

## Annex 2:

### Participant Lessons Learned (drafts)

Contributor's Name: **Faith A. Siba**

E-mail: [faithsiba@gmail.com](mailto:faithsiba@gmail.com)

#### 1. TITLE –

Twinning Exchange (American Samoa) – Piggery Waste Management

#### 2. PROJECT TITLE –

*International Waters R2R Project in Kosrae, FSM*

#### 3. PROJECT DESCRIPTION –

*IW R2R Projects are designed to guide the integration of water, land, forest and coastal management required sustainable futures for island community. The expected outcomes from the FSM Project are 1) Demonstration of Innovative approaches to Integrated Ridge to Reef Catchment Management in Kosrae, FSM, 2) Tofol Area Freshwater Resources Management Plan established, and 3) Kosrae State and local capacity for Integrated Ridge to Reef catchment management built to enable best practice in coastal waters, land and public health protection.*

#### 4. BACKGROUND TO THE LESSONS LEARNED –

*Piggeries are major contributors to nutrient release to water bodies throughout the island state of Kosrae. Pig farmers are not compliant to the existing piggery regulations, and at the same time, enforcement of said regulations are poor. To address this issue, the project's first component is "Demonstration of innovative approaches to Integrated Ridge to Reef Catchment Management" with one of the outcomes focusing on Environmental and public health safeguarding via reductions in nutrient and pathogen contamination of surface and ground water. The FSM R2R Programme (both IW & STAR Projects) will be constructing and converting existing wash-down piggeries along the coast of Mutunnenea Channel in Lelu into Dry-Litter Piggeries. This is to ensure that farmers do not continue to practice the wash-down method releasing more effluent into the channel or any other bodies of water.*

*There is an existing regulation in place – Regulation 41-97 of the Kosrae State Code: which specifies the type of pen structures to be used throughout the island state. "It must be constructed with a concrete floor and equipped with proper drainage pit constructed of concrete or other material approved in advanced by the Environmental Health and Sanitary Division". However; with poor enforcement and compliance to the regulation, many pig farmers have just been operating their respective pig farms using the wash down method, without actually having a septic tank for the pens. Without a septic tank, the washed down manure and feed are then effluent to the surrounding land and bodies of water. Thus being a major contributor to pollution. These poorly managed piggeries can also become nuisance to the community – releasing odor, and being an eye sore to the community.*

*The FSM IW-R2R Project in Kosrae, in collaboration with the FSM R2R STAR Project (STAR), the Kosrae Conservation and Safety Organization (KCSO), the Kosrae Island Resources Management Authority (KIRMA), the Lelu Town Government and the community members of Lelu Municipality is addressing this issue through a joint-effort to reduce the nutrient load released to improve the water quality of Mutunnenea Channel. The way to do this as agreed upon is to convert regular existing piggeries along the*

*banks of the Mutunnenea Channel. The site was predetermined, but the project will serve as a demonstration, a pilot site, as well as baseline for future endeavors with such issue.*

*The project will convert these existing regular wash-down piggeries into piggeries that will be operated using the Dry-Litter system, eliminating the effluent to both land and water, eliminating the strong odor from pig pens, and will also produce fertilizers that farmers will then be able to use or sell to other farmers.*

## **5. LEARNING EXPERIENCE**

### *5.1 Summarize your learnings from the exchange.*

- Which institutions, legal and regulatory frameworks, rights, ownership, informal agreements have management mandates for pig waste management (PWM)?
- *The American Samoa Code Annotated Title 25 Chapter 16 (ASCA 25.16) mandates the American Samoa EPA the authority to manage and regulate domestic animals which includes pig farming. AS-EPA has a piggery compliance program wherein the agency oversees everything that has to do with piggeries, compliance, and management. This ensures that the agency does what it is mandated to do.*
- 
- Are those management mandates in conflict with each other and are they supportive of achieving the desired PWM outcomes?
- *ASCA 25.16 really supports AS-EPA when it comes to enforcement of their Piggery Compliance Program. ASCA 25.16 clearly states each requirement of owning a pig, therefore supports enforcement. This law specifies and covers confinement of domestic animals, distance between animal confinement and human habitation, distance between animal confinement and bodies of water, sanitary confinement areas and so on.*
- *One of the most supportive document to PCP Enforcement is also part of the mandate. This document is the Land Use Permit. For every construction on new or existing piggery, a Land Use Permit is required. Other wise if cited, AS-EPA will shut down the construction and the farmers will have no chance with their case in court.*
- Are there other actors, e.g., private sector or non-governmental organizations, that may influence the PWM?
- *The history behind the start of the Piggery Compliance Program has been the main push to this program since the very first day. The story of the construction worker that contracted Leptospirosis after working at Matu'u Bridge in 2002 – also know as the first Lepto case in American Samoa. Before PCP, all piggery waste was just discharged into streams. There were illegal piggeries, non-compliant to regulations. In 2002, both sides of the Matu'u bridge had pig pens that were illegal and non-compliant. The stream water was found to be heavily contaminated with animal waste.*
- *Because of the first lepto case, piggeries became focused on, people were becoming aware of how harmful illegal piggeries could be.*
- *Later on in 2005, AS-EPA was granted shared authority for citation alongside Public Health whereas before, Public Health had the SOLE authority. But in 2006, AS-EPA ended up getting SOLE authority for citation.*
- *The court almost always rules in favor of the AS-EPA PCP.*
- *Public Health supports the PCP – with their work. : sanitation of domestic animal confinement -*
  - What is the relative power and impact of government, the private sector and civil society in affecting the condition of the PWM system?
- *continuous discharge of waste into the streams,*
- *documented diseases, illnesses, deaths due to pig-related issues*
- *Increasing Human Population – more people – more constructions of piggeries*
- *Culture: Piggeries are people's Treasures. People are rejecting the government's involvement in this matter*

- Are the practices being used by the targeted stakeholders in line with the institutional mandates or is there a failure in enforcement?
  - *Enforcement of the PCP has been good since its start. It's been hard but enforcers are really working hard to do their job. Since there are a couple of enforcement officers, they work together when an issue arises. For instance, if the farmer that they must cite is someone one of them knows, that officer that knows the farmer will stay in the car while the other officers go out to give out citations. This is an effort to reduce the likelihood of this becoming a personal issue outside work.*
    - Are there mechanisms for stakeholders (identify the stakeholders) to be involved in decision making, are there procedures in place for resolving conflicts that may arise between stakeholders and are they being effectively applied?
  - *There's a procedure and very clear guideline to the work that enforcement officers work by. With this, once a citation is issued, any conflicts that arise will have to be addressed by the court – should any farmers want that. Otherwise, farmers will have to comply to consequences as cited.*
    - What kind of outreach strategy and tools have worked in American Samoa?
  - *To fit American Samoa, the Education and Awareness program have employed an outreach strategy that is similar to their traditional houses – Mata'i. This strategy meant that they had to first go through layers of authority first. In the village setting – the team has to go through the high chief first, then the chief council, and finally be able to meet with the families and villagers. Likewise, in school setting, similar to what the project's been doing in Kosrae, in order to do outreach at schools, they'd go through the director of education, the school principal, and the teachers. AS also notes that having a Mayor present when entering a village is quiet vital.*
    - How has the AS maintained a sustainable model of operation and compliance?
  - *Keeping enforcement strong while showcasing success and failures via outreach and education. Good outreach and education program really ensures that the people of AS are aware of the efforts, and how these efforts are beneficial to all in the long run. Other than that, the very strict and well thought out and planned out supporting roles of other stakeholders, documents required really support the PCP and leaves no loopholes.*
- 5.2 What was your most significant learning?
- *It was interesting to see how strong and structured the whole program is. From documents required even before construction stage, to the involvement of the stakeholders to ensuring piggeries comply and are legal, and even on to the precise monitoring of the piggery construction.*
  - *Also, it was most significant to see how all these stakeholders come together to formalize, structure, and make all these guidelines to ensure that construction, compliance and enforcement will be backed up, using what is already set. This is something a bit harder to do in Kosrae at the moment as we see hesitation from some of our key stakeholders because the roles and responsibilities aren't clearly stated.*
  - *“BE A SOLUTION TO PIGGERY POLLUTION”*

## 6. REPLICATION –

- 6.1 Identify what learnings you can replicate in your project/country?
- *Enforcement of regulations – to be firm and not let personal relations get in the way*
  - *Regulations – to be well written to avoid loopholes*
  - *Coordination – amongst all stakeholders; including government agencies and even the Court.*
  - *Mandate – to be clearly stated – specifying roles and responsibilities of each agency*
  - *Education and Awareness Program – utilizing all medium, educating people about DLP and its benefits*
  - *BE A SOLUTION TO PIGGERY SOLUTION – to instill this in the mentality of our people*
- 6.2 Highlight specific factors or conditions needed for effective replication. What support will you need from the Experts/PCU to ensure effective replication?
- *Strong and firm enforcement of regulations already in place.*
  - *Work on updating regulations/laws that are loosely written to be specific and firm*
  - *Sell-out the concept of DLP – “be a solution to piggery pollution”*

- *The kind of support the PM needs most from Experts/PCU would be more around the technical and scientific area. Knowing HOW to measure reduction in pathogens released, monitoring change from DLP, measuring improvement in water quality.*

**7. LEARNING EXCHANGE IMPROVEMENT** – *What more would you like to learn? How could the design of the learning exchange be improved for future application?*

- *It would have been nice to actually go out with enforcement officers to issue citations. It would have also been nice if there were more time to show us how to calculate/estimate how much nutrient is reduced by pigs removed.*