

## **New water security measures in Yap Proper, Yap State, FSM**

### **Background**

During the 2018 consultation in Yap Proper, involving community representatives, NGOs and state agencies, it was decided to focus on refurbishing abandoned water sources in Yap Proper, which could then provide “point sources” for households and communities during drought.

### **Planning Phase**

Four main options were considered during the second half of 2018 and site visits conducted:

- Refurbishing community wells (4 sites were assessed)
- Extraction from surface water sources (2 sites were assessed)
- Enhancement of community rainwater harvesting systems (9 sites were assessed).
- Purchase of a drill for new wells.

A risk matrix was prepared to assess the different options for the RENI project.

After discussion it was decided to focus on three main measures:

1. Expand the rainwater harvesting systems at five community buildings
2. Establish ecological purification systems on the surface water streams at Dugor and Rumuu communities.
3. Conduct a hydrogeological assessment of the main underground aquifer, the Tomil Gagil Aquifer. (This was instead of the option of purchasing a new drill). This activity is described at <http://ccprojects.gsd.spc.int/4208-2/>

### **Implementation**

#### ***Enhancing Community Rainwater Harvesting***

Following detailed assessments, the following five sites were selected:

- Tamil Women’s Community Centre, Maap Village, Tamil Municipality
- Kaday Village Community Centre, Weloy Municipality
- Gagil Elementary School, Gachpar Village, Gagil Municipality
- Balabat Village Community Hall, Rull Municipality
- Tamil Elementary School, Tamil Municipality.

The selected sites were distributed across Yap Proper, and included a school, a women’s community building and other community buildings. In line with the project’s focus on communities and the more vulnerable groups.

Applying the lessons learnt from the Fais Island impact assessment in February 2019, special attention was given to involving the communities in the process. During the first half of 2019, the FSM Project Coordinator consulted with each community to discuss the proposed measures and a Memorandum of Understanding was signed with each community. These clearly identified the relative roles of the government and the community, land ownership and the ownership of the water system. The MOU (see sample) clearly defined the responsibility of the community to maintain the system and to allow public access to water from the system during any drought, for the purposes of water security.



Following a detailed design phase, procurement started in at the beginning of 2019. However, the request for proposals was closed without a successful bidder as the price quoted was substantially higher than what had been budgeted and negotiation was not an option. Recognising that no one supplier in the Pacific could provide all the items as per specifications, separate quotes were obtained for similar scope items.

The materials were purchased and delivered and a local contractor completed the installation in 2019. Involvement of the community in the installation was included in the installation contract. First flush diverters and leaf eaters were part of each installation. The water measures were fenced, and the gates padlocked so as to facilitate management and rationing during drought. A total of 73,931 litres (19,500 gallons) additional storage was provided by the project.

In January 2020, the Project Engineer and the FSM National Coordinator visited all the installations to check for compliance and at the same time to provide training and materials to the community representatives to maintain the new water measures. Checklists were provided and responsibilities for particular maintenance activities assigned.



*Maintenance training at Tamil Elementary School, Yap proper, January 2020*

### *Installing Ecological Purification systems in communities*

During the 2018 planning it was decided to install ecological purification systems (EPS) on the surface water streams at Dugor and Rumuu communities. This is a low cost, environmentally friendly water treatment method. Water flows under gravity through three tanks where gravel, sand and algae remove the impurities. EPS systems have been successfully installed in many communities in Fiji.



*EPS systems in Fiji*

At the beginning of 2019 meetings were held with the communities in Dugor and Rumuu and memoranda of understanding were signed setting out the community's role, the government's role and confirming the land ownership and the ownership of the EPS system. The MOU (see sample) clearly defined the responsibility of the community to maintain the system and to allow public access to water from the system during any drought, for the purposes of water security. Procurement of the materials was undertaken during the second half of 2019.

The leader of the Dugor community raised an issue about the use of community labourers to construct the EPS measures in November 2019. The community preferred to do the installation themselves rather than having a local contractor do the installation. As a result of this concern the signing of contracts for the materials was delayed. The issue was satisfactorily resolved when the communities were assured that the local contractor would be hiring labourers from the community.

To further reassure the communities the Project Engineer and an EPS expert from the Fiji Government Ministry of Waterways and Environment visited Yap Proper and the two communities in January 2020. A model of the EPS system was set up and discussed with the communities, and they each confirmed their acceptance of the systems.



*Demonstration of a physical model of the EPS to the Rumuu community, January 2020*



*Presentation about the EPS system to Rumuu community, Yap Proper, January 2020*

Despite this, the Rumuu community raised further concerns and in April 2020, the Rumuu site was replaced by the Amin community.

Unfortunately, these discussions, while extremely important, delayed the contracting and shipment process, and the delivery of all the materials was delayed until August 2020 due to the travel restrictions resulting from the COVID-19 pandemic.

Installation of the measures is planned for completion in 2020. This requires very close consultation between the Project Engineer and the local contractor, using virtual modalities, to ensure the installation is fully compliant with specifications, and that the EPS systems are satisfactory for the communities.