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International Waters: Learning Exchange and
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GEF IW Experience Notes Format

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The GEF's *International Waters Experience Notes* help the IW community share its practical experiences to promote better resource management. **Experiences** include successful practices, approaches, strategies, lessons, methodologies, etc., that emerge in the context of your projects. Completed forms may be 3-7 pages long and serve as the basis for *Notes*.

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1. TITLE

The Application of Ridge to Reef concept in Vanuatu with specific focus on lessons learned relative to Planning, Coordination, and Implementation

2. PROJECT TITLE -

Vanuatu International Waters Ridge to Reef (IW R2R) Project



3. PROJECT DESCRIPTION -

The project has three components and three outcomes within each of the components within the project time frame, 2020. The project aims to deliver on its stress reduction target of XX ha of land-sea areas conserved and protected following the adoption and implementation of an integrated catchment management plan. The details are provided in the summary table below.

Components	Outcomes	Timeframe
Strengthening the coordination in support of the development and implementation of Tagabe Catchment R2R Management Plan	Enhanced performance and accountability of the Tagabe River Management Committee (TRMC)	2017-2020
	Replication of Best Practices and Lessons Learnt from IWRM Sarakata Catchment Demo Project	2017-2020
	Improved inter-agency partnership in sustainable coastal area monitoring	2017-2020
Strengthening the capacity for participatory monitoring and evaluation of Tagabe Catchment R2R Management Plan to strengthen the enabling environment for coastal area management	Improved data collection for the development and implementation of the Tagabe Catchment R2R Management Plan	2017-2020
	Increase local community, business, and government agency capacity for environmental monitoring of Tagabe coastal area	2017-2020
	Endorsed PM&E Plan for catchment management for replication to other STAR R2R Coastal Areas	2017-2020
		2017-2020
Establishing partnerships for sustainable coastal area development	A multi-sectoral partnership hat developed and maintains the National Botanical Garden Providing economic and environmental benefits to the Tagabe	2017-2020
	Community local government partnership for sustainable land and surface water use preserving livelihoods	2017-2020
	Public-private partnerships for coastal area use preserving ecosystem services and community resilience	2017-2020

4. DESCRIPTION OF ISSUE(S), CHALLENGE(S), AND EXPERIENCE

The Vanuatu IW R2R Project encountered challenges throughout its planning phase, coordination, and implementation. The project is cross-sectoral and require careful planning, coordination and involvement of stakeholders and communities to garner support and buy-in. There are protocols and processes need following, which includes factoring into workplans and budget. There are issues of capacity and resources locally available to sustain current and future efforts on catchment management, especially when external

assistance ends. Also, there are equally important challenges of increasing population and therefore exploitation of resources, impacts of climate changes, the rapid increase in development including tourism. Communication and raising awareness help minimize operational setbacks and support positive progress in project implementation. The details of issues, challenges and experiences are described below.

4.0 Transboundary Water Management Issue and Action Addressed by the Project

1.1 Planning

The Project Demo Site, Tagabe Watershed Catchment is the only water catchment supplying the entire Port Vila and its outskirts with potable water. Since the demo site itself is a pre-urban area, developments are encroaching the Demonstration Site itself at a rapid rate, hence the depletion of the natural resources, particularly in the upper catchment of Tagabe Catchment Area (TRCA). Accordingly, the upper catchment was declared Matnakara Water Protection Zones (MWPZ) in accordance with subsection 26 (1) of the 2002 Water Resource Management Act, which authorised the Director of the Water Resources Department to declare this area a water protection zone. The MWPZ covers an area of 25.7 km². There are currently three (3) WPZs where specific activities are delineated within each zone; WPZ1 *Taboo Area*, WPZ2 *Recharge Area* and WPZ3 *Water Catchment Area*. The recommended action was taken by the project through the Inter-Ministerial Committee to account for such issue;

- a) The Tagabe River Management Committee (TRMC) is responsible for the effective oversight management of the Tagabe Catchment. The membership comprises of representatives of government, NGOs, and private organizations. The Department of Water Resources (DoWR) chairs the Committee. The IW R2R project resources are used to support the work of the TRMC, including secretariat role focused on amending the MWPZ declaration in 2017.
- b) As a result of the amendments, activities and development that are within the MWPZs which are not consistent to the declaration have been imparted inaction taken by DoWR and TRMC. Such action includes the relocation of settlements and stop-work notice to certain developments, as well issuing penalty notices within each protection zones.
- c) A “Task Force” is established consisting of relevant government departments forming an overall compliance team for enforcement and compatibility of MWPZs as well uploading relevant legislation which hereby giving them powers to regulate development in any places. The compliance team comprises of Department of Environment, Department of Water Resources and Geologies & Mines Unit. Comprising compliance team reflects purposely to the developments that are not specified with each respective acts or conditions of permits issued.
- d) Tagabe River Management Committee (TRMC) Rangers will be hired to “patrol” the protection zones to report and update to the TRMC on activities within the protected area. They are the eyes and ears on ground for the compliance team for ongoing monitoring of MWPZ. They will also contribute towards the compatibility of MWPZs and the delineated activities of each zone.



Figure 1 Matnakara Water Protection Zones

1. In the absence of better management of the Tagabe Watershed Catchment Area, the Tagabe River Management Committee (TRMC) also known as the inter-ministerial committee and national steering committee for the IW R2R in Vanuatu have, in the past, responded to threats and issues in regard to the safeguard and security of the water catchment. However, no strategic response and management have been established. The IW R2R Project as secretariat to TRMC took the opportunities to address this in the following ways;
 - a) Developing Tagabe Catchment R2R Management Plan (2017-2018). This is a national document that puts forward the consideration of a more strategic and intergraded management of Tagabe Water Catchment.
 - b) From this Management plan an implementation plan (2018-2019) was developed as guidelines for the better management of Tagabe Catchment scheduling time frames and responsible (TRMC members) implementing agencies (TRMC members).
2. Residential and commercial development is illegally established within the 20m buffer areas of the Tagabe River. Consequential of such action, community complains about wastewater from industry and manufacturing companies intruding Tagabe River. Within the buffer areas, the communities themselves also build improper sanitation facilities that could have direct negative health impacts in extreme weather from heavy rain and flooding. Rubbish dumping sites that are within 10m of the riverbanks have high chances of being blown into or washed into the river. In contextual to ridge to reef, given the close interconnectedness of land, water and coastal areas, the impacts of such activities will be felt across. Integrative approach to land and water will be taken to address such issues.
 - a) The need for more advocacy and awareness in terms of best practices for land and water and changing mindset of communities to be able to look at their environment in a more eccentric view and thus managers of the river.
 - b) Secondly, build a well-structured sanitation system for the communities.
 - c) Thirdly, build recycling cages as well as a proper rubbish disposal site for communities away from the river.

- d) Lastly to develop a Tagabe River Buffer Areas Regulations, thus becoming legal and lawful recommending public compliance. This should also take into consideration of conditions of the river.

4.2 Implementation

1. The Tagabe Catchment must be safeguarded from illegal dumping, indiscriminate exploitation, and other commercial developments in breach of relevant domestic standards, plans and legislations. Objective 4 of the Tagabe Catchment R2R Management plan highlighted the rehabilitation of the catchment. Related activities to revegetate catchment areas consist mainly of establishing a National Botanical Garden that benefits the environment, tourism, and education sector, but will also assist TRMC in meeting expenditure for effective management on a financial level. Members of the public and nearby communities enter prohibited areas, specifically zone 2 (Taboo area), and engaging in illegal activities such as deliberate starting of bush fires causing damages to the transplanted trees. Increasing levels of illegal activities in restricted zones require more wardens and resources to support monitoring work.
2. Furthermore, with the lagging means of financial assistance by TRMC to maintain restored areas, these issues are to be addressed by the project itself;
 - a) Hire rangers to ensure members of the public do not further disturb the re-vegetated site;
 - b) The IW R2R project to increase the financial support to TRMC for re-vegetation with the Tagabe River Catchment by taking initiatives towards implementing Tagabe River Management Plan and the related implementation plan.
3. Water Hyacinth/lily is the common invasive species found thriving on the surface of the Tagabe River. The impact of invasive species to local biodiversity including endemic species is well documented. Also, the overgrowth and wide distribution of water hyacinth plants in the river cause problems by trapping the floating littering rubbish downstream such as plastic bags and bottles, other plastic pieces and glass bottles disposed in or beside the riverbank. While such Invasive Species (IS) acts as filters, it will reduce the flow of water if it's overpopulated and unregulated
4. In Addressing such issues;
 - a) Communities are to engage in the removal of invasive species along Tagabe River. Not completely removing IA, as it functions also is to stop sediment runoff. Thus, portions or section of this should be left ensuring its function is beneficial to the system.
 - b) Introduce bio control for the management of water lily
 - c) Complete removal of water lily in WPZ 1
 - d) Learn from Fiji experience where the women use the dry plants to weave local hats and other handicrafts.



Figure 2 Invasive species (IA), water hyacinth and water lily in Tagabe River

5. Within the demonstration site, there are illegal quarrying, excavation, and dumping of wastewater from close by industrial factories and buildings, occurring in breach of the declaration of Matnakara Water Protection Zones. , These illegal activities are occurring at a fast rate posing greater concern within the buffer areas of the Tagabe River. This problem could result from ignorance of the law, insufficient communication & awareness, weak community governance and government support to commit resources to support awareness monitoring, compliance, and enforcement. The project responded to these issues by engaging with relevant government agencies in the following way;
 - a) Set up a task force consisting of compliance officers from various government organization, for example, the department of water resources, department of environment and geology and mines unit. Compliance and enforcement in all development within the project site to ensure compatibility of all correlated legislations, regulations, and acts.
 - b) Hire community rangers to extend the work of the compliance team, i.e., the task force on a daily basis and report on illegal activities on the ground. They will be regarded as ‘eyes and ears’ of the task force since the site itself consist of large hectares of land. The task force will take in consideration of monitoring and compliance of both lower and upper part of the catchment.
 - c) Incorporation and awareness of Matnakara Water Protection Zones and Tagabe River Catchment Area (TRCA) into the Dept. of Land, the Land Management Committee, the Port Vila Municipal Council and Shefa Province, the Dept. of Agriculture, Fisheries, Industries, Tourism and VIPA. To ensure the lease is provided and development approvals are adhered to by conditions or in consideration with the existing laws to avoid overlaps.



Figure 3 Possible Quarry Site in Matnakara Water Protection Zone III (MWPZ)

4.3 Coordination

As the project is at its implementation stage, strategic coordination is necessary to ensure that all major and minor activities are being implemented effectively and outputs are achieved by addressing all issues and concerns from the community to cabinet level.

1. The mindset of the communities is one that is often overlooked and yet most significant. To be able to implement effectively, engaging communities as a major stakeholder should start with a change of mindsets. This is one of the major issues. Most communities lack environmental knowledge and thus fail to notice their responsibilities as managers of the river. Therefore, such issues should be address as follows;
2.
 - a) Increase knowledge sharing and management through accessible and effective communication strategies. This should be done by individual community awareness and workshop, radio programs as set out in Communication and Knowledge Management Plan
 - b) Effective engagement of communities in all activities, river cleaning up campaign and more in which communities should feel the sense of ownership of what they are doing, again leading to the enhancement of the community's mindset.
 - c) **Establish Communication and Knowledge management** (in progress), which should apply to *community to cabinet approach*. A responsive away visible and applicable to the "Most Significance Changes". Community concerns can be raised and addressed at high level. However, allowing knowledge sharing and experiences from both ends.



Figure 4 Tagabe Communities engagement and participation during World Cleaning Day at Tagabe River

3. Rehabilitation and vegetation restoration are some of the major initiated activities currently implement. *Habitat restoration* is the GEF stress reduction initiatives for Vanuatu. Wherefore in some previous case re-vegetation has been occurring. The process from wild collection, nursery and to the transplanting and maintenance are not well monitored. Proper recording, as site assessment, baseline studies i.e., data from both reference and impact site should be recognized for monitoring and evaluation against the progress. Such is an acceptable issue that has never been taken in consideration so far. Thus, in progress this is how the project seeks to address the importance of matter above thoroughly.
 - a) **Environmental Monitoring Plan for GEF Stress reduction priorities.** Should address all issues mentioned above for all habitat restoration initiatives. Namely re-vegetation of buffer areas and national botanical garden. Such activities within the catchment could be replicated to other habitat restoration activities.

5. RESULTS AND LEARNING FROM EXPERIENCE -

In this section, the impacts of experiences will be discussed as per section discussed above individually as in accordance to planning, implementation and coordination of the IW R2R in Vanuatu.

5.1 Planning

1. Matnakara Water Protection Zones. Since it has been amended and gazetted late September 2017, at least three (3) water protection zones have been declared. However, as issues discussed, impacts of experience.
 - a) The “Task Force” will ensure compliance and enforcement by regular monitoring of the project demo site, specifically the Tagabe River and MWPZs. Since it will consist of government agencies such as the Department of Water Resources, Department of Environmental Protection and Conservation and Geology and Mines Unit, priorities of which issues and activities occurring within the project are referred to this government agencies relevantly. Actions, resolution and issuing r penalty notice or advice will comply to respective regulations and Acts available. This would support halting unwanted activities such as quarrying, excavating, piggery farming, wastewater disposal and wastewater management related to

drainage systems alongside other activities not declared under the declaration of Matnakara Water Protection Zones (MWPZ).

2. Tagabe Catchment R2R Management Plan is being currently implemented. A work plan (2018-2019) has been developed as set out by management plan with related activities and time frame. Maintaining focused actions for achieving related outputs and outcomes of the management proactively by joint implementation of Tagabe River Management Committee (TRMC) Government Representatives, NGO's and private companies' natural sectors and targeted communities.

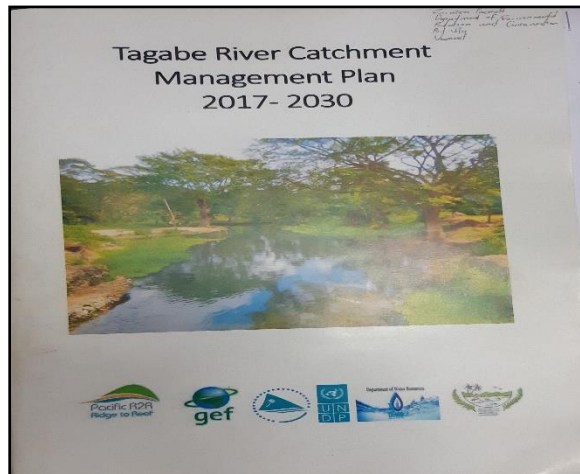


Figure 5 Tagabe River R2R Catchment Management Plan Launched by the Hon. Minister of Lands and Natural Resources

3. Since the upper the catchment of Tagabe has been strategically addressed through the Tagabe River Catchment R2R Management Plan and MWPZs, the lower catchment has been a continuous challenge by major uprising issues as stated. To maintain the functional system, i.e., the entire catchment towards maintenance and enhancement of ecosystem goods services adapting to current situations. Integrated management will need to be taken to lower catchment as similar to the upper catchment. However, the impacts of the experience here will be tremendously to change the way the communities think, as far as management of the Tagabe River is concerned including its biodiversity. Moreover, to be able to understand their roles, appreciate the environment in ways of how it benefits them. Thus, to be better resource managers of their river having the sense of

ownership. Not only the river, but land and forest given the interdependencies between such components. Buffer regulations will need to fall in place to safeguard and secure 30cm buffer areas from further contamination and development encouragement.

5.2 Implementation

1. **Impacts of experience for the catchment re-vegetation, issues, and approaches.** The disturbance to rehabilitation activities within MWPZ 1. These water protection zones are declared to be taboo, hence a restricted area. This zone is where re-vegetation begins. Unlawful entries from communities and members of the public have become common practice. This causes the transplanted seedlings to become disturbed. Hiring “community rangers” will ensure Matnakara Water Protection Zones are complied with and enforced. This will enable identification of illegal intruders in making sure they serve penalty notices and compensation for their actions.
2. **Removal of Invasive Species, Water Hyacinth and Water lily.** Such IS are commonly found along Tagabe River. Its removal is important to allow river to flow constantly at a normal rate. Alternatively, it also plays a unique role and function it plays in the entire ecosystem. Filtering the river, trapping sediments flow, and littering afloat on the surface. As such, removal of IS will ensure certain regulated populations to thrive and full the evolutionary niches.
3. **Project activities or any other works done by previous project, NGO’s or even government organization has never been “sustainable”.** Sustainability is what the project Vanuatu IW R2R implements in all its activities. Ensuring that these activities which have been implemented are ‘ongoing’ when the project ends. Thus, it only begins to enhance consensus in the community Because they are the key players benefit directly. This the adequate impact experience needed to implement in all project activities purposely for communities to feel and gain ownership of what has and is to be in place.
4. **Habitat Restoration.** Since a huge amount of funds have been allocated for restoration activities, the development of an Environmental Monitoring Plan will positively impact the progress and monitoring of habitat restoration, not only for sufficient and efficient use of funds but ensuring the successful outcome of the re-vegetation activities. As such, it should be beneficial to the Department of Water, Environment and Forestry but it can also be replicated elsewhere.

6. REPLICATION

6.1 Implementing Challenges- Planning

Implementing challenges that should be encountered when replicating such experiences from planning, implementation, and coordination of Vanuatu IW R2R are as follows:

1. Lack of effective communication between key implementing government agencies. Thus, no alignment in decision making and approval granted. Conditions and benefits;
 - a) Steering committee/ management committee to have its meeting quarterly to discuss the progress of project work and follow up action agenda item.
 - b) One to one consultation with each natural sector putting forward the symbiosis of work through legal and lawful procedures. Thus, to maintain and strengthen stakeholder partnership, especially stakeholders representing government organizational bodies

- c) Incorporation of declarations, regulations and legislations be incorporated to other natural sectors to maintain this symbiosis for ecosystem management.
- 2. Community's engagement in activities at some point may be very difficult. Conditions and benefits;
 - a) Sense of ownership and thus contributes towards changing the community's mindset.
 - b) Need of more contractive communication strategies through various communication tools.
- 3. Prolong effective and consistency in awareness and advocacy to change mindset of communities' members, men, women, youth, and elderly to be environmental managers. Conditions and benefits;
 - a) Setting up a timeframe with interval community awareness and workshop.
 - b) The need of awareness of digital communication and social media.
 - c) Regular participation and engagement of communities.
- 4. Weak Inter/intra community governance that will not deter "community to cabinet" approach. Conditions and benefits;
 - a) Strengthen existing community to cabinet structure.
 - b) Ensure knowledge sharing from both ends
 - c) Significant to the application of "Most Significant Change" Lesson Learned.
- 5. The need to develop, monitor and enforce natural resources regulation and national standards. Conditions and benefits
 - a) To cap fill gaps that is necessary to co-assist in monitoring, compliance, and enforcement.

7. SIGNIFICANCE

- 1. Regulates developments to be environmentally friendly as Vanuatu itself is a developing county expecting for more development projecting/expanding from urban to rural areas.
- 2. Capturing and enhancement of communities' mindset from anthropocentric approach to eccentric view of the environment.
- 3. Communities' engagement and participation will successfully implement all on ground project works, sense of ownership leads towards *sustainability* of project implemented activities
- 4. Integrative management of land, water, and forest in the context of Vanuatu locates the project site within pre-urban area.
- 5. Communication and Knowledge Management through awareness and advocacy with the approach of "community to cabinet", between stakeholder and targeted groups.

8. REFERENCES

Department of Environmental Protection and Conservation Websites: <https://environment.gov.vu/>
Pacific R2R Website: <https://www.pacific-r2r.org/partners/member-countries/vanuatu#faqnoanchor>

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9. KEYWORDS - *What 2-5 keywords could be used to help others search and find this experience note?*

1. Vanuatu IW R2R,
2. Tagabe Watershed Catchment
3. Tagabe River
4. Matnakara Water Protection Zones (MWPZ)
5. Tagabe River Management Committee

Examples of IW Experiences

Process	M&E Process Indicators
<ul style="list-style-type: none"> • Development and tracking of indicators • Knowledge management database and IT • Financing mechanisms • Public/private partnerships 	<ul style="list-style-type: none"> • Establishment of country-specific inter-ministerial committees • Completion of a country endorsed TDA • Documentation of stakeholder involvement in stakeholder involvement plan • Completion of a country-endorsed SAP • High-level political commitment to follow up joint actions • Adoption of a science advisory panel • Adoption of an M&E plan
Participation	M&E Stress Reduction Indicators
<ul style="list-style-type: none"> • National/regional/local participation • Leveraging of local funds (public and private) • NGO participation • Workshops, training, and education programs • Public relations/communications/outreach/visibility 	<ul style="list-style-type: none"> • Point source pollution reduction • Non-point source pollution programs implemented • Coastal zone or wetlands placed into protection • Reduced releases of pollution to groundwater recharge zones
Performance	M&E Environmental Status Indicators
<ul style="list-style-type: none"> • TDA/SAP approval • NAP development and approval • Regulatory development and enforcement • Engineering/investment project completion • Measurable environmental improvement • Public private partnerships & market-based mechanisms • Applied scientific research • Water quality monitoring program implementation • Species, habitat, and ecosystem protection/rehabilitation • Sustainability issues (post-GEF investment) 	<ul style="list-style-type: none"> • Improved (measurable) ecological or biological indices • Improved (measurable) chemical, physical (including flow regimes), or biological parameters • Demonstrable reduction of persistent organic pollutants (POPs) in the food chain
Technical	Other Areas
<ul style="list-style-type: none"> • Wetland restoration practices • Optimization of wetlands as nutrient sinks • Primary and secondary wastewater treatment • Tertiary wastewater treatment • Cleaner industrial production • Nutrient management in Agricultural practices 	<ul style="list-style-type: none"> • Pollution and water use tariffs • Economic instruments for water resources management (taxes, tradeable permits, etc.) • Economic valuation of water-related environmental assets • Sustainable fisheries management • Structuring and operation of transboundary waters institutions