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The Replication and Scaling-up Plan for the Tuvalu IW R2R Dry Litter Piggery Demonstration.

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Summary:

This paper presents efforts to replicate and up-scale the use of dry litter innovative technology in raising pigs in Tuvalu. The demonstration and trialling of dry litter technology was done on Funafuti atoll, which attracted interests from the local population. Piggery dry litter technology has also been trialled and successfully practised in other countries, which includes its commercial use in large pig farms in American Samoa. These are important developments providing simple alternative innovations, contributing immensely to environment stress reduction targets, improving quality of water and supporting biological diversity of ecosystem goods and services. This is critically important in atoll countries where ground and surface water contaminated from solid and hazardous wastes continue to be priority environmental challenges. The paper presents progress and lessons learned in replicating and scaling up dry litter piggery demonstrations on Funafuti and the outer islands. The challenges are discussed and suggested options explored in the paper.

Recommendations:

The R2R Technical Consultation is invited to:-

- (i) Consider and discuss the progress (or lack of) in replicating and up-scaling dry litter piggery demonstration in atoll countries;
- (ii) Provide advice on the feasibility of up-scaling dry litter piggery if there is relatively weak evidence from the current Tuvalu IW R2R demonstration;
- (iii) Provide clear advice on the suggested options to address key challenges hindering progress of up-scaling dry litter technology.

Background

1. In 2015 the Government of Tuvalu engaged with the SPC under a Memorandum of Agreement to implement a GEF approved program executed by the UNDP/UNEP/FAO which has multi-focal areas namely the “Pacific Islands Ridge-to-Reef.” The goal is to maintain and enhance Pacific Island countries’ ecosystem goods and services (provisioning, regulating, supporting and cultural) through integrated approaches to land, water, forest, biodiversity and coastal resource management that contribute to poverty reduction, sustainable livelihoods and climate resilience.
2. The R2R program goal is expected to be achieved through the implementation of its STAR and IW child projects, in 14- Pacific countries. Several participatory forums were organised in-country to identify and select priority environmental threats to be addressed under the R2R program. The national logframes were developed containing these details plus clear milestone targets on environment stress reduction projects with multi-focal area ‘Ridge to Reef’ (R2R) demonstration projects.
3. The R2R program focused mainly on addressing national priorities and development but also delivering global environmental benefits in line with GEF focal area (Biodiversity, Land Degradation, Climate Change Mitigation, International Waters) and Climate Change Adaptation. In contrast, the IW R2R project priorities cover the reduction of pollution through implementing innovative solutions to improve water use efficiency, sustainable fisheries with rights-based management, Integrated Water Resources Management, water supply protection in SIDS, and aquifer and catchment protection.
4. The Tuvalu IW R2R project identified the country’s priority being the reduction of pollution caused by municipal waste water with its enormous impact to the physical environment. The project will trial and demonstrate the dry litter piggery as an innovative technology that may ease the pressure to the local environment. A remarkable intervention with many benefits anticipated. The lessons learned from this demonstration will be used in planning for up-scaling future R2R investments. The Tuvalu Government is currently progressing efforts in this direction.

Testing and Up-scaling Dry Litter Piggery

5. There are current plans to upscale dry litter innovation from the small demonstration dry litter piggery to a larger commercial size one. The intention is to re-organise current system of raising pigs in many multiple small size household pig pens which may include relocation. Projects concepts and proposals were developed based on outcome of the IW R2R project demonstration. The government is interested to upscale and mainstream dry-litter technology in the country to support achieve stress reduction targets but more importantly reduce levels on contamination to ground and surface water.
6. In order to support up-scaling efforts, it was anticipated that the IW R2R project would support plans to raise awareness to the outer islands. The demonstration piggery was set up in Funafuti and local population benefited from R2R activities, not the outer islands people. These efforts were not supported because of limited funds for awareness raising exercises and up-scaling under the project allocation.
7. Because of the importance and priority placed on this activity, the government agreed on financial support of AU\$100,000 granted under the Department of Waste Management. This demonstrates the importance of the R2R project promoting innovative dry-litter technologies and, countries supporting their use addressing contamination of ground water. Changing perceptions on an introduced innovative technology like dry litter piggery take time and effort thereby need of raising awareness with demonstrations.

Planning Framework:

8. The Tuvalu IW R2R project document provides all the relevant details on the R2R approach including aspects of up scaling a successful demo of the project. This has been always the understanding in implementing the national IW R2R project relative to testing and up-scaling. The success of project implementation is guided by the following areas:-

- (i) stakeholder engagement;
- (ii) cross-sectoral coordination;
- (iii) evidence-based planning;
- (iv) application of management models and strategies;
- (v) use of locally appropriate environment and water resource stress reduction technologies and measures;
- (vi) communications and awareness; and
- (vii) Political commitment.

9. Stakeholders engagement and participation contributes to successful project implementation. For instance, the Eco Sanitation project did not include landowners and later confronted with many challenges. This lesson was important to the IW R2R project which ensured that all relevant parties and groups participate in the project implementation. The partnership between the project and Funafuti Kaupule was formalised at the start of the project to capture the benefits to landowners. The Funafuti Kaupule is the Island Strategic Planning Committee and it is the executive arm of the community. These partnerships were also secured between the project and other important stakeholders and the government agencies.

10. Establishing a baseline of the unknown facts through information gathering on the capital pertaining the need to create change in the community further assisted the planning stages of the undertaking. Previous knowledge on the IWRM was also considered, yet changes were noted. With the innovative technologies identified to be implemented in a new proposed infrastructure, management models and strategies have been considered to be procured through a private enterprise that will deliver the totally new proposed investment.

11. In the event of awareness, meetings and engagements with all government agencies were the mode of collaboration on the undertaking. Likewise the community drives on all villages paved a way for the collecting of information and delivering the intentions of the project to all residents on the capital. At the apex of the up scaling of the Tuvalu IW Demonstration the political will has always been acknowledged to cement the last phase of the project.

Key Challenges

12. There are many challenges to account for, yet highlighted were the major challenges encountered in the course of the up scaling which firstly, was the full commitment of most of the partners. Presumed reasons may be of their mandated priorities, lack of interest or as usual because of the voluntarily basis or because of the many ongoing projects with same people involved. Scientific knowledge in the innovative technologies is the subsequent challenge while limited funds and time were also experience as a disadvantage in the efforts to the upscale of the demo. Yet the Tuvalu IW hopes that the mainstreaming of the R2R concepts, if achieved, indicates a success.

Suggested Approach

13. Full commitment was a predictable factor observed in most of the stakeholders. Hence one of the key stakeholder being the Funafuti Island community, aligning the Funafuti Island Strategic Plan (an approved national development document) with the proposed undertaking sealed their commitment level. Likewise, linking and elaborating the strategic areas of the Te Kaakega III (The Tuvalu National Strategy for Sustainable Development 2016 to 2020) sealed the commitment of the government agencies to the proposed infrastructure. With these two strategic approved documents, one at the communal level and the other at the national level cemented a possible way for the up scaling to eventuate.

14. With the limited scientific knowledge about the innovative technologies, the best possible identified and adopted alternative was working in partnership with the immediate and appropriate government agencies in particular the agriculture, non-government agencies and the Taiwan agency.

15. Twinning, excursions and tours arranged for purposes of sharing and exchanging experiences are effective practical ways to enhance knowledge and awareness. For example, the American Samoa tour to learn how dry litter technology piggery up-scaling and commercialising is practiced there was very useful.

Conclusion

16. The Ridge to Reef approach in up scaling played an important part in the planning process. Though the approach is to test the viability of the planned framework of the R2R, the Tuvalu IW at the starting of the project cemented the idea to upscale since it foresees the benefits overwhelms the non-benefits not only scientifically but also socially and economically. Therefore, there is a high possibility of gaining the political will on this undertaking not only through the efforts of the Tuvalu team but also from the technical support of the Regional R2R Team.