p> <p>Although the focus of IW R2R Niue stress reduction measures is Catchment Protection Measures of 200 ha through ICM Planning, there is ongoing effort to develop a concept note that focuses on the protection of the water quality and supply from the impact of climate change. Consultations were held to develop the Water Use Efficiency (WUE) Plan and Cost Recovery which supports proposals for a concept note funded from the Green Climate Fund (GCF).</p> <p>Slow progress with too much planning and minimal actions to get things coordinated and done. No serious activities have started that help stress reduction measures and ICM planning to impact an area of 200 ha. Unless there is quick turnaround in project implementation it is likely the above willnot be met.</p> <p><u>Update:</u> Cabinet have approved the consultancies for both WUE. Contract has now been signed by consultant.</p> <p>Contract of Service to develop WUE Plan provided to RPCU. WUE Plan final draft report also provided to RPCU for review.</p> <p>WUE plan ties in with other plans post R2R project where the government will use the WUE which ties-in with other plans developed after extensive discussions with relevant stakeholders. These would then inform policy discussions and approximately 160ha of protection measures.</p>
Papua New Guinea
<p>A total of 13,867 ha of terrestrial and marine areas comprising of mangroves, estuaries, grassland, rocky shores and sea areas covering seagrass, mudflats and reefs have been secured under the Bootless Bay National Marine Sanctuary which is now a National Government Project under the Sustainable Environment Programme (SEP) (under CEPA). CEPA is seeking potential donors/partners to advance implementation of the BBNMS Management Plan for the next 5 years.</p> <p>Project activities are largely completed with few policies and by-laws left to complete as well project closure.</p> <p><u>Update:</u> Awaiting final drafts of By Law and Mangrove Management Plan from consultants to the IW PNG Project Manager. Drafts in Google Drive link provided above.</p> <p>Mangrove Management Plan complements Bootless Bay National Marine Sanctuary which covers 300 ha. Action plan outlined such as establishment of Mangrove Action Committee, Monitoring and Enforcement Programs, Legal framework for mangrove ecosystem management contributes to this SRT.</p>
Republic of the Marshall Islands

The IW R2R RMI Project and EPA have initiated a meeting with a potential consultant to discuss data gaps, funding availability and management strategies to wrap up work on the Integrated Coastal Management (ICM) plan and related management strategies and regulations for Laura. The catchment protection measures of 255 ha are targeted to be achieved through ICM planning.

Progress is slow and require lots of help. Unless there is change in current efforts to mobilise resources and implement project activities, the management plan work will drag and the actual protection measures contributing to stress reduction target would be somewhat beyond the scope of this project.

Update:

Though there is no ICM plan, households have been engaged but there have been internal assessments done to inform the plan and those prior activities set up the building blocks and provides opportunity for higher level discussions and interventions in conservation and coastal protection measures of **153 ha**.

Samoa

Planned activities implemented were riparian zone protection, planting of vetiver grass in critical areas and buffer zones of the Fagali'i river, river cleaning and widening for flood control and prevention, deepening and clearing of the river ways at Vaivase-tai, and carrying out an awareness campaign towards 1648 ha of revegetation

This is one of the projects where actual planning is done, RapCA is done and catchment measures are implemented (catchment protection measures of **4000 ha** done). The only support from RPCU that is needed is to ascertain the effectiveness of this measures. Final assessment can be made with support from technical staff (USP, RPCU and MNRE).

Update:

BioRap area surveyed shows approximately **1648ha**. BioRap team consists of a multi-disciplinary team filling out useful extensive surveys which provides detailed baseline data for 1648ha. Great potential for further studies and strategies based on this study.

Solomon Islands

The formulation and development of the Mataniko River Catchment Integrated Watershed Management Plan is close to completion. Baseline data has been acquired in 2014 and 2018, the

current project also carried out baseline studies in reference to the 2014 study. In achieving stress reduction targets of 575 ha of catchment protection measures, after the final reports are endorsed by the regional office and the Ministry of Environment, the implementation of the plan will begin.

The Honiara coastal assessment report and the integrated catchment plan for Mataniko are at their final draft stage. All the technical streams of work have been completed and used in the preparation of the above policies. Next, local consultants will be hired to do regionally-led activities on diagnostic, and SAF. While the implementation of protection and management measures in the above policies and plans are already in motion, the full impact and therefore achievements of stress reduction target would be fully realized beyond the life of this project.

Update:

ESSI Consultancy conducted EGS Valuation reports, Mataniko Risk Assessment Report, Mataniko Catchment Water Quality Report, Bathymetry and Hydrology Assessment report, Biological and Ecological Assessment Report, Honiara Coastal Assessment Report and finally the Mataniko River Catchment Management Plan.

From the Mataniko River Catchment Implementation And Monitoring Plan:

With support from several stakeholders this section presents the implementation, and the monitoring plan was developed. The actions and indicators were then validated by the community to ensure their involvement and support on the implementation phase. Each action therefore have indicators which were bound with their estimated times.

Fish refugia and wetland habitat protected through the Mataniko River Catchment Implementation and Monitoring Plan (**2000 ha**).

One of the many highlights include:

SPO 3: To synthesize approaches that encourages sustainability of the ecosystem goods and services through green economic assessing and analyzing the changes in supply, provision or production within the catchment

Develop a watershed trust fund by creating sectoral partnerships with Solomon Water, Barana park committees and other catchment communities within Honiara Basin together with support from MECDM for partnerships.

Catchment protection measures undertaken approximating **575 ha** through sustainable land use.

Tonga

Tonga's stress reduction target is 104 TN/kg/yr which corresponds to conversions of 6 households sanitation systems to compost toilets. There is also the target of 90 ha of wetland that has been protected and conserved. The construction of household compost toilets and sand filter systems in schools have been successfully completed. Also, the ICM planning is closed to finished, and the activity was jointly prepared in collaboration with the Ministry of Fisheries.

Parliament passing of the Water Resources Bill 2020 in which IW R2R Tonga contributed to its awareness through Tonga's Most Significant Change Story. This Bill reached 38 years of development as of 2020 due to the opposition by commercial farmers. Upon media coverage in Q2 of the IW R2R Tonga project, particularly a water quality test which showed *E. coli* presence in the water, this awareness led to consultation from the public and decisions to be made regarding the passing of the bill.

All the above efforts aim work towards achieving stress reduction targets in municipal pollution and protection of coastal habitats and wetlands, but also respond to domestic development priorities.

Update:

Tonga IW R2R project officially launched 3 compost toilets and 3 Plastic Septic with Sand Filtering system which was installed to help reduce nutrient offloads in the country. Tonga's stress reduction target is **104 TN kg/yr** was achieved using the conversions and upgrading to compost toilets and sand filter systems.

Tonga IW R2R was to develop a 90 hectares Conserved/Protected Wetland. The IW R2R intervention on ICM planning benefits far exceeds the target. The Kanokupolu SMA is a total of **382 hectares**, and this includes 107.4 hectares of Fishes Habitat Reserves.

Vanuatu

The pilot project has achieved 5% of its 30 ha habitat restoration stress reduction target. However, towards achieving this particular target, the project initiated the development and implementation of the "Tagabe Catchment Restoration Project" with efforts to restore a native forest with Water Protection Zones 1 and 2 as part of its rehabilitation programs. The ongoing efforts by the TCRP is shown to restore 14.6 ha degraded site within WPZ 1.

The pilot project has achieved 4% of the 5598 ha of buffer areas along Tagabe river under the Tagabe River Restoration project. This 26 ha is part of the Tagabe River Restoration Project that has only resumed early last year by the SPREP PEBACC Project. The IW R2R Project signed a Memorandum of Understanding with the Forestry Department to foster its support to rehabilitate the riparian areas of Tagabe River in early March of 2020. The catchment management plan provides locations of the restoration sites.

Vanuatu is one of the sites where actual interventions (revegetation, restoration/reforestation) are done. The only issue here whether the target of 2570 and 20 hectares are achieved until project is closed. Moreover, Vanuatu is very advanced and project work close to complete but current protection measures already manage and restore 30ha of habitats with endemic plant species.

The project is currently progressing work to hire local consultants to do diagnostic analyses and SAF. The fee levels appear to be a contributing factor.

Update:

According to the Tagabe Catchment Restoration Project (TCRP) map provided shows targeted areas for restoration.

National Botanical Garden planted with rare endemic species of **33.4 ha**.

ICM plan for **2570 ha** in place with nursery, replanting activities occurring, committee in place. However, GIS mapping of area is yet to be done.

Tuvalu

The project was only able to achieve municipal waste pollution reduction of **164 TN kg/yr** as opposed to the target of 536 TN kg/yr. This is due to the limited number of DLT piggeries established under the project. It was expected that around 24 pig pens would need to be converted to DLT to meet the reduction target. However, only one semi-commercial sized piggery was established, which approximates to about four standard size piggeries. Pollution reduction to aquifer is calculated at **48 TN kg/yr**.

According to Final Report:

Despite the limited scientific/quantitative data, the demonstration pig pen did provide qualitative

indication that the process is viable in the Funafuti context. The dry litter technology was successfully demonstrated, showing conversion of pig waste to valuable compost, rather than washing it away into the groundwater and the lagoon. Importantly, the demonstration helped alleviate concerns relating to odour and negative perceptions surrounding the idea of working with pig waste. The results were useful contributions in diagnostic stakeholder consultations that led to proper decisions in resource management and governance and helped mobilise resource for financing, investment planning and promotion in Tuvalu

Palau

Cook Islands

Project site is Muri-Avana and, even though not all outputs are site specific, it still does contribute to improved catchment management of the site area.

Ecological health of Muri lagoon characterized, and land-based contamination processes established for key ICM planning and investment (**1374 ha** achieved).

Actual End of Project Targets Verification

Fourteen national pilot projects testing are all closed noting the varying degrees of experience and results. At midterm, the end of project targets was revisited and adjusted accordingly. The adjustments were presented to the RSTC for review. Pilot projects have tried progressively to achieve these targets such as:

- Municipal waste pollution reduction by 1,595N kg/yr
- Pollution reduction to aquifers by 11kg/ha/yr
- Area of restored habitat covering 4,258 hectares
- Area of conserved/protected wetland covering 290 hectares
- Area of catchment under improved management covering 15,206 hectares
- 30 charcoal producers engaged in alternative livelihoods

Table 2: IW R2R National Demonstration stress reduction targets (original, updated and end of project targets).

Stress reduction measures	Original Targets (ProDoc)	Updated Targets	Actual End of Project Targets
Municipal Waste pollution reduction	5775 TN kg/yr	1595 TN kg/yr	1059 TN kg/yr
Pollution reduction to aquifer	23 kg/ha/yr	11 kg/ha/yr	48 kg/ha/yr
Restored habitat	6838 hectares	4258 hectares	4259.4 hectares
Conserved/protected wetland	290 hectares	290 hectares	2382 hectares
Catchment protection measures	31,448.2 hectares	15,206	26,007 hectares
Alternative livelihood¹	30 charcoal producers	-	-

Conclusion

27. In consideration of the uniqueness of the aspects of each IW R2R project demonstrations implementation period, the successes and setbacks in achieving stress reduction targets are provided for the RSTC at the end of the implementation period of the R2R Programme.

28. The meeting is invited to note the paper

¹ This end of project target has been removed following change of demonstration site from Nadi to Waimanu for Fiji. See details of the Nadi site in <https://www.pacific-r2r.org/sites/default/files/2020-03/Fiji.pdf> linking to alternative charcoal production and mangrove eco-farming 30 charcoal producers (40 percent at site) engaged in alternative (non-mangrove) charcoal production activities. The revised end of project target for the Waimanu demonstration site is 500ha catchment protection measures.