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RANO WASH

Rural Access to New Opportunities
in Water, Sanitation, and Hygiene, Madagascar

Annual Report FY19

October 1, 2018 to September 30, 2019

Quarterly Report

4th Quarter – July 1 to September 30, 2019

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FRONT PICTURE: Private operator working for the water operator AπR in Ambila Lemaitso, Atsinanana (Photo credit: RANO WASH)

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ACRONYMS AND ABBREVIATIONS

APS	Avant-Projet Sommaire (Technical Scoping Study)
APD	Avant-Projet Détaillé (Detailed Project Design)
AO	Agreement Officer
AOPDEM	National Association of Private Water Providers
AOR	Agreement Officer Representative
BC	Behavior Change
BCD	Behavior Centered Design
BNGRC	Bureau National de Gestion des Risques et Catastrophes (National Bureau of Disaster Risk Management)
BPOC	Budget Programme par Objectif Communal (Communal Program Budget per Objective)
BPON	Budget Programme par Objectif National (National Program Budget per Objective)
BPOR	Budget Programme par Objectif et Région (Regional Program Budget per Objective)
CARE	Cooperative for Assistance and Relief Everywhere Inc.
CHV	Community Health Volunteers
CLTS	Community-Led Total Sanitation
COP	Chief Of Party
CRM	Climate Risk Management
CRS	Catholic Relief Service
CSO	Civil Society Organization
CTTP	Center for the Triage and the Treatment of the Plague
DCOP	Deputy Chief of Party
DGRE	Direction de la Gestion des Ressources en Eau (Direction of Water Resource Management)
DiMat	District Monitoring Assessment Tool
DMEAL	Director of Monitoring, Evaluation, Accountability, and Learning
DREEH	Direction Régionale de l'Energie, de l'Eau et des Hydrocarbures (Regional Direction of Energy, Water, and Hydrocarbon)
DSI	Direction of the Information System
EMMP	Environmental Mitigation & Monitoring Plan
ERF	Environmental Review Form
ERR	Environmental Review Report
ESF	Environmental Screening Form
FAA	Fonds d'Appui pour l'Assainissement (Global Sanitation Fund)
FY	Fiscal Year
GoM	Government of Madagascar
GSF	Global Sanitation Fund
IBM	Integrated Behavioral Model
ICT4D	Information and Communication Technology for Development
IP	Implementing Partner
JSR	Joint Sectorial Review

KRFF	Local committees at the Fokontany level
LDP WASH	Local Development WASH Plan
LSHTM	London School of Hygiene and Tropical Medicine
MCSP	Maternal and Child Survival Program
MEEH	Ministère de l'Eau, de l'Energie et de l'Hydrocarbure (Ministry of Water, Energy and Hydrocarbon)
MEO	Mission Environmental Officer
MFI	Micro-Finance Institution
MHM	Menstrual Hygiene Management
MOC	Maîtrise d'Ouvrage Communale (Communal Project Management)
MoEEF	Ministry of Environment, Ecology, and Forest
MoFB	Ministry of Finance and Budget
MoID	Ministry of Interior and Decentralization
MoNE	Ministry of National Education
MoPH	Ministry of Public Heath
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
NPP-WSH	National Platform for the Promotion of Water, Sanitation, and Hygiene
ODF	Open Defecation Free
ODDIT	Organisme de Développement de la Diosèce de Toamasina (Toamasina Diocese Development Organization)
ONCD	National Office of Concertation and Decentralization
PCT	Project Coordination Team
PGDI	Projet de Gouvernance et de Développement Institutionnel (Governance and Institutional Development Project)
PGRM	Projet de Gouvernance des Ressources Minières (Mining Resources Governance Project)
PHE	Population, Health, and Environment
PIC	Projet Pôles Intégrés de Croissance (Integrated Growth Pole Project)
PMP	Performance Monitoring Plan
PNI	WASH National Investment Plan
PNP-EAH	Plateforme Nationale de la Promotion de l'Eau, Assainissement et Hygiène (National Platform for the Promotion of Water, Sanitation and Hygiene)
PPR	Performance Plan Report
RANO WASH	Rural Access to New Opportunities in Water, Sanitation, and Hygiene
RDoWEH	Regional Director of Water Energy and Hydrocarbon
SE&AM	Suivi Eau et Assainissement de Madagascar (Madagascar Water and Sanitation Monitoring)
SILC	Specialized Investment and Lending Corporation
SLC	Structure Locale de Concertation (Local Dialogue Structure)
SMILER	Simple Monitoring of Indicators for Learning and Evidence-based Reporting
SO	Strategic Objective
STEAH	Service Technique de l'Eau, Assainissement et l'Hygiène (Water, Sanitation and Hygiene Technical Department)

STH	Soil-Transmitted Helminth infections
STTA	Short Term Technical Assistance
SWA	Sanitation and Water for All
SWAp	Sector Wide Approach
TDY	Temporary Duty
TFP	Technical and Financial Partner
TOR	Terms of reference
ToT	Training of Trainers
USA	United States of America
USAID	United States Agency for International Development
USG	United States Government
VAT	Value Added Tax
VSLA	Village Savings and Loan Association
WALIS	Water for Africa through Leadership Institutional Support
WASH	Water And Sanitation and Hygiene
WASH-BAT	WASH Bottleneck Analysis Tool
WHO	World Health Organization
WMA	WASH Market Assessment
WMDP	WASH Market Development Plan
WQAP	Water Quality Assurance Plan
WSP	WASH Service Provider

PROJECT OVERVIEW/SUMMARY

Project Name:	Rural Access to New Opportunities in Water, Sanitation, and Hygiene, Madagascar (RANO WASH)
Activity Start Date And End Date:	June 15, 2017 – June 15, 2022
Name of Prime Implementing Partner:	Cooperative for Assistance and Relief Everywhere Inc (CARE)
Cooperative Agreement Number:	AID-687-A-17-00002
Name of Subawardees:	Catholic Relief Services (CRS), WaterAid, BushProof and Sandandrano
Major Counterpart Organizations:	Ministry of Water, Energy, and Hydrocarbon; Ministry of Public Health; Ministry of Interior and Decentralization; Ministry of National Education; Ministry of Environment, Ecology, and Forests; Ministry of Higher Education and Scientific Research; Ministry of Finance and Budget; Ministry of Population, Social Protection, and Woman Promotion; regional and commune governments
Geographic Coverage:	250 communes in 6 regions: Alaotra Mangoro, Atsinanana. Amoron'i Mania, Haute Matsiatra, Vakinankaratra, and Vatovavy Fitovinany regions, Madagascar
Geographic Coverage in FY19:	110 communes in 4 regions: Alaotra Mangoro, Atsinanana, Vakinankaratra, and Vatovavy Fitovinany. Activities at the regional level in 2 regions: Amoron'i Mania and Haute Matsiatra
Reporting Period:	October 1, 2018, to September 30, 2019

Project Description/Introduction

The Rural Access to New Opportunities in Water, Sanitation, and Hygiene (RANO WASH) project aims to increase equitable and sustainable access to water, sanitation, and hygiene services; maximize the impact on human health and nutrition, and preserve the environment in 250 rural communes in six high-priority regions: Vatovavy Fitovinany, Atsinanana, Alaotra Mangoro, Amoron'i Mania, Haute Matsiatra, and Vakinankaratra.

A CARE International-led consortium that includes Catholic Relief Services (CRS), WaterAid, BushProof, and Sandandrano implements the RANO WASH project.

The project is developing a systematic partnership with national and regional governments, water and sanitation institutions, communities, private sector actors, civil society organizations, and beneficiaries to accomplish this goal. The aim is to implement a strategic set of mutually supporting activities that contribute to three interlinked strategic objectives:

1. Strengthening the governance and monitoring of water and sanitation;

2. Increasing the engagement of the private sector in the delivery of WASH services;

3. Accelerating the adoption of healthy behaviors and the use of WASH services.

In FY2019, RANO WASH worked at the communal level in four of the six selected regions: Alaotra Mangoro, Atsinanana, Vakinankaratra, and Vatovavy Fitovinany; and at the regional level in two regions: Amoron'i Mania and Haute Matsiatra.

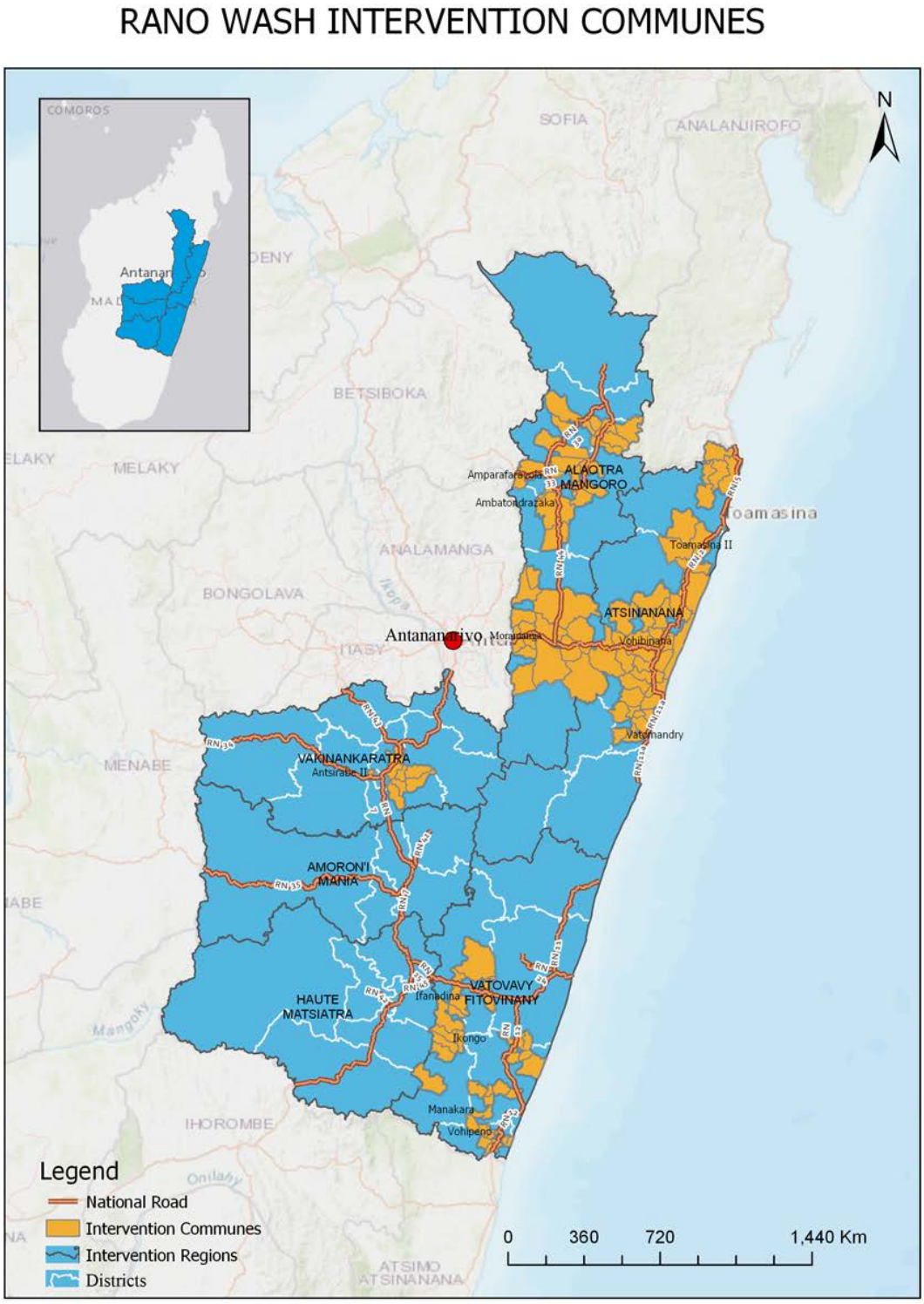


Figure 1. RANO WASH 110 Intervention Communes

ACTIVITY IMPLEMENTATION PROGRESS

Implementation Status

In FY19, RANO WASH extended its intervention into 59 new communes, for a total of 110 intervention communes. Together with the MoWASH, the project developed a demand-led approach to identify communes on metrics related to organization, leadership, and solidarity that increase the ownership and accountability necessary to sustain results over the long term. In FY19 Q4, the project started the process of selecting the remaining 140 communes. 130 Communes were selected with the regional directions (Ministries in charge of WASH, Public Health, and National Education). The RANO WASH Alaotra Mangoro regional team relaunched a call for expressions of interest at the request of the DREEH to align this process with the municipal election calendar (November 19- January 20) and the proclamation of newly elected mayors (scheduled for January 2020). The selection of the 10 remaining Communes will be held in FY20 Q1.

RANO WASH also expanded upon and sharpened the broad range of activities started in FY18 in order to scale up impact and bring about measurable results across the six project intervention regions. This included re-aligning priorities with the MoWASH, water system construction and management, and implementing a behavior change strategy.

Water supply activities included monitoring the quality and environmental compliance of the 12 construction works, supporting private water operators to promote the installation of water connections, launching construction for new water systems, developing and testing different service delivery models under the PPP to extend services to remote villages, and considering a circular economy allowing profitability for the private sector and sustainability of WASH services. Despite several project management tools developed to support the program implementation, not all targets set in FY19 were met. There was notably less progress than anticipated in reaching targets set in strategic objective 2.

To ensure that improvements in access to WASH services are sustained, RANO WASH is promoting a system-wide approach that tackles all dimensions—policy, financing, institutions and other key building blocks at national and local levels, which requires collective action and change, involving all stakeholders who make up the system[1]. (Figure 2 and annex 5).

[1] CARE and WaterAid are members of the Agenda for Change, a global collaboration launched in 2015 to support the delivery of sustainable WASH services through systems strengthening. https://www.washagendaforchange.net/about CARE, CRS and WaterAid are also members of the Millennium Water Alliance, a consortium of leading charities offering sustainable solutions through advocacy, shared knowledge, and collaborative programming https://mwawater.org

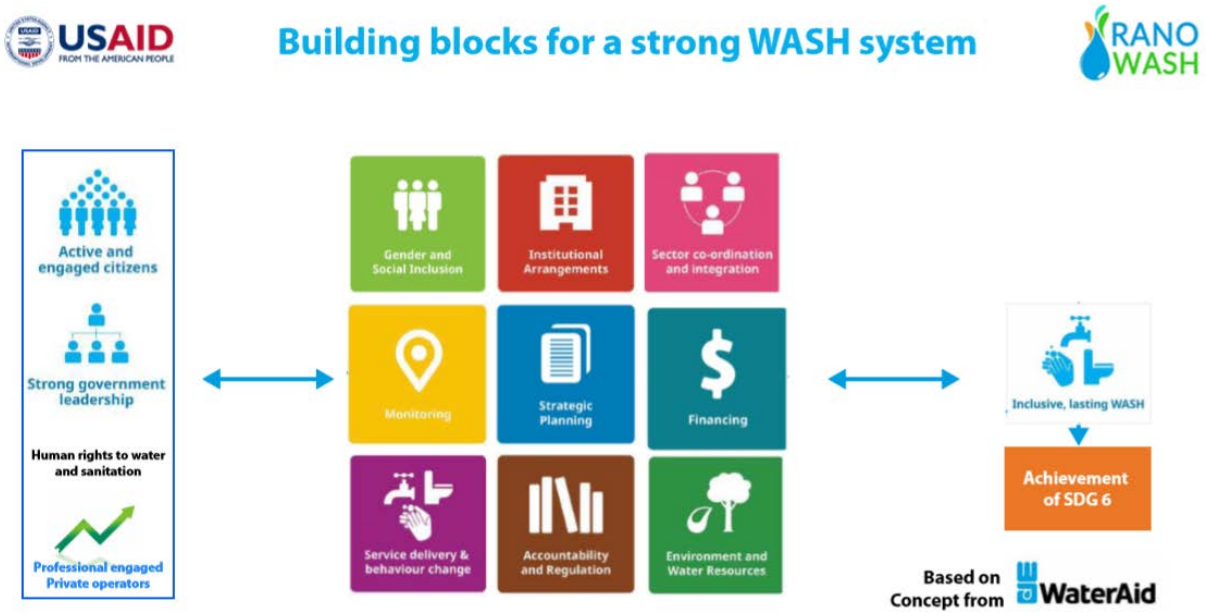
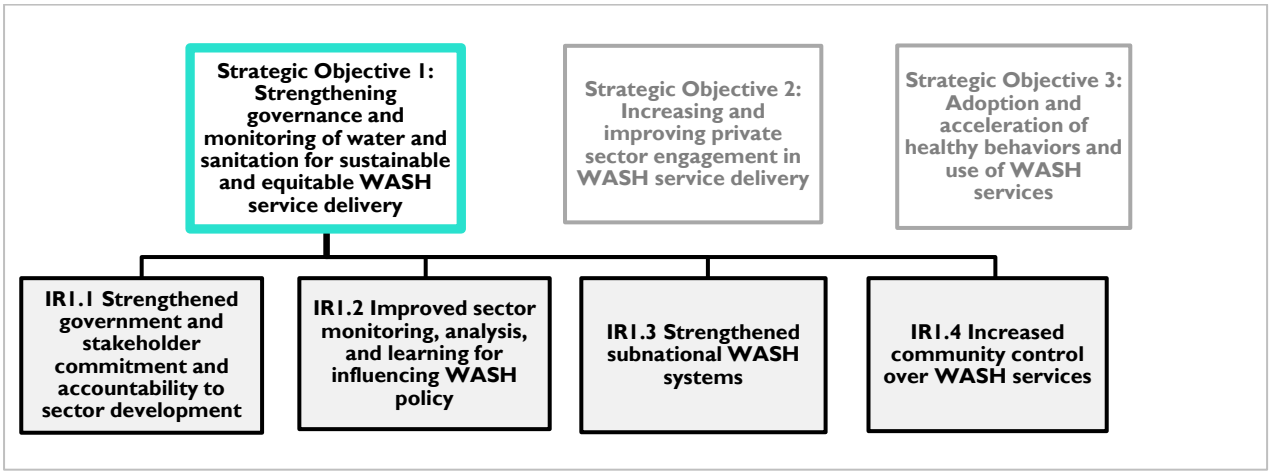


Figure 2. WASH System

Strategic Objective 1: Strengthening governance and monitoring of water and sanitation for sustainable and equitable WASH service delivery



Key achievements

MEEH is in the final review stages for its sector plan, and RANO WASH facilitated a wide consultation process, including the private sector and civil society organizations. The sector plan is a key component in harmonizing sector priorities and setting out a framework for all stakeholders' actions.

Sector coordination structures and roles and responsibilities were defined at the national and regional levels under the leadership of MEEH. The first round of coordination meetings tested RANO WASH's assumptions and allowed the team to bring together challenges and lessons learned to inform future meetings and continue to strengthen MEEH's leadership ability.

Coaching DREEH and technical and financial partners in intervention regions through two timely SE&AM data updates. The experience of RANO WASH in updating SE&AM motivated stakeholders to set up a technical reflection committee and a

joint SE&AM improvement project to be supported technically and financially by UNICEF, WaterAid, and RANO WASH in FY20.

Improving STEAH's capacity to conduct technical and financial monitoring. This will strengthen the support available to private operators, and the lessons learned, and successes will provide valuable evidence as the GoM moves forward in the process of institutionalizing a national model for technical and financial support.

Strengthening the capacity of the 110 municipalities in WASH project management and engaging the private sector in the development of WASH services. A total of 65 municipalities set up a financing and technical monitoring operator (STEAH), 79 had their CSO network implementing their advocacy plans, and 109 communes had functional SLCs.

IR1.1 Strengthened government and stakeholder commitment and accountability to sector development

Output 1.1.1 Sector coordination and learning mechanisms operating effectively under strong national leadership

Box 1. Context

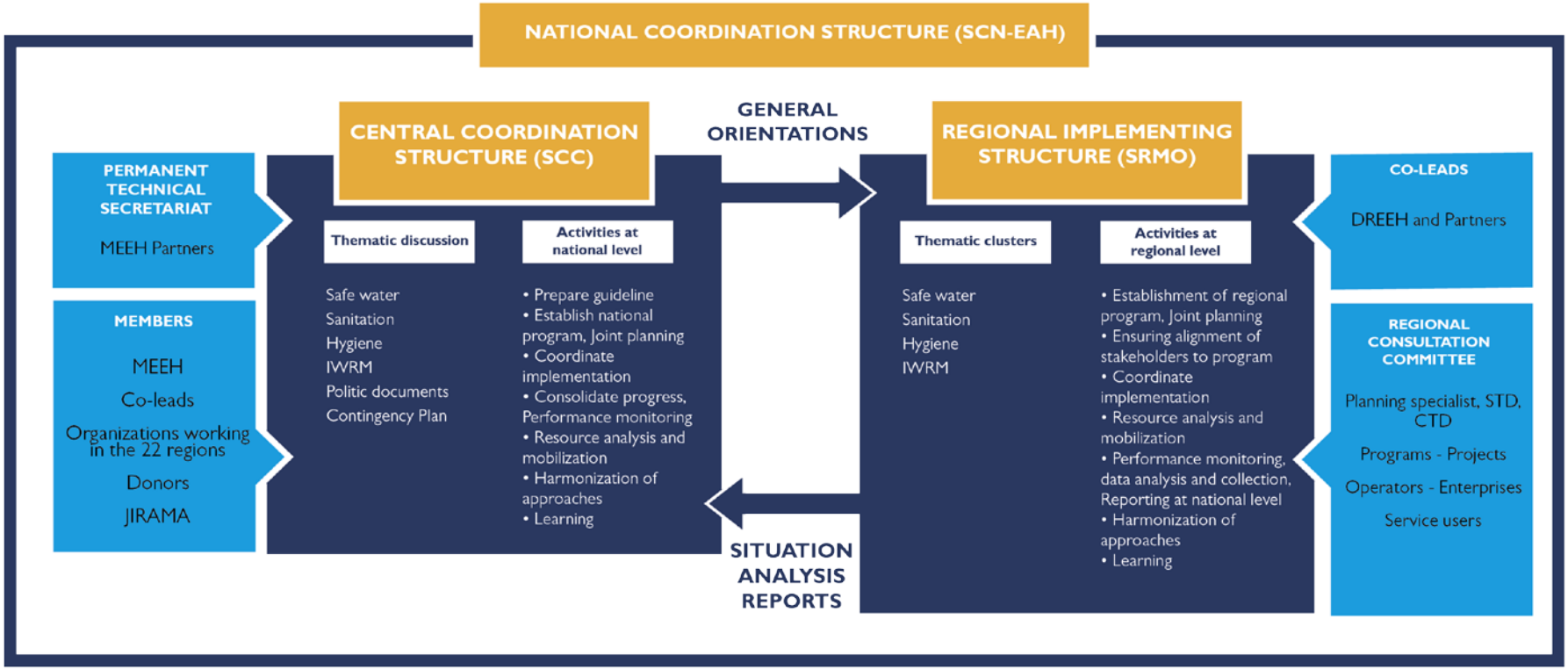
A new presidential election cycle resulted in a new organizational structure for WASH, in which the ministry in charge of WASH once again merged with the Energy and Carbon Ministry to create MEEH. It also ushered in new personnel under MEEH, which meant reinvesting in capacity building and advocacy for core sector functions.

Despite these ministerial changes, we were able to capitalize on MEEH's willingness to ensure continuity and thus prioritize the necessary foundations for effective collaboration at the sector level for FY19.

RANO WASH supported MEEH to (1) set up the 2023 WASH objectives through the performance contract; (2) define the structure, roles, and responsibilities for a formal and regular coordination structure at the regional and national level[2]. A total of 13 of 22 regions held their first SRMo meeting in Q4, including the six regions RANO WASH supports. These first steps demonstrate MEEH's willingness to systematize reporting through sharing sector progress (through SE&AM) against performance contracts during each meeting.

The first 3-month cycle for implementing the SRMo structure highlighted the need for more guidance from MEEH regarding the process, clarification on certain roles and responsibilities, and harmonization of coordination tools. RANO WASH will support SRMOs to establish quarterly after-action reviews on the roles and responsibilities described in the TORs. We will document the results of these reflections in order to improve collaboration at the regional level and with national entities.

[2] The ToRs defining the roles and responsibilities of the coordinating structures at national and regional level and the member entities are annexed to this report. (Annex 19)



LEGENDS

CTD	Collectivités Territoriales Décentralisées (Decentralized Territorial Collectivities)	**MEEH**	Ministry of Energy Water and Hydrocarbon
DREEH	Direction Régionale de l'Energie, l'Eau et des Hydrocarbures (Regional Direction of Energy Water and Hydrocarbon)	**STD**	Services Techniques Déconcentrés (Decentralised Technical Services)
IWRM	Integrated Water Resource Management	**SCN-EAH**	Structure de Coordination Nationale de l'Eau l'Assainissement et l'Hygiene (WASH National Coordination Structure)
JIRAMA	JIRAMA state-owned electric utility and water services company in Madagascar	**SRMo**	Structure Régionale de Mise en Œuvre (Regional Implementation Structure)

Figure 3. SCNEAH Coordination Structure

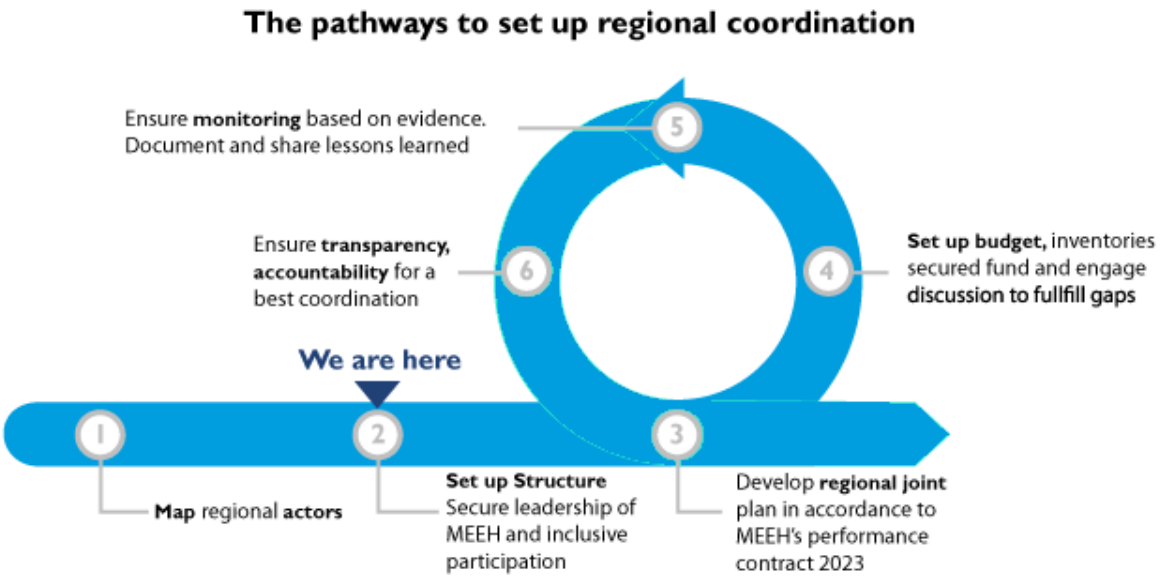


Figure 4. Pathways WASH Regional Coordination

The inclusive participation of stakeholders is one of the qualities that RANO WASH wishes to observe in the sector's dialogue spaces. The private sector is a key actor, as the coordination decisions concern it. Similarly, WASH-CSOs are the voice of the community and actively work to ensure that local demands are heard.

In FY19, we worked on two points: (1) advocate with the government to open the doors to its participation, which has been achieved at regional level but not yet at national level; (2) strengthen the visibility of these structures and their ability to influence decisions affecting them.

With a long-term objective of effective participation of private sector groups and OSC-EAH in coordination, RANO WASH has:

Mobilized private operators from the Atsinanana, Alaotra Mangoro, and Vatovavy Fitovinany regions to get together and participate through sector meetings, including:
Regional consultation for the development of PSEAH (Q1);

Madagascar WASH Week (Q2);

Regional coordination (Q4);

Discussing capacity-building opportunities at the regional level, identifying key learnings and sharing opportunities useful to them (Q4);

Equipping them with tools and skills to be active in the market development plan discussions in each region (Q2–Q4).

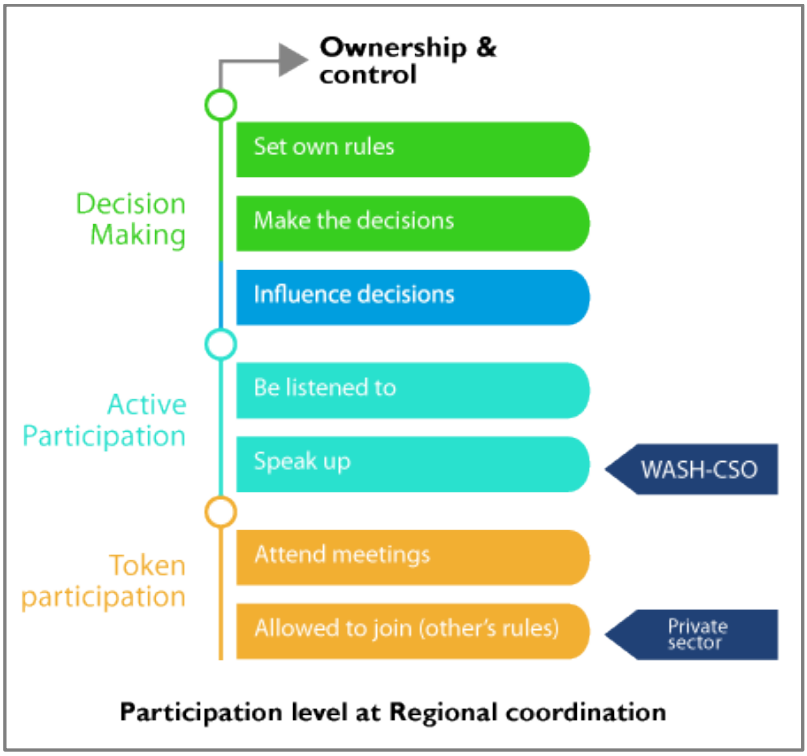


Figure 5. Participation Ladder of the private sector and CSOs in the WASH Coordination Structure

Mobilized, trained, and coached the regional WASH-CSO from five out the six regions:

To hold general assemblies to update CSO mapping in each region and integrate communal WASH-CSO and the election of new representatives (Q2–Q4);

To promote the CSO-WASH network visibility during the WASH week (Q2) and the regional consultation for the development of PSEAH (Q1);

To implement advocacy activities (Q2–Q4).

Figure 4 describes the progress of private sector and CSOs against RANO WASH's metrics to define meaningful participation.

Output 1.1.2 Developing the institutional capacity of the ministry in charge of WASH to meet strategic needs

This fiscal year was marked by the new president's five-year development strategy for Madagascar, including objectives to ensure WASH services, for which several key policies and sector coordination, planning, and monitoring functions that RANO WASH developed and/or supported were consulted.

To improve MEEH's capacity to achieve and monitor WASH sector progress towards SDGs 6, RANO WASH worked hand in hand with MEEH on the need to clarify national policies used within the sector as the basis for designing operational plans (sector plan) and mobilizing resources to implement them.

As result of this advocacy, RANO WASH and MEEH developed an action plan for "Axis 4: Development of WASH framework documents." Various parties got involved in updating these policy documents and some committed to financing some activities: (1) HP+ supported the development process of policy direction; (2) UNICEF got involved with the WASH sector plan (PSEAH), with financial support from other actors for the regional consultation (consultation in Atsinanana, Vakinankaratra, Alaotra Mangoro, and Vatovavy Fitovinany was financed by RANO WASH); (3) RANO WASH committed to supporting the costing and financial strategy for PSEAH.

Box 2. Axis 4: Development of WASH framework documents for the 2023 MEEH's performance contract

1. Set up the permanent national coordination structure (SCN-EAH) technical secretariat
2. Update and finalize the policy direction of WASH sector
3. Finalize the WASH sector plan (PSEAH)
4. Review the texts (Water, Sanitation, and Hygiene Code and its decrees)
5. Elaborate the National Investment Plan
6. Integrate the WASH component into local development plans
7. Define common indicators to track performance against plans
8. Disseminate policy documents
9. Develop the sustainability strategy
10. Set up a knowledge management center
11. Develop the WASH sustainability strategy
12. Develop the WASH strategy in schools

RANO WASH is active within the technical committee that advises MEEH on the development and validation of all these documents. RANO WASH participated in the discussion to update the status of Madagascar for GLASS, Ngor engagement, and the Sanitation and Water for All (SWA) meeting. RANO WASH provided technical support to MEEH to cost for the achievement of the SDGs 2030, which was presented during the SWA meeting in Costa Rica, and the financing required annually for services planned in MEEH's performance contract.

Box 3. Progress Report on SE&AM

The MoWASH increasingly uses SE&AM to facilitate discussions with partners, and the ministry team is becoming more autonomous in operating the system.

For each event organized by MEEH, we can see tables or maps from SE&AM data. For example, MEEH shared maps of the access rate of WASH services, maps of recommended locations for private sector investment, maps of the location of actors' intervention flows, etc.

SE&AM was also used to develop the distribution of performance contract objectives by region and status tables for each region to facilitate discussions during the regional consultations of PSEAH.

Finally, SE&AM data was used to update the situation in Madagascar at the global level (SWA, GLASS, Ngor, etc.).

IR1.2 Improved sector monitoring, analysis, and learning for influencing WASH policy

Output 1.2.1 Strengthening and extending SE&AM

RANO WASH continued its support to SE&AM as the GoM's existing platform. We (1) mobilized the actors in its six intervention regions, (2) trained these actors in the use and update of SE&AM, and (3) coached DREEH, actors, and the communes during each data update.

Data updates were carried out at commune and TFP level. Sixteen out of 18 communes[3] piloted ICT4D for infrastructure data within the mWater system. STEAH also used this system during its water points monitoring visits, with technical support from RANO WASH.

[3] 18 communes refers to the communes benefiting from the water systems from RANO WASH.

The challenges and lessons learned will continue to inform SE&AM upgrades[4] and functions. To improve ownership by stakeholders, a technical committee representing the sector's stakeholders has been set up to lead these SE&AM upgrades with financial commitment from RANO WASH, WaterAid, and UNICEF during FY20.

Output 1.2.2 Implementation of the learning agenda to increase and better regulate private sector engagement in WASH

To strengthen learning and knowledge sharing in the WASH sector, RANO WASH is working on two components: (1) mobilize stakeholders to create learning groups and implement a common learning plan, and (2) promote the use of the MEEH digital library as a sharing space for all WASH-related documents.

During this FY, RANO WASH continued to inform regional-level stakeholders about the MEEH digital library. RANO WASH trained the actors of the three new regions to use the digital library. Moreover, the 31 APS and APD documents produced by RANO WASH are available online in the digital library. Users commitment to use the digital library is still low, both from the MEAH which manages the library and from to other WASH actors. RANO WASH plans to facilitate with the MEEH the inventory of documents at the SRMO level to be shared in the library, to strengthen the capacity both of the library manager to have documents of interest to WASH actors and of the MEEH to provide updates and promote the use the digital library.

For FY19, private operator groups in the three regions have set up their learning agenda, and sharing activities[5] have been initiated in Alaotra Mangoro.

IR1.3 Strengthened subnational systems

Output 1.3.1 Availability of decentralized resources for sustained WASH service delivery

In FY19, RANO WASH worked on two components to strengthen the governance and tools available at the regional level during FY20: (1) improvement of the planning and monitoring process and (2) strengthening DREEH's capacity to effectively support their respective municipalities.

During Q1–Q3, RANO WASH (1) provided a training session on BPOR data and regional projections to reach the ministry's commitment to universal access by 2030, and (2) discussed the improvements needed in the WASH sector at regional level with DREEH and stakeholders.

During Q3–Q4, the implementation of the SNC-EAH and the regional structure (SRMo) required a review of the tools for planning, monitoring, reporting, and learning. Our effort has been redirected towards the establishment of the regional structure (Q4) and the identification of priority activities to make it operational. We are currently working on developing the annual regional planning tools that reflect regional plan data (BPOR). The evaluation of progress at BPOR level is delayed for FY20 and will be reviewed and carried out when the SRMo is effective and ready for such activities.

We engaged five of the six DREEHs this year to improve our STEAH training cycle. They participated in improving the organization of training, developing training tools, monitoring

[4] Detailed improvement needs are shared in Annex 6 SE&AM upgrade

[5] Sharing on "The manufacture of jatropha soap" by ERATEC, represented by Professor Etienne Rakotomaria; sharing for local masons on "Waterproofing of concrete" by ETANCO Sarl.

STEAH performance in the field, and developing and implementing STEAH aptitude tests. The idea is to make them able to lead these training sessions in FY20.

Output 1.3.2 Strengthening commune management capacities for WASH service delivery

In order to strengthen each commune's capacity to fulfill its mandate to provide WASH services, RANO WASH focused on four key entry points:

(1) Strengthen knowledge on their role and responsibility as asset owner and duty bearer for WASH and in the benefits and constraints of working with the private sector. In this context, RANO WASH trained leaders of the 110 municipalities on the MOC and PPP contracts (Q1–Q4) and held an exchange visit for the eight communes benefiting water systems in FY20 in Haute Matsiatra and Amoron'i Mania (Q3).

(2) Improve municipalities' ability to secure sufficient funding for communal development by improving their capacity to mobilize local resources. RANO WASH worked with the MoID to design a training course for STEAH and commune accountants in local resource mobilization (Q4). These technicians will help new mayors set up a plan to identify local resources in a participatory manner with communities.

(3) Improve the planning capacity of municipalities through the development of communal plans (PCDEAH) (Q2–Q4). Out of 51 municipalities, 43 undertook the WASH plan, 10 of which are in the first draft stage of the document. The PCDEAH development process took longer than expected to better involve the municipalities. A review of the PCDEAH development process and tools will be done during FY20-Q1 to address challenges.

Box 4. Example of results and findings from commune capacity building

- Quick-success activities are motivating factors for new STEAHs in their new professions: CLTS, small repairs, regularization of community management contracts.
- Encourage municipalities to work with districts and MoID to set up STEAHs.
- Encourage the expansion of the commune's agent's skills instead of recruiting new STEAH agents.

(4) Strengthening STEAH as the WASH commune's focal point. RANO WASH has set up six training modules [6]for STEAH:

Picture 1 STEAH training by the DREEH (photo credit: RANO WASH)

The first three modules allow STEAHs to (1) deepen their knowledge of their roles and responsibilities relating to drinking water supply systems and sanitation, and (2) strengthen their capacity to implement key functions for which they are responsible. Of the 110 communes, 65 have STEAH trained on these modules and 45 communal WASH focal points have received lighter training enabling them to support their communes to develop their vision on WASH and to mobilize actors to improve WASH services. The STEAHs benefiting from the comprehensive training package have already started providing tangible services at the level

[6] Details on STEAH training are shared in the Annex 7. STEAH Training Cycle

of their respective communes, such as collaborating with project field officers in the implementation of CLTS, sharing with visitors and other actors the ongoing WASH activities undertaken or documenting problems and solutions relating to water system construction works.

Picture 2 STEAH training on Water treatment (photo credit: RANO WASH)

IR1.4 Increased community control over WASH services

Output 1.4.1 Awareness and organization of communes and communities with an active civil society, to claim their right to water and sanitation

In order to strengthen communities' knowledge and mobilize them to claim their rights to WASH, RANO WASH relied on (1) CSO-WASH group at commune level and (2) water users' associations (ASUREP) at local level with water supply services supported by RANO WASH.

RANO WASH currently supports 110 communal WASH-CSOs that represent civil society organizations working for WASH within each commune. These CSOs have received training on water and sanitation human rights (DH-EAH), and have put in place action plans to empower the community to claim their rights and to implement their advocacy plan.

During Q2–Q4, the WASH-CSO within the 51 (FY18) communes have received training to improve their advocacy strategy.

Table 1 Example of objectives set by communal WASH-CSOs in Atsinanana region

Example of objectives set by communal WASH-CSOs in Atsinanana region	
Niarovana Caroline	Before August 2019, persuade the municipality to negotiate the exploitation of the Ambodizavoka spring to supply water to the 3 fokontany—Bonaka, Niarovana, Mahatsara.
Ilaka Est	Before the end of December 2019, persuade the municipality to set up garbage bins at the market, school, hospital, and bus station.
Sahamatevina	Before the end of December 2019, commit the municipality to developing a strategy to increase access to latrines for 80% of households.
Niherenana	Persuade the commune to implement measures to protect the infrastructures for water supply.

RANO WASH currently provides technical support to 39 water users' associations to fight for the WASH users' rights. In Q3, RANO WASH trained representatives of 10 commune-level groups of WASH-CSOs (civil society organizations) in the PPP contract and the roles and responsibilities of the project owner, the private operator, and the association of service users (ASUREP). The training emphasized the importance of accountability mechanisms, taking into account user feedback to ensure the quality, equity, and sustainability of services. After the training, these members increased local knowledge about these contracts and shared the importance of accountability mechanisms. Within their commune, they have set up and strengthened the association of water service users (ASUREP).

Output 1.4.2 Communes with functional WASH accountability mechanisms

To encourage the participation of beneficiaries and the consideration of their ideas in decision-making, RANO WASH relied on (1) the local consultation structures and (2) accountability mechanisms to increase transparency in decision-making and to improve the responsiveness of water service providers to community feedback.

Box 5. Example of results and findings from CSOs, SLCs, and accountability mechanism

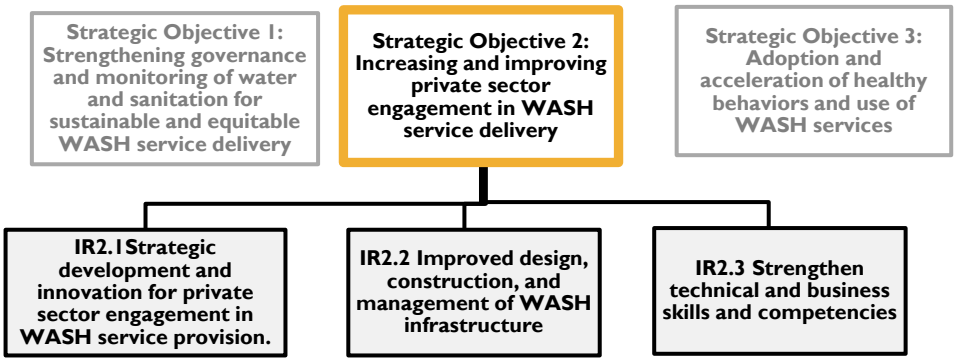
- Quick win for CSO advocacy: The Fokontany ODF competition launched by the municipality of Morarano-Gare led the Androfia fokontany to be one of the first ODF fokontany of the project (Alaotra Mangoro).
- Decision after a SLC meeting: The commitment of the rural commune of Fanandrana to mobilize 4,000,000 Ariary to build a modernized hand pump for 250 people.
- The CSC process in some non-functional water points helps to rehabilitate the infrastructure and improve management in Vatovavy Fitovinany.

(1) **58 out of 59 FY19 new municipalities have finalized the implementation of their SLC**. RANO WASH continued to coach the FY18 SLCs to strengthen the quality of public decision-making mechanisms.

(2) **RANO WASH trained 110 municipalities on accountability mechanisms and 69 of the target municipalities have an operational accountability mechanism**. RANO WASH uses the following mechanisms depending on the decision of the municipalities: Community Score Card (CSC), idea box, community meeting, or green phone line "Allo RANO WASH."

Picture 3 Opening of an idea box for reading community feedback in a community meeting (photo credit: RANO WASH)

Strategic Objective 2: Increasing and improving private sector engagement in WASH service delivery



Key achievements

In FY 19, 5,363 people gained access to basic drinking water services, including 2,703 people via social water connections, and 2,660 people via public water points. Additionally, 2,159 people gained access to safely managed drinking water services through private water connections.

A total of 39,704 people gained access to a limited sanitation service, through shared but improved latrines, and 20,524 people to a basic sanitation service through unshared improved latrines, according to the JMP service ladder. This shows a marked improvement in households' moving up the sanitation ladder.

The construction of the 12 water systems launched in FY 18 was completed and four out of the nine new water systems with ESF approval began construction at the end of Q4.

The project completed 49 APS and 12 APD, and the reports are validated by the municipalities, DREEH, and the PCT team.

RANO WASH continued to champion the co-invest-build-operation and maintenance PPP model. A total of 63 companies were preselected following the call for expressions of interest launched in Q1 for private operators wishing to become builder, co-investor, and manager for the drinking water supply. The project provided a training workshop for these preselected companies and a networking event with banks in order to improve the quality of bids for construction work and system management.

Tender committees comprising RANO WASH representatives, communal authorities, and beneficiaries' representatives, as well as DirWASH representatives, received on-the-job training in PPP procurement procedures and carried out analysis and evaluation of bids for the new nine water systems' construction and management.

Following the procurement process, four companies were selected to be builder, co-investor, and manager of the nine drinking water supply systems. According to the results of the bid evaluation, the companies' co-investment increased from 15 percent for the last 12 water systems to 17 percent for the upcoming nine water systems.

IR2.1 Strategic development and innovation for private sector engagement in WASH service provision

Output 2.1.1 Development of a comprehensive WASH Market Assessment (WMA) methodology

In FY19, RANO WASH conducted a WASH Market Assessment for the three new intervention regions, in addition to those of the former regions carried out in FY18. The WMA focused on the analysis of the following elements: customer description, customer perceptions and practices, market trends with existing services and progress of WASH services trends, challenges and opportunities in the supply chain, and market projections.

The WMA results will guide initial FY20 regional discussions on market development to fill information gaps and propose potential products and services to be discussed during market development workshops. The project contacted iDE to provide technical support for the development and implementation of sanitation service delivery models based on the results of this WMA. The scope of work will be finalized in Q1 FY20.

Output 2.1.2 Drafting regional WASH market development plans

In FY19, RANO WASH supported a first iteration of regional market-based WASH products and services strategies for its FY19 intervention regions by facilitating discussions between WASH sector development actors, private operators, and representatives of regional financial institutions.

In Q2 and Q3, RANO WASH organized workshops with different stakeholders, including MoWASH, the Ministry of Population, the Ministry of Health, region and district representatives, WASH service providers in the region, NGOs working on WASH, banks, and MFIs, to: i) identify and assess potential WASH services and products in the region and potential actors available to complete value chains; and ii) analyze the business environment, including barriers to scale and a Strengths-Weaknesses-Opportunities-Threats (SWOT) assessment of service providers. WASH stakeholders prioritized WASH products and services that serve local contexts and address objectives defined in the BPOR and regional development plans.

Picture 4 Latrine promoted by Nestor, a local mason in Ilaka Est, Atsinanana region (photo credit: RANO WASH)

Based on the results of the WMAs and consultation with other regional development plans, the project developed business models to test for priority products and services: private provision of drinking water services, latrine models (primarily SanPlat slabs with regional variations), and sanitary napkins. In Atsinanana, a local mason initiates and promotes an adapted pit and slab for sandy soil affordable for middle-class households.

The RANO WASH team will work on the development of these WMDP in FY20, and will have a dissemination session with WASH stakeholders to review the plan.

However, pending on the first iteration of the WMDPs, the project has begun to support initiatives taken by local operators to expand their WASH businesses and expand service delivery models beyond the local mason. For example, in Vatovavy Fitovinany, the project

identified a sanitation enterprise run by a private provider that offers services for SanPlat slab, nozzle[7] for the offset pit design, and latrine construction. RANO WASH then organized a sharing workshop between local masons on their successes and challenges allowing them to transfer skills and identify ways to collaborate for the development of their market, including supply chain collaboration and transport costs. A network of local masons was set up after this workshop, with the private sanitation operator accepting to lead the network in Manakara district in order to expand his business.

Output 2.1.3 Increasing the type and range of financial products for WASH services and products available and accessible

The project began the tendering process for the water system construction—co-investment— and management in June 2019. To build on lessons learned in order to improve the quality of bids for construction work and water system management, RANO WASH organized training for 63 preselected private water operators. It was an opportunity for the operators as well to meet ACCESS Bank and Baobab and to discover financial products facilitating their investment.

A total of four were able to benefit from loans to obtain the bank guarantee necessary for the financial and administrative provisions when submitting bids.

This connection was an opportunity for (i) private operators and financial institutions to identify additional WASH business opportunities, (ii) WASH service providers to discover available financial services, and (iii) a better understanding of the advantages of the Association of Private Water Operators of Madagascar (AOPDEM) membership.

To increase household access to finance, VSLA members were encouraged to invest in the purchase of WASH products and services. A total of 2,627 members were able to have access to latrines, basic hygiene products, and water treatment. The following table shows the distribution of these investments.

Table 2. Purchased products by VSLA members[8]

Purchased product	Number of VSLA members
Purchase bidon of sureau	728
Purchase SanPlat latrine slabs	138
Purchase material	629
Purchase soap	2,032
Water treatment purchase	463
Improve latrine facilities	178
Food hygiene	536
Menstrual hygiene	311
Privat connection payment	15
Social connection payment	90
Payment of water invoice	33

[7] These are nozzles of different sizes, which can be used for:
- The protection of excavations to build pit latrines, or for the construction of wells.
- The construction of septic tank compartments
- Domestic sewage disposal

[8] A member can buy several products at the same time so the figures are not cumulative.

IR 2.2 Improved design, construction, and management of WASH infrastructure

Technical feasibility studies (APS) and construction-project detailed designs (APD)

From FY19 onwards, RANO WASH selected its intervention municipalities through a demand-led approach. Criteria such as the number of potentially reachable populations (more attractive for a private manager if preferably more than 3,500), accessibility for cost-effectiveness, and the commitment of the communes to support the implementation of private management and billed services, are required for municipalities which benefited from APS and APD. Thus, the choice of municipalities for the APS and APD studies was established with the DREEHs.

In total, in FY19, 49 APS and 12 APD were completed by BushProof and Sandandrano, and the reports are validated by the municipalities, the DREEHs, and the PCT team. The targets of FY19 were 30 APS and 20 APDs. (Annex 8: List of APS and APD for FY19) Achievements in APS are beyond the target to activate the choice of sites for APD and finish all targeted APS in FY21. However, the APD target was not met because the project conducted a review of the APD process and report, with a view to improving and harmonizing deliverables.

APS and APD reports made by RANO WASH are archived in the SE&AM and shared with Communes, DREAHs and Central Ministry levels after their validation.

Elaboration and approval of ESFs

After APD study reports validation, the development of ESFs and its submissions to USAID began on June 2019, and the project got the last approval on September 20, 2019. All the approved ESFs were translated in French and shared with the project team and stakeholders who will implement and the environmental measures.

Tendering processes and contractualization

The procurement process included the following activities: i) a call for expression of interest to assemble a short list of companies for a restricted call for tenders; ii) a training for preselected enterprises to support them to submit higher-quality bids; iii) the development of bidding documents by the RANO WASH consortium and MoWASH; iv) the launch of restricted call for tenders; v) a site construction visit; vi) the evaluation by the bidding committee (see Box 6); and vii) the awarding of the contract award to the selected supplier.

Box 6. Members of a bidding committee:

- ✓ (03) Commune's representatives appointed by decree:
  - Mayor
  - Communal council's representative
  - Beneficiaries' representative
- ✓ (01) DirWASH representative
- ✓ (02) CRS/CARE/WaterAid representatives
- ✓ (01) RANO WASH PCT representative

Thus, 63 companies were preselected following the call for expressions of interest launched in Q1 for small and medium enterprises wishing to become builder, co-investor, and manager for the drinking water supply.

The PPP model adopted for FY19 was a construction, co-investment, and management model. Before the launch of the related restricted tendering processes, all interested private operators received training on issues and business opportunities that these markets involve. In this model, the project, and the government through VAT support, provided 80 to 90 percent of the funding, while the selected operator provided an average of 10 to 20 percent of infrastructure and equipment cost-share. A slight increase (1.5 percent) in investment by companies was noted.

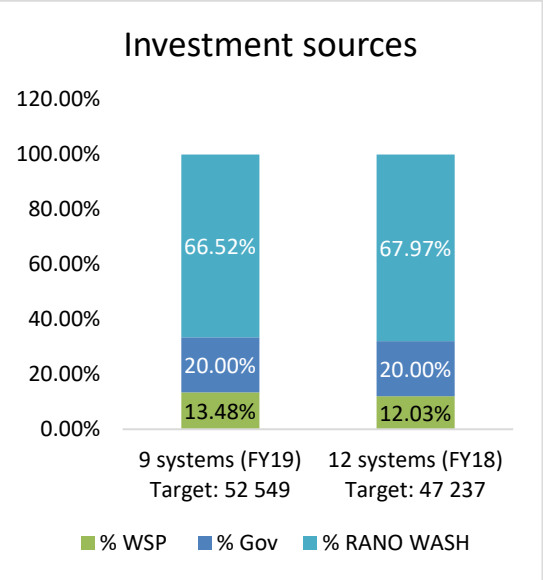


Figure 6 Investment sources of water system construction

To this end, a first wave of restricted tendering was launched in Q1 for the three Ambatofotsy projects that were not completed in FY18, and a second wave of seven restricted tenders was issued in Q3 for the nine additional works of the FY19. For systems in close proximity to each other, such as the three systems of Ambatofotsy Ikongo (Vatovavy Fitovinany), Mahatsara and Ampasimadinika (Atsinanana), and Betatamo and Ambongabe of Amparafaravola commune (Alaotra Mangoro), RANO WASH promotes economies of scale by recruiting a single manager for several systems.

For the 12 water system construction works, the definitive acceptance to release the 5 percent holdback is withheld for 12 months after the provisional acceptance. To learn from this experience, the project decided to reduce this period to six months to better support water operators in the startup of the operation for a contract of 15 to 20 years.

With RANO WASH-supported capacity building in PPP procurement, communes were better able to lead the tendering process. In FY19, the project completed the procurement process of new nine water systems[9] adopting the construction, co-investment, and management model.

According to the results of the bid evaluation, the companies' co-investment increased from 15 percent for the last 12 water systems to 17 percent for the upcoming nine water systems.

In FY18 the companies's co-investment ranged from 8 to 23 percent, averaging 15%. The average cost of a water supply system in 2018 was $78,000 with an average contribution of $11,000.

In FY19 the companies's co-investment ranged from 7 to 28 percent the average cost of a system was $117,000 (also with a significant increase in the number of potential beneficiaries) with an average contribution of $21,000 (or about 17 per cent). (Annex 9. Progress of Water System Construction Q4.19).

Construction work on the 12 systems started in FY18

[9] Communes benefiting from the new nine water systems: Atsinanana: Niarovana Caroline, Mahatsara, and Ampasimadinika; Alaotra Mangoro: Ambongabe and Betatamo in Amparafaravola Commune and Anosibe Ifody; Vatovavy Fitovinany: Antaretra, Lokomby, and Manampatrana.

The construction work for the 12 systems started in FY18 has all been provisionally accepted, and is currently operational. Furthermore, the project launched the construction of four out of the nine water systems approved in Q4 (Annex 9: Progress of Water System Construction).

Picture 5 Ferrocement water pipe in Ambila Lemaitso, Atsinanana Region (photo credit: RANO WASH)

As part of the water system construction, Sandandrano and BushProof provided on-the job training for the companies contracted with RANO WASH on new technologies/building techniques that are more ecological and cost-effective. For example, ferrocement has been used for filtration works and tanks (in the case of all new constructions). Sandandrano built a hybrid dam in ferrocement on the Foulpointe learning site, which allows to secure 43,000m^3 of water per year, in anticipation of the extension of the drinking water supply network (Annex 10 - 11. Photo documentation of ferrocement hydraulic structures and Technical brief on Hybrid dam).

Apart from these examples, the project will continue to document all the good practices it has acquired during the implementation of its construction activities.

Promotion of the first 100 water connections per system

During the start-up phase of the system's operation, a minimum number of customers is required, as well as the assurance of cost recovery (at least 90 percent). The average connection cost for a distance of 30m is around US$100, which is unaffordable for most rural households. Consequently, the minimum number of customers for profitability is not immediately reached. This represents a risk to the financial viability of the model during the first years of the startup (1 to 4 years). To address this challenge, the project is supporting WSPs in implementing a marketing strategy to provide affordable connections for the first 100 water connections. Furthermore, we supported the WSPs to establish a plan to reach the objective per site and to deliver intensive coaching sessions in FY20.

Picture 6 A household gaining a private water connection for the first time, Sabotsy Anjiro, Alaotra Mangoro Region (photo credit: RANO WASH)

With beneficiaries' financial contribution to the cost of the length of the connection from the main network to the meter, the project funded the cost of the first 100 connections by covering the meter cost and fixed accessories.

The number of people with access to water didn't meet FY19 targets. At the end of FY19, 497 households were able to access private connections and 679 households had access to social connections. A total of 532 households were able to access drinking water at collective

water points. In total, 5,363 people gained access to basic drinking water services and 2,159 people gained access to safe drinking water services managed through private connections.

The project estimated the expected results based on the number of people to be covered by the FY18 water systems built, which was too ambitious in relation to the capacity of the water operators and the demands from service users.
The water systems were operational from April 2019 but installation of new water connections took longer than expected for two main reasons:
Gaps in marketing capacity of WSPs to promote households to subscribe to new water connections;
Delays in the signature of concession contracts by the MEEH.

The increase in household demand for water connections in the early stages of water system management is still slow, requiring marketing and incentive activities to facilitate payment for the water connection. RANO WASH will provide further technical support to WSPs in FY20 on business management, including sales and marketing, customer relations and finance management.

The project will also implement water service models in unserved villages and fokontany, and support communes re-operate existing and functional water systems but without private sector operators.

Environmental monitoring and mitigation report

In general, BushProof and Sandandrano ensured the application and follow-up of environmental measures, and trained and coached the selected water operators to implement environmental action points. The construction work for the 12 water supply systems (WSS) s started at the beginning of FY19 is currently fully operational. However, the Andemaka system, whose rehabilitation was completed towards the end of Q4 FY19, will require even more support on the management side (further explanation in the previous section). The acceptance of this work means that the conditions required in the corresponding ESF have been verified and respected by the water operators.

With regard to water quality, the action plans defined in Q3 for problematic systems have been implemented and monitored in Q4. However, water quality assurance and customer satisfaction remain a challenge in coastal areas such as Ilaka Est, for instance, where the color of the water changes slightly to red, while the iron level in the water is below the maximum limit. Further information on water quality, the actions taken, and action plans underway is provided in Annex 12. EMMR – Water Quality Report. The project is still following the protocols set out in its WQAP to manage challenges, and continues to support managers in order to provide them with the ability to produce and distribute clean water that meets standards.

With regard to CLTS and behavior change activities, the project continued to train municipalities and private operators (Build–Invest–Operate) in environmental compliance measures, in particular those concerning persistent groundwater pollution due to the construction of latrines.

Also, with regard to climate risk management activities, best practices and lessons learned concerning this topic are shared within the detailed EMMR, particularly, a summary table of the RANO WASH achievements related to the CRM plan.

Improved use of latrines:

20,524 people out of 4,500 targets gained access to basic sanitation and 39,704 people out of 30,000 targets gained access to limited sanitation. The complementary activities within the behavior change strategy and the services provided by trained local masons explain this large difference. However, adopting the use of latrines is not difficult, the main challenge will be sustainability. RANO WASH will strengthen its market based sanitation approaches in FY20.

IR2.3 Strengthened technical and business skills and competencies

Output 2.3.1 Building abilities for private sector business systems and strengthening technical operations

RANO WASH conducted training for the 12 water supply providers and corresponding STEAHs on the operation and maintenance of these systems, in partnership with Sandandrano, BushProof, SHOPS Plus project, and the DREEH team. The training focused on building the private operators' abilities in water system management and operation (technical, financial, commercial, and organizational), contract management and supervision, customer needs, and the promotion of water connections and use.

Content of new WSP Training:
1) PPP and delegation of management
2) Roles and responsibilities of the different PPP stakeholders
3) Regulation on water tariffs and municipal fees
4) Access to financing for companies via SHOPS Plus
5) Business plan
6) Submission of bids for RANO WASH
7) Particular technical approaches of the project: ferrocement, global and fixed price contracts
8) Fraud and conflicts of interest

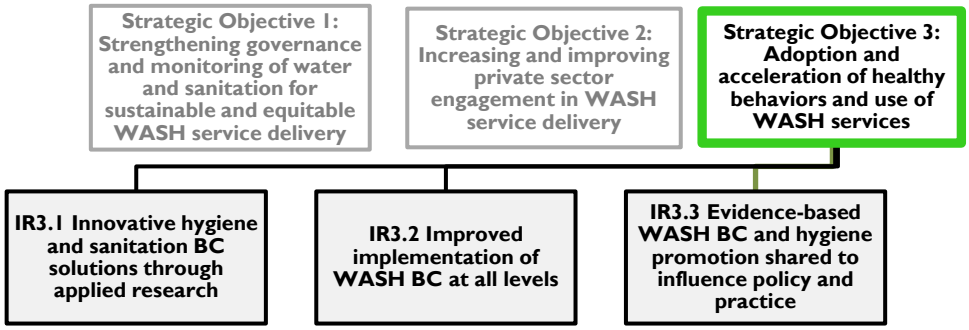
In each region, the project held a refresher session or an exchange workshop for local masons to support them in sharing best practices and challenges, and to address these together.

Output 2.3.2 Development of professional associations

A meeting was held in Q2 with AOPDEM (Association des Operateurs Privés Distributeurs d'Eau à Madagascar) to assess potential partnership opportunities, to learn more about its objectives and mission, and to assess a potential partnership to increase private sector engagement for the WASH service delivery. Ten members of AOPDEM attended the meeting and shared their mission and objectives, as well as their main challenges. One of these challenges is their need to master low-cost construction technologies, such as ferrocement and hybrid dams. RANO WASH provided an exchange visit and training in these technologies to WSPs on the Foulpointe site school. Sandandrano supported the seven water operators constructed in negotiating prices for group purchases related to the installation of fittings and piping for the connections of the 12 water systems.

In FY20, the project plans to establish an AOPDEM organizational and institutional diagnosis to serve as a benchmark for all private operators working in the WASH sector and to develop a capacity building plan for the association.

Strategic Objective 3: Accelerating adoption of health behaviors and use of WASH services



Key achievements

Implementation of the behavior change strategy based on LSHTM orientations at household and group levels under the Grow-Up sticker concept. A total of 6,425households were targeted with behavior change activities.

RANO WASH organized a sharing session on the behavior change strategy with ministries and WASH actors at national level to share lessons learned on the process/development of the strategy, including promoting strategies that go beyond education only and the importance of behavioral drivers in promoting change.

Development and use of a CLTS training curriculum for RANO WASH intervention areas, with adjustments to combine CLTS and sanitation marketing, maximizing the project's market-based approaches and understanding of behavioral drivers.

A total of 607 ODF communities were verified this fiscal year (plus an additional 17 communities verified ODF that were not included in FY18 reporting) and efforts have been made to link these ODF communities with local masons trained by the project to enable households to access improved latrines and sustain their ODF status.

A total of 187 VSLA groups participated in village-level WASH contests where members competed to obtain the best toilet, the ideal kitchen, and the ideal shower. About 60 percent improved the quality and cleanliness of their toilets, showers, and kitchens.

Development of the PHE research protocol and engagement of activities with the PHE network in Madagascar: there is a strong interest of the actors and a real need for the environment and health sector.

Engagement of WASH's friendly institutions in activities and inclusion of the project among the main actors supporting the Ministry of Education, in particular WSUP and UNICEF, who are reflecting on how to support the ministry in improving the process.

Participation in the development of MEEH's Mada Madio 2025 initiative, which aims to make Madagascar an ODF country by 2025.

IR3.1 Innovative hygiene and sanitation behavior change solutions through applied research

Output 3.1.1 Exploration, iteration, and evaluation of behavioral science innovations for WASH BC

This year is marked by the rollout of the project's behavior change strategy based on the behavior change research undertaken in the first year of the project. Earlier in the fiscal year, LSHTM facilitated a workshop to identify the project's set of five key behaviors and the psychosocial drivers behind each behavior to better frame and deliver activities. LSHTM provided a document on "Determinants of RANO WASH targeted behaviors" to inform subsequent iterations of the RANO-WASH behavior change strategy.
We also added a key behavior to promote gender equality to address interhousehold dynamics on decision-making and use of WASH services. Gender analysis and research findings with LSTHM have demonstrated the importance of the decision-making process and the sharing of roles and responsibilities at the household level on access to social services and the behaviors adopted by members. Discussion among household members, particularly between men and women on the responsibilities of each member facilitates the adoption of healthy behaviors and access to appropriate WASH services. For this reason, one of the behaviors identified is the improvement of the relationship and discussion between men and women at the household level.

The project launched its "Grow-Up: A leading household" campaign, which motivates households to achieve the project's key behaviors through collection of petal stickers to complete a flower. Activities are delivered in a participatory manner at mass, community, group, and household levels. Activities range from household visits by local promoters and regular meetings to discuss progress, to mass communication campaigns such as radio campaigns, theatre, contests, and quizzes with an entertainment component to engage communities. So far, we have reached 6,425 households. In Q4, the project developed the evaluation framework to be used in early FY20 to measure the fidelity and effectiveness of the campaign and reiterate as needed.

Output 3.1.2 Studies of integrated population, health, and environment (PHE) programming models stimulating cross-sectoral collaboration

During FY19, the project developed a five-year plan to clarify how the PHE approach will be used and researched within the project lifetime. Based on this plan, the project developed a draft of an action-research protocol to explore and test different coordination mechanisms to facilitate cross sectoral collaboration. The action-research will take place in three protected areas in Alaotra Mangoro, Atsinanana, and Vatovavy Fitovinany to explore how different actors from environment, health, education, nutrition and WASH can work better together and produce value-added impact.

Potential partners in health, environment, and livelihood have already been identified. As an example, for the environment component, Madagascar Fauna and Flora Group in Atsinanana, Conservation International in Alaotra Mangoro, and the Valbio Center in Ranomafana expressed interest in partnering with the project to not only conduct joint research but also operationalize any recommendations from this research.

RANO WASH is an active participant in Madagascar's PHE network[10] and is also committed to supporting the GTSE[11], which is an inter-ministerial working group composed of

[10] https://phemadagascar.org/
[11] Groupe de Travail Santé Environnement

representatives from the Ministry of Environment, the Ministry of Public Health, and the Ministry of Population. The GTSE's mission is to promote the PHE approach in Madagascar. In Q4, RANO WASH organized a workshop to present the research protocol and gather feedback from partners, including line ministries, NGOs, and other USAID-funded projects.

Output 3.1.3 WASH-Nutrition connections researched

This year, the project's activities related to WASH-nutrition were as follows:

Target households with children under five for the BC campaign. Out of 6,425 households targeted by the campaigns, 6,374 have children under five. RANO WASH's Grow Up sticker campaign provides integrated WASH-Nutrition messaging, including specific messages on handwashing with soap before eating and food preparation hygiene to avoid orofecal contamination. A total of 2,923 households are reported to wash their hands regularly, and 2,007 are reported to practice appropriate behaviors related to food hygiene.

Coordination with other organizations to ensure complementarity. As an example, at Ambatondrazaka, two workshops were organized with the Regional Office of Nutrition (ORN) to explore joint planning for activities. The project also participated in the regional celebration of Breastfeeding World Day, which included quizzes and contests for communities on questions related to hygiene and breastfeeding.

IR3.2 Improved implementation of WASH behavior change at all levels: communities, government, and private sector

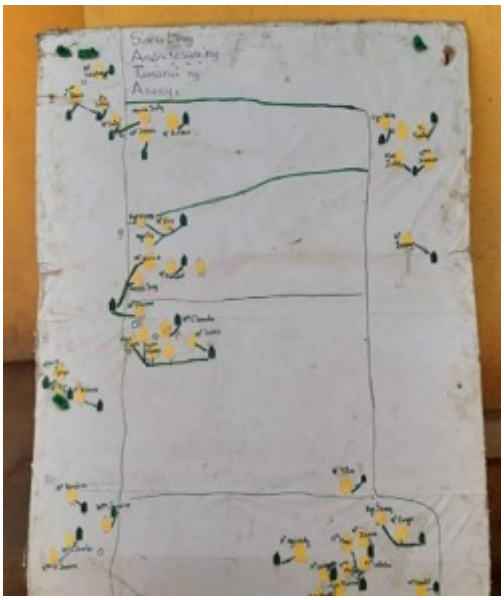
Output 3.2.1 Improving the WASH BC program coordination in RANO WASH regions

During this fiscal year, the project participated in coordination activities at national and regional levels. In Alaotra Mangoro, coordination meetings under the DREEH's leadership allowed the team to solve issues related to overlapping fokontany or villages, and to make sure the different organizations contribute to achieving the DREEH's performance objective. In Atsinanana, the project is member of the C4D regional platform and participated in the harmonization of the guidebook for community activities on essential family practices, including WASH activities. At a national level, the most notable activity the project undertook this year was to advocate , along with UNICEF and FAA, for the government's commitment to the Mada Madio 2025 initiative, and to develop a draft national ODF verification and certification protocol, which is central to coordinating and harmonizing sanitation activities and achievements. RANO WASH also coordinated with the USAID-funded ACCESS project to provide a CLTS training curriculum with the participation of the MEEH and the MHP. The program also shared its experience in working with local masons to allow ACCESS to organize training for local masons working in their intervention areas.

Output 3.2.2 Innovative CLTS and WASH BC implementation activities

The project's achievement in terms of behavior change implementation activities for this fiscal year are:

Picture 7 SATA, a community map that helps them to monitor their progress towards ODF (photo credit: RANO WASH)



A total of 607 communities were verified ODF, which represents 101 percent of the fixed target for FY19. The best-performing region was Atsinanana, with 220 verified ODF communities. This success can be explained by two major factors: (i) the strong involvement of the STEAH and local promoters in triggering the Follow up Mandona process helps CLTS be perceived as a local-driven initiative; (ii) the ripple effect using influential local actors. Based on field experience and working with other organizations, the project is also developing other approaches besides CLTS that can boost the use of latrines. As an example, the FAA's SATA tool helps community members self-assess progress towards the elimination of open defecation and use of improved and nonshared toiles. RANO WASH regions also conducted institutional triggers in more densely population areas where CLTS may have a hard time gaining traction.

On average, 81 percent of triggered communities were verified ODF which is beyond the target of at least 70% of triggered villages to become verified ODF. This success is based on the fact that the triggering process is now well mastered by the team, and the challenge is more on maintaining ODF status than achieving it.

A total of 7,988 improved latrines were constructed as results of RANO WASH's demand-generation activities, including CLTS. Of these, only 3,579 are shared toilets. These improved latrines allowed the project to reach the target of 20,542 people gaining access to basic sanitation service and 39,704 people gaining access to limited sanitation service. These results were beyond the fiscal year targets which were respectively 4,500 and 30,000. This is likely attributed to the perception of a nonshared latrine as a source of pride and the promotion and uptake of sanitation and hygiene behaviors currently being promoted by several community-level actors, including the project, private sector providers such as local masons and civil society organizations.

In Vatovavy Fitovinany, a network of local masons and seamstresses has been established to address the main issues in carrying out their activities: accessibility, distance, and availability of basic materials. The network will allow them to order and purchase bulk materials and organize marketing strategies.

For the Grow Up sticker approach, an exponential increase of the number of adopting household has been noted in Q4 compared with Q3 results. A big contributor to this increase was the use of VSLAs as the main entry points for the strategy. The positive peer pressure among members encourages them to change rapidly. This has been noted in Atsinanana and Alaotra Mangoro, where VSLA members were specifically targeted. Targeted households were also linked with local masons and seamstresses to ensure products and services were available when behavior change activities were being conducted. The BC campaign also targets communities that are already triggered based on the rationale that these communities are already in the momentum of change. The project will undertake a more thorough evaluation process in early FY20 to identify the Grow Up campaign's success factors or the most notable barriers that need to be addressed.

Picture 8 A household with six petals completed in Bongabe, Foulpointe, Atsinanana. (photo credit: RANO WASH)

Table 2. Number of households adopting a key behavior of the Grow Up sticker (FY19)

	Use of improved and nonshared latrines	Practice of handwashing with soap	Menstrual hygiene	Use of safe water	Food hygiene	Joint decision-making
Number of adopting households	2,576	2,923	802	1,491	2,007	1,908

A total of 3,654 VSLA[12] members invested in WASH, especially by purchasing WASH products such as soap, SanPlat slabs, and water treatment. The target for this year was 3,200 VSLA members. One strategy that allowed us to achieve this target was the organization of the VSLA contest among 187 groups and 4,862 members. The contest aims to promote ideal toilets, kitchens, and showers among members. Since the beginning of the contest, 60 percent of the contesting households have access to an improved latrine, shower, and kitchen. In Alaotra Mangoro, of the 444 households from 26 participating VSLAs, a total of 356 use an ideal kitchen, 266 have access to a shower, and 276 have improved toilets.

Picture 9 Improved kitchen after contest (photo credit: RANO WASH)

This fiscal year was also marked by the identification of village agents and PSPs[13] that are interested in working with the project. A total of 191 villages agents or PSPs are partners of the project. They will be the contact persons with the VSLA groups and will promote WASH activities within those groups and help the groups be sustainable.

Among the 28 schools supported by the project in FY19, 2 out of 15 targets have achieved the level-one Friendly status. Of the 10 health centers supported and targeted for this fiscal year, none have achieved a WASH friendly status. This low achievement is due to the fact that the WASH-Friendly process remains one of the challenges that the project is currently facing (see the "Challenges" section). To address this, the project is working with both ministries and partners, such as WSUP, UNICEF, FAA, ACCESS, to develop better and more efficient ways for institutions to achieve a WASH-Friendly status. The project developed with MoNE the WASH Friendly school process to address the challenges encountered. (Annex 15 WASH Friendly School Process)

Picture 10 CSB II chief in Ranomafana Est showing how to wash hands with soap (photo credit: RANO WASH)

RANO WASH also supported local campaigns, including those during World WASH days to engage with communities and instigate changes. In Alaotra Mangoro, the project organized a cultural contest called "WASH DRAZANA" that targeted traditional musical groups to write and compose traditional songs promoting good hygiene behaviors.

Output 3.2.3 Marketing communication developed for WASH services

In FY19, RANO WASH supported private operators and sanitation and MHM entrepreneurs in key business skills, including business planning and basic marketing.

The project conducted training on basic marketing for water service providers, which emphasized an initial community assembly to give households a better understanding of their services, payment options, and contracts. Each WSP is then encouraged to refine its own marketing strategy based on local needs and contexts.

The strategies used by private operators to boost household connections vary. One strategy is to fully install primary network extension coverage to allow relatively remote communities, including vulnerable ones, to connect to the existing network. This is expected to reduce the connection cost for households, thus contributing to increasing the number of water connections. An example of this strategy can be seen in Ilaka Est (Atsinanana), implemented by the Lova Velu Enterprise. In Foulpointe (Atsinanana), Sandandrano invests in extending the coverage of its primary network to more remote areas, to enable the connection of secondary networks of poorer households. This drives households living along the main pipe to connect to the system, thus increasing the number of connections. In Ambatofotsy (Vatovavy Fitovinany), Michael Enterprise offers flexible payment options for household connections, including payment in installments and in-kind payment.

As a result of the marketing campaigns undertaken by the private operators with RANO WASH's support, a total of 1,125people are benefitting from 225 private water connections in Vatovavy Fitovinany, whereas 3,510 people are benefiting from 94 social water connections.

Local masons and seamstresses in all the intervention regions received basic marketing training that allowed them to organize marketing activities such as targeted activities in health clinics and schools to increase bulk sales or selling their products during mass campaigns organized by the project (such as world days' celebrations). Local masons have also engaged in village-level discussions with potential clients, as seen in Vatovavy Fitovinany, and have developed basic promotional materials.

IR 3.3 Evidence-based WASH behavior change and hygiene promotion shared to influence policy

Output 3.3.1 Engaging national-level networks, policies, and programs for sustainable WASH BC

The main ongoing policy and programming in relation to WASH is the development of the Mada Madio 2025 initiative, focused on improving sanitation at national level. RANO WASH participates in all the working sessions on this initiative and brings its input by commenting on working files such as the ODF verification and certification protocol and the "*Feuille de Route Mada Madio 2025*." RANO WASH's main positions can be summarized as follows:

Discussions on ODF criteria and input from field expertise: Toilets can be shared to allow villages to become ODF.

Discussions on the ODF verification process and influence on how to make this process as simple and as realistic as possible based on previous experience: Verifications are to be made by the closest local authority.

Promoting sanitation marketing as an important asset to sustainability issues.

Importance of institutional triggering at different levels.

[12] See in Table 1 for details of purchase per product.

[13] PSP: PSP means private service provider, who is the equivalent of a village agent in the SILC concept developed by CRS https://www.crs.org/our-work-overseas/program-areas/microfinance/silc-road. In Atsinanana, CRS has PSPs, and RANO WASH is working with both village agents from VLSA and PSPs from SILC.

Currently, only four main positions have been included in the draft versions of those two key documents[14], and the project will continue to bring in as much technical expertise as possible so that the final versions of the documents have all the necessary details to be successful.

In Q4, the project also organized a presentation of its behavior change strategy with different actors including various ministries (MEEH, MHP, MEN), and it piqued the interest of those actors who required the project to organize more sharing sessions during implementation phase.

Gender Mainstreaming

In FY18, RANO WASH completed a gender analysis to develop the gender strategy in FY19 in consultation with field teams and stakeholders in all intervention regions. This analysis highlighted five main insights:

(1) Women have less time than men due to expectations of running the household and contributing to working in the field. Women are expected to be flexible and clean, to work hard, and to respect men.

(2) Although violence and harassment are illegal, women may fear retaliation if they contribute opinions on decisions, and distant water sources are likely a risk of Gender Based Violence (GBV) for women and girls in many of these communities.

(3) Women and people with disabilities are expected to remain silent; thus, major decisions regarding selling, purchasing, and constructing are made by men.

(4) Women, girls, and people with disabilities are the most disadvantaged due to use of poor WASH infrastructure.

(5) Social norms put women, especially those with little education, in a relationship of dependence, even submission, that prevents them from engaging in viable economic actions and contributing to decision-making.

To address these issues, the gender strategy describes RANO WASH's approaches and activities to empower girls and women, promote WASH inclusive services, and transform gender norms.

In FY19, to promote inclusive access to decision-making bodies and build vulnerable people's self-confidence and skills of public communication, negotiation, leadership, and group management, the project supported community structures (SLCs and CSOs) and local promoters to involve more women and youth. Furthermore, STEAHs were trained on gender mainstreaming to be sensitive to the needs of minority social groups: women, elderly people, illiterate people, people with disability, and those in remote villages.

In Alaotra Mangoro, RANO WASH initiated an event to bring together a few women leaders to discuss their experiences and challenges. The project produced a video with highlights of the discussion for broadcasting at national, regional, and communal levels. (https://youtu.be/OY6SHz24EBQ)

In FY19, the project held workshops to evaluate public infrastructure constructed by RANO WASH and provide solutions to answer specific needs of women, girls, and people with disabilities. Models of WASH inclusive infrastructure are developed and will be applied by operators contracting with RANO WASH.

[14] The two documents refer to the ODF verification and certification protocol and the "*Feuille de Route Mada Madio 2025*."

RANO WASH is also promoting women's empowerment through the production of sanitary pads for women and girls. This activity has provided economic benefits and more networking to seamstresses after participating in events supported by RANO WASH. The two most successful seamstresses trained by RANO WASH shared their experience with sanitary pads production at national and regional events. Thanks to 3,499 sanitary pads sold, women and girls in RANO WASH intervention regions have dealt with menstruation in a dignified manner. The seamstresses trained other 14 girls to help them meet demand. For the entire fiscal year, 68 dressmakers, comprising 66 including 2 men, were trained.

In terms of behavior change, RANO WASH facilitated discussions at community and household levels to engage men in women's empowerment. The RANO WASH strategy for behavior change considers the decision-making dynamic at household level as one of the six key targeted behaviors. Through interactive discussions on households' practices on gender relation, women and men make decisions together to improve their behavior to reduce gender inequalities in decision-making at the household level. (https://youtu.be/5Y01aiDS168)

Implementation Challenges and Modifications Made/Issues Addressed from Last Quarterly Report

Having water system models for remote villages managed by private operators: The water supply system models built and rehabilitated by RANO WASH serve fokontanys with population density above 3,000. However, many small villages surrounding these fokontanys do not have access to safe water services. The project developed a revised PPP concept to address this challenge, with an objective to explore a range of sustainable and profitable range of products. Water services models adapted for remote villages, especially in communes already working with water operators, are being developed and will be implemented in FY20, which can complement services already managed by private companies in the surrounding areas.

Easing the WASH-friendly institution approach: One of the biggest challenges faced by the project is the approach to acquire WASH-friendly institutions. This challenge is faced not only by RANO , but by all partners. As an example, in Q4 the MEN team organized a working session with partners during which they explained that a total of 2,885 schools had been trained in the WASH-Friendly process since its creation, and only about 160 schools had obtained the status. Actors focus more on interventions on WASH infrastructure and training on WASH messages. Schools and health centers are not supported enough to successfully manage WASH services such as planning, resource mobilization, operations, and maintenance. Furthermore, the conditions required for the institutions' training, especially the carrying out of activities by only the Ministry staff at the central level and participants required to attend the training, make the process complicated and not effective.

Currently, there is some openness from the MoNE and MoPH to improve the situation, and the project will fully support both ministries in this respect, while improving its own indicator to better reflect the reality.

Increasing work with feminist associations, youth groups, and minority groups: Develop and organize specific reinforcing and coaching sessions for women, youth, and minority groups so that they can defend their rights at CSO and SLC levels and use their skills to influence the decision-making process for their benefit.

Launching market-based sanitation: The project trained local masons to help households build their latrines taking into account local context and people's needs. Some other initiatives are already underway from exchanges with local masons and operators

working in the regions, such as a network of local masons and connecting local masons with hardware stores. Based on the challenges encountered by local masons and the results of WMA, we are developing a stronger market-based strategy to pilot in one region. RANO WASH is developing a scope of work for iDE to provide technical support to the project's team to develop and implement the strategy. The project seeks to enhance the value of the entire sanitation value chain, including collection, conveyance, treatment, disposal, and reuse, as part of this strategy.

Delay in starting water construction works: The project underestimated all the steps required prior to establishing a construction contract, and time implication to comply with USAID FAR requirements under the Cooperative Agreement. The project will conduct an after-action review workshop on the entire PPP process in Q1 to address this challenge and come up with resolutions for future construction.

MONITORING, EVALUATION, ACCOUNTABILITY, AND LEARNING (MEAL)

Performance Monitoring Plan (PMP) Update

In FY19, following an analysis of indicators and project activities to date, RANO WASH updated the project PMP. The goal of this process was to develop a lighter, more focused system with clearer indicators. Repetitive and extraneous indicators were removed, while several other indicators were updated to provide additional clarity and better measure results. Additionally, RANO WASH analyzed project achievements to date and global targets to set/revise realistic annual targets for project outputs and outcomes.

RANO WASH benefited from technical feedback from USAID on the updated PMP and indicators. Following additional revisions, the new MEAL plan, including the PMP and the performance indicator reference sheets (PIRS), was submitted to USAID and was approved in May 2019.

The MEAL data collection tools were updated to reflect the finalized set of indicators and corresponding definitions. The RANO WASH indicator performance tracking table (IPTT) with a full list of indicators, achievements, and yearly targets is shown in Annex 4.

MEAL System Update

Transition to electronic data collection system

In FY19, RANO WASH transitioned from a primarily paper-based data collection system to an electronic system that utilizes Android tablets and the CommCare platform for electronic data collection. In the first half of FY19, the RANO WASH team revised the data collection tools to support programming activities. Forms were updated to improve functionality, limit data entry errors, and respond to changes made to the MEAL plan. Field agents and regional staff use these data collection tools to monitor project interventions and inform planning. RANO WASH also developed some additional forms in FY19 to track essential activity data and further digitize the MEAL system. Updates and additions include the following:

Creation of electronic forms to track the sales of products by local tailors and masons;

New form to monitor key WASH behaviors;

Revised CLTS forms to account for communities who were influenced by neighboring ODF villages («TACHE D'HUILE») and did not undergo pre-triggering;

Expanded forms to track beneficiaries of informal usage of shared water connections;

Development of checklists for SO1 activities for regional staff.

The electronic data collection system provides faster access to project results at the national and regional levels, reduces common data collection errors, and eliminates the burden of managing high volumes of paper-based forms. Since RANO WASH relied on a paper-based system for the first year of the project, the transition to an electronic system required staff capacity building, discussed below, and an intensive period of data entry to ensure the availability of complete project data in the central database.

An improved beneficiary census was implemented in intervention communes in FY19. The census allows RANO WASH to continuously monitor project beneficiaries involved in multiple activities during project implementation, helps avoid double counting of beneficiaries, and provides the necessary data for indicator disaggregation. The revised data collection tool was deployed and piloted in December 2018, following training for the regional MEAL staff and field technicians. As of the end of FY19, over 180,000 potential or actual project beneficiaries have been censused in four RANO WASH regions.

In FY19, RANO WASH also developed an internal dashboard in Power BI to display real-time data from project activities. Power BI is a data visualization platform similar to Tableau. Power BI is linked to the project database to produce visualizations and display data for a variety of activities linked to process indicators and outputs, and to monitor project achievements and guide program decision-making and planning. A short document presenting screen captures of the current state of the Power BI dashboard is presented in Annex 20. In FY20, this dashboard will be extended to include an externally facing section that can be shared with outside partners and donors.

MEAL capacity building

In FY19, all new field agents received Android tablets and extensive training on the project MEAL system. RANO WASH trained the new field agents at regional SMILER workshops during February–April. These workshops focused on practical applications of the MEAL system, with training on data collection forms, use of tablets, and best practices for mobile data collection, project beneficiary census, and accountability mechanisms. To acquire practical experience, the agents field-tested the data collection forms in project communities under the supervision of the MEAL staff. In addition to informal capacity building activities during monthly and quarterly reviews, existing field agents will participate in formal refresher MEAL training in early FY20.

RANO WASH national MEAL staff conducted monitoring field visits to all regions in FY20, which focused on the supervision of field agents and MEAL capacity reinforcement. Field visits are conducted on a rotating basis among project regions. Key field agents received both direct supervision of commune- and village-level activities and feedback on data collection. National MEAL staff assisted with monthly reviews to provide additional training on new data collection forms and review best practices for data quality assurance, tablet management, and basic troubleshooting in CommCare.

Data quality

Data quality is an essential component of the project monitoring plan, and data quality checks have been integrated into this plan at various levels. During form generation in CommCare, data quality restrictions and guidance (skip patterns, limits to acceptable minimum/maximum numbers entered, inability to submit incomplete forms, etc.) control the number of data errors and prevent simple data quality issues.

The national MEAL team supports regional teams and field staff to facilitate data management and high-quality reporting. Electronic data collection tools reduce the potential for lost data due to misplaced or damaged hard-copy forms. In the second half of FY19, all zone supervisors received web user access to CommCare, which allows them to extract and review data collected by field agents via tablets. Zone supervisors play a key role in data validation, and the use of CommCare results in the quicker identification of data quality errors and data cleaning that must be done in the central project database.

The first formal internal data quality assessment (DQA) was conducted in September 2019 in six communes in Atsinanana and Alaotra Mangoro. The focus of this assessment was on water system beneficiaries, but also included a review of beneficiaries' data for sanitation access. Following the DQA, an action plan was developed to improve data collection quality for these indicators. This plan recommends that regional MEAL staff conduct monthly informal DQA among select communes in their regions. As a direct result of this assessment, electronic data collection forms were expanded to track beneficiaries of informal usage of shared water connections.

Baseline study activities

Following completion of reports for the first baseline in late FY18, which covered the regions of Vatovavy Fitovinany, Atsinanana, and Alaotra Mangoro, preparation and planning activities were undertaken for the baseline study and WASH infrastructure inventory in Amoron'i Mania, Haute Matsiatra, and Vakinankaratra. Data collection for the second baseline will cover these three regions and will be completed in the first part of FY20.

The results for the second baseline should be available to coincide with the FY2020 Q2 report. The external consultant has already been selected and preparations have begun for data collection. Data collection for the three regions will be conducted shortly following commune selection with sampling among the chosen intervention communes. The protocol methodology has not changed since the first baseline study. However, the location and sampling frame has been updated to include only the 83 communes added in FY20. This survey methodology will result in baseline values specific to the intervention communes and will allow RANO WASH to conduct a targeted final evaluation.

Accountability

In Q4, RANO WASH operationalized Green Line in Alaotra Mangoro, Vatovavy Fitovinany, Vakinankaratra, and the remaining communes in Atsinanana. An additional 5,000 posters promoting the line were distributed and posted in public places, such as mayor's offices and health centers, in project intervention communes. During monthly meetings, field agents reviewed how to effectively promote Green Line to expand awareness of this service. RANO WASH developed a "one pager" to provide additional information about Green Line to community members.

A summary of non-sensitive calls is shared weekly to relevant regional staff and national focal points, and a monthly report of calls is produced from the Green Line database. There was

a slow but steady increase in the number of Green Line calls received through the end of FY19, particularly in August and September after the line was extended into four regions. Overall, 144 calls were made to Green Line in FY19, the majority of which were made from Alaotra Mangoro and Atsinanana. Few calls were received from Vatovavy Fitovinany and Vakinankaratra, which suggests the need for targeted promotion of Green Line in these regions during early FY20. The most common reason for calling the line was requests for information about the project and Green Line. Annex 16 provides an analysis of the Green Line calls received during FY19.

At the end of FY19, an additional 4,200 posters were printed in preparation for Green Line expansion into FY20 project communes. In FY20, RANO WASH will revise the protocol for handling sensitive calls to ensure there is a clear protocol for these situations. RANO WASH will continue promoting the line so that its purpose and availability as an accountability tool is well understood by project communes and community members. In Q1 FY20, new field agents will be trained on the Green Line service and posters will be distributed. Activities will continue to expand awareness of project feedback mechanisms, particularly in districts/regions with low utilization of Green Line.

In FY20, RANO WASH will also consider the sustainability of the Green Line services following the end of the project. Management of the line does not require a lot of time or human resources, but the cost of the service presents a potential barrier. The MEAL team will collaborate with SO1 to consider how the Green Line could be adapted as part of the package of sustainable commune-level accountability mechanisms, as well as integrated into the essential services budgeted in communal development plans.

Activities planned for next quarter

MEAL trainings for field agents in new FY20 communes;

Operationalization of Green Line in new FY20 communes, including expansion into Haute Matsiatra and Amoron'i Mania;

Data collection for the baseline study and WASH infrastructure inventory in the new communes;

USAID data quality assessment in Vatovavy Fitovinany;

Field visits for regional MEAL capacity building;

ICT4D/Database development:

Revision of project results dashboard to display real-time data decision-making;

Dissemination of tablets and ICT4D materials to new field agents.

MANAGEMENT AND ADMINISTRATIVE ISSUES

Personnel

Dr. Alain Randriamaherisoa resigned as RANO WASH Chief of Party in July after discussion with CARE, resulting in a mutual decision to seek new leadership for RANO WASH in FY20, effective July 22, 2019. As of that date, Sébastien Fesneau, RANO WASH Deputy Chief of Party was officially designated as Acting Chief of Party for RANO WASH. Avo Ratoarijaona, RANO WASH Director of Programs, assumed interim responsibility for the full DCOP role. The recruitment process for a new Chief of Party was completed in Q4. At the time of

reporting, RANO WASH has received formal approval from USAID on the appointment of Sébastien Fesneau as RANO WASH Chief of Party.

RANO WASH maintains a staff totaling 281[15] and enjoys a relatively high staff retention rate of 88.6%.

Management

Due to the technical and geographical complexities of the project RANO WASH has adopted a "Matrix Management" approach structure to ensure clarity in terms of roles, responsibilities and importantly, lines of communication.

To keep pace with managerial demands of RANO WASH, several internal mechanisms have been strengthened to ensure effective internal planning and coordination and the prompt resolution of issues and constraints encountered:

Routine RANO WASH meetings include:

Steering Committee Meeting – Quarterly
COP-CARE Skype – Biweekly
COP-DCOP/MEAL Programmatic and Technical Meeting – Weekly
COP – DAF Finance / Operations Meeting – Weekly
Strategic Objectives (SO1, SO2, SO3) PCT / Region Skype Calls – Monthly
Project Coordination Team Meeting –biweekly
RANO WASH Annual Plan Meetings – Annually
PCT - National and regional-level partners meetings – Semi Annual
Regional-PCT Meetings/ Skype – Monthly
Regional-level Team Meetings – Biweekly to monthly
MEAL PCT / Region Skype - weekly
MEAL Review PCT / Region Meeting/Skype – Quarterly

Coordination

RANO WASH continues engaging with USAID as well as with GoM partners at the regional, communal, and national levels.

Startup in Amoron'i Mania and Haute Matsiatra

CARE has established an interregional office in Amoron'i Mania covering both Amoron'i Mania and Haute Matsiatra regions. Key personnel for the two new regions have been recruited and the coordinator participated in the FY20 annual planning workshop held late July 2019 in Antsirabe,. CARE has selected 2 implementation partners, the project will formally request their approval from USAID in Q1.20.

Events and Visits

RANO WASH is periodically involved in hosting visitors or organizing events. Not inclusive of all (especially those at the regional level), some of the more noteworthy visits/ events during FY19 are enumerated in the following table:

[15] This does not include all partner staff in Vakinankaratra, Amoron'i Mania and Haute Matsiatra under recruitment RANO WASH uses a definition of employee retention as the percentage of employees working on the project at the beginning of fiscal year (Oct 18) who stayed with the project for the whole fiscal year.

Month	Events
December 2018	**USAID field monitoring visit** from Jesse Shapiro, USAID Senior WASH Advisor to monitor water supply system construction activities and discuss market-based sanitation strategy with the RANO WASH team.
February 2019	RANO WASH CoP Dr was part of a delegation with representatives of WASH partners in Madagascar (including UNICEF, FAA-WSSCC, Loowat, Protos and MEEEF)
February 2019	USAID field monitoring visit from Amy Fowler and Catherine Korona of Global Health USAID headquarters in the USA to Sabotsy Anjiro in Alaotra Mangoro region
March 2019	RANO WASH Semi-Annual Review in Antananarivo
March 2019	Participation in the WASH WEEK organized by the MEEH
March 2019	Celebration of the World Water Day with MEEH in Masindray, Analamanga, Antananarivo
March 2019	USAID Monitoring visit from Daniele Nyirandutiye, head of USAID HPN, Azzah Al-Rashid, AOR and Dan Nover WASH advisor to Vakinankaratra in Atsinanana region
March 2019	Filming of Chez Moi video with CoP Dr Alain Randriamaherisoa
April 2019	Celebration of the World Health Day with MoPH in Antananarivo
May 2019	USAID field visit from Azzah Al-Rashid, AOR and Dan Nover, WASH adviser, to Vakinankaratra (launch of new region)
July 2019	RANO WASH FY20 Annual Plan Workshop in Antsirabe,
August 2019	Visit of USAID Washington Senior WASH and Social Behavior Change Adviser Nga Nguyen to Antananarivo and Vakinankaratra to review RANO WASH Behavior Change Strategy and tools under SO3 objective.
August 2019	Sebastien Fesneau, RANO WASH Acting CoP attended the World Water Week in Stockholm
September 2019	RANO WASH attended a 2-day workshop on environmental compliance organized by USAID in Antananarivo
September 2019	RANO WASH organized an Annual and Learning Review in Antananarivo.

FINANCIAL MANAGEMENT

RANO WASH realized during FY19 a total expenditure of $5,606,796, which represents a burnt rate of 72% of the FY19 budget. The project's expenditure of $1,831,268 during the last quarter of the 2019 Fiscal Year (FY19 Q4) represents a burnt rate of 26 % of the annual FY19 budget, compared with the forecasted accrual of $3m.

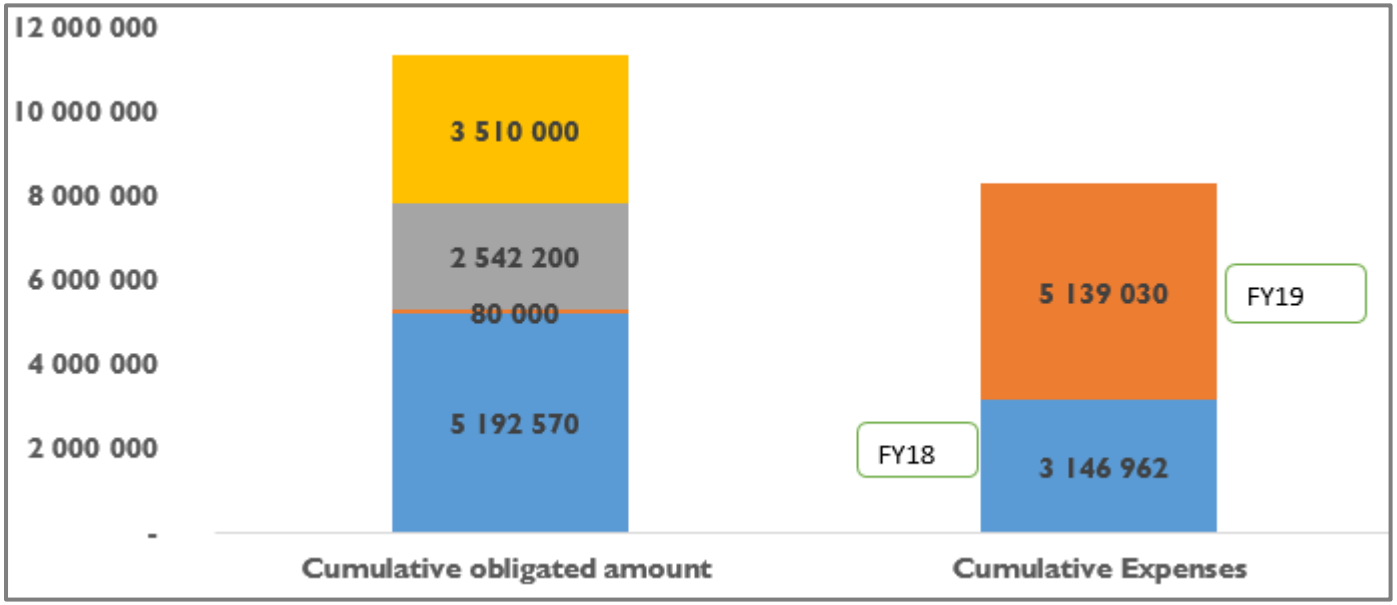
The major underspent from the forecast of Q4.19 is related to the approval of construction contracts, required after clarification with USAID on the application of Standard Provision M22 (Limiting Construction Activities) in the Cooperative Agreement. This process delayed the start of construction activities scheduled to commence in August and which would have otherwise provided an estimated burn rate of over 85% of the FY19 budget by the end of September.

FY19 remaining construction activities are included in the FY20 annual implementation plan.

The project contributed a total of $ 467,766 in cost share, representing 71% of $654,910 planned for FY19. RANO WASH has achieved to date 47% of its cost share objective against the project lifetime completion of 44%. (See Annex 2)

Line Item Description	Previous FYs Cumulative Expenditure	Current FY, FY19 (October 1,2018 to September 30,2019)						Cumulative Expenditure to date	Burn Rate
		FY 19 Budget	Q1 (Oct- Dec 2018)	Q2 (Jan - Mar 2019)	Q3 (Apr - June 2019)	Q4 (July - Sept 2019)	FY 19 Expenditure		
Salaries	353,345	492,351	136,717	111,208	156,339	119,846	524,110	877,455	106%
Allowances/Benefits	70,844	115,210	19,706	49,985	39,272	53,154	162,117	232,961	141%
Consultant Costs	5,400	80,340	-	921	5,414	-	6,335	11,735	8%
Travel Costs	49,804	75,311	3,768	9,475	19,165	23,926	56,333	106,138	75%
Equipment and Supplies	182,584	96,878	835	(970)	2,677	108,542	111,083	293,667	115%
Program Cost	494,877	1,341,083	56,012	134,681	244,465	283,759	718,917	1,213,794	54%
Sub-awards	1,542,816	4,002,561	590,737	623,646	644,893	983,667	2,842,943	4,385,759	71%
Other Direct Costs	108,360	188,786	24,044	39,061	39,464	61,147	163,716	272,076	87%
Total Direct Costs	**2,808,031**	**6,392,519**	**831,818**	**968,006**	**1,151,690**	**1,634,040**	**4,585,554**	**7,393,585**	**72%**
Indirect Costs	338,930	771,577	100,400	116,838	139,009	197,229	553,476	892,406	72%
Total USAID Costs	**3,146,961**	**7,164,096**	**932,219**	**1,084,844**	**1,290,699**	**1,831,268**	**5,139,030**	**8,285,991**	**72%**
Cost Share	154,783	654,910	31,906	56,220	121,001	258,639	467,766	622,548	71%
Total Project Cost	**3,301,743**	**7,819,006**	**964,125**	**1,141,064**	**1,411,700**	**2,089,907**	**5,606,796**	**8,908,539**	**72%**

The chart below shows the cumulative obligated amount of $11,324, 770 which give a balance of $3,038,779 at the end of September 2019.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10 000 000
8 000 000
6 000 000
4 000 000
2 000 000
-
3 510 000
2 542 200
80 000
5 192 570
5 139 030
3 146 962
FY18
FY19
Cumulative obligated amount
Cumulative Expenses

LIST OF ANNEXES

ANNEX 1: RANO WASH SUCCESS STORIES Q4.19

Together for an Open Defecation-Free Village

Efadahy Justin dit Dada is a fisherman in his forties, living in the village of Ambatomitsangana in the fokontany of Ampasimadinika Ranofotsy, a village that has already been triggered for the eradication of open defecation. However, Dada was still among those who did not use a latrine, and so the community blamed him for the fact that the village was still subject to open defecation. With a lower- limb disability, Dada was convinced that community mobilization and awareness activities were not intended for him. "I thought that because I have a disability, I was different, and so I was not concerned with the messages promoted by the local facilitators.

I couldn't believe they meant for me to change my ways. Since the beginning, I preferred to stay at home. I was not listening to the sensitizations," he explains.

However, from 2018 onwards, everything has changed for Dada. The RANO WASH project has strengthened the capacity of the Water, Sanitation and Hygiene (WASH) Committee for the fokontany, in terms of its ability to mobilize the community and raise awareness on key WASH messages. In 2019, local promoters were also identified and trained at the Fokontany level to support households in adopting healthy behaviors, and particularly households with disabled family members. On May 8, 2019, the committee conducted community mobilization and awareness-raising activities in Dada's village to promote the use of improved latrines and handwashing with soap. This time, Dada was present at the awareness session and was shocked by the consequences of his open defecation on his entire community.

Commitment and mutual assistance

The committee, along with the village's WASH promoter made home visits to reinforce the messages communicated in the community meetings. This time, Dada agreed to receive them. "The promoters are people from my Fokontany, from my community. I trust them – they will not judge me. If after all I know now, I continue to practice open defecation, I and my community will be mocked by other villages, and it will be shameful for us," he testified.

Dada subsequently expressed his commitment to build a latrine, and asked for the support of the committee, the RANO WASH project and any community members who could help. In response, the local promoter, committee representatives, a few community members, the local mason and the RANO WASH project technician agreed to build a latrine for Dada. It took Dada 30 days to collect the local materials and tools needed to

build his latrine ("falafa," wood, etc.), after which the community volunteers helped him with construction. Together, they were able to finish the construction in one day – with the local mason and WASH committee member responsible for digging the pit, and Dada and the others in charge of making and installing the walls and roof. Crucially, the mason took Dada's disability into account when he designed the latrine, ensuring that Dada could access the space with ease. Once the latrine was complete, the team installed a handwashing device to promote good hygiene.

"*Open defecation is a common problem, we must help each other*," said Solo Francois, member of the WASH committee.

Wall construction

Installation of the walls with a member of the WASH Committee

Flyproof latrine

Three months later …

Having been recognized by the community for his efforts, Dada was motivated to improve his latrine. He ordered a sanplat slab from a mason in the nearby fokontany of Savalaina to improve his latrine. He has planned further embellishments and improvements to his latrine so that it can be a model for the community. He plans to collaborate with the local mason of the commune of Ambinaninony and to learn the trade so he can help more households build their own latrines.

Improvements made by Dada

Louisette Rasoanirina, using the well she built next to her house.

"A well, water close to home, it's also a good investment when you're a member of a VSLA"

Many households in the rural commune of Ambodivoananto in the fonkontany of Amboditavolo draw the water they consume and use on a daily basis from a river far from the village. Thanks to the end-of-cycle sharing of her village savings and loan association (VSLA), Louisette Rasoanirina and her family were able to build a well near their house.

"For four years now, our VSLA has allowed us to improve our living conditions thanks to the investment opportunities it provides us. In the previous three years, my husband and I mainly invested our savings in our shop, which sells basic necessities - soap, rice, oils, etc. This year we preferred to build a well near our house. After information and discussion sessions with our savings group conducted by the RANO WASH project, we realized that building a well and having water close to home would be a very good investment. It is essential that we, especially our children, have access to drinking water," Louisette testified. In July, she invested 150,000 Malagasy Ariary (approximately US $41) to build a well with the support of local construction workers. Following advice from the RANO WASH project teams, Louisette says that her family is careful to always either treat the well water with Sur'eau or boil it to make sure it is safe to drink.

Since 2018, the RANO WASH project has strengthened collaboration with local VSLAs, or VOAMAMI in Malagasy, which are known to promote and facilitate the adoption of healthy water, sanitation and hygiene (WASH) behaviors in the community. Competitions, information sessions and various local events with the RANO WASH project have enabled group members to become role models for their community. In order to strengthen the sustainability of healthy behaviors at the household level, the project also encourages members to invest in their WASH services and products, and not only big infrastructure investments, as Louisette did, but also the various products people need on a daily basis to ensure healthy WASH behaviors, like water treatment options, soap, washable sanitary

towels, etc. Louisette is one of approximately 1,600 members of VSLA groups in the three RANO WASH project intervention districts in the Atsinanana Region. Thanks to the lending and credit opportunities available through these groups, members have the ability to invest in WASH products and services when they need them.

"As president of my VOAMAMI, I have a responsibility to encourage members to improve their WASH behaviors. This is not easy because it requires changing habits and priorities of the members, and change takes time." She also sees investment in WASH as common sense and a strong financial investment. "If I waited on my community to invest in water infrastructure, the risk of disease would have been greater for me and my children. Sometimes you need to invest in order to save money: by investing in WASH now, we will end up spending less on medications and visits to the doctor. I hope that the steps I have taken for my family will positively influence the other members of my group," shared Louisette.

Phillipine is now considered a model mother in

New Habits for Better Living Conditions in East Ilaka

Three years ago, Philippine, a young woman in her thirties and a former teacher, moved with her two sons to the fokontany Antanambao in the commune of East Ilaka for her work. When she arrived, she had difficulty finding a house to rent that had a latrine and a safe source of drinking water. Eventually, she settled on a house near a community well without a latrine. After she moved in, she made an agreement with a neighbor to use their latrine. She was not comfortable with these provisions, but she had no choice.

It was during a campaign led by the RANO WASH project, through the local promoter, that she found a solution in May 2019. With the approval of the owner of the house, they were able to build a latrine with a handwashing device and a shower near her home. A few weeks later, there was a promotion that reduced the cost of connecting to running water. Philippine jumped at the opportunity. "I want my family to be healthy, so I need to ensure the quality of the water I use. This promotion came at the right time," she said. Philippine also started using washable sanitary napkins so that she no longer has to worry about how to dispose of her sanitary napkins. "I have given myself the means to be a model of healthy WASH behaviors for my children, my students and my community. This is not an easy commitment, but it is a necessary one, in my opinion. We must support and assist each other to build a better future. Investment in WASH benefits everyone."

Anniko, in front of his 2 showers and 2 toilets (left) Anniko's pump (right).

Getting down to (WASH) business : a young entrepreneur's journey to provide water and sanitation in Foulpointe

Aniko is a young entrepreneur in Foulpointe, in the region of Atsinanana. He used to do security work before but decided to start a new business. He made a loan of 8 millions Ariary to set up his new business of managing latrines and showers on the port of Foulpointe. The Commune provided the land will soon sign a multi-year PPP contract with Aniko. "This business brings me 10,000 to 25,000 Ariary per day", added Aniko. In fact, he negotiated with Sandandrano, the water supply provider which manages the water supply system, to get a private connection to replace his traditional pump: an opportunity for Sandandrano because it gives access to clean water for the population.

He is convinced that this is a profitable business for him because of the number of people visiting the port of Foulpointe. Aniko is already thinking of setting up another shower and latrines and a water distribution point near the main pier.

The Cleanest Fokontany in the Municipality

Bongabe is a fokontany in the commune of Foulpointe, which is 8 km from the nearest city. It is the cleanest fokontany in the municipality with a very high rate of latrine ownership. RANO WASH promoters awarded eight households the "Grow Up" sticker, which is a reward for "leading households." Households earn a sticker when they practice and sustain one of RANO-WASH's six key behaviors.

Much of the success in Bangabe can be attributed to the active involvement of the local village savings and loan association members in the development of their communities. Their commitment will also ensure the sustainability of this progress, as they will be able to continue implementing all they have learned through RANO WASH well into the future.

Groups of women enjoying living in the clean fokontany of Bongabe

Where Hygiene Rules Become Habits

The community is engaged in using RANO WASH Handwashing device

Ranomafana East is a municipality where good hygiene has become a habit. Through the RANO WASH program, WASH friendly institutions such as Basic Health Centers have successfully raised awareness about the benefits of using clean water in the community. As a result, diseases such as diarrhea are decreasing. People in the community have learned to see these centers as a source of information about WASH and health in general, and not just a place to go after a family member falls sick.

Ranomafana East also testifies to the very active involvement of the municipality in the pursuit of good hygiene practices. In his drive to develop the municipality, the deputy mayor has engaged the full community and made water, sanitation and hygiene a top priority. In the future, he hopes Ranomafana East will attract more tourism, due to its thermal hot springs and the national park.

By investing in communal development and public health, the municipality is also investing in potential economic growth.

Local mason installing a SanPlat slab

Model Local Promotor

Akimy, a father of one from Tanambao village, is a local promotor trained by RANO WASH. Reflecting on his own personal situation and that of his village, he identified the rising water levels during the rainy season as a key public health problem. During the rainy season, latrines flood and fecal matter floats and spreads all over the village. Following the RANO WASH triggering sessions, villagers were persuaded to make financial contributions to improve latrines within 10 days. Akimy requested the help of local builders to make sanplat slabs and install them. Before long, every household had their own improved toilet, thanks to these local builders.

Akimy also organized a meeting with the local supply point to discuss how to improve water quality, since his remote, rural village has no clean drinking water infrastructure, leaving the community rely on the Matitanana River. As a result, Akimy was able to supply Sur'eau water treatment products and soaps to villagers. Now, all households supported by this local promotor treat their water to make it safe for drinking.

Kings and Accountability

When RANO WASH started working in Amboanjo in March 2018, the team found that open-air defecation was still practiced in all villages. Only 12 households had and used toilets.

The opening of the suggestions box in Amboanjo

Local concertation structure established suggestions box in this village in order to promote local accountability. Kings in the village of Amboanjo were so much involved in this process despite their illiteracy. In fact, traditional leaders insisted on attending the opening of these boxes so that they could see everything for themselves and participate in the resulting discussions.

While these traditional leaders had previously been content to simply accept decisions made by the government authorities, this time they really wanted to participate in the process.

They wanted to make sure that their citizens were allowed to fully express themselves.
On opening the suggestions box, the majority of comments made were around the need for clean drinking water. In response, the assembly decided to reinforce the systems to control and manage existing water infrastructure, so as to make sure it can be sustained well into the future.

A latrine in Vohitsivalana village, which was recently declared open defecation-free. There are now 61 households who have and use latrines.

Amboanjo has seen many projects in the past. Inter Aide, a development organization based in France, has worked in the municipality since 2003, and has been active in distributing sanplat slabs to encourage people to build improved toilets. However, few locals have participated, and it is mostly the immigrants to the area who have actually built toilets.

Since the project began, the field agent has worked closely and tirelessly with the local authorities, traditional leaders and community members to combat open-air defecation. **Since then, 13 villages have since been declared open defecation-free.**

Local builder constructing a hygienic latrine for Amboanjo Primary School.

ANNEX 2. RANO WASH COST SHARE QUARTERLY UPDATE Q4.19

RANO WASH project continues to monitor its three potential sources of cost sharing:

(1) Cash contributions;
(2) Donated goods and services, and
(3) In kind contributions.

The project's contributed $258,638this quarter, making a total $ 467,765 in cost share for FY19 (71% of $654,910 planned for FY19).

The increase in cost share this quarter is due to the recording of cash contribution from new water systems (WSP co-finance and water users connection), donated goods and services (program and operating costs) and from in-kind contribution (basic sanitation users). RANO WASH has achieved to date 47% of its cost share objective against the project lifetime completion of 44%.

The following table present the source of matching, ITD as of Q4.19 (amount in $USD).

Description	Budget FY19	Actual FY18	Actual Q1.19	Actual Q2.19	Actual Q3.19	Actual Q4.19	Total Actual FY19	%age Actual vs Budget FY19
Cash contributions	**307,460**	**-**	**-**	**50,328**	**921**	**74,386**	**125,635**	**41%**
Water Service Providers	187,960	-	-	50,328		53,882	104,210	55%
Water users	34,500	-	-	-	921	20,504	21,425	62%
Non-USG Fundraising	85, 000					-	-	0%
Donated goods and services	**288,816**	**154,784**	**30,251**	**40,464**	**32,321**	**84,370**	**187,407**	**65%**
Operating costs	176,918	138,040	18,732	39,404	21,731	28,746	108,612	61%
Program costs	111,898	16,744	11,519	1,060	10,590	55,625	78,794	70%
In kind contributions	**58,634**	**-**	**1,655**	**12,984**	**40,202**	**99,882**	**154,723**	**264%**
Basic sanitation Users	4,500	-	-	-	37,848	73,392	111,240	2472%
Unrecovered Indirect costs	54,134	-	1,655	12,984	2,354	26,490	43,483	80%
Total	654,910	154,784	31,906	103,776	73,444	258,638	467,765	**71%**
Cumulated cost share (ITD)		154,784	186,691	290,467	363,911	**622,549**		
% vs $3m cost share proposal for 5yrs		5%	6%	10%	12%	**21%**		
Project life time completed						**44%**		
%age of cost share target						**47%**		

The project is finalizing a harmonized guidance for cost share for the consortium to ensure the quality of data and proper documentation of in-kind contributions.

ANNEX 2. FY19 DETAILED IMPLEMENTATION PLAN QUARTERLY UPDATE Q4.19

Status	Legend
Rescheduled	Deliverable rescheduled
Not Started	Activity not started
On Track	Deliverable meeting plan
Potential Risks / Delays	Slightly off-track requiring additional attention and/or resources
Risks / Road Blocks	Significantly off-track requiring substantial senior-level attention and/or resources
Completed	Deliverable closed, plan met
On Hold	Deliverable on hold, not active
Canceled	Deliverable canceled

	Planned Activities
	Actual Progress
	Planned Activities & Actual Progress

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
PROJECT MANAGEMENT & CROSS CUTTING ISSUES															
	Program Coordination Team														
National / Regional	Regional Launching in Vakinankaratra	Completed													
National / Regional	Courtesy visit in Vakinankaratra	Completed													
National / Regional	Workshop with Ministries to define methodology on selection of the interventions communes (Demand led-approach)	Completed													
National	RANO WASH Visibility package production	Completed													
National / Regional	Courtesy visit in the FY2020 two intervention regions (Haute Matsiatra and Amoron'I Mania)	Completed													
National	Recruitment of sub-grantees in the FY2020 two intervention regions (Haute Matsiatra and Amoron'I Mania)	Potential Risks / Delays													
National / Regional	Recruitment Subgrantees staff	Potential Risks / Delays													
National	Selection of interventions communes in the FY2020 two intervention regions (Demand led-approach)	Completed													
National and Regional	Office space and equipment for FY2020 two new regional offices	Completed													
	Finance and Administration														
National	A-133 Audit (KPMG)	On Track													
National	Statutory Audit (E&Y)	On Track													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National	Financial Management / compliance Refresher Training Sessions (Subgrantees and regions)	On Track													
National	Recruitment of regional teams for FY20	Completed													
National	Completion of recruitment of regional teams for FY20	Completed													
	Communication and Reporting, Leadership Program Planning and Review														
National / Regional	Monhtly narrative report	Completed													
National / Regional	Bi-annual meeting for the whole project staff	Completed													
National / Regional	Communicate quarterly report planning schedule to partners	Completed										Q3			Q4
National / Regional	Quarterly report (financial and technical)	Completed													
National / Regional	Quarterly newsletter	Rescheduled	FY20												
National / Regional	FY2018 Annual report	Completed													
National / Regional	Quarterly plan (financial and technical)	Completed													
National / Regional	FY2020 implementation plan (financial and technical)	Completed													
Regional	FY 20 planning for Regions	Completed													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National	Communicate FY planning schedule to partners	Completed													
National	Monthly COP Communication to staff	Completed													
National	Senior Leadership Team weekly meetings	Completed													
CARE, CRS, & WA	**Regional Level**														
Regional	Call for interest to select new communes in FY2019 intervention communes	Completed													
Regional	Call for interest to select new communes in FY2020 intervention communes	Rescheduled	240 Communes selected, 10 Communes for Alaotra mangoro rescheduled in Q1												
Regional	Information meetings on RANO WASH project for FY2019 new intervention communes	Completed													
Regional	Regional quarterly workshop	Completed													
MONITORING EVALUATION & LEARNING															
	Promotion of the use of baseline survey data in the first 3 RANO WASH 3 regions														
National	Production of brochures for the dissemination of baseline results - Malagasy version	Completed													
National	Production of brochures for the dissemination of baseline results - French version	Completed													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National	Workshop to promote the use of baseline survey data at the national level	**On Hold**	To be combined with baseline for new regions												
National / Regional	Workshop the promote the use of baseline survey data at the regional level by the PCT and regional offices - Atsinanana region (half-day)	**On Hold**													
National / Regional	Workshop the promote the use of baseline survey data at the regional level by the PCT and regional offices - Vatovavy Fitvinany region (half-day)	**On Hold**													
National / Regional	Workshop the promote the use of baseline survey data at the regional level by the PCT and regional offices - Aloatra Mangoro region (half-day)	**On Hold**													
	Annual beneficiary-based survey														
National	Recruitment of surveyors	**Canceled**	Formal annual survey with external surveyors is scheduled for end FY20 with mid-term review												
National / Regional	Training of surveyors	**Canceled**	Formal annual survey with external surveyors is scheduled for end FY20 with												

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
			mid-term review												
National / Regional	Field data collection	Completed	Data collection by RANO WASH staff and TA												
	Baseline survey and WASH infrastructure inventory in the 3 new regions (Vakinankaratra, Amoron'I Mania, Haute Matsiatra)														
National	Call for offer of interest	Completed		W2											
National	Selection of research firm	Completed			W1										
National	Signing of contract	On Hold	Awaiting final list of FY20 communes		W2										
National	Validation of start-up report	Rescheduled			W4										
National	Training of surveyors and enumerators, pre-test	Rescheduled				W3									
National / Regional	Field data collection	Rescheduled	Awaiting final list of FY20 communes				W1-3								
National	Validation of final report	Rescheduled	Awaiting final list of FY20 communes					W4							
	Promotion of the use of baseline survey data in the 3 new regions of RANO WASH														

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National	Duplication of leaflets / brochures for the dissemination of baseline results - Malagasy version	On Hold	Awaiting baseline of new regions												
National	Duplication of leaflets / brochures for the dissemination of baseline results - French version	On Hold	Awaiting baseline of new regions												
National	Workshop to promote the use of baseline survey data at the national level	On Hold	Awaiting baseline of new regions												
National / Regional	Workshop to promote the use of baseline survey data at the regional level -Vakinankaratra region	On Hold	Awaiting baseline of new regions												
National / Regional	Workshop to promote the use of baseline survey data at the regional level - Amoron'I Mania region	On Hold	Awaiting baseline of new regions												
National / Regional	Workshop to promote the use of baseline survey data at the regional level - Haute Matsiatra region	On Hold	Awaiting baseline of new regions												
	Census of project beneficiaries														
National / Regional	Training for new TAs with sub-grantees - Vakinankaratra region	Completed													
	SMILER workshop for 3 new regions														
National / Regional	Regional SMILER workshop: Vakinankaratra region	Completed													
	ICT4D Platform														
National	Development and routine updating of data collectiong forms within CommCare	On Track													
National	Installation of DHIS2 development/test instance	Cancelled	DHIS2 deemed unnecessary for												
National	Hosting of DHIS2 development/test instance	Cancelled													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National	Installation of DHIS2 production instance	Canceled	operationalization of database/ICT4D platform												
National	Hosting of DHIS2 production instance	Canceled													
National	Installation of AirWatch application for Android tablet management	Completed													
National	Reservation of project website domain name (www.ranowash.org)	Completed													
National	SSL securizationof project website domain name	Completed													
National	Development and routine updating of forms within DHIS2	Canceled													
National	Development and periodic updating of results-monitoring dashboards within DHIS2	Canceled													
National	Periodic updating of mapping (GIS) database	On Track													
	Evaluation of data quality														
National	Data Quality Assessment	Completed													
	RANO WASH MEAL annual review														
	Annual review with MEAL regional teams and MEAL PCT team	Completed													
	Field visit to support the operationalization of the M & E system														
National / Regional	Field visit - Atsinanana region	Completed													
National / Regional	Field visit - Vatovavy Fitovinany region	Completed													
National / Regional	Field visit - Aloatra Mangoro region	Completed													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National / Regional	Field visit - Vakinankaratra	Rescheduled	To be completed in FY20 Q1												
	MEAL team training														
National	Results-Based Management (RBM) and M&E training (PCT)	Rescheduled	FY20												
National	Statistical analysis training (MEAL team)	Rescheduled	FY20												
National	Advanced ICT4D training	Completed	Participation of MEAL staff in advanced training in July												
National	Participation in international ICT4D conference	Canceled	Participation of other RANO WASH staff												
	Database management														
National	Development of xls frameworks for data extraction from new CommCare forms	Completed													
National	Modification of database tables according to new data collection forms	Completed													
National	Deployment of MS Azure for online data consultation	Canceled	Deemed unnecessary for operationalization of database/ICT4D platform												
National	Updating database after CommCare data extraction	On Track													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National	Creation of dashboard to display real-time data for strategic objectives	Completed	Regularly updated and will be extended in FY20												
SO1. Governance and monitoring of water and sanitation strengthened for sustainable and equitable WASH services															
IR1.1 Strengthened government and stakeholder commitment and accountability to sector development															
Output 1.1.1.	Sector coordination and learning mechanisms operating effectively under strong national leadership														
Act 1.1.1.1	Dicussions between thematic groups to document best practices and lessons learned of the WASH sector	Completed													
Act 1.1.1.2	Capacity building and mobilizing of private sector groups to discuss key needs for the WASH private sector development	Completed	To be enhanced in FY20												
Act 1.1.1.3	Capacity building and mobilization of WASH CSOs to dicuss their key priorities	Completed	To be enhanced in FY20												
Output 1.1.2.	Ministry in charge of WASH institutional capacity developed to meet strategic needs														
Act 1.1.2.1	Participation in development of sector plan (PSEAH)	**On Hold**	Waiting for the resolution of contract conflict (UNICEF, MEEH)												
Act 1.1.2.2	Study/workshop to develop costing of PS-EAH	**On Hold**	Waiting for the PSEAH finalization and rescheduled in FY20												

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act 1.1.2.3	Study/workshop for the development National Plan for Investment	**On Hold**	Waiting for the PSEAH finalization and rescheduled in FY20												
IR1.2 Improved sector monitoring, analysis and learning, influencing policy															
Output 1.2.1.	SE&AM strengthened and extended														
Act 1.2.1.1	Meeting with DREAH on activities for the regional SE&AM														
	Refresher training for regional team of DiMat	**Completed**													
	Update DiMat at the regional level (supervision and coaching)	**Completed**													
Act 1.2.1.2	Regional support to DREAH to be operational for the SE&AM process	**Completed**													
Act 1.2.1.3	Workshop to launch SE&AM and BPOR														
	Working sessions / training for the regional WASH actors to be ready to launch SE&AM BPOR	**Completed**													
	SE&AM/BPOR launching workshop	**Completed**													
Act 1.2.1.4	Coaching sessions for Commune/District/DREAH to update data														
	Work with DREAH to mobilize WASH actors to update SE&AM data	**Completed**													
	Coaching to RANO WASH team to update quarterly data in the SE&AM system	**Completed**													
	Quarterly review and coaching sessions with actors	**Completed**													
Act 1.2.1.5	Training for Communes to pilot the SE&AM ICT4D platform	**Completed**													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act 1.2.1.6	Working with the MoWASH to assess the sectorial review performance	Rescheduled	FY20												
Act 1.2.1.7	Contributing to conduct the WASH sectorial review taking in account the assessment results at national level	Rescheduled	FY20												
Act 1.2.1.8	Contributing to conduct the WASH sectorial review taking in account the assessment results at regional level	Rescheduled	FY20												
Output 1.2.2	Learning agenda implemented to increase and better regulate private sector engagement in WASH														
Act 1.2.2.1	Mobilize potential actors to the learning activities														
	Inventory of potential actors at national and regional levels	Completed													
	Organize learning events at regional level	Completed													
Act 1.2.2.2	Work with the DREAH to feed the digital library with the learning events deliverables	Rescheduled	FY20												
Act 1.2.2.3	Facilitate learning events for the RANO WASH project on PPP	Completed													
IR1.3 Strengthened sub-national systems															
Output 1.3.1	Decentralized resources available for sustained WASH service delivery														
Act 1.3.1.1	Mobilize WASH actors at regional level to assess the progress achieved against BPOR/BPON and to define strategy to move forward	**On Hold**	Waiting for the finalization of WASH sector program (PSEAH)												
Act 1.3.1.2	Training of trainers and coaching for DREAH and RANO WASH team on STEAH capacity building	Completed	Resceduled for Q4												

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act 1.3.1.3	Working session with the MoWASH on Communes' capacity building to set up and to coach STEAH	Rescheduled	FY20												
Act 1.3.1.2	Conduct capacity building of the STEAH	Completed													
Output 1.3.2	Commune management capacities strengthened for WASH service delivery														
Act: 1.3.2.1	Coaching of communes to develop PCDEAH (Commune WASH plans)														
	Training for RANO WASH regional team on PCDEAH	Potential Risks / Delays	will be completed in FY20												
	Working sessions with communes to develop with them PCDEAH	Potential Risks / Delays	will be completed in FY20												
Act: 1.3.2.2	Training of 8 communes on their roles relating to WASH service delivery	Completed													
Act: 1.3.2.3	Training for communal CAO (tender evaluation committees)	Completed													
Act: 1.3.2.4	Setting-up tax payment mechanism	Completed													
	Develop tools to ensure tax recovery and management	Completed													
	Training for 20 communes on tax recovery and management	Completed													
Act: 1.3.2.5	Field visit for communes benefiting water supply systems construction	Completed													
IR1.4 Increased community control over WASH services															
Output 1.4.1	Communes and communities with an active civil society, aware of and organized to claim their right to water and sanitation														
Act 1.4.1.1	Training for National CSO	Completed													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act: 1.4.1.2	Training for Regional CSO	Rescheduled	5 Regions completed, but Amoron'I Mania, rescheduled on FY20-Q1												
Act: 1.4.1.3	CSO Mapping at communal level	Completed													
Act: 1.4.1.4	Training and coaching for CSO at communal to develop advocacy plan and networking	Completed													
Act: 1.4.1.5	Coach and Follow up CSO at communal level to implement their advocacy plan	Completed													
Output 1.4.2	110 communes with functional WASH accountability mechanisms														
Act: 1.4.2.1	Setting up SLC for each commune (59 new communes)														
	Meeting to improve approach for SLC - Identification of samples of themes to be discussed within the SLC	Completed													
	Training of trainers or refresher for RANO WASH technicians staff	Completed													
Act: 1.4.2.2	Training and coaching for SLC to be operationnal (dialogue sessions agenda)	Completed													
Act: 1.4.2.3	Facilitate working sessions with District and Communes to implement SLCs' recommendations	Rescheduled	Done for some communes but have to be continued in FY20												

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act: 1.4.2.4	Conduct national learning event on social accountability mechanism	Completed													
Act: 1.4.2.5	Training and coaching for communes to implement social accountability mechanism	Rescheduled	To be continued in FY20												
SO2. Private sector engagement in WASH service delivery increased and improved.															
IR2.1 Improved WASH products, technologies, services and business models															
Output 2.1.1	A comprehensive WASH market assessment (WMA) strategy developed														
Act: 2.1.1.1	Under the leadership of the MoWASH, conduct WMA in the three new regions	Completed													
Output 2.1.2	Regional WASH market development plans drafted														
Act 2.1.2.1	Work with a Consultant to develop the regional WMDP for the previous 3 regions	Canceled													
Act 2.1.2.2	Develop WASH marketing plan per region	On Track													
Act 2.1.2.3	Training and coaching for private sector actors to implement WMDP and marketing plan	On Track													
Output 2.1.3	Type and range of financial products for WASH services and products available and accessible increased														
Act: 2.1.3.1	Informational visits on project to heads of financial institutions	On Track													
Act: 2.1.3.2	Invite financial institutions to participate in the Regional WMDP presentation to engage them in the potential WASH market	On Track													
Act: 2.1.3.3	Organize an "open house" to connect financial institutions and WASH service providers at the national level	Completed									With the 63 new				

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
											preselected entreprises				
Act: 2.1.3.4	Support VSLA loans to initiate WASH small business ie hygiene product and sanitation marketing	Rescheduled									Rescheduled				
Act: 2.1.3.5	Develop communication materials related to new loan products	Rescheduled									Rescheduled				
IR 2.2 Improved WASH products, technologies, services and business models															
Output 2.2.1	Design and construction of sustainable WASH infrastructure improved														
Act 2.2.1.1	Conduct APS and APD														
	33 APS reports pending for FY18 planned technical study	**Complete**		14 APS delivered by BushProof		19 APS reports provided by Sandandrano									
	Produce at least 30 APS reports for FY19	**On Track**										16 APS for FY19 provided			
	3 APD reports pending for FY18 planned technical study	**Completed**													
	Produce at least 20 APD reports for FY19	**On Track**							3 V7V	**6 APD produced**			11 APD in pro		

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
													gress		
	Validation meetings for APD at each commune	On Track							3 V7V	9 APD validated			11 APD in progress		
Act 2.2.1.2	Select short list of enterprises for construction and investment-management	On Track													
	Launch call for interest at regional and national level	Completed													
	Develop 20 DAO (tender documents) from APDs in FY19	On Track								09 DAO launched				In progress	
	Training and coaching for communes / evaluation committee for tenders on procurement and the water supply system management contract	On Track													09 committee trained for FY20 construction
	Launch the tender procedure	On Track											9 DAO	11 DAO for FY20 construction	12 DAO for FY20 construction
	Visit the sites construction with potential WSP	On Track													11 DAO

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
															for FY20 construction delayed in Q1 FY20
	Evaluation of the tenders received	On Track										09 DAO ATS, ALMA, VV7V			
Act 2.2.1.3	Develop ESF and monitor its implementation in the construction sites	On Track													
	Develop ESF	On Track		3 FY18							9 ESF				
	Monitor ESF implemntation for the 12 construction	On Track													
	Monitor ESF implemntation	On Track											New forecast for the 11 remaining construction		

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act 2.2.1.4	Contract and Monitor water infrastructures construction and management														
	Contract water infrastructures construction and management	On Track													
	Monitor water infrastructures construction and management	On Track													04 infras (Phase I)
IR 2.3 Strengthened technical & business skills and competencies															
Output 2.3.1	Capacity building for private sector in business systems and technical operations strengthened														
Act 2.3.1.1	Provide on-the-job technical training on management to private companies	Complete													
Output 2.3.2	Professional Associations Development														
Act 2.3.2.1	Conduct an institutional diagnostic of the Private sector association (AOPDM) specialized on water systems management in Madagascar	Rescheduled								Rescheduled					
Act 2.3.2.2	Develop and implement a capacity building plan to the WASH private sector institution	Rescheduled									Rescheduled				
SO3. Adoption of healthy behaviors and use of WASH services accelerated															
IR3.1 Improved hygiene and sanitation behavior change solutions through applied research															
Output 3.1.1	Behavioral science innovations for WASH BC explored, iterated, evaluated														
Act: 3.1.1.1	Publish and share action-research on BC conducted by LSHTM	Completed													
Act: 3.1.1.2	Develop 4 action-research protocols	Completed													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act: 3.1.1.3	Implement BCD strategy for 3 regions (V7V, ALM, ATS)	Completed													
	Research and analysis for gaps in knowledge/researc														
	Design strategies to address key behaviors	Completed													
	Conceptualization of materials adapted according to the strategy and validation	On Track													
	Tools production	On Track													
	Implementation and evaluation of the BCD strategy	On Track													
Output 3.1.2	Studies of integrated population, health and environment (PHE) programming models stimulating cross-sectoral collaboration														
Act 3.1.2.1	Develop and present an agenda for action-research on PHE with PHE actors in Madagascar	Rescheduled													
Output 3.1.3	WASH-Nutrition linkages researched														
Act 3.1.3.1	Share the Action-research research for WASH-Nut to WASH and nutrition sector stakeholders to begin influence programs and policies	Rescheduled													
Output 3.2.1	WASH BC program coordination improved in RANO WASH regions														
Act 3.2.1.1	Collaborate with MoWASH to coordinate WASH BC activities at the national level (quarterly meeting)	Completed													
Act 3.2.1.2	Organize and participate in regional platform meetings to ensure coordination of activities at regional level	Completed													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Output 3.2.2	Innovative CLTS and WASH BC implementation														
Act 3.2.2.1	Identification, training and placement of gender focal points for RANO-WASH staff	**Completed**													
Act 3.2.2.2	Training on gender and community mobilization for RANO WASH staff	**Completed**													
Act 3.2.2.3	Production of gender promotion tools	**Completed**													
Act 3.2.2.4	Basic and advanced CLTS training for staff	**Completed**													
	FY18 assessment in the field with FAA by organizing joint mission and discussion	**On Track**													
	Periodical meeting with FAA	**Rescheduled**													
	Conduct CLTS training	**On Track**													
Act 3.2.2.5	Training and coaching on VSLA for RANO WASH staff	**On Track**													
Act 3.2.2.6	Training on training techniques for RANO WASH staff	**Completed**													
Act 3.2.2.7	Identification and training - coaching for local promoters at communal level in the 110 intervention communes	**Completed**													
Act 3.2.2.8	Coaching for local promoters on BC communication activities	**Completed**													
Act 3.2.2.9	Coaching for CHV on promotion of health activties and PNSC promoter (in collaboration with MSP)	**Completed**													
Act 3.2.2.10	Establish WASH committees to strengthen community participation and coordination	**On Track**													
Subgrante e	*Setting up of WASH committee in all communes*	**On Track**													
Subgrante e	*Training and coaching for WASH committees*	**Completed**													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act 3.2.2.11	Establish new VSLA groups and coaching for previous VSLA	Completed													
Act 3.2.2.12	Encourage VSLA members to invest in WASH products/services	Completed													
Act 3.2.2.13	CLTS Triggering and FUM activities at village/fokontany level	Completed													
Act 3.2.2.14	Train and coach health facilities and schools in the WASH friendly	Rescheduled													
Act 3.2.2.15	BC activities specific to MHM at WASH friendly schools	Rescheduled													
Act 3.2.2.16	Celebrate and mobilize communites to create movements for change during world days	Completed													
Output 3.2.3	Communication Marketing developed for WASH products and services														
Act 3.2.3.1	Implement marketing camapaign on WASH products and services in communes where products and services are avaialable	Completed													
Act 3.2.3.2	Promote WASH products and services through local medias	Rescheduled													
IR3.3 Evidence-based WASH BC and hygiene promotion shared to influence policy															
Output 3.3.1	National-level networks, policies and programs engaged for sustainable WASH BC														
Act: 3.3.1.1	Initiate learning hub discussions within the project and setup the learning hub at national and regional level	Rescheduled													
	Develop the workshop TOR														
	Hold the quarterly learning events	Completed													
Act: 3.3.1.2	Attend, participate, initiate workshops and meetings on national level to share experiences, expertise and to influence	Completed													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
	policies: based on action research, formative research results														

ANNEX 5. WASH SYSTEM STRENGTHENING

Building blocks for a strong WASH system

Based on Concept from WaterAid

Reach everyone with lasting WASH services

Women and marginalized people are empowered and involved in government decision-making at all levels. Services are inclusive. Standards, policies and investment target range of products and services adapted to everyone and everywhere.

Moving forward together with clear roles and responsibilities

All institutions at all levels have clear roles and responsibilities set out in government policies with adequate human and financial resources (setting-up, operation and regulation). Private operators have access to clear structures to promote their investment and commitment in the sector.

Coordinate WASH interventions to optimize impact

A coordination structure, led by the government involving WASH actors and agencies meets regularly to coordinate activities toward one single WASH master plan. This structure is cross-sector and involves private sector and WASH CSO.

Measure progress to support evidence-based decisions

SE&AM system monitors WASH service level with harmonized indicators including private operator performance, service quality and equity. Data are used to inform plans, investement and joint sector review process for each level. The system is government-led, regularly updated.

Clarify the vision and the way to get there

A comprehensive WASH governement owned plan toward 2030 with buy-in from all WASH actor is available for each level. This plan is based on detailed cost to reach sustainable governement WASH target and on available fund. Policy documents promote enabling environment for private sector engagement.

Financing the plan

A financial strategy is available based on detailed cost to reach sustainable governement WASH target and the potential funding sources (taxes, transfers, tariffs, investments). It highlights strategies to facilitate private sector access to finance and to optimize the business environment to encourage private sector investment.

Engage private sector to deliver professional and sustainable WASH services

Service providers deliver sustainable and professionnal WASH services. They increase their investment to expand WASH services and implement marketing activities to activate WASH demands. Models of profitable investment and affordable services are implemented. WASH service providers fullfill demands from all categories of people.

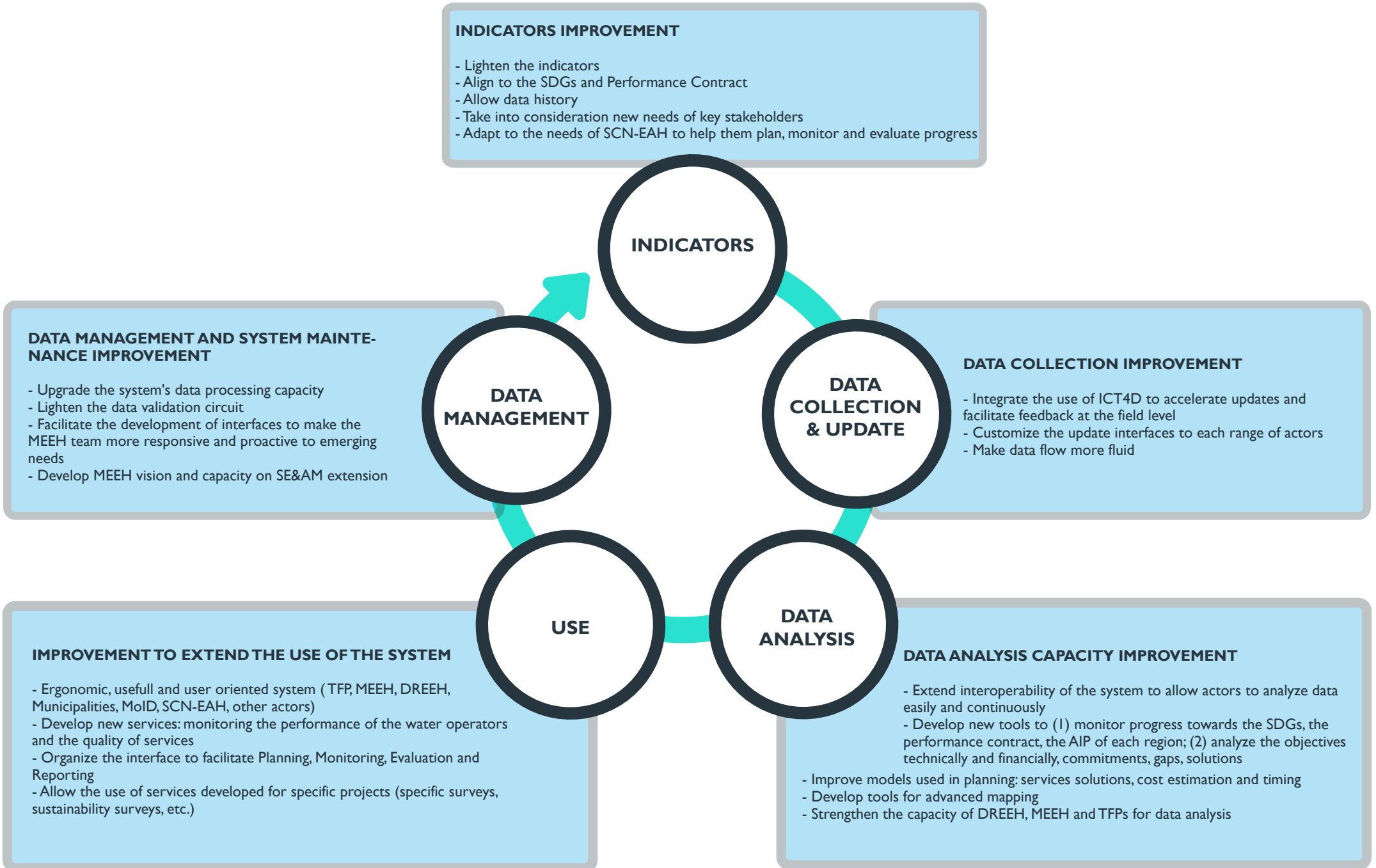
Empower citizen to speak up, encourage government responsiveness and activate services regulation

Functional feedback mechanism between service users, providers and regulator are accessible to all. Community use these systems and actions are taken to address issues raised. Adequate regulation body monitors and holds into account governement, service providers and other actors. It secures private sector investment and ensures that the quality of services is respected.

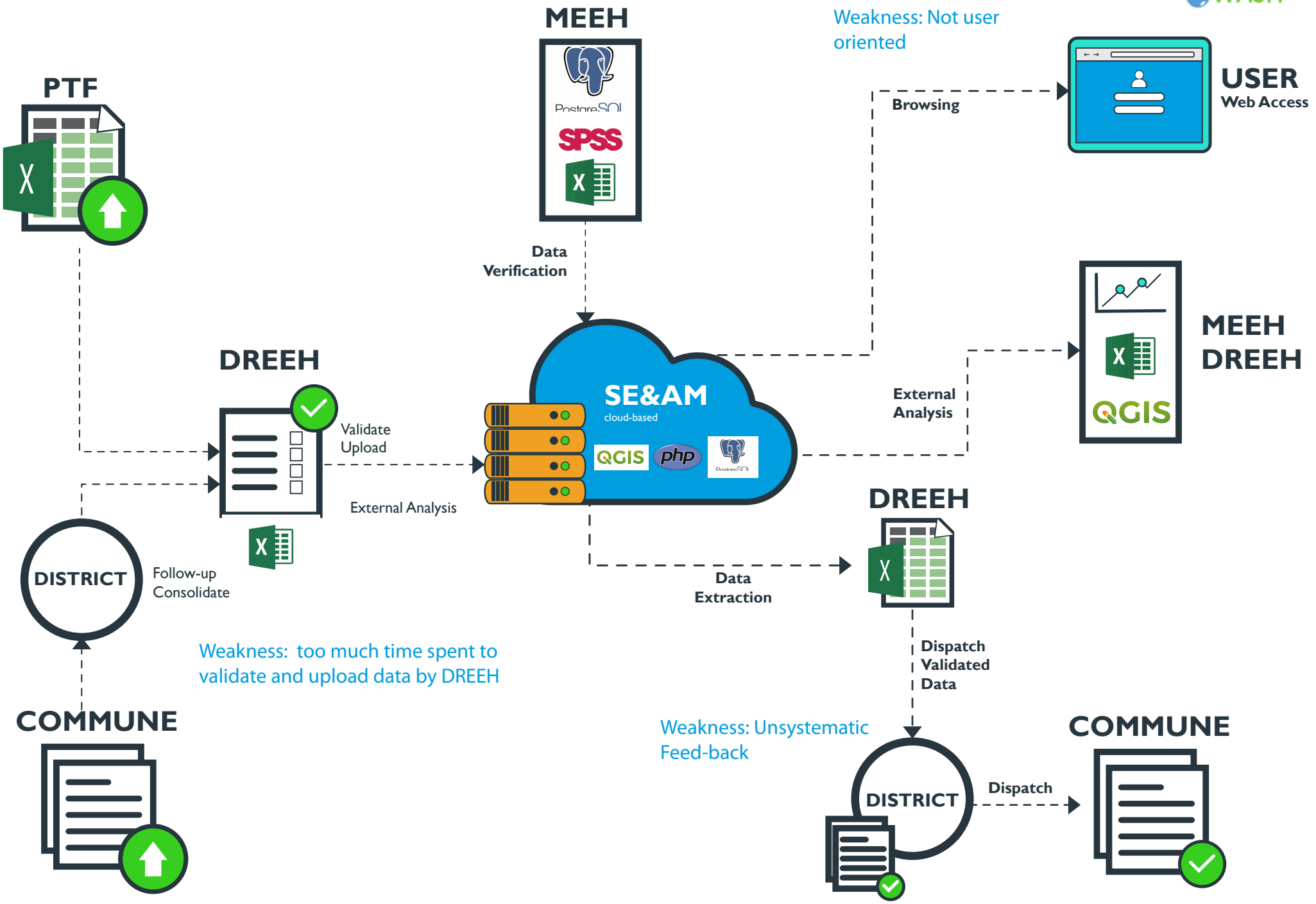
Manage water resources and mitigate threats to water quality and quantity

Water resources are regularly monitored. Threats to WASH services, water resources and wider environment are understood and mitigated. Government, WASH service providers and communities are taking responsibility for the implementation of water quality assurance and environmental measures to secure investment and ensure the sustainability of WASH services. Adequate mechanisms are in place for the safe capture, storage, transfer, treatment and disposal of faecal waste.

ANNEX 6 SE&AM UPGRADE

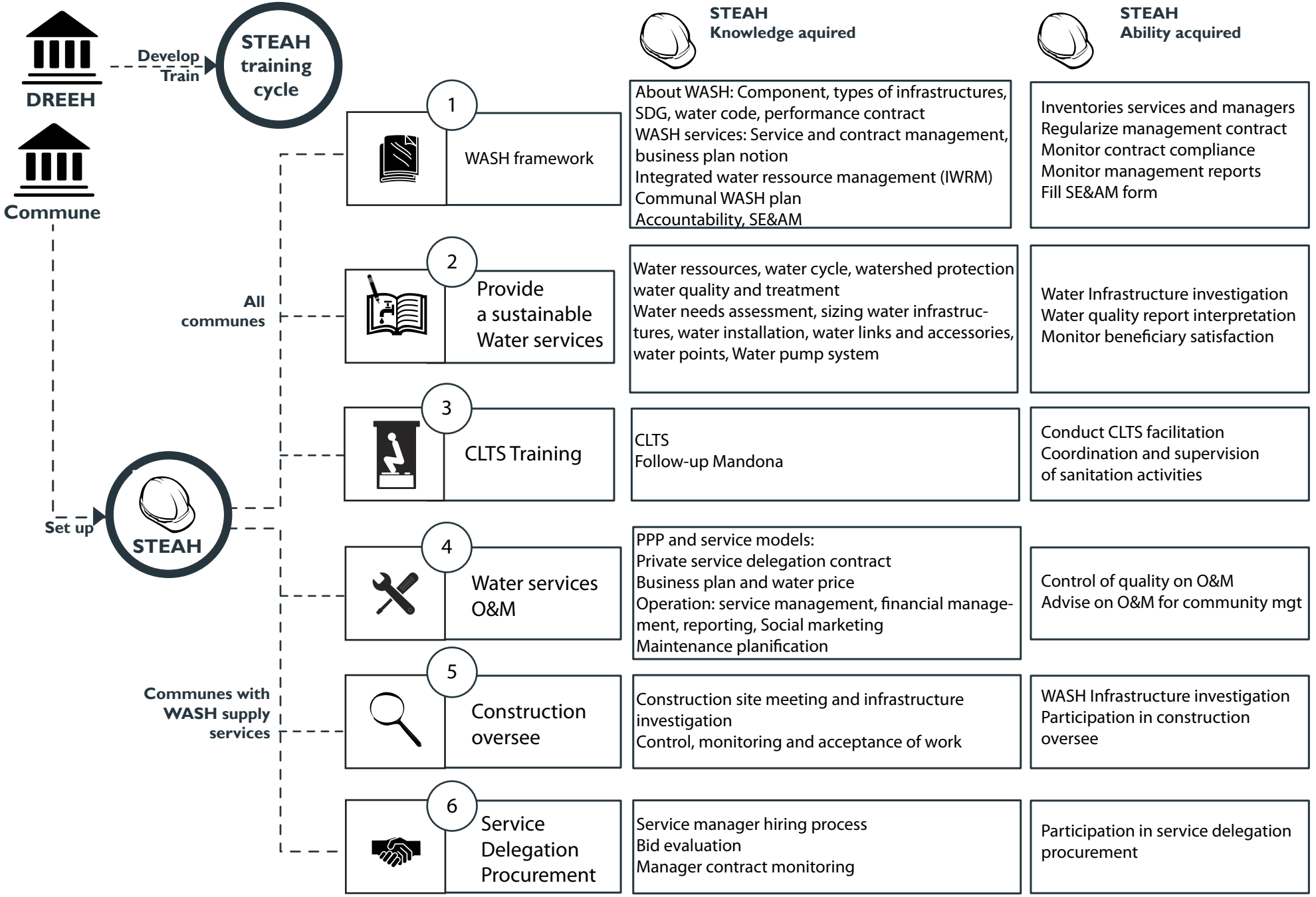

INDICATORS IMPROVEMENT
- Lighten the indicators
- Align to the SDGs and Performance Contract
- Allow data history
- Take into consideration new needs of key stakeholders
- Adapt to the needs of SCN-EAH to help them plan, monitor and evaluate progress
INDICATORS
DATA COLLECTION & UPDATE
DATA ANALYSIS
USE
DATA MANAGEMENT
DATA COLLECTION IMPROVEMENT
- Integrate the use of ICT4D to accelerate updates and facilitate feedback at the field level
- Customize the update interfaces to each range of actors
- Make data flow more fluid
DATA ANALYSIS CAPACITY IMPROVEMENT
- Extend interoperability of the system to allow actors to analyze data easily and continuously
- Develop new tools to (1) monitor progress towards the SDGs, the performance contract, the AIP of each region; (2) analyze the objectives technically and financially, commitments, gaps, solutions
- Improve models used in planning: services solutions, cost estimation and timing
- Develop tools for advanced mapping
- Strengthen the capacity of DREEH, MEEH and TFPs for data analysis
IMPROVEMENT TO EXTEND THE USE OF THE SYSTEM
- Ergonomic, usefull and user oriented system (TFP, MEEH, DREEH, Municipalities, MoID, SCN-EAH, other actors)
- Develop new services: monitoring the performance of the water operators and the quality of services
- Organize the interface to facilitate Planning, Monitoring, Evaluation and Reporting
- Allow the use of services developed for specific projects (specific surveys, sustainability surveys, etc.)
DATA MANAGEMENT AND SYSTEM MAINTENANCE IMPROVEMENT
- Upgrade the system's data processing capacity
- Lighten the data validation circuit
- Facilitate the development of interfaces to make the MEEH team more responsive and proactive to emerging needs
- Develop MEEH vision and capacity on SE&AM extension

SE&AM upgrade project
Current data flow and weaknesses



ANNEX 7. STEAH TRAINING CYCLE

STEAH training cycle - WASH Technical agent at communal level



ANNEX 8. PROGRESS OF WATER SYSTEM CONSTRUCTION Q4.19

Location				Technical Description	Contractor				Montant d'investissement Gestionnaire TTC	Montant total projet TTC	Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply	WSP Investment Amount	% of WSP investment	Total Estimated costs			Phase	% Completion	Technical Reception	Provisional Reception	Final Reception	
FY18 Construction Activities (WSS)																
FY19 Construction Activities (WSS)																
Alaotra Mangoro	Amparafaravola	Amparafaravola	Ambongabe	Rehabilitation; extension; upgrading	SRAFI	$ 50,566.16	27 %	$ 186,277.23	176,981,571.25 MGA	782,364,378.87 MGA	Construction	0%	Undefined			Contract award process, including contract signing, ongoing.
Alaotra Mangoro	Amparafaravola	Amparafaravola	Betatamo	Rehabilitation; extension; upgrading	SRAFI	$ 39,575.69	28 %	$ 139,958.57	138,514,912.50 MGA	612,318,741.94 MGA	Construction	0%	Undefined			Contract award process, including contract signing, ongoing.
Alaotra Mangoro	Moramanga	Anosibe Ifody	**Anosibe Ifody**	Rehabilitation	Rano an'ala B	$ 9,142.86	10 %	$ 91,237.56	32,000,000.00 MGA	399,164,308.00 MGA	Construction	20 %	29-nov.-19	16-Dec-19	13-Jun-20	Contract signed on September 25, 2019 for a duration of 65

Location				Technical Description	Contractor				Montant d'investissement Gestionnaire TTC	Montant total projet TTC	Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply	WSP Investment Amount	% of WSP investment	Total Estimated costs			Phase	% Completion	Technical Reception	Provisional Reception	Final Reception	
																days for the execution of the work. The warranty period for the new contracts is also 6 months after provisional acceptance.
Atsinanana	Vatomandry	Niarovana Caroline	**Niarovana Caroline**	New construction	2ADH	$ 15,034.95	14 %	$ 109,345.10	52,622,329.32 MGA	478,384,812.00 MGA	Construction	0%	3-Dec-19	18-Dec-19	15-Jun-20	Contract signed on October 04, 2019 for a duration of 60 days for the executi

Location				Technical Description	Contractor				Montant d'investissement Gestionnaire TTC	Montant total projet TTC	Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply	WSP Investment Amount	% of WSP investment	Total Estimated costs			Phase	% Completion	Technical Reception	Provisional Reception	Final Reception	
																on of the work. The warranty period for the new contracts is also 6 months after provisional acceptance
Atsinanana	Brickaville	Mahatsara	**Mahatsara**	New construction	2ADH	$ 15,940.57	13 %	$ 121,589.99	55,791,996.96 MGA	531,956,211.05 MGA	Construction	0%	3-Dec-19	16-Dec-19	13-Jun-20	Contract signed on October 04, 2019 for a duration of 60 days for the execution of the work.
Atsinanana	Toamasina II	Ampasimadinika	**Ampasimadinika**	Renovation with redesign							Construction	0%				

Location				Technical Description	Contractor				Montant d'investissement Gestionnaire TTC	Montant total projet TTC	Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply	WSP Investment Amount	% of WSP investment	Total Estimated costs			Phase	% Completion	Technical Reception	Provisional Reception	Final Reception	
																The warranty period for the new contracts is also 6 months after provisional acceptance
Vatovavy Fitovinany	Ifanadiana	Antaretra	**Antaretra**	Rehabilitation & extension	MICKAEL	$ 14,914.29	13 %	$ 113,255.85	52,200,000.00 MGA	495,494,346.00 MGA	Construction	20 %	11/13/2019	28-Nov-19	26-May-20	Contract signed on September 24, 2019 for a duration of 50 days for the execution of the work. The warranty period

Location				Technical Description	Contractor				Montant d'investissement Gestionnaire TTC	Montant total projet TTC	Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply	WSP Investment Amount	% of WSP investment	Total Estimated costs			Phase	% Completion	Technical Reception	Provisional Reception	Final Reception	
																for the new contracts is also 6 months after provisional acceptance
Vatovavy Fitovinany	Manakara II	Lokomby	**Lokomby**	New construction	MICKAEL	$ 9,771.43	7%	$ 146,611.69	34,200,000.00 MGA	641,426,132.40 MGA	Construction	20 %	11/23/2019	9-Dec-19	6-Jun-20	Contract signed on September 24, 2019 for a duration of 60 days for the execution of the work. The warranty period for the new contract

Location				Technical Description	Contractor				Montant d'investissement Gestionnaire TTC	Montant total projet TTC	Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply	WSP Investment Amount	% of WSP investment	Total Estimated costs			Phase	% Completion	Technical Reception	Provisional Reception	Final Reception	
																s is also 6 months after provisional acceptance
Vatovavy Fitovinany	Ikongo	Manampatrana	**Manampatrana**	New construction	MICKAEL	$ 11,485.71	13 %	$ 87,156.54	40,200,000.00 MGA	381,309,858.00 MGA	Construction	20 %	11/13/2019	28-Nov-19	26-May-20	Contract signed on September 24, 2019 for a duration of 50 days for the execution of the work. The warranty period for the new contracts is also 6 months

Location				Technical Description	Contractor				Montant d'investissement Gestionnaire TTC	Montant total projet TTC	Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply	WSP Investment Amount	% of WSP investment	Total Estimated costs			Phase	% Completion	Technical Reception	Provisional Reception	Final Reception	
																after provisional acceptance

ANNEX 9. FY19 LIST OF APS AND APD

LIST OF TECHNICAL SCOPING STUDIES (AVANT PROJET SOMMAIRES) APS

N°	Region	District	Commune	Site	Prepared by	Period
1	Vatovavy Fitovinany	Manakara	Amboanjo	Amboanjo	BushProof	Q1
2	Atsinanana	Toamasina II	Ambodiriana	Ambodiriana	BushProof	Q1
3	Atsinanana	Vatomandry	Ambodivoananto	Ambodivoananto	BushProof	Q1
4	Atsinanana	Manambolo	Ampasimadinika	Ampasimadinika	BushProof	Q1
5	Atsinanana	Vatomandry	Ampasimadinika	Ampasimadinika	BushProof	Q1
6	Vatovavy Fitovinany	Manakara	Anorombato	Anorombato	BushProof	Q1
7	Vatovavy Fitovinany	Ifanadiana	Antaretra	Antaretra	BushProof	Q1
8	Vatovavy Fitovinany	Vohipeno	Mahabo	Mahabo	BushProof	Q1
9	Vatovavy Fitovinany	Vohipeno	Mahasoabe	Mahasoabe	BushProof	Q1
10	Atsinanana	Brickaville	Mahatsara	Mahatsara	BushProof	Q1
11	Vatovavy Fitovinany	Ikongo	Maromiandra	Maromiandra	BushProof	Q1
12	Atsinanana	Vatomandry	Niherenana	Niherenana	BushProof	Q1
13	Atsinanana	Vatomandry	Sahamatevina	Sahamatevina	BushProof	Q1
14	Vatovavy Fitovinany	Ifanadiana	Tsaratanana	Tsaratanana	BushProof	Q1
15	Atsinanana	Brickaville	Ranomafana Est	Antongombato	Sandandrano	Q2
16	Alaotra Mangoro	Ambatondrazaka	Ambohitsilaozana	Ambohitsilaozana	Sandandrano	Q2
17	Vatovavy Fitovinany	Ikongo	Ambinanitromby	Ambinanitromby	Sandandrano	Q2
18	Vatovavy Fitovinany	Ikongo	Ambatofotsy	Ambatofotsy	Sandandrano	Q2
19	Vatovavy Fitovinany	Ikongo	Ambatofotsy	Tsarakianja	Sandandrano	Q2
20	Vatovavy Fitovinany	Ikongo	Manampatrana	Manampatrana	Sandandrano	Q2
21	Atsinanana	Toamasina II	Mahavelona	Bongabe	Sandandrano	Q2
22	Vatovavy Fitovinany	Ikongo	Ambatofotsy	Ambalatenina	Sandandrano	Q2
23	Alaotra Mangoro	Amparafaravola	Amparafaravola	Amparafaravola	Sandandrano	Q2
24	Alaotra Mangoro	Moramanga	Sabotsy Anjiro	Mahasoa Miaramiasa	Sandandrano	Q2
25	Alaotra Mangoro	Amparafaravola	Amparafaravola	Antsakoana	Sandandrano	Q2
26	Alaotra Mangoro	Moramanga	Ambohibary	Ampitambe	Sandandrano	Q2
27	Alaotra Mangoro	Amparafaravola	Amparafaravola	Ampilahoana	Sandandrano	Q2
28	Alaotra Mangoro	Amparafaravola	Tanambe	Amborompotsy	Sandandrano	Q2
29	Alaotra Mangoro	Moramanga	Ambohidronono	Ambohidronono	Sandandrano	Q2
30	Alaotra Mangoro	Moramanga	Anosibe Ifody	Ambodinifody	Sandandrano	Q2

N°	Region	District	Commune	Site	Prepared by	Period
31	Alaotra Mangoro	Moramanga	Morarano Gara	Morarano Gara	Sandandrano	Q2
32	Alaotra Mangoro	Moramanga	Belavabary	Marovitsika	Sandandrano	Q2
33	Alaotra Mangoro	Moramanga	Belavabary	Belavabary	Sandandrano	Q2
34	Alaotra Mangoro	Ambatondrazaka	Andilanatoby	Andilanatoby	BushProof	Q4
35	Alaotra Mangoro	Ambatondrazaka	Bejofo	Bejofo	BushProof	Q4
36	Atsinanana	Vatomandry	Ambalavolo	Ambalavolo	BushProof	Q4
37	Atsinanana	Vatomandry	Amboditavolo	Amboditavolo	BushProof	Q4
38	Atsinanana	Vatomandry	Iamborano	Iamborano	BushProof	Q4
39	Atsinanana	Vatomandry	Tanambao Vahatrakaka	Tanambao Vahatrakaka	BushProof	Q4
40	Vatovavy Fitovinany	Ifanadiana	Ambiabe	Ambiabe	BushProof	Q4
41	Vatovavy Fitovinany	Ikongo	Ambinanitromby	Ambinanitromby	BushProof	Q4
42	Vatovavy Fitovinany	Manakara	Ambotaka	Ambotaka	BushProof	Q4
43	Vatovavy Fitovinany	Manakara	Analavory	Analavory	BushProof	Q4
44	Vatovavy Fitovinany	Vohipeno	Ankarimbary	Ankarimbary	BushProof	Q4
45	Vatovavy Fitovinany	Vohipeno	Anoloka	Anoloka	BushProof	Q4
46	Vatovavy Fitovinany	Vohipeno	Ilakatra	Ilakatra	BushProof	Q4
47	Vatovavy Fitovinany	Vohipeno	Nato	Nato	BushProof	Q4
48	Vatovavy Fitovinany	Vohipeno	Savana	Savana	BushProof	Q4
49	Alaotra Mangoro	Amparafaravola	Morarano Chrome	Morarano Chrome	Sandandrano	Q4
50	Alaotra Mangoro	Moramanga	Mandialaza	Mandialaza	Sandandrano	Q4

LIST OF DETAILED PROJECT DESIGNS / AVANT-PROJET DÉTAILLÉS (APD)

N°	Region	District	Commune	Site	Prepared by	Period
1	Alaotra Mangoro	Amparafaravola	Amparafaravola	Betatamo	Sandandrano	Q3
2	Alaotra Mangoro	Amparafaravola	Amparafaravola	Ambongabe	Sandandrano	Q3
3	Alaotra Mangoro	Moramanga	Anosibe Ifody	Ambodinifody	BushProof	Q3
4	Vatovavy Fitovinany	Ifanadiana	Antaretra	Antaretra	BushProof	Q3
5	Vatovavy Fitovinany	Ikongo	Manampatrana	Manampatrana	BushProof	Q3
6	Vatovavy Fitovinany	Manakara	Lokomby	Lokomby	BushProof	Q3
7	Atsinanana	Vatomandry	Niarovana Caroline	Niarovana Caroline	Sandandrano	Q3
8	Atsinanana	Brickaville	Mahatsara	Mahatsara	Sandandrano	Q3
9	Atsinanana	Toamasina II	Ampasimadinika	Ampasimadinika	Sandandrano	Q3
10	Vatovavy Fitovinany	Ikongo	Ambatofotsy	Ambatofotsy	BushProof	Q1
11	Vatovavy Fitovinany	Ikongo	Ambatofotsy	Ambodiara Sakorihy	BushProof	Q1
12	Vatovavy Fitovinany	Ikongo	Ambatofotsy	Ambalatenina	BushProof	Q1

ANNEX 10. PHOTO- DOCUMENTATION OF USE OF FERROCEMENT FOR HYDRAULIC STRUCTURES

FERROCEMENT HYDRAULIC STRUCTURES

I. CREATION OF A TANK FOR HORIZON 2038

160 m length. 4.5 m high hybrid soil and ferrocement Vol 50m3.
Works completed in 60 days. Time saving in production. Investment costs Savings– more than 5 to 10 times cheaper than a reinforced concrete dam.

2. CONSTRUCTION OF TWIN SPHERICAL TANKS IN FERROCEMENT OF2 x 10M3 IN 20 DAYS

Spherical tanks replacing cylindrical metal tanks in a corrosive area. Construction on two

existing towers to preserve the history of the city related to drinking water supply.

3. WELLS OF 8M WITH MIXED PUMPING SYSTEM (SOLAR/SECTOR) FROM 15M3/H TO3BARXTE

Well equipped with ferrocement nozzles - Support for ferrocement solar panel

4. TREATMENT BATTERY MADE ON THE DOME OF THE TANK WITH FERROCEMENT WALLS

5. COMPLETE TREATMENT SYSTEM WITH FERROCEMENT WALLS

6. ANCHORING STRUCTURES FOR A PVC PIPE EMBEDDED IN A FERROCEMENT SHEATH WITH FERROCEMENT RODS FOR CROSSING A BRIDGE

7.

8. SPHERICAL FERROCEMENT TANKS OF 20 M3 ON A 15M TOWER

Ferrocement tank operating in a cyclonic zone and in a corrosive environment.

9. OTHER FERROCEMENT STRUCTURES

FERROCEMENT INCINERATOR

THE INSIDE COVERED BY REFRACTORY BRICKS

FERROCEMENT DIGESTER

Prepared by SANDANDRANO

ANNEX 11 HYBRID DAM PRESENTATION

Hybrid Dam

Hybrid Dam Model based on the "RANO GASY" Concept developed by SANDANDRANO

RANO GASY Hybrid Dam

The **hybrid dam** model in Ambila Lemaitso, Atsinanana region, is based on the "RANO GASY" concept developed by SANDANDRANO. It is a technology developed and optimized by SANDANDRANO for the RANO WASH project. SANDANDRANO named this concept hybrid dam because its main body is made of earth and waterproofed upstream by a ferrocement wall.

The hybrid dam's technical design and specifications ensure it is stable and watertight. The upstream watertight face is made of ferrocement, and a downstream face is earth-filled to ensure stability.

The **RANO GASY** model or **R**apid **A**pproach to **N**ew **O**pportunities with Gasy System, also called ***Approche Rapide aux Nouvelles Opportunités avec le Système Gasy*** is a private initiative to boost rural areas towards rapid and sustainable development through integrated water management. It takes into account the Sustainable Development Goals (SDGs), the State's General Policy (PGE), the Multisectoral Strategic Guidelines (Drinking Water Supply, Health, Agriculture and Environment) and specifically the Performance Contract in the Water and Sanitation Sector.

The RANO GASY model aims to transform **Madagascar's natural capital** into **tools for sustainable economic, social and environmental development.**

This model is based around the construction of a **soil/ferrocement hybrid dam** that encompasses ecological, social, and economic benefits into its design.

The design takes into account:

- The role of the private sector in the development of the water sector as part of the broader development of Madagascar;
- Climate change adaptation using with the construction of a hybrid water retention dam to control and manage water before, during, and after the rainy season;
- Integrated Water Resources Management (*GIRE*) developed around this hybrid dam with multiple uses (drinking water supply, agriculture, fish farming, etc.);
- Risk and disaster mitigation through the installation of spillways sized for a 100-year flood;
- Integrated wetland management;
- The promotion of sustainable tourism through the reforestation of protected areas (immediate, close or even remote) with native Malagasy trees that shelter endemic birds and wild animals in danger of extinction;

- The sustainable management of renewable (soil, water, forest) and non-renewable natural resources, given challenges in over-extraction of water from rivers;
- Equitable sharing of benefits from environmental services, including the use of revenues derived from "carbon" markets as well as benefits from soil erosion control and integrated watershed management;
- Mitigate risks related to desertification and land degradation;
- **The reforestation of Madagascar with endemic Malagasy trees**.

This model aims to change the paradox of "**poor population surrounded by natural wealth**" into a leitmotif of a "**a population that is healthy and empowered to preserve its environment and optimizing its natural environment**".

Impacts of the RANO GASY Model

Given that a hybrid dam can be constructed over a short period (depending on the site, for example in the case of the Foulpointe dam in the USAID RANO WASH project, a 160ml long and 4m high dam took three months), the scale up of the **RANO GASY** concept can:

- improve access to safe drinking water that can improve health status;
- improve agricultural and fish productivity, thus increasing household access to these products that can have an impact on nutrition status;
- the effective application of the Malagasy Water Code on "**the management, conservation and development of water resources**";
- effectively preserve the environment to improve performance against reforestation policy benchmarks;
- effectively transfer technical capacity by carrying out learning-by-doing pilot projects in different regions.

Hybrid dam for the pumped drinking water supply system in Ambila Lemaitso (completed by the USAID RANO WASH project)

Saving in formwork timber when installing a dam of an average height of 4 ml (preservation of the environment, natural development and ease of installation)

Replicability and adaptability

The biggest challenge in increasing access to WASH services remains addressing poverty, followed by the implementation of environmental protection regulations, the creation of a circular economy, the effective commitment of private operators to achieve the Sustainable Development Goals and specifically SDG 6 to **guarantee the access to water and sanitation for all and ensure sustainable management of water resources**.

As it is an integrated multisectoral project (water, sanitation, agriculture, tourism, environment, health) involving the private sector, this model can be duplicated and adapted at the national or even international level.

In addition, the RANO GASY model provides a full range of services, creating a sort of environmental "value chain" that brings together the different stakeholders and partners involved in the delivery of sustainable water supply services. The concept creates a wealth of proximity, leading to a "value chain" that eliminates the various intermediate collectors, thus directly benefiting the basic producers in agricultural production.

Cascading development both upstream and downstream of the hybrid dam in Foulpointe

The "Water, Land, Food Production" chain develops naturally downstream of the hybrid dam. The development of agriculture tends towards the market economy, moving away from the subsistence economy.

Before construction

After 3 months of construction

RANO WASH
www.ranowash.org

RANO WASH is a five-year cooperative agreement funded by the United States Agency for International Development under Agreement No. AID-687-A-17-00002, beginning June 15, 2017. RANO WASH is implemented by Cooperative for Assistance and Relief Everywhere Inc (CARE), in consortium with Catholic Relief Services (CRS), WaterAid, BushProof and Sandandrano.

This publication was produced for review by the U.S. Agency for International Development. It was prepared by RANO WASH The information provided in this document is not official U.S. Government information and does not necessarily reflect the views or positions of the U.S. Agency for International Development or the U.S. Government.

Photos courtesy of SANDANDRANO and the RANO WASH project.

ENVIRONMENTAL MITIGATION AND MONITORING REPORT (EMMR)

- PROJECT/ACTIVITY DATA

• Project/Activity Name:	• Rural Access to New Opportunities in Water, Sanitation, and Hygiene (RANO WASH)
• Geographic Location(s) (Country/Region):	• Madagascar
• Implementation Start/End Dates:	• FY19 - October 1, 2018 – September 30, 2019
• Contract/Award Number:	• Cooperative Agreement N° AID-687-A-17-00002
• Implementing Partner(s):	• CARE International in consortium with CRS, WaterAid, Sandandrano and BushProof
• Tracking ID:	•
• Tracking ID/link of Related IEE:	• Program/Activity 687-005 • USAID/Madagascar Health Sector Portfolio – Use of Selected Health Services and Products Increased and Practices Improved
• Tracking ID/link of Other, Related Analyses:	•

- ORGANIZATIONAL/ADMINISTRATIVE DATA

• Implementing Operating Unit(s): (e.g. Mission or Bureau or Office)	• USAID Madagascar, Africa Bureau
• Lead BEO Bureau:	• AFR/SD
• Prepared by:	• RANO WASH Project Coordination Team
• Date Prepared:	• July 2019
• Submitted by:	• Sebastien FESNEAU, Chief of Party

• Date Submitted:	• October 30, 2019

• ENVIRONMENTAL COMPLIANCE REVIEW DATA

• Analysis Type:	• EMMR
• Additional Analyses/Reporting Required:	•

• PURPOSE

Environmental Mitigation and Monitoring Report (EMMRs) are required for USAID-funded projects when the 22CFR216 documentation governing the project impose conditions on at least one project/activity component. EMMRs ensure that the ADS 204 requirements for reporting on environmental compliance are met. EMMRs are used to report on the status of mitigation and monitoring efforts in accordance with IEE requirements over the preceding project implementation period. They are typically provided annually, but the frequency will be stipulated in the IEE or award document.

Generally, EMMRs are developed by the IP (and updated at least annually) in conjunction with the Annual Report. Responsibility for ensuring IPs submit appropriate EMMRs rest with USAID CORs/AORs. These reports are an important tool in adaptive management and are used by Mission, Regional, and Bureau Environmental officers to ensure USAID interventions are implemented in compliance with 22 CFR 216 and mitigation measures are adequate.

• SCOPE

The following EMMR documents the status of each required mitigation measure as stipulated in the associated EMMP. It provides a succinct update on progress regarding the implementation and monitoring of mitigation measures implemented as detailed in the EMMP. It summarizes field monitoring, issues encountered, actions taken to resolve identified issues, outstanding issues, and lessons learned.

This EMMR includes the following:

1. A succinct narrative description of the EMMP implementation and monitoring system, any updates to the system, any staff or beneficiary trainings conducted on environmental compliance, lessons learned, and other environmental compliance reporting details.

2. EMMR table summarizing the status of mitigation measures, any outstanding issues relating to required conditions, and general remarks.

3. Attachments such as photos of mitigation measures and activities, waste disposal logs, water quality data, etc.

• USAID REVIEW OF EMMR

Approval:		
	[NAME], Activity Manager/A/COR [required]	Date
Clearance:		
	[NAME], Mission Environmental Officer [as appropriate]	Date
Clearance:		
	[NAME], Regional Environmental Advisor [as appropriate]	Date
Concurrence:		
	[NAME], _____ Bureau Environmental Officer [as required]	Date

- DISTRIBUTION:

• 1.0 PROJECT/ACTIVITY SUMMARY

The Rural Access to New Opportunities in Water, Sanitation, and Hygiene (RANO WASH) Project aims to increase equitable and sustainable access to water, sanitation, and hygiene services; maximize the impact on human health and nutrition; and preserve the environment in 250 rural communes in six high-priority regions: Vatovavy Fitovinany, Atsinanana, Alaotra Mangoro, Amoron'i Mania, Haute Matsiatra, and Vakinankaratra.

Following the FY19 updated Environmental Mitigation and Monitoring Plan (EMMP), this Environmental Mitigation and Monitoring Report (EMMR) provides an update on environmental compliance activities classified as « Negative Determination with Conditions » that require environmental mitigation and monitoring measures.

In FY18, RANO WASH has developed a Water Quality Assurance Plan (WQAP), in close collaboration with BushProof and Sandandrano, the two private sector representatives in the RANO WASH consortium who also have prior experience with WQAPs from the USAID funded RANO HP project. The WQAP has been approved by USAID Agreement Officer Representative (AOR), the Mission Environmental Officer (MEO), and the Regional Environmental Adviser (REA). USAID has also approved all submitted ESF before the construction of each water supply system.

The 12 water supply system (WSS) construction activities under the project started at the end of FY18 were implemented during the first and second quarter of FY19. The provisional acceptance of these 12 works was carried out in Q3 and Q4. The promotion of water connections, support to managers, during the operation of the water systems put in place began in Q3 and is still ongoing. This latter approach aims to increase the number of people having access to social and private water connections.

Finally, nine new drinking water supply system construction works have been started in Q4 and their construction are still ongoing, with completion planned for Q1 FY20. The approval of each corresponding ESF (Environmental Screening Form), as provided for in the EMMP and prior to the implementation of any construction work, has been granted.

Apart from this, as part of the implementation of the Community Led Total Sanitation - CLTS approach, the project has facilitated 746 village triggers, of which 607 have currently been verified as "Open Defecation Free - ODF". These ODF villages have benefited from the support and influence of local masons and local promoters.

• 2.0 ENVIRONMENTAL COMPLIANCE MONITORING AND REPORTING

In FY18, RANO WASH worked with the Ministry of Water, Sanitation and Hygiene (MoWASH)[16] to select intervention locations for potential water supply systems. The project conducted technical feasibility and detailed design studies (APSs and APDs[17]), ESF development and water quality testing before the construction of water infrastructures. All technical studies were approved by the Ministry of Water, Sanitation and Hygiene and disseminated to the communes and communities benefiting from the water supply systems.

BushProof and Sandandrano ensured the application and follow-up of environmental measures, and trained and coached operators selected for the construction and operation of the water supply systems to implement environmental action points. The 12 water supply system (WSS) construction works started

[16] With the 2018 presidential elections in Madagascar, and the establishment of a new government in January 2019, the WASH sector is now managed by the Ministry of Energy, Water and Hydrocarbon (*Ministère de l'Energie de l'Eau et des Hydrocarbures*, MEEH)

[17] Avant Projet Sommaire (APS or technical feasibility Studies) and Avant Projet Détaillé (APD or detailed design study)

since the beginning of fiscal year 19 are currently fully operational. However, the Andemaka system, whose rehabilitation was recently completed towards the end of Q4 FY19, will require even more support on the management side, with the recruitment of a new manager still in progress at the commune and MoWASH level. However, apart from this case, the acceptance of this work means that the conditions agreed in the corresponding ESF have been verified and respected by the –construction company.

With regard to water quality, the action plans defined in Q3 for problematic systems have been implemented and monitored in Q4. However, water quality assurance and customer satisfaction remains a challenge in coastal areas such as Ilaka Est, for instance, where the color of the water changes slightly to red while the iron level within the water is below the limit not to be exceeded. Further information on water quality and the actions taken and action plans underway are provided in Annex 1 (Water Quality Report) of this EMMR. The project is still following the protocols set out in its WQAP to manage challenges, and continues to support managers in order to provide them the capacity to produce and distribute clean water that meets standards.

With regard to CLTS and behavior change activities, the project continued to train municipalities and private operators (Build - Invest - Operate) in environmental compliance measures, in particular those against persistent groundwater pollution due to the construction of latrines.

With regard to climate risk management activities, best practices and lessons learned regarding environmental compliance measures and climate risk management is shared in the next sections of this report, and will be shared within each RANO WASH periodic report. Particularly, a summary table of the achievements of the RANO WASH project related to the CRM plan is included in the section 4.0. The project will continue to collaborate with DGM and BNGRC.

3.0 LESSONS LEARNED

Related to Water Quality Assurance

Water quality remains one of the major challenges of projects promoting the supply of drinking water in Madagascar. Though RANO WASH has the support of two of the local reference private sectors, BushProof and Sandandrano, the project also had to manage challenges that were initially not planned until it obtained acceptable water qualities for the systems it had put in place. For example, for the design of the extension of the production capacity of the water supply system of the rural commune of Mahavelona Foulpointe, the carried out analyses on water quality were mainly focused on the extension part of the network, while the goal was to design an operational water catchment work. Although, when the construction was completed, and random water samples were taken from several point of the distribution networks, and catchment works, the testing results delivered by the Institut Pasteur of Madagascar has found that the production part of the system, including the catchment works, and the reservoirs, produced and stored water that met the standards after treatment. However, analyses carried out on the distribution networks have identified a distribution line polluted by arsenic, which usually comes from an environmental cause. In this case of Foulpointe, it was very important to carry out water tests distributed over the entire distribution network in order to have an overview of how any possible contamination is distributed across the water supply system. The project will also document the importance of monitoring water quality during the O&M period, and the importance of a properly targeting the parameters that need to be assessed in the project design phase.

In addition to health-related parameters, and beyond standards, water quality also plays an important role in customer satisfaction and ownership of the service by beneficiaries, especially if the service is managed by a private company. For example, in the case of Ilaka Est, the Institut Pasteur tested the water and certified it as not drinkable due to the presence of coliform bacteria. However, at the same time, people complained about the color of the water, which was rather reddish. Thus, Chlorine production was reviewed with the manager and corrected, however, the parameter giving a red color to the water was

iron, which was actually present in the water but, out of 05 sampling points for the analyses, with a value below the standard (0.1 < 0.3 mg/l). To Improve the color of the water, Aluminum sulphate has been injected into the network, however, in large quantities present in the water, the latter product can give it a bitter taste. The point to remember in these observations is the following, even if a water meets the criteria of potability of the water, some parameters by increasing their values can alter the color or taste of the water and affect customer satisfaction, it is also important to note that these parameters, even if they are below the standards, must in some cases be taken into account from the design of the treatment units which was underestimated for Ilaka Est.

The last main challenge regarding water quality is the presence of laboratories capable of performing physico-chemical and bacteriological water analyses in the vicinity of the built systems. Companies are always obliged to have analyses carried out by the Institut Pasteur. However, local initiatives such as Ranontsika are being developed in regions such as Atsinanana. But despite the fact that they give fairly good results, these types of laboratories are not yet approved by the Ministry of Public Health. High-level advocacy is still needed to facilitate their approvals and ISO certifications.

Related to climate risk management

Climate change adaptation measures are generally formulated as standards, and their compliance is monitored as construction progresses. However, sometimes project designs respond directly to climate change mitigation measures. As in the particular case of Foulpointe, the installation of a 43,000 m3 surface water storage facility upstream of a hill dam can be considered as one of the most appropriate measures to adapt to, and mitigate, one of the main Impacts of climate change, which is the drying up of fresh water resources. Indeed, the interannual cycles typical of the rivers of the eastern watersheds of Madagascar show, because of their small surface area, that they have a rapid response to rainfall events (heavy rains in the East), but that most of the rains in these watersheds end in runoff. For the most part, surface water, which dries up in dry periods, is not sufficiently valued, compared to the groundwater rich in iron and manganese (difficult to reduce without the right treatment units). The establishment of an artificial lake is an effective solution for this region to overcome this challenge related to the exploitation of surface water in relation to its seasonal drying up and the temporary abundance of water input during the rainy season.

Related to community involvement within a PPP promotion process

RANO WASH has rehabilitated a drinking water supply system in Sabotsy Anjiro. The existing system was no longer functional, but there were water points that were still distributing raw water before the project intervened to rehabilitate it. The communities have been involved since the design phase of the project, and moreover, the origin of the project's interventions in this commune derives from the population's grievances on water quality at the level of the commune capital. The project therefore decided to set up a new water treatment system, and to make some improvements in water production and distribution network. Nevertheless, after the regulation on the use of volumetric meters and service management by a private operator was put in place, some people who were dissatisfied among the population refused to join the paid service provided by the operator. On the basis of the experiences on Sabotsy Anjiro, it was established as a prerequisite for the choice of intervention site for construction and in particular infrastructure rehabilitation that the communes and communities are committed and adhere to the private management system with volumetric pricing. This was the case, for example, for the newly started constructions of Anosibe Ifody and Amparafaravola. The project also decided to capitalize on the experiences of various donors and stakeholders in Madagascar, or on the most interesting experiences of projects around the world on community engagement within a public and private partnership process.

• 4.0 EMMR TABLE FOR RANO WASH ACTIVITIES INCLUDING CRM REPORT

Period covered: FY 2019; October 2018, to September 2019.

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• **SO1. Governance and monitoring of water and sanitation strengthened for sustainable and equitable WASH services**			
• **IR1.3 Strengthened sub-national systems**			
• **Output 1.3.2 Commune management capacities strengthened for WASH service delivery**			

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Act: 1.3.2.1: Coaching of communes to develop PCDEAH[18] (Commune WASH plans)	• Employ qualified and well-trained technician(s) to implement the design of each PCDEAH in an inclusive and participatory way. This implementation includes field works, planning, and establishment of the design document itself.	• The development of the PCDEAH for RANO WASH FY18 intervention communes began at the end of the third quarter. • Trainees of university level, specialized in water or planning, have been trained by the project to collect the requisite data to build and write a PCDEAH report per commune. These trainings, which also served as an indication for the development of these communal planning documents, included environmental considerations in the choice of the types of water resources to be mobilized for each site. The PCDEAHs developed should take into account not only the best solutions for water supply, but also the actions required to preserve water resources / watersheds, and adaptation measures against climate change. • At the end of Q4, all the current RANO WASH intervention commune are in the process to finalizing their PCDEAH. • The FY19 communes will benefits from the same support starting from Q1 FY20.	•

[18] PCDEAH means « Plan Communal de Développement sectoriel spécifique à l'Eau, à l'Assainissement, et à l'Hygiène » which is the communal WASH related Development Plan including technical solution aiming to increase WASH access and its related funding plan.

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Act: 1.3.2.2: Training of 8 communes on their roles relating to WASH service delivery	• Ensure that the training curricula includes sustainability issues and action towards water resources management / watershed protection	• The training of the communes via STEAH was started in Q1 in collaboration with the University of Villanova. Regular monitoring was carried out in the field to assess the progress of these communal technical services. And, at the end of Q3 (June 2019), the communal authorities (mayors, president of the communal councils, STEAH), for the 08 main communes of this FY2019, were trained on communal project management[19]. This last training included modules on the roles of the municipality in relation to the sustainability of drinking water supply infrastructures, and the sustainability of water resources through the protection of watersheds.	•

[19] Communal project management is also called "maîtrise d'ouvrage communal", where the commune is strengthened to have the ability to handle that responsibility. The habilitation criteria / requirements are defined by the Malagasy water code.

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Act: 1.3.2.3: Training for communal CAO (tender evaluation committees)	• Ensure that technical notation criteria, used in bid processes to train the CAO, advantage enterprises that are having confirmed experiences and / or human resources, in order to ensure a good quality of implementation of each requested WASH infrastructure construction activity	• 07 bid committees have been trained relatively to 09 potential market of management – investment – and construction of water supply systems (WSS) in Q3 (till end of June 2019). • Within the related tendering documents, it has been set, by the criteria of notation, that the enterprises having confirmed technical capacity (experiences and / or human resources) will be advantaged. However, as part of our promotion of the private sector, even inexperienced companies will have a chance to be selected on the condition that they have the necessary technical skills justified by a score above 60 out of 100. • The second scoring criterion for the award of contracts mainly measures the company's willingness to co-finance the work, reflected in the amount of its financial contribution to the construction work. This is also implemented to ensure the company's interest in ensuring the sustainability of the water system.	•
• **SO2. Private sector engagement in WASH service delivery increased and improved.**			
• **IR2.1: Improved WASH products, technologies, services and business models**			
• **Output 2.1.1: A comprehensive WASH market assessment (WMA) strategy developed**			

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Activities related to WASH Market Assessment (WMA) and WASH Market Development Plan (WMDP) (Cf. Act: 2.1.1.1; Act 2.1.2.1; Act 2.1.2.2; Act 2.1.2.3; Act: 2.1.3.2; Act: 2.1.3.4; Act: 2.1.3.5.)	• Ensure that environmental concerns (distance between the bottom of the latrine pit and the water table) are taken into account in any latrine promotion strategy that may emerge during the implementation of WMA and WMDP	• The WMA reports for the first 03 regions (Alaotra Mangoro, Atsinanana, Vatovavy Fitovinany) already take into account of those environmental concerns, especially when it comes to sanitation. And, the related WMDP have been conducted from Q2 to Q4. However, those concerns will still be taken into account and recommended in the upcoming WMDP reports as a prerequisite particularly for sanitation marketing. • In the same way, WMA reports started in Q2 for the last 03 regions (Vakinankaratra, Matsiatra Ambony, Amoron'I Mania) have been finalized.	•
• **IR 2.2: Improved WASH products, technologies, services and business models**			
• **Output 2.2.1: Design and construction of sustainable WASH infrastructure improved**			

• Act 2.2.1.1: Conduct APS and APD	• Ensure that appropriate design of WSS is designed for the appropriate location with regards to population that need to be serve (water demand, geographical location) • • Ensure that the best water resource (spring, ground-water, surface water) is used, based on accurate data related to their capacity of production in adequation with targeted people water demands, for any WSS design. • • Ensure that both feasibility (APS) and detailed project design (APD) results are always communicated and validated by the beneficiary community and the MoWASH before any construction. • • Identifying, Planning and	• Service scenarios were proposed in the feasibility study reports (APS where 33 such reports were conducted in Q1 and 16 in Q4). The scenarios selected in these studies for detailed design studies (APD, where 09 reports were produced in Q2 and Q3 and 03 APD reports remaining from FY18 were carried out in Q1) are the ones that best meet the needs of local populations. • • The APD reports mentioned above include an entire section dedicated to studying the productive capacity of water resources and the adequacy of resources against the water needs of the target populations, justifying at the same time the choice of mobilizing one water resource over another. The data used come from direct spot measurements in the field made by BushProof and Sandandrano, which are reinforced by data obtained from nearby weather stations (from DGM). To verify their reliability, satellite data are also used by these partners. • • The APD reports, produced by BushProof and Sandandrano, used for the 09 potential construction sites in addition to FY2019 were all returned and validated at the community and Dir-WASH level before being used in the procurement processes launched in Q3. • • The drying up of water resources is one of the impacts of climate change that is particularly considered in the APS and APD reports. The infrastructure, and supporting activities planned in these reports, are designed to define how this	•

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
	Applying appropriate actions aiming to the Attenuation of or Adaptation to Climate change impact / risk	infrastructure can contribute to adapting to climate change and possibly manage the associated risks.	

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Act 2.2.1.2: Select short list of enterprises for construction and investment-management	• Train short-listed enterprises about the technical minimum requirement (established by the project) before launching any bid process. • • Ensure that technical notation criteria, used in the bid processes, advantage enterprises that are having confirmed experiences, and / or qualified human resources, and having confirmed capacity for cost-sharing, in order to ensure a good quality of implementation, and sustainability of each requested WASH infrastructure construction activity	• RANO WASH issued a call for expressions of interest in Q2 to issue a short list of eligible bidders for its restricted call processes. Before launching the procurement processes for the works, the short-listed bidders were trained in April 2019 (Q3) on the project's bid quality requirements and the administrative procedures to be followed. • • 07 restricted call for tenders has been launched in Q3. Within the tendering documents, it has been set, by the criteria of notation, that the enterprises having confirmed technical capacity (experiences and / or human resources) will be advantaged. However, as part of our promotion of the private sector, even inexperienced companies will have a chance to be selected on the condition that they have the necessary technical skills justified by a score above 60 out of 100. The second main scoring criterion for the award of contracts mainly assess the company's willingness to co-finance the work, reflected in the amount of its financial contribution to the construction work. Obviously, the amount of construction work proposed by a company, in return, also plays an important role in the assessment of its financial offer. All these criteria have defined the successful tenderers of the contracts mentioned, but any work have not started until the corresponding ESFs have been validated.	•

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Act 2.2.1.3: Develop ESF and monitor its implementation in the construction sites	• As most of RANO WASH construction activities have no significant adverse impact on environment, a detailed environmental and climate change related concerns analysis will be provided on the Environmental Screening Form (ESF) related to each construction site	• In addition to the construction of the 12 water systems already started and mostly completed, RANO WASH, for the FY19, will undertake at least 08 additional works. To this end, for the 09 available APD files, the project has developed 09 ESFs that have been validated by USAID in Q4. The corresponding reports are available and are given in the annex to this report.	•

• Act 2.2.1.4: Contract and Monitor water infrastructures construction and management	• Following the technical standards of each WSS identified and respecting water quality standards and environmental norms	• Currently, 12 out of the 12 constructions launched for the FY18 have passed the stage of provisional approval of the works and are in operation. • The validation of technical approvals is done by the project's qualified engineers (Sandandrano, BushProof, PCT) and representatives of the communes and the Dir-WASH; this step means that the validated work complies with the standards applicable in Madagascar and the project's quality requirements. The validation of provisional approvals also means that most of the construction responsibilities no longer involve the project and are the responsibility of the manager of the water supply system, who now operates it by law. • At least 08 other constructions were planned to start in the fourth quarter. However, among the 09 APDs available with their validated ESFs, it was only possible to launch 04 works before the end of the 4th quarter. Nevertheless, the corresponding APDs already consider this normative aspect of quality and environment.	• Despite the fact that water quality is considered from the design stage of water supply systems and for the design of treatment facilities, their effective operationalization remains a major challenge at sites already in operation. Water quality analysis carried out just after the end of the work, most in Q3, in collaboration with the Institut Pasteur de Madagascar, and at the beginning of the system's operation, show that some parameters at few sites require a deeper control. For these particular cases, specific measures are given in the attached WQAP report and have been rigorously implemented on Q4. Depending on the complexity of the implementation of some measures, the contradictory analyses with the IPM are reported for Q1 FY20. • • The project have implemented, and is currently implementing a policy to promote access to social and private connections at construction sites.

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
			As this is a new approach, even under the PPP in Madagascar, the administration and communication strategy with beneficiaries on the amount of connections is still slow, as well as the number of connections is slowly and gradually increasing.
• **IR 2.3: Strengthened technical & business skills and competencies**			
• **Output 2.3.1: Capacity building for private sector in business systems and technical operations strengthened**			

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Act 2.3.1.1: Provide on-the-job technical training on management to private companies	• Ensure that the WSP is well-trained on-the-job relatively to Operation & Maintenance (O&M) of its Water Supply System.	• Since the managers of water systems are also the entities that build them, Sandandrano and BushProof, while supervising and controlling the work, have supported these WSP companies in order to provide them with the technical capacities necessary to ensure the operation and maintenance of these systems. This was done on site during the execution of the construction work and until their acceptance. • The project also facilitated the access of these managers to AOPDEM[20] so that they could benefit from the experiences of their peers even after the project.	• Joining AOPDEM is not an obligation for water distributors in Madagascar and some operators may be reluctant, however, the project also aims to support this association so that it becomes a network on which managers can share their experiences. Discussion forums to promote this association were facilitated by RANO WASH in Q2 and Q3. The objective is to encourage water distributors to join the association and enhance the profile of water distribution in Madagascar.
• **SO3. Adoption of healthy behaviors and use of WASH services accelerated**			
• **IR3.2 Improved implementation of WASH behavior change at all levels: communities, government and private sector**			
• Output 3.2.2: Innovative CLTS and WASH BC implementation			

[20] AOPDEM means « Association des Opérateurs Privés Distributeurs d'Eau à Madagascar » which is an association of water service providers and water professionals in Madagascar

• Act 3.2.2.4: Basic and advanced CLTS training for staff • Act 3.2.2.13: CLTS Triggering and FUM activities at village/fokontany level	• Include environmental measures in training programs. • These measures will concern the respect of the safety distance between the bottom of the latrine pits and the water table, as well as the horizontal distance between a latrine and a well or other groundwater withdrawal point. • • Train local masons aiming to promote improved and secured latrine building after the village has been verified as ODF.	• As for the last update of the EMMR (FY18), communities in areas benefiting CLTS constructed latrines in order to break the faeco-oral transmission chain. (examples: distance from well, not defecating in the river, etc.) (FY19 Q1 – Q4) • • The training package on WASH friendly health centers includes environmental measures such as the distance of latrines from rivers and wells (12 to 50 meters), respect of the groundwater table (at least a pit depth of approx. 2,5 meters). • • Health agents and community health volunteers have been trained on these topics, have promoted and will continue to promote these messages to households during counseling, households' visits and community campaigns. (FY19 Q1 – Q4) • • After CLTS when a village has been verified as ODF, local promoters and local masons who were trained during FY18 promote access to hygienic and solid latrines. For sites without local masons, RANO WASH is currently reviewing its sanitation marketing strategy in line with the data from the WMA and the recommendations currently being developed in regional WMDP. The development of this strategy is still on-going, but the project already took the initiative to use the current intermediate results to promote improve sanitation across those unreached villages.	• It takes time to establish the best approach to promote the scale-up of sanitation and the products that will work for a given site. The project believes that the results will be more tangible after the development and implementation of its remediation marketing strategy, especially for sites that currently do not have a local mason. • Key documentation will also be available through the RANO WASH website (FY19 Q3-Q4).
• **Output 3.2.3: Communication Marketing developed for WASH products and services**			

• **Project/Activity/Sub-Activity**	• **Mitigation Measure(s)** •	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**	• **Outstanding Issues, proposed resolutions**
• Act 3.2.3.1: Implement marketing campaign on WASH products and services in communes where products and services are available	• Ensure that environmental concerns (distance between the bottom of the latrine pit and the water table) are taken into account in any latrine promotion strategy. • • Promote the use of recyclable/reusable products (such as washable sanitary napkins) or biodegradable products to minimize environmental impacts •	• For the first mitigation, the achievements and issues are already reported above. • • Field agents called local promoters have been working, and are still currently working, closely with producers of washable sanitary pads, local masons, and other local WASH service and product providers to promote ranges of recyclable hygiene products, spot water treatment (Sur'Eau), washable latrine slabs, and so on. (FY19 Q1 – Q4).	•

• ADDITIONAL COMMENTS

•

Climate Risk Management Updates

• **Project/Activity/Sub-Activity**	• **Climate change risk addressing / Impact Mitigation**	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**
• Activity 1: Study and infrastructure preparation		
• Technical feasibility study (APS) / Detailed design study (APD)	• Well scheduling the field study planning, • Well scoping and specifying the needed data and computation model, • Cooperation with DGM and BNGRC.	• As alike in FY18, the field studies were started by BushProof & Sandandrano during the Q1 and Q2 of FY19 (flood season) and ended on Q3 the same FY (dry season) in order to take into account, the maximum of weather conditions that could threaten the projected constructions. It was also ensured that the data used for these studies take into account both floods and low water levels. • A pool of technicians from RANO WASH and the MoWASH was mobilized to verify the quality of each design and ensure that accurate data were used while modelling each water supply system.
• Activity 2: WASH service implementation		
• Infrastructure building	• Well scheduling the field work planning and the infrastructure building, • Use of adapted and suitable technical modelling, • Design a ground protection system and anti-erosion structures around the infrastructure, • Cooperation with DGM and BNGRC.	• Most of FY19 constructions, the firsts 12, have been carried out on rainy season. However, weather developments have been closely monitored to avoid inconvenience and infrastructure has been received (their quality has been verified and their operations are ongoing) despite intermediate delays. 04 of the last 09 constructions for this FY19 have been started in Q4, under better conditions, and the remaining 05 are ready to be started by Q1 of FY20. • The project will also continue to cooperate closely with the BNGRC via the WASH Cluster in crisis management and especially while a disaster touches its intervention areas (that was also the case during the two above cyclones).
• Activity 3: Gravity Water Infrastructure specific concern		

• **Project/Activity/Sub-Activity**	• **Climate change risk addressing / Impact Mitigation**	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**
• Catchment: Dam, Surface water or Piped source	• Groundwater recharge by IWRM approach, • Well selecting the site location, • Secured and well dimensioned spillway and decanter (sand trap), • Cooperation with DGM and BNGRC.	• IWRM activities have been promoted at the Commune level, through project management training, to put in place solid watershed protection measures for the sites of the first 12 constructions. Community mobilizations were also conducted accordingly (FY19 Q1 – Q3). • Otherwise, each catchment facility has been designed and implanted taking into account all environmental and climatic issues (flooded area, landslides, …)
• Water treatment and filtering (and maybe the storage)	• Water Quality control in WQAP • Readjustment of water treatment and cleaning frequency	• As mentioned above, water quality testing was conducted by RANO WASH technical partners and the Institut Pasteur de Madagascar during the phase of project design until the phase of provisional approval in order to ensure water safety. As reported in the WQAP report some issues are currently being resolved. (FY19 Q2 – Q4) • • BushProof and Sandandrano trained water service providers on environmental measures related to periodical water treatment.
• Surface capture		

• **Project/Activity/Sub-Activity**	• **Climate change risk addressing / Impact Mitigation**	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**
• Capture: Dam, Well and Drain, Pumping	• Well dimensioning infrastructure using Climate Change monitored model • Groundwater recharge by IWRM approach • Using secured and well dimensioned spillway and grit chamber • Programming and organizing cleaning out • Cooperation with DGM and BNGRC.	• According to the ESF and the technical feasibility study, infrastructures constructed under RANO WASH project should be resilient to climate change effects and impacts, and water service providers are trained on mitigation measures to cope with climate change risk. This was verified during the validation of technical and provisional approvals for completed construction work. •
• Groundwater well or Drilling and Pumping system		
• Capture: Well and Borehole	• Well dimensioning infrastructure using Climate Change monitored model • Groundwater recharge • by IWRM approach • Well selecting infrastructure location and characteristics using climate change monitored model • Well selecting infrastructure location • Researching other option for very low elevation village	• The IWRM main activities has been held on Q1 and Q2 (FY19) for the construction activities that has begun in FY18 Q4. For new constructions that have just started, these activities will be carried out for Q1 and Q2 FY20.
• Community Led Total Sanitation (CLTS)		

• **Project/Activity/Sub-Activity**	• **Climate change risk addressing / Impact Mitigation**	• **Summary Field Monitoring/Issues/Resolution** • **(i.e. monitoring dates, observations, issues identified and resolved)**
• Trigger to Open Defecation Free (ODF)	• Well communicating and inciting	• During triggering session and Follow-Up Mandona (FUM) activities, communities were reinforced to understand more the faeco-oral transmission chain especially during rainy season. (examples: location of latrines, protection of well, promotion of an ecosan latrine model to protect groundwater, etc.)

5.0 ATTACHMENTS

- Water Quality Assurance Plan

RANO WASH_WQAP_revie

- Updated FY19 EMMP: Environmental Mitigation and Monitoring Plan

EMMP_RANO WASH_2019_màjQ3.

- WQAP reporting sheet

WQ report Q4 update.xlsx

- List of the newly FY19 approved ESF for the 09 new construction of WSS infrastructures

RANO WASH FY19 - ESF Ampasimadinika

RANO WASH FY19 - ESF Lokomby (V7V) f

RANO WASH FY19 - ESF Mahatsara (Atsi

RANO WASH FY19 - ESF Manampatrana

RANO WASH FY19 -ESF Ambodinifody

RANO WASH FY19 ESF Ambogabe (Ala

RANO WASH FY19 ESF Antaretra (V7V)

RANO WASH FY19 ESF Niarovana Carol

RW FY19 ESF BETATAMO 28Aug19

USAID REVIEW OF EMMR

Approval:			
	[NAME], Activity Manager/A/COR [required]		Date
Clearance:			
	[NAME], Mission Environmental Officer [as appropriate]		Date
Clearance:			

	[NAME], Regional Environmental Advisor [as appropriate]	Date
Concurrence:		
	[NAME], _____ Bureau Environmental Officer [as appropriate]	Date

- DISTRIBUTION:

EMMR ANNEX I WATER QUALITY ASSURANCE PLAN

RANO WASH

Rural Access to New Opportunities

in Water, Sanitation, And Hygiene, Madagascar

Water Quality Assurance Plan (WQAP)

Submitted by
the RANO WASH Project Coordination Team (PCT)
on behalf of the RANO WASH Consortium members composed by
CARE, CRS, WaterAid, Sandandrano and BushProof
in December 2017

and resubmitted in March 2018

DISCLAIMER

This document is made possible by the generous support of the American people
through the United States Agency for International Development (USAID).
The contents are the responsibility of the RANO WASH PCT and the consortium of CARE, CRS, WaterAid, Sandandrano and BushProof led by CARE International and do not necessarily
reflect the views of USAID or the United States government

A. PROJECT/ACTIVITY DATA

Project/ Activity Name:	Rural Access to New Opportunities in Water, Sanitation, and Hygiene (RANO WASH) program
Implementation Start/End:	June, 15th 2017 to June, 15th 2022
Solicitation/Contract/Award Number:	Cooperative Agreement N° AID-687-A-17-00002
Implementing Partner(s):	CARE International in consortium with CRS, WaterAid, Sandandrano and BushProof
Geographic Location(s):	Region of Atsinanana, Vatovavy Fitovinany, Alaotra Mangoro, Vakinankaratra, Amoron'i Mania, Matsiatra Ambony- Madagascar
Tracking ID/link:	
Tracking ID/link of Related RCE/IEE (if any):	Program/Activity 687-005 USAID/Madagascar Health Sector Portfolio – Use of Selected Health Services and Products Increased and Practices Improved
Tracking ID/link of Other, Related Analyses:	

B. ORGANIZATIONAL/ADMINISTRATIVE DATA

Implementing Operating Unit(s): (e.g. Mission or Bureau or Office)		CARE International, in consortium with CRS, WaterAid, BushProof and Sandandrano	
Funding Operating Unit(s): (e.g. Mission or Bureau or Office)		USAID Technical Office, Health, Population and Nutrition (HPN)	
Funding Account(s):			
Funding Amount:		$ 30,000,000	
Amendment Funding Amount:	$ 30,000,000	Amendment Funding Date:	September 29th, 2017
Other Affected Unit(s):			
Lead BEO Bureau:		CARE International in Madagascar	
Prepared by:		RANOVVASH Project Coordination Team	
Date Prepared:		December, 30th 2017	

Certification:

I, the undersigned, certify that:

1. The information on this form and accompanying VVQAP is correct and complete.
2. Implementation of these activities will not go forward until specific approval is received from the AOR.
3. All mitigation and monitoring measures specified in the VVQAP will be implemented in their entirety, and that staff charged with this implementation will have the authority, capacity and knowledge for successful implementation.

(Signature) _____ (Date) 2/9/2018

(Print name) Dr Alain RANDRIAMAHERISOA (Title) RANOVVASH COP

PROJECT/ACTIVITY NAME: RANOWASH – Rural Access to New Opportunities in Water Sanitation and Hygiene
Notes:
1. For clearance to be granted, the activity MUST be within the scope of the activities for which use of the WQAP is authorized in the governing IEE. Review IEE before signature. If activities are outside this scope, deny clearance and provide explanation in comments section. The Partner, C/AOR, MEO and REA must then confer regarding next steps: activity re-design, an IEE or EA.
2. Clearing a WQAP containing one or more findings that significant adverse impacts are possible indicates agreement with the analysis and findings. It does NOT authorize activities for which "significant adverse impacts are possible" to go forward. It DOES authorize other activities to go forward. The Partner, C/AOR, MEO and REA must then confer regarding next steps: activity re-design, an IEE or EA.

Clearance record:

C/AOR, USAID □ Clearance given □ Clearance denied	(print name) Click or tap here to enter text.	(signature)	(date) Click or tap to enter a date.
USAID/Mission MEO □ Clearance given □ Clearance denied	(print name) Click or tap here to enter text.	(signature)	(date) Click or tap to enter a date.
Regional Env. Advisor (REA) □ Clearance given □ Clearance denied	(print name) Click or tap here to enter text.	(signature)	(date) Click or tap to enter a date.
Bureau Env. Officer (BEO)* □ Clearance given □ Clearance denied	(print name) Click or tap here to enter text.	(signature)	(date) Click or tap to enter a date.

* C/AOR, MEO and REA clearance is required. BEO clearance is required for all "high risk" screening results and for findings of "significant adverse impacts possible."
Note: if clearance is denied, comments must be provided to applicant (attach sheets if necessary)

CONTENTS

Tables

LIST OF ACRONYMS

APS	Avant-Projet Sommaire (Technical Scoping)
APD	Avant-projet Détaillé (Feasibility Study)
AOR	Agreement Officer Representative
BPOR	Budget Programme par Objectif et par Région
CARE	Cooperative for Assistance and Relief Everywhere Inc.
CFR	Code of Federal Regulation
CLTS	Community Led Total Sanitation
COP	Chief Of Party
CSO	Civil Society Organization
CRS	Catholic Relief Service
DCOP	Deputy Chief of Party
Dir WASH	Regional Direction of Ministry in charge of WASH
DMEAL	Director of Monitoring, Evaluation, Accountability and Learning
EC	Electrical Conductivity
EMMP	Environmental Mitigation and Monitoring Plan
ENSOMD	Enquête Nationale sur le Suivi des Objectifs du Millénaire pour le Développement
ERF	Environmental Review Form
ERR	Environmental Review Report
HPN	Health Population Nutrition
IEE	Initial Environmental Examination
IP	Implementing Partner
MEO	Mission Environmental Officer
MLSB	Macrolide-Lincosamide-Streptogramin B
MoPH	Ministry of public Heath
MoWASH	Ministry in charge of WASH
NGO	Non-Government Organization
NTU	Nephelometric Turbidity Unit
ODF	Open Defecation Free
ONN	Office National de Nutrition
PCT	Project Coordination Team
RANO WASH	Rural Access to New Opportunities in Water, Sanitation, and Hygiene
SARL	Société à Responsabilité Limitée
TDS	Total Dissolves Solid
TTC	Total Thermotolerant Coliforms
USAID	United States Agency for International Development
USG	United States Government
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WQAP	Water Quality Assurance Plan
WSP	WASH Service Provider

1. INTRODUCTION

CARE in consortium with Catholic Relief Services (CRS), WaterAid and in partnership with private sector represented by Sandandrano SARL and BushProof SARL are implementing the RANO WASH or Rural Access to New Opportunity in Water, Sanitation and Hygiene through a national and regional Project Coordination Teams.

The project cooperates with one national NGOs as implementing partners in each intervention region. The project is funded by the Government of United States of America (USG) through the United States Agency for International Development (USAID). RANO WASH's goal is to improve an equitable and sustainable access to rural professional WASH services maximizing the WASH impacts on population Health and Nutrition and on Environment conservation. RANO WASH targets to cover 250 communes in the six regions of Atsinanana, Alaotra Mangoro, Vatovavy Fitovinany, Vakinankaratra, Amoron'I Mania and Matsiatra Ambony. The prioritization of these regions are partly linked with their WASH and Nutrition status like illustrated in the following table of data from ONN (Office National de la Nutrition) and MoWEH database called BPOR (Budget Programme par Objectif Régional).

Region	Safe water drinking rate	Functional water points	Use of latrines	Access to improved latrines	Self-declared ODF villages	Chronic malnutrition rate
Alaotra Mangoro	9,00%	55,20%	26,44%	2,76%	9,08%	56,50%
Atsinanana	13,01%	48,90%	28,87%	6,24%	5,05%	44,60%
Vatovavy Fitovinany	10,81%	43,70%	3,25%	0,39%	4,34%	57,10%
Vakinankaratra	21,80%	69,70%	57,27%	7,56%	17,84%	65,20%
Amoron'i Mania	18,30%	87,40%	47,69%	0,00%	17,95%	64,00%
Matsiatra Ambony	20,53%	73,10%	36,52%	3,66%	13,84%	65,20%
Source	BPOR	BPOR	BPOR	BPOR	BPOR	ENSOMD 2012-13

Groundwater and surface water are the main sources of water in the targeted regions. Abstraction is generally done from rivers, traditional wells or spring catchments. If regions of the east coast (Atsinanana, Vatovavy-Fitovinany) have a humid climate and do not show any problem in terms of quantity of exploitable water, areas further west (Alaotra-Mangoro, Vakinankaratra, Amoron'i Mania, Matsiatra Ambony) have less rainfall and then less year-round water availability. The known water qualities are generally good in these areas, the water being generally young and never have a long transit. On the other hand, some characteristics of the water of main aquifers can have a direct or indirect impact on health.

Information of general hydrogeological context of Madagascar are provided in the two documents presented in annex:

- Upton, K., Ó Dochartaigh, B.É. and Monteleone, M. 2017. Africa Groundwater Atlas: Hydrogeology of Madagascar. British Geological Survey. Accessed [January 2018]. http://earthwise.bgs.ac.uk/index.php/Hydrogeology of Madagascar
- BRITISH GEOLOGICAL SURVEY (BGS). 2002. Groundwater Quality: Madagascar. British Geological Survey, WaterAid, NERC. 5 pp.

Apart from small-scale water use (surface water, traditional wells), many villages have water distribution systems. These are fed either by pumping or by spring catchment and gravity feed. Unfortunately, a large part of these systems are today partially functional or non-functional at all.

RANO WASH seeks to provide drinking water for 300 000 habitants through 140 construction or rehabilitation of gravity or pumping systems from surface or ground water. For sanitation and hygiene, RANO WASH plans, in addition to behavior change activities, to provide improved sanitation infrastructures for 350 000 people and to reach 2 500 Open Defecation Free villages.

RANO WASH is a USAID program that works with HPN Department and is integrated into the WASH Sector led by the Ministry in charge of WASH (MoWASH) and into the Health and Nutrition sector through its collaboration with the Ministry of Public Health (MoPH).

To achieve all of its expected results, RANO WASH will develop a systematic partnership with national and regional government, water and sanitation institutions, communities, private sector actors, civil society organizations (CSO), and beneficiaries in order to implement a strategic set of mutually supporting activities that contribute to three (3) components:

Strategic objective 1: Strengthening governance and monitoring of water and sanitation for influencing decision for sustainable and equitable water services

Strategic objective 2: Increasing engagement of the private sector in delivering professional and sustainable WASH services

Strategic objective 3: Accelerating adoption of health behaviors and use of WASH services

The innovative approach introduction concerns the use of new technology of WASH service delivery and the behavior change. Research and training centers will bring support to the project on different themes linked to water supply sustainability, behavior change, governance through new curricula of simplified training for the technical office in charge of WASH at communal level.

Within the Strategic Objective 2, as part of its WASH improvement activities, RANO WASH will set up several types of drinking water points and water services and facilities in its intervening zones and their link with sanitation and hygiene infrastructure, these includes: boreholes, shallow improved wells, Gravity Flow Water Supply Systems, public multiple use block facility, including: toilets, showers, washing basins, hand washing and water points.

The following table shows the projected implementation of WASH Infrastructures in all the targeted regions during the project.

System's size[21]	Total per system	Year 1	Year 2	Year 3	Year 4
System 1	30	2	10	10	8
System 2	60	6	20	20	14
System 3	50	4	18	18	10
Total	140	12	48	48	32

Since the project seeks to exploit groundwater for the supply of drinking water, it is essential to set clear rules from the beginning of the project regarding the observation of the waters to be exploited.

The purpose of this WQAP is to set the rules that will be applied by all parties implicated in the project during the various stages of implementation and operation of the water supply systems.

1. Observations of different hydrochemical features, describing the quality and the identity of the water available (source, wells, etc.), will be made during the first visits to the selected sites.
2. Then, extensive and varied analysis will be carried out during the design study of the chosen systems.
3. Finally, a monitoring strategy will be put in place, which will make it possible to follow the selected parameters and to quickly take corrective measures of this quality in the event of a change, in order to ensure the distribution of a quality water.

This WQAP becomes a key document for the implementation of the RANO WASH project and will be shared as a mandated policy for each project partners who intend, or is mandated, to carry construction work. On the other hand, BushProof and Sandandrano, private sectors' partners of this project, will also be assigned the monitoring of the completion of all requirements agreed in this documents in the field.

The RANO WASH PCT has already completed and submitted to USAID fundamental documents and tools. All of them have received the USAID approval. One of them, the EMMP, specifies the importance of Water Quality and quantity impacts on the relevance and the efficiency of Water,

[21] Here a "system" refers to a water supply system (globally including many water points that belong to one pipes' network served by a catchment or a system of catchments), or a system of water points (catchment, treatment, and distribution belong to a unique facility), as per the current Malagasy regulations, 193-2003 decree of application of the water code.
Otherwise, a "System 1" refers to a level one "water supply system" (that might be a Gravity Flow Water Supply System - GFWSS, or a Pumping based Water Supply System - PWSS) that can serve up to 4,000 beneficiaries.
A "system 2" refers to a level two "water supply system" (GFWSS or PWSS) that can serve between 2,000 to 4,000 beneficiaries.
A "system 3" refers to a level three "water supply system" (GFWSS or PWSS) that can serve between 600 to 2,000 beneficiaries; Or a group of "system of water points" which is potentially manageable by a unique water service provider and can serve between 600 to 2,000 beneficiaries.

Hygiene and Sanitation infrastructures and their equitable and sustainable access and use for the rural population. Therefore, the current document treats the RANO WASH Water Quality Assurance Plan (WQAP).

II. ASSESSMENT OF APPLICABLE WATER QUALITY STANDARDS AND CRITERIA

A. RESEARCH OF REGULATORY REQUIREMENTS

The drinking water quality parameters presented in following tables are the basis for any hydrochemical observation. The RANO WASH project will focus on few parameters that:

- allows to define the identity of water;
- have a direct influence on health of users.

Note that samples of water will be collected and analyzed before allowing any consumer's use and on a determined monitoring rhythm that will be defined during the survey according to the site and the production of the water source, after work is accomplished, to insure continuous distribution of clean water.

1) BASIC PARAMETERS (ID OF WATER)
WATER QUALITY PARAMETER
Electro-conductivity
Total Dissolved Solids (TDS)
pH
Temperature
Turbidity

2) MAJOR IONS
WATER QUALITY PARAMETER
Calcium (Ca^{2+})
Magnesium (Mg^{2+})
Sodium (Na^{+})
Potassium (K^{+})
Carbonates (CO_3^{2-})
Bicarbonate (HCO_3^{-})
Chloride (Cl^{-})
Sulphate (SO_4^{2-})

3) HEALTH RELATED PARAMETERS
WATER QUALITY PARAMETER
Nitrate (NO_3^-) and Nitrite (NO_2^-)
Total Iron (Fe^{2+}, Fe^{3+})
Manganese (Mn^{2+})
Fluoride (F^-)
Arsenic (As)

4) BACTERIOLOGICAL QUALITY
WATER QUALITY PARAMETER
Fecal coliform

B. HOST COUNTRY REGULATIONS

The host country's regulation requirement is described in the following legal texts:

- Law 98 – 029 of January 20th, 1999 called Water Code: The Article 38 of the Code states that "Any water delivered for human consumption must be potable. Drinking water is defined as water intended for human consumption, which, by treatment or naturally, meets organoleptic, physico-chemical, bacteriological, and biological standards set by decree."
- Decree 2003-941 amended by Decree 2004-635 of 15 June 2004 on water monitoring, control of water intended for human consumption and priorities for access to water resources: the Annex 2 "Norme Eau" provides details on the parameters and applicable policies. It considers the following limit values for the stated parameters.

Organoleptic and physical parameters

WATER QUALITY PARAMETER	MADAGASCAR ACCEPTABLE LIMIT
Smell	No
Color	No
Unpleasant Taste	No
Temperature	Do not exceed ≤ 25°C
Turbidity	≤ 5 NTU
Conductivity	≤ 3000 µS/cm at 20°C
pH	From 6.5 to 9

Chemical parameters – normal elements

WATER QUALITY PARAMETER	MADAGASCAR ACCEPTABLE LIMIT
Calcium	≤ 200 mg/l
Magnesium	≤ 50
Chloride	≤ 250 mg/l
Sulfate	≤ 250 mg/l

Chemical parameters – Abnormal elements

WATER QUALITY PARAMETER	MADAGASCAR ACCEPTABLE LIMIT
Chlorine (Cl_2)	≤ 2 mg/l
Nitrite (NO_2)	≤ 0.1 mg/l
Manganese (Mn^{2+})	≤ 0.05 mg/l
Iron (Fe)	≤ 0.5 mg/l
Nitrates (NO_3^-)	≤ 50 mg/l
Fluoride (F)	≤ 1.5 mg/l

Chemical parameters – Toxic elements

WATER QUALITY PARAMETER	MADAGASCAR ACCEPTABLE LIMIT
Arsenic	< 0.05 mg/l

Microbiological parameters

WATER QUALITY PARAMETER	MADAGASCAR ACCEPTABLE LIMIT
Thermo-tolerant Coliforms (Escherichia coli)	0/100ml

C. WHO GUIDANCE

The WHO guidance values and limits are selected from the WHO Guidelines for Drinking-Water Quality (WHO, 2011). This document provides the overall framework for ensuring safe drinking water management with a focus on health-based targets and water safety plans. WHO provides specific guideline values for many essential water quality parameters (e.g., arsenic), and many other important parameters (e.g., fecal coliform).

WATER QUALITY PARAMETER	STANDARD WHO
Potassium (K^+)	12.00 mg/l
Total Iron (Fe^{2+}, Fe^{3+})	0.30 mg/l
Manganese (Mn^{2+})	0.05 mg/l
Chloride (Cl^-)	250.00 mg/l
Sulphate (SO_4^{2-})	250.00 mg/l

Nitrate (NO_3-) and Nitrite (NO2-)	50.00 & 0.20 mg/l
Fluoride (F^-)	1.50 mg/l
Arsenic (As)	0.01 mg/l
Electro-conductivity	2000 µS/cm
Total Dissolves Solids (TDS)	1.5 ppt.
pH	6.5 < pH < 9
Temperature	15°C
Turbidity	< 5 NTU
Residual Chlorine	0.50 mg/l
Fecal coliform	0 E.coli / 100 ml

D. Inventory of Selected Water Quality Standards and Criteria

The assessment begins by testing general water chemistry (major cations: Ca^{2+}, Mg^{2+}, Na^+, K^+ and anions: NO_2^-, NO_3^-, CO_3^{2-}, HCO_3^-, Cl^-, SO_4^{2-}), and testing few parameters showing eventual contamination. The conductivity, Total Dissolved Solids (TDS), pH, Temperature, turbidity, Arsenic, Nitrate, Nitrite, Fluoride and Iron will be analyzed. Depending the case, assessment for some heavy metals might be made.

For assessment of the bacteriological quality of the water, an indicator bacteria methodology will be followed. The chosen indicator is the Total Thermotolerant Coliforms (TTC). They will be grow using MLSB and an incubator.

The main idea of this strategy is to get information on the history of the water and the local risk of exploiting this water. With these parameters, it is possible to estimate the origin of water. The purpose is to get adequate and detailed hydrogeological data of the region. Besides that, the earliest these parameters and contaminants are assessed, the easiest it will be to manage them and ensure effective control measures. During further survey (conception survey), the same parameters are recorded systematically in wells or springs to understand if the hydrochemistry, and in consequence the water quality, change with weather conditions. This phase is important to know if water ID has changed and, if yes, to assess the reason. Over the system's exploitation a systematical monitoring of sampling is made and send to our laboratories to maintain the best quality water and react in case of water quality deterioration.

Water testing is conducted by RANO WASH technical partners during the Technical reconnaissance (APS) and the Feasibility study (APD) and all study phase before beginning the construction and/or rehabilitation of infrastructure. Samples are brought by the technical partners and construction firms to an accredited lab for testing, depending the parameter or contaminant tests. If the water flow and characteristics are well understood, and parameters are meeting

WHO standards or at least Madagascar standards, the study is approved for execution. Approval from USAID Mission Environmental Officer will condition the startup work.

For the monitoring of water quality, a complete analysis of the water, including bacteriological analysis, will be done systematically each semester, using local laboratories facilities and service. Some parameters, influencing directly human health will be followed as described in Table II-A.

TABLE II-A: APPLICABLE HUMAN HEALTH-RELATED DRINKING WATER QUALITY PARAMETERS OF CONCERN

RANOWASH ADOPTED STANDARDS			HOST COUNTRY REGULATIONS		WHO GUIDANCE	
Parameter	Limit	Frequency	Limit	Frequency	Limit	Frequency
Arsenic	0.01 mg/l	Every 6 months	0.05 mg/l	N.S.	0.01 mg/l	N.S.
Fecal Coliform*	0/100 ml	Every 6 months	0/100 ml	N.S.	0/100ml	N.S.
Fluoride	1.5 mg/l	Every 6 months	1.5 mg/l	N.S.	1.5 mg/l	N.S.
Nitrate (as NO3)	50 mg/l	Every 6 months	50 mg/l	N.S.	50 mg/l	N.S.
Nitrite (as NO2)	0.1 mg/l	Every 6 months	0.1 mg/l	N.S.	0.2 mg/l	N.S.
Iron	0.3 mg/l	Every 6 months	0.5 mg/l	N.S.	0.3 mg/l	N.S.

Notes: *Analysis for Thermo-Tolerant Coliforms (TTC) bacteria, or Escherichia coli.
N.S.: Not specified in the guidance

Changes in basic parameters (describing the identity of the water) are indicating chemical changes of the water and possible contamination. A strict and regular follow-up will be set-up using digital multi-meter.

TABLE II-B: APPLICABLE OPERATIONAL-BASED DRINKING WATER QUALITY PARAMETERS OF CONCERN

RANOWASH GUIDANCE			HOST COUNTRY REGULATIONS		WHO GUIDANCE	
Parameter	Limit	Frequency	Limit	Frequency	Limit	Frequency
Electrical Conductivity (EC)	1600 µS/cm	Daily	3000 µS/cm	N.S.	2000 µS/cm	N.S.
TDS	500 mg/l	Daily	N. A.	N.S.	1000 mg/l	N.S.
pH	6.5 - 8.5 S.U.	Daily	6.5 - 9 S.U.	N.S.	6.5 - 9 S.U.	N.S.
Turbidity	5 NTU	Daily	5 NTU	N.S.	< 5 NTU	N.S.
Temperature	15°C	Daily	25 °C	N.S.	15 °C	N.S.

N.A.: Not Applicable
N.S.: Not specified in the guidance

The RANO WASH Project wants to monitor the selected parameters according to the following planning.

	PARAMETERS	PHASE OF DESIGN OF THE WATER SUPPLY SYSTEM	PHASE OF THE END OF THE CONSTRUCTION	PHASE OF OPERATION
Water Identity (ID) related parameters	Electrical Conductivity (EC)	Once during APS, and monitoring during APD	Systematic control	Daily
	TDS			
	pH			
	Turbidity			
	Temperature			
Water facies related parameters	Calcium - Ca^{++}	Once during APS, and once during APD	--	To check in case of major changes related to the ID of the water
	Sodium - Na^{+}			
	Magnesium - Mg^{+}			
	Potassium - K^{+}			
	Carbonate - CO_3^{-}			
	Bicarbonate - $HCCO_3^{2-}$			
	Chlorine - Cl^{-}			
	Sulfate - $SO4^{2-}$			
Health related parameters	Total Iron Fe^{2+} & Fe^{3+}		Systematic control	Every 06 months
	Fluoride - F^{-}			
	Nitrite and Nitrate			
	Arsenic			
	TT Coliforms			

E. RATIONALE FOR SELECTION OF SITE SPECIFIC WATER QUALITY PARAMETERS

Madagascar Geology and climate and its insularly status are the origin of its water resources and their quality diversity. The surface waters in the highland upstream regions are generally clean and of good quality.

However, the turbidity becomes worst and worst according to be downstream in sedimentary areas until being at the coast. There are various qualities of the groundwater according to the soil and the geological characteristics. They are commonly ferruginous in the highland and mineralized or salted in the littoral; but can be well treated to be drinkable in general. Conductivity is linked to salinity, but may also show other characteristics of the water. It is also linked to mineralization because it is proportional for low rate. The pH of some groundwater in the area can be more acidic than ideal, but is the only reliable source. The Temperature has an effect on the stability of some dissolved features and on the development of microorganisms.

Turbidity is important if water must be chlorinated, in this case the limitation is located at 1 NTU. Total Thermo-Tolerant coliforms are important for some water sources because it is judged more effective to allow limited contamination than to request protection measures or treatment. For water wells, the preference is given to well that produce higher volume water with significantly lower contamination than digging a new well that may be low volume and with uncertain contamination level. According to the recent revision of WHO, the concentration of Arsenic changed to be 50 to 10 µg/l, due to this, it is difficult to analyze it. Alkalinity, measuring Iron and pH, could be a useful indicator. Nitrate may cause a health risk in the body and can be very dangerous to infant. The highest risks are in an environment where latrines are installed less than 30m above water table, and where intensive use of chemical fertilizers for agriculture is occurring nearby. Nitrate is very dangerous for young children. Fluoride is highest in occurrence of volcanic area. Iron is high in basement area and east coast alluvial deposit, but it is not problematic for health, at low rate. At higher rate it could influence aesthetic of water, pushing user to use alternative contaminated sources.

A systematic assessment of the facies (ID) of the water, and then of different targeted health influenced parameters and water contaminants, increases confidence in the safety of drinking water and allows to manage the risk. This approach involves a holistic risk assessment across the entire drinking water supply system from water source to the consumer.

In addition, all of the regions targeted by the RANO WASH project are part of Madagascar eastern coast and contiguous high land, which are frequently affected by tropical cyclones and usually sites of forest cutting followed by fire cleaning and consequently soil erosion. As part of insular country, they are as well sensitive to climate change.

Water is essential to sustain life, and a satisfactory (adequate, safe and accessible) supply must be available to all. Improving access to safe drinking-water can result in tangible benefits to health. Every effort should be made to achieve a drinking-water quality as safe as practicable. Safe drinking-water is suitable for all usual domestic purposes, including personal hygiene. It is essential in the development and implementation of standards to refer to the country water, health and local government related laws.

The purpose of this WQAP, in accordance with 22CFR216[22] and Madagascar water law 98-029 and its decree n° 2003-941 09/09/2003 amended by Decree 2004-635 of 15 June 2004, which governs water monitoring, control of water destined for human consumption, and access priorities for water resources; is to provide an initial Water Quality Testing and Monitoring Response Protocol in case of contamination, as well as standards for Reporting and

[22] http://www.usaid.gov/our_work/environment/compliance/22cfr216

Recordkeeping of regular water quality assessments as a condition for the establishment of new or rehabilitation water access points.

The Water Quality Assurance Plan (WQAP) is an important part of WASH project environmental compliance. This WQAP will ensure that all new and rehabilitated water infrastructure provides safe drinking water, defined as meeting local and WHO water quality standards. This Plan must be approved by the MEO, AOR, REA and BEO prior to initiation of these activities.

III. RESOURCES FOR SAMPLE COLLECTION AND LABORATORY ANALYSIS

A. Sample Collection and Field Measurement

Availability of Trained Personnel

The technical partner, who are used to sample routinely and have trained staff doing that every day will be in charge of sampling and carrying any interested water sample during the project. Any sample coming from other part will be accepted.

Availability of Appropriate Equipment

For primary measurements (conductivity, pH, TDC, water depth), water dipper and conductivity meter will be used.
The material used for sampling will be PE disinfected sampling bottles (0.5 l), cooling boxes, syringes (50 mL), micro-filters (0.2 µm), labels, sterile gloves, GPS, batteries, Nitric acid (HNO3), test kit, pumps, alcohol to disinfect, permanent marker.
For fieldwork it is used notebook, pencil, spare parts, paper towels, toolbox, waterproof jacket, work shoes, cap, and eventually safety glasses.
Technical partners will be required to obtain all the described equipment.

Procedures and protocols for collection, measurement, sample preservation and transport to laboratories.

Water quality sampling will be necessary in order to carry out the initial testing and periodic monitoring required for all of the parameters listed previously.
Water is sampled using disinfected PE bottle with a volume of 0.5 l. The analysis for the whole parameters (cited above), 1.5 l of water is needed. All bottles are labeled with project name, sampling name site, and date. In notebook will noted the weather conditions at the moment of sampling. Before well sampling, if it is possible, a pump will purge water for few minutes, in a way to pump at least three times the water volume in the column. If not, a surge or a recipient attached to a rope will be used to collect water sample in the well.

Conductivity, Total Dissolved Solids (TDS), pH and Temperature (always linked together) will be measured with a conductivity meter and thermometer at the water source and noted.
Turbidity will be measured with a turbidity tube or photometer at the source.
Total Thermo-Tolerant Coliforms will be sampled making sure no to contaminate the sample (the use of sterile gloves is compulsory). The analysis will be made in a laboratory within 6 hours after sampling. In laboratory it will use a membrane filtration and growing in MLSB at 44°C overnight. If sampling transport exceeds 6 hours, portable "Delagua" test kit will be used, in a clean and closed space in findable near the water source site.

All anions will be sampled at the water source and analyzed in laboratory by visible spectrometry. Cations will be acidified with acid nitric (HNO3) to avoid precipitation and consequently diluted before analysis in a lab by visible spectrometry.

All water samples will be stocked in a cooler, at 20°C maximum to maintain their properties, until laboratories processing.

All these protocols will be integrated in the whole area of RANO WASH project.

B. LABORATORY ANALYSIS

LOCATION OF NEAREST QUALIFIED LABORATORY

The RANO WASH project will work with experienced firms using quality equipment to test water quality and to ensure water quality monitoring
Main laboratory:

- Institute Pasteur of Madagascar LHAE[23] laboratory, BP 1274 Ambatofotsikely Avaradoha, 101 Antananarivo. This lab is accredited by the NF-norms applicable in Madagascar for the analysis of all of the water quality parameters. Distance of 200 to 600 km from the targeted regions.

Alternates[24] laboratories under reserve of getting approved certification:

- Ranontsika Water Quality Lab, Lot 45B plle 14/33 Morafeno, Madagascar 501. Distance of 100 km of almost all targeted sites in the Atsinanana region.
- BushProof BP 182, Ivato Aéroport, Madagascar 105. Distance of 200 to 600 km from the targeted regions.

[23] LHAE – « Laboratoire pour l'Hygiène des Aliments et de l'Eau » of the Institute Pasteur of Madagascar.

[24] The project wills to collaborate with qualified laboratories that are close to rural interventions areas in order to make the process of water quality analysis more affordable for the beneficiaries during the operation phase of the supply.

AVAILABILITY OF PROPER ANALYTICAL EQUIPMENT

The Institute Pasteur of Madagascar (IPM) is qualified to perform water testing under several standards. The IPM has a central lab in Antananarivo and a professional mobile lab that can easily be deployed in the field to avoid long and problematic transports of samples.

Institute Pasteur of Madagascar (IPM), Antananarivo		
Parameter to be measured	Analytical method	Instrument Make and Model
Water quality - pH	NF EN ISO 10153 Phenolred 6.8 – 8.4	Photometer 7500 Palintest
Water quality - EC	NF EN 27 888	N/A
Water quality - Turbidity	NF EN ISO7027-1	Photometer 7500 Palintest
TDS	NF T 90-111	Conductometer 3210
Escherichia coli and coliforms bacteria	ISO 9308-02	UV observation chamber
Nitrate, Fluoride, Chlorine,	Spectrometry	Photometer 7500 Palintest
Arsenic	Microfiltration	N/A

N/A means information not available

AVAILABILITY OF TRAINED PERSONNEL

LHAE – Institut Pasteur de Madagascar

LHAE is headed by Mme Alexandra Bastaraud, engineer who has more than 20 years of experience with the Institut Pasteur network and 10 years of experience as laboratory manager. Has assured and ensures the responsibility of all sectors of activities, physicochemical, micro pollutants, samples, and microbiology as well as service quality.

Technicians are responsible of the analysis under the supervision of senior technical staff:

- Vero Ramiandrasoa – Water quality, relation with partners and final report
- Jackson Mahazosaotra – Technical validation, Microbiological analysis
- Andrianina Rabenoro – Technical validation, Physicochemical methods

The RANO WASH project, through its technical partners and local laboratories will monitor water quality at water points established or rehabilitated by the project. The project aims to develop activity of laboratory for the monitoring part, recognizing that equipping local water supply manager doesn't give convincing results. But the local water supply manager will be trained to follow basic parameters, to identify relevant changes in water quality (using basic parameters), to collect and carry sample correctly. They will be put in contact with selected laboratories that are able to give reliable water quality results and advice water supply manager on quality of water production. Water quality results must be shared by water supply manager to regional water authorities to set-up mitigation measure.

REPORTING AND QA/QC OF DATA

All reports are made by the RANO WASH team; the data are recorded via notes. GPS coordinates are market trough "degrees, minutes, seconds" format. Once the data fields are noted, they will be transcribed to computer to exploit them.

After sampling water analysis, the results are incorporated in GIS maps and graphics.

Per commune, any water quality results, at any stage of the project, will be shared to any local stakeholder implicated in the set-up and operation of a water supply system. At the end of the project, water quality records gotten during the project will be shared with the concerned communes, health care facilities and water service provider; and, on a more global scale, to the Ministries in charge of WASH and Public Health.

C. FIELD ANALYSIS USING PORTABLE TEST KITS

Measuring conductivity, mineralization, pH and temperature of water cannot be done long time after sampling operation because environment in the sample is changing rapidly making these parameters varying. These must have been measured in the field.

The fact that some cations are not stable in the type of water know on the east coast, it appears interesting to check certain value in the field. This will be applied to measure the quantity of iron (dissolved or not) in the water, using a field colorimeter. Despite the fact that this equipment is less professional, it can be accepted for monitoring purpose on some remote sites.

Due to the remoteness of a part of water infrastructure sites targeted by RANO WASH and the impossibility to reach a proper laboratory within 6 hours after sampling, the presence of bacteria will be sometime checked in the field

Technical partners will use the followings kits to measure the parameters discussed above.

Targeted parameter	Field test kits	Process by which the accuracy of the test kits has been verified	Field staffs have been trained in the use of the test kits	USAID approved
EC, TDS, pH, T°C	Multi meter	Calibration done every month	Yes	Yes
Total Iron (Fe^{2+} & Fe^{3+})	Palintest comparator (colorimeter)	Check dates of reagents	Yes	Yes
Total Thermotolerant coliforms	Delagua	Calibration done every four analysis	Yes	Yes

D. DOCUMENTATION OF AVAILABILITY OF RESOURCES

TABLE III-A: AVAILABILITY OF RESOURCES FOR SAMPLE COLLECTION AND LABORATORY ANALYSIS

	Collection and Field Measurement			Laboratory Analysis and Reporting			
Parameter	Field Team	Equipment	Protocol	Lab Location	Equipment	Methodology, Uncertainty	Personnel
Calcium (Ca^{2+})	Technical partners	SPB, HNO3	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Magnesium (Mg^{2+})	Technical partners	SPB, HNO3	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Sodium (Na^{+})	Technical partners	SPB, HNO3	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Potassium (K^{+})	Technical partners	SPB, HNO3	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Total Iron (Fe^{2+}, Fe^{3+})	Technical partners	SPB, HNO3	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Manganese (Mn^{2+})	Technical partners	SPB, HNO3	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Carbonates ($CO3^{2-}$)	Technical partners	SPB	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Bicarbonate ($HCO3^{-}$)	Technical partners	SPB	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Chloride (Cl^{-})	Technical partners	SPB	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Sulphate ($SO4^{2-}$)	Technical partners	SPB	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Nitrate (NO3-) and Nitrite (NO2-)	Technical partners	SPB	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs
Fluoride (F^{-})	Technical partners	SPB	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – Comparator	Visible spectrometry	Technical partners and mandated labs

TABLE III-A: AVAILABILITY OF RESOURCES FOR SAMPLE COLLECTION AND LABORATORY ANALYSIS							
Arsenic (As)	Technical partners	SPB	Keep cool or at same temperature, transport to labs	Antananarivo or Toamasina	Palintest – VisuPAsS	Visible spectrometry	Technical partners and mandated labs
Fecal coliform	Technical partners	SPB	Keep cool or at same temperature, transport to labs within 6 hours	Antananarivo or Toamasina	MLSB	Selected by filtration & MLSB, indicative only	Technical partners and mandated labs
Conductivity	Technical partners	Digital multimeter	Measured on site, at water source	On Site	HANNA HI 98311 / 98312	EC ±2% F.S.	Technical partners and mandated labs
Mineralization, Total Dissolved Solids TDS)	Technical partners	Digital multimeter	Measured on site, at water source	On Site	HANNA HI 98311 / 98312	TDS ±2% F.S.	Technical partners and mandated labs
pH	Technical partners	Digital multimeter	Measured on site, at water source	On Site	HANNA HI 98311 / 98312	/	Technical partners and mandated labs
Temperature	Technical partners	Digital multimeter	Measured on site, at water source	On Site	HANNA HI 98311 / 98312	Temperature ±0.5°C / ±1°F	Technical partners and mandated labs
Turbidity	Technical partners	Turbidity tube	Measured on site, at water source	On Site	Turbidity Tube	/	Technical partners and mandated labs
Residual Chlorine	Technical partners	SPB, DPD, comparator	Measured on site using DPD	Antananarivo or Toamasina	Palintest – Photometer 7100	Visible spectrometry	Technical partners and mandated labs

IV. IMPLEMENTATION OF THE WATER QUALITY ASSURANCE PLAN

DESIGN AND CONSTRUCTION

During the RANO WASH project, every infrastructure will be built by the technical partner (or by other qualified firm, chosen by and under the supervision of the technical partner and consortium), which will follow rule of the art of the domain and construction rules accepted in Madagascar.

For civil engineering work the rules in force in Madagascar will be followed strictly, and USAID will be fully aware of the planned construction (including review of the water work designs) in the WQAP.

For the specific domain of groundwater engineering, rules of the art and specific methodology of the domain will be followed.

At each stage of the project, the RANO WASH staff will make sure every point described in this WQAP and water quality standards are followed adequately.

1. During first phase of the survey (APS): observations of different hydrochemical features, describing the quality and the identity of the water available (source, wells, etc.). Teams will make sure that raw water is of good quality and if not that it can be adjusted easily.
2. During the design study of the chosen systems (APD), extensive and varied analysis will be carried out. If necessary, treatment plant will be sized according to what should be adjusted.
3. During exploitation of the systems, a monitoring strategy will be put in place, which will make possible to follow the selected parameters and to quickly take corrective measures of this quality in the event of a change, in order to ensure the distribution of a quality water.

WATER SOURCE PROTECTION

Two type of protection will be applied. The first one is a qualitative protection, which mean that it is forbidden to let substances to infiltrate into the wells or spring catchment. For this purpose, a protection area will be created around the well to not allow contaminants infiltration. An enclosure will be built around the well.

The second one is a quantitative protection, which means that the pumping will not exceed the quantity of available groundwater.

For each study case the best source protection will be considered.

A. OPERATIONAL SUSTAINABILITY

STAKEHOLDER PARTICIPATION

The following individuals/named positions are responsible for overseeing implementation of the RANO WASH WQAP:

a. Project Chief of Party (COP)—The COP has overall responsibility for ensuring that the project implements the WQAP and that the project complies with all IEE conditions and environmental mitigation and monitoring requirements.

b. Project Deputy Chief of Party (DCOP)—The DCOP has overall responsibility for ensuring that all the project partners implement the WQAP at the field level and comply with all requirements and norms and standard for each water infrastructure rehabilitated or newly implanted by the project. He is responsible to make that IEE conditions and environmental mitigation and monitoring requirements related to these infrastructures are apply.

c. Consortium member in charge of the region – The Head of Program of CRS, WaterAid, CARE has the supervision responsibility for ensuring that their Implementing Partners implement the WQAP in all systems in their region respective and comply with all requirements and norms and standard for each water infrastructure rehabilitated or newly implanted by the project.

d. Implementing / technical partners Project Coordinators—They will have primary responsibility for ensuring that this WQAP is implemented as it relates to project activities under their direct supervision. Project Coordinators may delegate certain WQAP-related tasks (e.g., monitoring), but will retain responsibility for their completion.

e. Project Environmental Specialist — will support the day-to-day fulfillment of environmental management activities, including compliance efforts such as implementation of the WQAP. This position also supports project reporting and facilitates coordination of environment related duties.

f. Environmental / climate risk Compliance Consultant —will provides guidance on USAID Environmental Procedures and assists with the design of specific Project interventions, helping to identify environmentally sound alternatives and recommending specific mitigation and risk management approaches.

g. Any communal or community representatives implicated in the life of the water-supply (water committees, water user's association, health care facilities, etc.)

ROUTINE OPERATION AND MAINTENANCE (O&M)

Operations and maintenance of the water supply systems build by the project will be done by selected and trained manager. Strict specifications of the O&M work will be prepared during the project. This will consider every operation to be done on every part of the system.
Particular attention will be paid to the policy considering the protection of the resource, the maintenance of well and catchment and the disinfection of the system. The O&M routine should guarantee continuous distribution of clean and potable water.

ROUTINE MONITORING AND TESTING

During exploitation of the systems, a monitoring strategy will be put in place, which will make possible to follow the selected parameters and to quickly take corrective measures of this quality in the event of a change, in order to ensure the distribution of a quality water.

Water test will be carried out as described above in this document, at the adequate frequency for the site. The project wants to implement a collaboration with local lab who have developed an expertise on the type of water that will be exploited

LONG TERM OPERATION AND MAINTENANCE AND MONITORING

In long term, the GOM representatives, especially the ministry in charge of WASH, and the communal authorities will have the responsibility of the monitoring of all constructed infrastructures and the quality of delivered water for each of them. Therefore, they should have a clear action plan that are budgeted and taken into account in their annual portfolio, in order to support and monitor the water services providers toward the completion of their roles related to operations & maintenance (O&M) of the supply services. They also should report and solved any dysfunction that might affect the sustainability of the service that includes any abnormal changes among the water quality parameters. The project will assess their capacity and provide adequate support, through its First Strategic Objective (SO1) aiming to reinforce the Governance and the Monitoring of the Water Supply System. Furthermore, the fees collected from Water Service will provide some provision for the commune through local tax collection.

Otherwise, operations and maintenance of the water supply systems build by the project will be done by selected and trained manager. Strict specifications of the O&M work will be prepared during the project.

All construction which are in contact with the water to be delivered will be disinfected at least once a year using chlorine. The use of chlorine must be evaluated via a 22 CFR 216.3 (b) analysis and must be approved by the BEO. A plan will then be shared with USAID representative during the project regarding the routine disinfection of water supply systems.
Note related to chlorination – mitigation measures

Chlorination consists of mixing sufficient chlorine-based chemical reagent HTH-70 (pellet form of calcium hypochlorite) with water to create a solution containing a certain quantity of active chlorine per liter (mg/l), or parts per million (ppm). This is used to disinfect any component of water supply systems (wells, catchment, pipes, storage tanks, distribution network and water point). Whenever its relevant, if an electro chlorinator is available, we might use sodium hypochlorite in liquid form resulting from the electrolyze of salt in water. We will note that only liquid reagents (sodium or calcium hypochlorite) will be used for disinfection activities in RANO WASH.

For the storage of these reagents, both pellets and aqueous solutions are stored inside sealed opaque containers, closed by screwed lids, and branded with clear indications about the contained products. These products will never be stored with fuels. And while handling these reagents, each qualified operator must use adequate individual protection equipment (mask, glove, apron, etc.) to avoid any accidents.

TRAINING

Staff of RANO WASH engaged on any operation related to water quality investigation will be trained adequately during the project. Staff of technical partners are trained within their organization and have developed expertise in the domain.

V. CORRECTIVE MEASURES

Approach to Resolution of Water Quality Contamination.

The selection of the corrective measures to implement when the water quality guidance levels are exceeded depends on a variety of factors, most of which depend on potentially unique site characteristics.

The two most important issues to consider prior to implementing a corrective response are:

- Does the exceedance present an immediate health risk to consumers?
- Are there alternative water sources which are accessible and safe?

If there is no immediate danger to the life and health of the beneficiaries, the IP will follow the following corrective measures.

Corrective Measures.

If the water quality testing completed following the commissioning of the water point indicates that contaminant levels exceed the thresholds established in this WQAP, the Implementing Partner (IP) will take the following actions:

a. If any of the levels are exceeded, the following will be performed (if there is no immediate danger to life and health):
   i. an additional round of sampling and analysis for the given parameters will be performed to confirm the initial results;
   ii. if the second round of sampling/analysis confirms the exceedance, an investigation of the potential source of contamination (see guidance in Annex 2 on key issues to investigate, which can be accessed here: http://www.usaidgems.org/wqap.htm.)

A. HUMAN HEALTH-RELATED DRINKING WATER QUALITY PARAMETERS OF CONCERN

a. If arsenic, mercury, lead, zinc, nickel, chromium, cadmium and cyanides levels are exceeded, the IP will notify the appropriate authorities, and investigate alternative safe water sources. If alternative sources are available, then:

i. Access to the alternative source will be provided; and,
ii. The water point with the exceedance, shall be disassembled, or equipped to otherwise prevent groundwater withdrawal.

b. If fecal coliform is detected, the IP will work with the appropriate authorities as well as the water service provider (water supply manager) to ensure that the following measures are implemented:

i. An investigation of potential sources of contamination, and removal of the contamination, if possible;
ii. Examination of the well construction will be conducted to ensure that the concrete apron and casing are sealed and in good condition and the well head is elevated such that runoff flows away from the concrete pad;
iii. The sampled well will be disinfected via the shock chlorination technique. NOTE: REQUIRES ADDITIONAL USAID AUTHORIZATION; [25]
iv. Outreach to community members will be completed (through radio announcements, community meetings, etc.) to boil water;
v. Access to the water point may be restricted, if possible, to non-drinking water, non-domestic uses only (e.g., that water is used for irrigation purposes only, or livestock watering).

c. If fluoride levels are exceeded, the IP will complete the following measures:

i. An investigation of the presence of health effects (i.e. dental or skeletal fluorosis), additional sources of fluoride (e.g. brick tea consumption), will be performed, if possible;
ii. Alternative low-fluoride sources of water will be used; if possible, and, blending of the two sources will be executed; or,
iii. Fluoride treatment will be installed that is available and acceptable to the community, such as bone charcoal, contact precipitation, clay, activated alumina, calcium chloride, monosodium phosphate, or,
iv. Access to the water point will be restricted to non-drinking water, non-domestic uses only (i.e., that water is used for irrigation purposes only).

d. If nitrate levels are exceeded, the IP will complete the following measures:

i. An investigation of potential sources of contamination, such as nearby agricultural

[25]1 The **use of chlorine** must be evaluated via a 22 CFR 216.3 (b) analysis and must be approved by the BEO.

fertilizer application, or leaking septic tanks, will be performed, and removal of the contamination will be completed, if possible; or,

ii. Access to the water point will be restricted to non-drinking water, non-domestic uses only (i.e., that water is used for irrigation purposes only).

B. Operational-Based Drinking Water Quality Parameters of Concern

a. If electrical conductivity or TDS levels are exceeded, the IP will complete the following measures:

i. The IP will perform additional testing for individual constituents of conductivity including, chloride, sodium, nitrate, calcium, magnesium, and sulfate, to ensure these constituents are not present at levels above the host country regulatory limits.

ii. An investigation of potential sources of contamination will be performed, and removal of the contamination will be completed, if possible; or,

iii. Access to the water point will be restricted to non-drinking water uses only (confirm that elevated conductivity does not preclude use for irrigation or for livestock watering).

b. If pH levels are outside of the range (i.e. below 6.5 or above 8.5), the IP will complete the following measures:

i. An investigation of potential anthropogenic sources of contamination, such as nearby industrial activities including mining, will be performed, and an investigation of alternative sources of water supply will be completed, if possible;

ii. An investigation of potential natural sources, such as subsurface geology, will be performed, to confirm that the low or high pH is a result of natural conditions;

iii. If the pH exceedance is due to natural conditions, such as local geology, an investigation of the potential of corrosion of the existing or proposed water supply extraction and distribution infrastructure (e.g. corrosive metal piping and pumping equipment) will be performed;

iv. If pH exceedances, could result in corrosion, and leaching of metals from water supply equipment, then testing will be conducted for metals appropriate water treatment (e.g. neutralizing filter) will be installed, at the water point, or at the point of use (e.g. in the residence); or,

v. Access to the water point will be restricted to non-drinking water, non-domestic uses only (i.e., that water is used for irrigation purposes only).

c. If turbidity levels are exceeded, the IP will complete the following measures:

i. An investigation of potential sources of contamination, and removal of the contamination, if possible;

ii. Water treatment that is available and acceptable to the community, such as fiber,

cloth or membrane filters, granular media filters, sedimentation systems, moringa flocculation, sand filters, will be installed (or provided for household use) to remove turbidity; or,

iii. Access to the water point will be restricted to non-drinking water, non-domestic uses only (i.e., that water is used for irrigation purposes only).

C. Summary EMMP Matrix

The RANOWASH Project already has its approved EMMP. The water quality concerns 140 planned safe water supplies to be built or rehabilitated by the project. Specific mitigation measures for each region will be given in specific Environmental Screening Forms. Measures will be reported then in the Environmental Status Report which will include result of the water testing conducted prior the commissioning of the rehabilitated water point.

During the construction phase, RANOWASH staff will be responsible of the control of contractor works. During each step of the construction and rehabilitation will be documented and a water quality assurance plan will be followed.

RANOWASH will report to the USAID Mission on each step of the construction and rehabilitation and will guarantee quality of the water in accordance with USAID, WHO and GOM before commissioning the infrastructure.

The manager of the constructed or rehabilitated infrastructure (WSP) will be trained on proper management of the water supply system and will be part of the process from the beginning.

RANO WASH PROJECT

SITE: 6 regions

Environmental Mitigation/ Enhancement Plans for Established WASH Projects

WATER QUALITY ASSURANCE PLAN

Activity: Water Supply

Adverse Impact: Inadequate Water Quality

Type of infrastructure: Gravity water supply system (new or rehabilitated and extended), including spring catchment, or surface water catchment.
Pumped water supply system (new or rehabilitated and extended), including shallow well or borehole as catchment.

SOURCE TYPE	MITIGATION PLAN	EVIDENCE OF MITIGATION MEASURE	FOLLOW UP/ FREQUENCY	RESPONSIBLE PERSONS/ ORGANIZATIONS
	CONSTRUCTION STAGE			
Spring catchment	a) Construction work must avoid any change of water quantity and quality b) Protection area around the catchment c) Fence around the catchment (closer protection) d) Set-up of local regulations to control activities within and around the catchment area	Installation, completion reports, photos, water quality reports, design drawings for treatment units	During construction, after construction	Contractors, IP, community, relevant ministries

SOURCE TYPE	MITIGATION PLAN	EVIDENCE OF MITIGATION MEASURE	FOLLOW UP/ FREQUENCY	RESPONSIBLE PERSONS/ ORGANIZATIONS
	e) Take water samples for water quality analysis according to the WQAP f) Provide appropriate treatment system to remove identified physical and chemical impurities			
Surface water catchment	a) Catchment design must consider variation in runoff yield along year, and related change in water charge (turbidity, suspended matter) b) Protection area around the catchment c) Fence around the catchment (closer protection) d) Set-up of local regulations to control activities within and around the catchment area e) Take water samples for water quality analysis according to the WQAP f) Provide appropriate treatment system to remove identified physical and chemical impurities	Installation, completion reports, photos, water quality reports, design drawings for treatment units	During construction, after construction	Contractors, IP, community, relevant ministries
Boreholes	g) Install durable pipe casings (use PVC with enough strength for the purpose) h) Ensure proper disposal of waste materials from the drillings pit to prevent any seepage to the ground water	Installation, completion reports, photos water quality reports, photos, design drawings for treatment units	During construction, after construction	Contractors, IP, community, relevant ministries

SOURCE TYPE	MITIGATION PLAN	EVIDENCE OF MITIGATION MEASURE	FOLLOW UP/ FREQUENCY	RESPONSIBLE PERSONS/ ORGANIZATIONS
	i) Cementation done according to usual norms (density of 1.4 to 1.8 t/cu) j) Proper development of the pit to remove any unwanted material occurring during drilling process k) Take water samples for water quality analysis according to the WQAP. l) Protection area and fence around the borehole and pump house sites m) Ensure all spilled oils and fuels are properly disposed by removing affected soil n) Provide appropriate treatment system to remove identified physical and chemical impurities			
Pipeline Extension	a) Avoid swampy areas in installation of the pipes or else use galvanized iron (GI) pipes in swampy areas to prevent any cracks of pipes and an eventual pipe water contamination b) Trenches must be at least 0.70 m deep c) Cover all the installed pipes / refilling the excavated trenches with soil d) Take water samples for water quality analysis according to the WQAP.	Installation, completion reports, photos, water quality reports	During construction, after construction	Contractors, IP, community, relevant ministries

SOURCE TYPE	MITIGATION PLAN	EVIDENCE OF MITIGATION MEASURE	FOLLOW UP/ FREQUENCY	RESPONSIBLE PERSONS/ ORGANIZATIONS
	e) Provide appropriate water treatment system, if necessary			
Shallow wells	a) Fence round the shallow well b) Provide proper drainage of spilled water c) Take water samples for water quality analysis according to the WQAP. d) Provide appropriate treatment system to remove identified physical and chemical impurities	Installation, completion reports, photos, water quality reports, design drawings for treatment units	During construction, after construction	Contractors, IP, community, relevant ministries
	OPERATION STAGE			
Spring catchment	a) Undertake water quality tests (physiochemical and bacteriological) according to WQAP b) Maintenance of the catchment equipment and treatment unit c) Community sensitization on proper handling of water after drawing it	Visual inspection of works, review water quality reports	Continuous	Water supply manager, community
Surface water catchment	a) Undertake water quality tests (physiochemical and bacteriological) according to WQAP b) Maintenance of the catchment equipment and treatment unit	Visual inspection of works, review water quality reports	Continuous	Water supply manager, community

SOURCE TYPE	MITIGATION PLAN	EVIDENCE OF MITIGATION MEASURE	FOLLOW UP/ FREQUENCY	RESPONSIBLE PERSONS/ ORGANIZATIONS
	c) Community sensitization on proper handling of water after drawing it			
Boreholes	a) Undertake water quality tests (physiochemical and bacteriological) according to WQAP b) Maintenance of the borehole equipment and treatment unit c) Community sensitization on proper handling of water after drawing it	Visual inspection of works, review water quality reports	Continuous	Water supply manager, community
Pipeline Extension	a) Undertake water quality tests (physiochemical and bacteriological) according to WQAP b) Ensure immediate repairs of leakages to prevent any contamination of pipe water	Visual inspection of works, review water quality reports	Continuous	Water supply manager, community
Shallow wells	a) Undertake immediate repairs of any cracks on the well cap b) Undertake water quality tests (physiochemical and bacteriological) according to WQAP c) Provide a diversion trench for any storm water to protect the well cap d) Maintenance of the well and treatment unit	Visual inspection of works, review water quality reports	Continuous	Water supply manager, community

SOURCE TYPE	MITIGATION PLAN	EVIDENCE OF MITIGATION MEASURE	FOLLOW UP/ FREQUENCY	RESPONSIBLE PERSONS/ ORGANIZATIONS
	e) Community sensitization on proper handling of water after drawing it			

NB: Indicate if a consultant has conducted a water quality feasibility study and design plans are being developed for the recommended treatment units for all water sources. Installation of the treatment systems will be undertaken in the year.

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ANNEX 1: DESCRIPTION OF TESTED PARAMETERS

WATER QUALITY PARAMETER	JUSTIFICATION FOR INCLUSION	METHOD OF ANALYSIS
Calcium (Ca^{2+})	Calcium is an indicator of the presence of fertilizer	Visible spectrometry
Magnesium (Mg^{2})	Natural feature in basement area	Visible spectrometry
Sodium (Na^{+})	Sodium is an indicator for the presence of fertilizer, wastewater and saline intrusion near the coast.	Visible spectrometry
Potassium (K^{+})	Potassium is an indicator of the presence of fertilizer	Visible spectrometry
Total Iron (Fe^{2+}, Fe^{3+})	Other potential water contaminants of concern include heavy metals including iron, which can be found in drinking water sources, and can lead to a variety of health risks. Heavy metals are often present in drinking water sources as a result of mining operations or other industrial activities. It is also important for redox process	Visible spectrometry
Manganese (Mn^{2+})	It can be found in large concentration in wastewater and sewage sludge and is a remarkable parameter for redox process	Visible spectrometry
Carbonates ($CO3^{2-}$)	Bicarbonate is an important factor that indicates the presence of degradation of organic contaminants.	Visible spectrometry
Bicarbonate ($HCO3^{-}$)	Bicarbonate is an important factor that indicates the presence of degradation of organic contaminants.	Visible spectrometry
Chloride (Cl^{-})	This major anion could indicate an anthropogenic source of contamination. For example, fertilizer or wastewater.	Visible spectrometry
Sulphate ($SO4^{2-}$)	Natural feature	Visible spectrometry
Nitrate (NO3-) and Nitrite (NO2-)	According to the Madagascar Water Law 98-029, the project will monitor these contaminants (in a lab or in the field using colorimeter) to test their presence in the water body. Monitoring will be done each semester after work is accomplished. Also, as mitigation measures, a sensitization at the community level is conducted to inform that a water point has to be far from a contamination source (latrine, livestock shed). It should be noted that latrine and livestock sheds have to be at least 30 meters away from a water point.	Visible spectrometry

WATER QUALITY PARAMETER	JUSTIFICATION FOR INCLUSION	METHOD OF ANALYSIS
Fluoride (F^-)	Fluoride is a naturally occurring anion of fluorine and occurs in minerals and fluoride salts. In small quantities fluoride can be helpful to human health and protect from tooth decay, however, in higher concentrations (above several parts per million) fluorides can cause pitting of teeth and skeletal problems including crippling fluorosis, anemia and stiff joints. Heavy concentrations of fluoride can be found naturally throughout northern Africa, the Middle East and central Asia.	Visible spectrometry
Arsenic (As)	In compliance with Guidance Cable State 98 108651, and the Madagascar water law 98-029, RANO WASH will monitor groundwater-sourced water access points for inorganic arsenic at a level not to exceed 10 ppb (10 µg/l or 0.01 mg/l). Following the initial water quality test, the Project will sample groundwater for inorganic arsenic not less than once per quarter for a minimum of four (4) quarters. Arsenic monitoring will be completed using the same technology and sampling method as the initial water quality test. Nevertheless, due to a new reference from the WHO value, it is acceptable at the highest 50 ppb given the difficulty of on-the-ground analyses.	Visible spectrometry
Electro-conductivity	This will provide information on the salinity of the water for consumption and will be monitored by the project and the water manager entity on the ground using a conductivity meter. The test will be done every semester after work is accomplished. For some areas (especially in the southwest) near the coastal areas, where salinity is found, a higher conductivity is allowed but does not exceed the 3400 µS/cm limit.	Digital multimeter
Total Dissolved Solids (TDS)	The TDS is closely related to conductivity, is a measure of all ion particles smaller than 2 microns (0.0002 cm), and is a close approximation of salinity (although dissolved organic matter and other compounds may be included in the TDS measurement). High TDS can also indicate high	Digital Multimeter

WATER QUALITY PARAMETER	JUSTIFICATION FOR INCLUSION	METHOD OF ANALYSIS
	alkalinity or hardness. Sharp changes to the TDS indicate changes to the overall water quality.	
pH	The project and the water management entity will be responsible for underground monitoring of the water acidity using a pH-meter. After the first test, pH will be monitored each semester after the work is accomplished. It is noted that groundwater often has a more acidic pH than ideal. If the pH is so high that it corrodes, the project will identify an alternative water source that meets the standard.	Digital multimeter
Residual Chlorine	If chlorine is used in a treatment	Visible spectrometry
Temperature	It is a parameter that is necessary to determinate the chemical equilibrium between the water component. It could give the depth of groundwater flow, the residence time, its origin, and the eventual contaminations	Digital Multimeter
Turbidity	Water with a turbidity of 5 NTU or less appears clear to consumers. At a higher level, the water becomes colored. A maximum level of 20 NTU is suggested for the case of a small system where the consumers and the contracting authority grant it and where the reduction of the turbidity is no longer feasible. For chlorination-treated systems, the limit is more severe (1 NTU) because particles suspended in water can prevent the action of chlorine on pathogens attached to it.	Turbidity tube
Fecal coliform	The project will monitor all new or rehabilitated water access points (groundwater- and surface water-sourced) for no detectable fecal coliform in any 100 ml sample using a comparable technology and sampling method as the initial water quality test. Total coliform monitoring will be completed at least once every six months as long as the water point remains the source of drinking water or for domestic purposes. However, for some types of sources, it is more effective to allow limited contamination than requesting protection measures or treatment.	Selected by filtration & MLSB

EMMR ANNEX 2 UPDATED EMMP

ENVIRONMENTAL MITIGATION AND MONITORING PLAN (EMMP)

- **PROJECT/ACTIVITY DATA**

• **Project/Activity Name:**	• Rural Access to New Opportunities in Water, Sanitation, and Hygiene (RANO WASH) program
• **Geographic Location(s)** (Country/Region)**:**	• Madagascar
• **Implementation Start/End Dates:**	• June, 15th 2017 to June, 15th 2022
• **Contract/Award Number:**	• Cooperative Agreement N° AID-687-A-17-00002
• **Implementing Partner(s):**	• CARE International in consortium with CRS, WaterAid, Sandandrano and BushProof
• **Tracking ID:**	•
• **Tracking ID/link of Related IEE:**	• Program/Activity 687-005 • Madagascar Health Sector Portfolio IEE 2019-2024 • ECD Permalink: https://ecd.usaid.gov/document.php?doc_id=51512
• **Tracking ID/link of Other, Related Analyses:**	• RANO WASH FY2018 EMMP Oct 2017 to Sept 2018

- **ORGANIZATIONAL/ADMINISTRATIVE DATA**

• **Implementing Operating Unit(s):** (e.g. Mission or Bureau or Office)	•
• **Lead BEO Bureau:**	•
• **Prepared by:**	• RANO WASH Project Coordination Team
• **Date Prepared:**	• April 30, 2019
• **Submitted by:**	• RANO WASH Project Coordination Team

• **Date Submitted:**	• July 30, 2019

• **ENVIRONMENTAL COMPLIANCE REVIEW DATA**

• **Analysis Type:**	• EMMP
• **Additional Analyses/Reporting Required:**	• EMMR

• PURPOSE

Environmental Mitigation and Monitoring Plans (EMMPs) are required for USAID-funded projects, as specified in ADS 204, when the 22 CFR 216 documentation governing the project (e.g. the Initial Environmental Examination (IEE)) specifies mitigation measures are needed. EMMPs are in important tool for translating applicable IEE conditions and mitigation measures into specific, implementable, and verifiable actions.

An EMMP is an action plan that clearly defines:

1. **Mitigation measures.** Actions that reduce or eliminate potential negative environmental impacts resulting directly or indirectly from a particular project or activity, including environmental limiting factors that constrain development.

2. **Monitoring indicators.**[26] Criteria that demonstrate whether mitigation measures are suitable and implemented effectively.

3. **Monitoring/reporting frequency.** Timeframes for appropriately monitoring the effectiveness of each specific action.

4. **Responsible parties.** Appropriate, knowledgeable positions assigned to each specific action.

5. **Field Monitoring/Issues.** Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution. This field is primarily for documentation during implementation.

Generally, EMMPs are developed by the IP (and updated at least annually) in conjunction with the Annual Work Plan. Some IEEs include a general EMMP, in such instances it is incumbent on the IP to tailor the general EMMP once activities are fully defined. Responsibility for ensuring IPs develop appropriate EMMPs and budget for their implementation rest with USAID CORs/AORs.

An EMMP is a living document. It should be reviewed against the IEE and updated/tailored as needed over the life of implementation, e.g. when new sites are identified or changes in scope are made through award modifications and IEE Amendments.

[26] Note: Monitoring indicators differ from performance indicators, which are the measures that USAID uses to detect progress towards the results included in a Results Framework.

1.0 PROJECT/ACTIVITY SUMMARY

This EMMP examines the activities within the Rural Access to New Opportunities in Water, Sanitation and Hygiene (RANO WASH), Project funded by USAID/MG/HPN and implemented by a consortium led by CARE Madagascar and including Catholic Relief Services (CRS) and WaterAid Madagascar. The consortium collaborates with two private sector Malagasy partners, BushProof and Sandandrano, which operate successful water and sanitation businesses in Madagascar.

RANO WASH has as global goal to increase equitable, suitable and sustainable access to improved water supply increase sanitation coverage rates, and improve household hygiene practices in 250 communes in six regions of Madagascar (Alaotra Mangoro, Atsinanana, Amoron'i Mania, Matsiatra Ambony, Vakinankaratra, and Vatovavy Fitovinany). RANO WASH aims to maximize the WASH access impact on Human Health, Nutrition and Environment. The institution members of the Consortium have their own WASH relevant experience in their respective action region: Atsinanana and Vakinankaratra for CRS; Alaotra Mangoro for WaterAid and the rest for CARE. Target areas overlap with the former and ongoing USAID-funded MIKOLO, FARARANO, and ASOTRY FFP Programs. Targeted communes represent areas with some of the lowest "safely managed water supply system" and "basic sanitation" coverage rates in Madagascar. By the end of the life of project in June 2022, the project anticipates directly affecting the communities in the 250 rural communes targeted.

This EMMP also updates the previous EMMP, of the RANO WASH Project developed for the purpose of the FY 2018 project activities, performed under the umbrella Initial Environmental Examination (IEE) for USAID/MG/HPN funded projects approved in October 2013, and now updated for a new period covering 2019 to 2024. This newly updated umbrella IEE identifies those activities that are classified as Negative determination with Conditions for each HPN Program Element, and offers a sample EMMP to mitigate and monitor the potential risks that these activities pose to the environment. Water and Sanitation is Program Element 3.1.8 of USAID Foreign Assistance Framework.

To avoid ambiguity, and ensure an environmentally sound project design in compliance with USAID regulation 22 CFR 216, this document provides threshold determinations for principal activities within the RANO WASH program per Strategic Objective. This document also outlines a series of mitigation and monitoring measures for those infrastructure related activities categorized under negative determination with conditions.

RANO WASH also possess a Water Quality Assurance Plan (WQAP) developed based on the USAID WQAP guidance and template, and taking into account the specific contexts of the regions of project implementation. Sandandrano and BushProof will continue to ensure the monitoring of the implementation of this WQAP, based on their experience of the FY2018 RANO WASH construction monitoring, and that of their previous implementation of the USAID funded project RANO HP.

Through its activities, RANO WASH will also continue to assess and address climate risk in order to facilitate resilience to both current and future climate. Indeed, Water regime, Water and Sanitation infrastructure and services, as well as Hygiene facilities, are sensitive and vulnerable to climate change and natural disaster. The current Climate Risk Management (CRM) will ensure the safeguards of the USAID development impacts. CRM will also permit the wisest today's investments for sustainable and compliant gains.

No construction works will start before the submission and the approval of the related Environmental Review Form (ERF) taking into account the conditions of the IEE retaken in this EMMP, and the WQAP and CRM Plan.

The table below shows the main framework of the RANO WASH project activities, according to the approved FY2019 AIP, and the related threshold determinations according to the Umbrella IEE and the 22 CFR 216.

Activity description		Threshold Determinations
PROJECT MANAGEMENT & CROSS CUTTING ISSUES		
Program Coordination Team		
	Regional Launching in Vakinankaratra including courtesy visit	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Implementation of the selection process of the next intervention communes by a Demand led approach	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Courtesy visit in the FY2020 two intervention regions: Matsiatra Ambony and Amoron'i Mania	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Recruitment of subgrantees for the next two intervention regions, Matsiatra Ambony and Amoron'i Mania	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Project coordination, internal meetings, and project staff training activities	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
MONITORING EVALUATION & LEARNING		
	Promotion of the use of baseline survey data in the RANO WASH regions (Workshops at national and regional levels)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Implementation of the annual beneficiary-based survey (recruitment, training, field data collection)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Implementation of the baseline survey and WASH infrastructure inventory in the 3 new regions (Vakinankaratra, Amoron'i Mania, Matsiatra Ambony)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Regional SMILER workshop: Vakinankaratra region	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
	Data Quality Assessment, development of ICT4D and database management tools	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
SO1. Governance and monitoring of water and sanitation strengthened for sustainable and equitable WASH services		
IR1.1	**IR1.1 Strengthened government and stakeholder commitment and accountability to sector development**	

Activity description		Threshold Determinations
Output 1.1.1.	Sector coordination and learning mechanisms operating effectively under strong national leadership	
Act 1.1.1.1	Discussions between thematic groups to document best practices and lessons learned of the WASH sector	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.1.1.2	Capacity building and mobilizing of private sector groups to discuss key needs for the WASH private sector development	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.1.1.3	Capacity building and mobilization of WASH CSOs to discuss their key priorities	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 1.1.2.	Ministry in charge of WASH institutional capacity developed to meet strategic needs	
Act 1.1.2.1	Participation in development of sector plan (PSEAH)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.1.2.2	Study/workshop to develop costing of PS-EAH	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.1.2.3	Study/workshop for the development National Plan for Investment	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
IR1.2	**IR1.2 Improved sector monitoring, analysis and learning, influencing policy**	
Output 1.2.1.	SE&AM strengthened and extended	
Act 1.2.1.1	Meeting with DREAH on activities for the regional SE&AM	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.1.2	Regional support to DREAH to be operational for the SE&AM process	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.1.3	Workshop to launch SE&AM and BPOR	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.1.4	Coaching sessions for Commune/District/DREAH to update data	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.1.5	Training for Communes to pilot the SE&AM ICT4D platform	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.1.6	Working with the MoWASH to assess the sectorial review performance	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.1.7	Contributing to conduct the WASH sectorial review taking in account the assessment results at national level	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.1.8	Contributing to conduct the WASH sectorial review taking in account the assessment results at regional level	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 1.2.2	Learning agenda implemented to increase and better regulate private sector engagement in WASH	
Act 1.2.2.1	Mobilize potential actors to the learning activities	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.2.2	Work with the DREAH to feed the digital library with the learning events deliverables	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.2.2.3	Facilitate learning events for the RANO WASH project on PPP	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
IR1.3	**IR1.3 Strengthened sub-national systems**	
Output 1.3.1	Decentralized resources available for sustained WASH service delivery	

Activity description		Threshold Determinations
Act 1.3.1.1	Mobilize WASH actors at regional level to assess the progress achieved against BPOR/BPON and to define strategy to move forward	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.3.1.2	Training of trainers and coaching for DREAH and RANO WASH team on STEAH capacity building	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.3.1.3	Working session with the MoWASH on Communes' capacity building to set up and to coach STEAH	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 1.3.1.2	Conduct capacity building of the STEAH	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 1.3.2	Commune management capacities strengthened for WASH service delivery	
Act: 1.3.2.1	Coaching of communes to develop PCDEAH (Commune WASH plans)	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act: 1.3.2.2	Training of 8 communes on their roles relating to WASH service delivery	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act: 1.3.2.3	Training for communal CAO (tender evaluation committees)	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act: 1.3.2.4	Setting-up tax payment mechanism	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.3.2.5	Field visit for communes benefiting water supply systems construction	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
IR1.4	**IR1.4 Increased community control over WASH services**	
Output 1.4.1	Communes and communities with an active civil society, aware of and organized to claim their right to water and sanitation	
Act 1.4.1.1	Training for National CSO	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.4.1.2	Training for Regional CSO	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.4.1.3	CSO Mapping at communal level	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.4.1.4	Training and coaching for CSO at communal to develop advocacy plan and networking	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.4.1.5	Coach and Follow up CSO at communal level to implement their advocacy plan	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 1.4.2	110 communes with functional WASH accountability mechanisms	
Act: 1.4.2.1	Setting up SLC for each commune (59 new communes)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.4.2.2	Training and coaching for SLC to be operational (dialogue sessions agenda)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.4.2.3	Facilitate working sessions with District and Communes to implement SLCs' recommendations	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)

Activity description		Threshold Determinations
Act: 1.4.2.4	Conduct national learning event on social accountability mechanism	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 1.4.2.5	Training and coaching for communes to implement social accountability mechanism	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
SO2. Private sector engagement in WASH service delivery increased and improved.		
IR2.1	**Improved WASH products, technologies, services and business models**	
Output 2.1.1	A comprehensive WASH market assessment (WMA) strategy developed	
Act: 2.1.1.1	Under the leadership of the MoWASH, conduct WMA in the three new regions	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Output 2.1.2	Regional WASH market development plans drafted	
Act 2.1.2.1	Work with a Consultant to develop the regional WMDP for the previous 3 regions	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act 2.1.2.2	Develop WASH marketing plan per region	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act 2.1.2.3	Training and coaching for private sector actors to implement WMDP and marketing plan	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Output 2.1.3	Type and range of financial products for WASH services and products available and accessible increased	
Act: 2.1.3.1	Informational visits on project to heads of financial institutions	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 2.1.3.2	Invite financial institutions to participate in the Regional WMDP presentation to engage them in the potential WASH market	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act: 2.1.3.3	Organize an "open house" to connect financial institutions and WASH service providers at the national level	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 2.1.3.4	Support VSLA loans to initiate WASH small business i.e. hygiene product and sanitation marketing	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act: 2.1.3.5	Develop communication materials related to new loan products	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
IR 2.2	**Improved WASH products, technologies, services and business models**	
Output 2.2.1	Design and construction of sustainable WASH infrastructure improved	
Act 2.2.1.1	Conduct APS and APD	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),

Activity description		Threshold Determinations
Act 2.2.1.2	Select short list of enterprises for construction and investment-management	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act 2.2.1.3	Develop ESF and monitor its implementation in the construction sites	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act 2.2.1.4	Contract and Monitor water infrastructures construction and management	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
IR 2.3	**Strengthened technical & business skills and competencies**	
Output 2.3.1	Capacity building for private sector in business systems and technical operations strengthened	
Act 2.3.1.1	Provide on-the-job technical training on management to private companies	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Output 2.3.2	Professional Associations Development	
Act 2.3.2.1	Conduct an institutional diagnostic of the Private sector association (AOPDEM) specialized on water systems management in Madagascar	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 2.3.2.2	Develop and implement a capacity building plan to the WASH private sector institution	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
SO3. Adoption of healthy behaviors and use of WASH services accelerated		
I.R.3.1	**IR3.1 Improved hygiene and sanitation behavior change solutions through applied research**	
Output 3.1.1	Behavioral science innovations for WASH BC explored, iterated, evaluated	
Act: 3.1.1.1	Publish and share action-research on BC conducted by LSHTM	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 3.1.1.2	Develop 4 action-research protocols	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 3.1.1.3	Implement BCD strategy for 3 regions (V7V, ALM, ATS)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 3.1.2	Studies of integrated population, health and environment (PHE) programming models stimulating cross-sectoral collaboration	
Act 3.1.2.1	Develop and present an agenda for action-research on PHE with PHE actors in Madagascar	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 3.1.3	WASH-Nutrition linkages researched	
Act 3.1.3.1	Share the Action-research research for WASH-Nut to WASH and nutrition sector stakeholders to begin influence programs and policies	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
I.R.3.2	**IR3.2 Improved implementation of WASH behavior change at all levels: communities, government and private sector**	

Activity description		Threshold Determinations
Output 3.2.1	WASH BC program coordination improved in RANO WASH regions	
Act 3.2.1.1	Collaborate with MoWASH to coordinate WASH BC activities at the national level (quarterly meeting)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.1.2	Organize and participate in regional platform meetings to ensure coordination of activities at regional level	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 3.2.2	Innovative CLTS and WASH BC implementation	
Act 3.2.2.1	Identification, training and placement of gender focal points for RANO-WASH staff	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.2	Training on gender and community mobilization for RANO WASH staff	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.3	Production of gender promotion tools	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.4	Basic and advanced CLTS training for staff	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act 3.2.2.5	Training and coaching on VSLA for RANO WASH staff	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.6	Training on training techniques for RANO WASH staff	
Act 3.2.2.7	Identification and training - coaching for local promoters at communal level in the 110 intervention communes	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.8	Coaching for local promoters on BC communication activities	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.9	Coaching for CHV on promotion of health activities and PNSC promoter (in collaboration with MSP)	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.10	Establish WASH committees to strengthen community participation and coordination	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.11	Establish new VSLA groups and coaching for previous VSLA	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.12	Encourage VSLA members to invest in WASH products/services	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.13	CLTS Triggering and FUM activities at village/fokontany level	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
Act 3.2.2.14	Train and coach health facilities and schools in the WASH friendly	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.15	BC activities specific to MHM at WASH friendly schools	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act 3.2.2.16	Celebrate and mobilize communities to create movements for change during world days	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Output 3.2.3	Communication Marketing developed for WASH products and services	
Act 3.2.3.1	Implement marketing campaign on WASH products and services in communes where products and services are available	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),

Activity description		Threshold Determinations
Act 3.2.3.2	Promote WASH products and services through local medias	**Negative Determination** with **Conditions**, per 22 CFR 216.3(a)(2)(iii),
IR3.3	**Evidence-based WASH BC and hygiene promotion shared to influence policy**	
Output 3.3.1	National-level networks, policies and programs engaged for sustainable WASH BC	
Act: 3.3.1.1	Initiate learning hub discussions within the project and setup the learning hub at national and regional level	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)
Act: 3.3.1.2	Attend, participate, initiate workshops and meetings on national level to share experiences, expertise and to influence policies: based on action research, formative research results	**Categorical Exclusion** per 22 CFR 216.2 (c)(viii)

• 2.0 SITE SPECIFIC INFORMATION

According to regional environmental dashboard set by the ONE in the region of Alaotra Mangoro, the abusive, uncontrolled, and illegal exploitation of the natural resources (by logging and mining) has led to the current degradation and erosion of the soil of most of the watersheds. Moreover, the local population keeps using destructive agricultural technics that are intensifying water pollution, and depleting and drying water sources, and even accentuating climate disturbance and drought phenomenon. The region has low access to new energy and illiteracy and cultural poverty are still common amongst the masses. The food and sanitary conditions are precarious and the population still lives in insecurity. The region has a confirmed potential on tourism, but the valorization of sites of tourist, cultural and religious interest is still insufficient, and most of roads and tracks are degraded.

The same reference shows for the region of Amoron'i Mania that there is also the same issue related to the degradation of biodiversity mainly due to bush fires, slash and burn cultures, and abusive exploitation of fishing resources. Also, due to over-lumbering, it was observed a significant degradation of Tapia forests, silting and soil erosion. These latter are also intensified by the illegal and uncontrolled exploitation of mining products. Thus, most of the watersheds are degraded, and on that is added the pollution of water resources by phytosanitary products and nitrates used by farmers. It was also observed a decrease in rainfall due to the imbalance climate. Moreover, such decrease has led to the current deplete of available water quantity. In the other hand, the local population also faces the same issues about literacy, land security, poverty, precariousness of food and sanitary conditions, access to new energy, isolation and rural insecurity. The region might also have some touristic potential but is still not well valorized.

For the case of Atsinanana region, the main environmental issues turn around trafficking of precious woods and endemic wildlife, practice of bush fires, slash and burn cultures, deforestation, uncontrolled mining activities, extraction and tramping of the coral reef,

overexploitation of coastal and marine resources. That leads to degradation of soils, erosion and degradation of watersheds, soil exhaustion due to its abusive use and the low quality of fertilizer used to grow cash crops, land dispute, deterioration of marine and coastal resources, siltation of lakes and rivers (especially the canal of Pangalanes and port), water pollution, and depleting of fishing resources. For the last two decades, it was also observed an increase in frequencies and intensity of natural disasters (cyclone, flood). Except for transversal issues, such as illiteracy, low access to new energy, poverty, insecurity, random food security, and isolation, the main socio-economic challenge for this region should be the alarming rate of school dropout (early dropout between 10 and 14 years old) almost at all district level.

For Matsiatra Ambony the degradation of biodiversity is mainly due to the trafficking of fauna and flora. The region also faces the proliferation of invasive species (harmful to agriculture). The Tapia Forests are highly degraded due to forest overexploitation and common practice of slash, burn cultures, and bush fires. Because of that latter issue and accentuated by mining activities, the soil is highly eroded on plateau (presence of landslides) and silted on valleys. The region also faces strong soil exhaustion due to abusive exploitation. The water sources are highly threatened in terms of both quality and quantity. Moreover, in terms of climate change, the climatic hazards sometimes make communication difficult with the most isolated areas (media, roads …). The listed above socio-economic issues, for the other regions, can be also applied to the region of Matsiatra Ambony, pointing out that rural insecurity (stealing of cattle) is omnipresent there.

For Vakinankaratra the observed degradation amongst biodiversity is mainly due to illegal collection of ornamental plants. The notions and principles of sustainable management are not acquired at all. There has been identified a significant decrease in fish stock and quality, as well as a loss of the ecosystem balance of the lentic environment. The practice of bush fires or any inappropriate agricultural production method are still common which accentuate the diminution of vegetal land cover, the erosion of watersheds and siltation of downstream lakes and plains. The natural resources, including the soil (e.g. for brick fabrication) and the rivers (for sand extraction) are overexploited. Besides, livestock and land-use are poorly managed, and land disputes are common. Besides, that two latter issues have had significant adverse consequences on the local agricultural production. Not to mention the increasing pollution of surface waters and the depleting of groundwater availability. Contradictorily, despite de relative availability of water sources, the local increasing population only have limited access to drinking water and basic infrastructure.

In Vatovavy Fitovinany a loss of biodiversity, as well as a progressive disappearance of animal and plant species have been observed, while harmful species especially for rice cultivation are proliferating. Alike the precedent regions, natural resources such as forest, soil, vegetal materials for houses constructions, and watersheds are overexploited and uncontrolled, and slash, burn cultures and bush fires are still common due to the lack of knowledge and financial means among peasant. It results a soil erosion, siltation of rice fields and river mouths. As a main part of the region belongs to the east coast of Madagascar, there is also some risks of marine pollution by hydrocarbons due to the aging of hydrocarbon installations in the port of

Manakara. The beaches are also polluted by human wastes (low use of latrines). In the coastal area, the groundwater is commonly brackish in dry season, and the crop areas are often flooded during the rainy season. Vatovavy Fitovinany is also a tropical cyclone crossing area (Nosy Varika) which have adverse and unpredictable effects. Finally, the same socio-economic issues as for the precedent regions also applies for Vatovavy Fitovinany.

• 3.0 ANNUAL REPORTING

Annually, the Implementing Partner will prepare an Environmental Mitigation and Monitoring Report (EMMR) to be submitted to the Activity Manager/AOR/COR and the USAID Environmental Compliance Database. This report will summarize the effectiveness of mitigation measures, issues encountered, resolutions, and lessons learned. As appropriate, attachments such as site photos, verification of local inspections, product warranties, etc. should also be included.

• 4.0 EMMP TABLE FOR RANO WASH ACTIVITIES

List of RANO WASH project activities falling under Categorical Exclusion

Threshold Determinations: Categorical Exclusion per 22 CFR 216.2 (c) (viii)

Activity description	
PROJECT MANAGEMENT & CROSS CUTTING ISSUES	
Program Coordination Team	
Regional Launching in Vakinankaratra including courtesy visit	
Implementation of the selection process of the next intervention communes by a Demand led approach	
Courtesy visit in the FY2020 two intervention regions: Matsiatra Ambony and Amoron'i Mania	
Recruitment of subgrantees for the next two intervention regions, Matsiatra Ambony and Amoron'i Mania	
Project coordination, internal meetings, and project staff training activities	
MONITORING EVALUATION & LEARNING	
Promotion of the use of baseline survey data in the RANO WASH regions (Workshops at national and regional levels)	
Implementation of the annual beneficiary-based survey (recruitment, training, field data collection)	
Implementation of the baseline survey and WASH infrastructure inventory in the 3 new regions (Vakinankaratra, Amoron'i Mania, Matsiatra Ambony)	
Regional SMILER workshop: Vakinankaratra region	
Data Quality Assessment, development of ICT4D and database management tools	
SO1. Governance and monitoring of water and sanitation strengthened for sustainable and equitable WASH services	
IR1.1	**IR1.1 Strengthened government and stakeholder commitment and accountability to sector development**
Output 1.1.1.	Sector coordination and learning mechanisms operating effectively under strong national leadership
Act 1.1.1.1	Discussions between thematic groups to document best practices and lessons learned of the WASH sector
Act 1.1.1.2	Capacity building and mobilizing of private sector groups to discuss key needs for the WASH private sector development
Act 1.1.1.3	Capacity building and mobilization of WASH CSOs to discuss their key priorities
Output 1.1.2.	Ministry in charge of WASH institutional capacity developed to meet strategic needs
Act 1.1.2.1	Participation in development of sector plan (PSEAH)
Act 1.1.2.2	Study/workshop to develop costing of PS-EAH
Act 1.1.2.3	Study/workshop for the development National Plan for Investment
IR1.2	**IR1.2 Improved sector monitoring, analysis and learning, influencing policy**
Output 1.2.1.	SE&AM strengthened and extended
Act 1.2.1.1	Meeting with DREAH on activities for the regional SE&AM
Act 1.2.1.2	Regional support to DREAH to be operational for the SE&AM process
Act 1.2.1.3	Workshop to launch SE&AM and BPOR
Act 1.2.1.4	Coaching sessions for Commune/District/DREAH to update data
Act 1.2.1.5	Training for Communes to pilot the SE&AM ICT4D platform

Activity description	
Act 1.2.1.6	Working with the MoWASH to assess the sectorial review performance
Act 1.2.1.7	Contributing to conduct the WASH sectorial review taking in account the assessment results at national level
Act 1.2.1.8	Contributing to conduct the WASH sectorial review taking in account the assessment results at regional level
Output 1.2.2	Learning agenda implemented to increase and better regulate private sector engagement in WASH
Act 1.2.2.1	Mobilize potential actors to the learning activities
Act 1.2.2.2	Work with the DREAH to feed the digital library with the learning events deliverables
Act 1.2.2.3	Facilitate learning events for the RANO WASH project on PPP
IR1.3	**IR1.3 Strengthened sub-national systems**
Output 1.3.1	Decentralized resources available for sustained WASH service delivery
Act 1.3.1.1	Mobilize WASH actors at regional level to assess the progress achieved against BPOR/BPON and to define strategy to move forward
Act 1.3.1.2	Training of trainers and coaching for DREAH and RANO WASH team on STEAH capacity building
Act 1.3.1.3	Working session with the MoWASH on Communes' capacity building to set up and to coach STEAH
Act 1.3.1.2	Conduct capacity building of the STEAH
Output 1.3.2	Commune management capacities strengthened for WASH service delivery
Act: 1.3.2.4	Setting-up tax payment mechanism
Act: 1.3.2.5	Field visit for communes benefiting water supply systems construction
IR1.4	**IR1.4 Increased community control over WASH services**
Output 1.4.1	Communes and communities with an active civil society, aware of and organized to claim their right to water and sanitation
Act 1.4.1.1	Training for National CSO
Act: 1.4.1.2	Training for Regional CSO
Act: 1.4.1.3	CSO Mapping at communal level
Act: 1.4.1.4	Training and coaching for CSO at communal to develop advocacy plan and networking
Act: 1.4.1.5	Coach and Follow up CSO at communal level to implement their advocacy plan
Output 1.4.2	110 communes with functional WASH accountability mechanisms
Act: 1.4.2.1	Setting up SLC for each commune (59 new communes)
Act: 1.4.2.2	Training and coaching for SLC to be operational (dialogue sessions agenda)
Act: 1.4.2.3	Facilitate working sessions with District and Communes to implement SLCs' recommendations
Act: 1.4.2.4	Conduct national learning event on social accountability mechanism
Act: 1.4.2.5	Training and coaching for communes to implement social accountability mechanism
SO2. Private sector engagement in WASH service delivery increased and improved.	
IR2.1	**Improved WASH products, technologies, services and business models**
Output 2.1.3	Type and range of financial products for WASH services and products available and accessible increased
Act: 2.1.3.1	Informational visits on project to heads of financial institutions
Act: 2.1.3.3	Organize an "open house" to connect financial institutions and WASH service providers at the national level

Activity description	
IR 2.3	**Strengthened technical & business skills and competencies**
Output 2.3.2	Professional Associations Development
Act 2.3.2.1	Conduct an institutional diagnostic of the Private sector association (AOPDEM) specialized on water systems management in Madagascar
Act 2.3.2.2	Develop and implement a capacity building plan to the WASH private sector institution
SO3. Adoption of healthy behaviors and use of WASH services accelerated	
I.R.3.1	**IR3.1 Improved hygiene and sanitation behavior change solutions through applied research**
Output 3.1.1	Behavioral science innovations for WASH BC explored, iterated, evaluated
Act: 3.1.1.1	Publish and share action-research on BC conducted by LSHTM
Act: 3.1.1.2	Develop 4 action-research protocols
Act: 3.1.1.3	Implement BCD strategy for 3 regions (V7V, ALM, ATS)
Output 3.1.2	Studies of integrated population, health and environment (PHE) programming models stimulating cross-sectoral collaboration
Act 3.1.2.1	Develop and present an agenda for action-research on PHE with PHE actors in Madagascar
Output 3.1.3	WASH-Nutrition linkages researched
Act 3.1.3.1	Share the Action-research research for WASH-Nut to WASH and nutrition sector stakeholders to begin influence programs and policies
I.R.3.2	**IR3.2 Improved implementation of WASH behavior change at all levels: communities, government and private sector**
Output 3.2.1	WASH BC program coordination improved in RANO WASH regions
Act 3.2.1.1	Collaborate with MoWASH to coordinate WASH BC activities at the national level (quarterly meeting)
Act 3.2.1.2	Organize and participate in regional platform meetings to ensure coordination of activities at regional level
Output 3.2.2	Innovative CLTS and WASH BC implementation
Act 3.2.2.1	Identification, training and placement of gender focal points for RANO-WASH staff
Act 3.2.2.2	Training on gender and community mobilization for RANO WASH staff
Act 3.2.2.3	Production of gender promotion tools
Act 3.2.2.5	Training and coaching on VSLA for RANO WASH staff
Act 3.2.2.6	Training on training techniques for RANO WASH staff
Act 3.2.2.7	Identification and training - coaching for local promoters at communal level in the 110 intervention communes
Act 3.2.2.8	Coaching for local promoters on BC communication activities
Act 3.2.2.9	Coaching for CHV on promotion of health activities and PNSC promoter (in collaboration with MSP)
Act 3.2.2.10	Establish WASH committees to strengthen community participation and coordination
Act 3.2.2.11	Establish new VSLA groups and coaching for previous VSLA
Act 3.2.2.12	Encourage VSLA members to invest in WASH products/services
Act 3.2.2.14	Train and coach health facilities and schools in the WASH friendly
Act 3.2.2.15	BC activities specific to MHM at WASH friendly schools
Act 3.2.2.16	Celebrate and mobilize communities to create movements for change during world days
IR3.3	**Evidence-based WASH BC and hygiene promotion shared to influence policy**

Activity description	
Output 3.3.1	National-level networks, policies and programs engaged for sustainable WASH BC
Act: 3.3.1.1	Initiate learning hub discussions within the project and setup the learning hub at national and regional level
Act: 3.3.1.2	Attend, participate, initiate workshops and meetings on national level to share experiences, expertise and to influence policies: based on action research, formative research results

List of RANO WASH project activities falling under Negative Determination with conditions

Threshold Determinations: Negative Determination with Conditions, per 22 CFR 216.3(a) (2) (iii),

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
• **SO1. Governance and monitoring of water and sanitation strengthened for sustainable and equitable WASH services**						
• **IR1.3 Strengthened sub-national systems**						
• **Output 1.3.2 Commune management capacities strengthened for WASH service delivery**						
• Act: 1.3.2.1: Coaching of communes to develop PCDEAH (Commune WASH plans)	• Risk related to the quality of the design of the planned WASH infrastructures inside the commune area, not taking into account environmental aspects and the real need of the population	• Employ qualified and well-trained technician(s) to implement the design of each PCDEAH in an inclusive and participatory way. This implementation includes field works, planning, and establishment of the design document itself.	• PCDEAH effectively addressing WASH issues and taking into account environmental aspects	• Record of realization should be reported regularly each quarter and while relevant.	• RANO WASH Project Coordination Team (RW PCT) • Regional director of the ministry in charge of WASH[27] (Dir-WASH)	• This section will be filled inside each EMMR update
• Act: 1.3.2.2: Training of 8 communes on their roles relating to WASH service delivery	• Risk of non-sustainable water supply infrastructures and water resources	• Ensure that the training curricula includes sustainability issues and action towards water resources management / watershed protection	• Commune training package including an action plan related to sustainability and water resources management / watershed protection	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT • Dir-WASH	• Same as above
• Act: 1.3.2.3: Training for communal CAO		• Ensure that technical notation criteria, used in	• Qualified enterprises are chosen by the CAO	• Record of realization should	• RW PCT	• Same as above

[27] The current name of the ministry in charge of WASH is « Ministry of Energy, Water, and Hydrocarbons »

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
(tender evaluation committees)		bid processes to train the CAO, advantage enterprises that are having confirmed experiences and / or human resources, in order to ensure a good quality of implementation of each requested WASH infrastructure construction activity	for any requested construction activity	be reported regularly each quarter and while relevant.	• Dir-WASH	
• **SO2. Private sector engagement in WASH service delivery increased and improved.**						
• **IR2.1: Improved WASH products, technologies, services and business models**						
• **Output 2.1.1: A comprehensive WASH market assessment (WMA) strategy developed**						
• Act: 2.1.1.1: Under the leadership of the MoWASH, conduct WMA in the three new regions	• A risk of increased groundwater pollution could occur if the promotion of latrines was proposed in the absence of adequate environmental mitigation measures.	• Ensure that environmental concerns (distance between the bottom of the latrine pit and the water table) are taken into account in any latrine promotion strategy that may emerge during the implementation of WMA.	• Environmental measures are taken into account in any latrine promotion activity within the project.	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT • Dir-WASH	• Same as above
• **Output 2.1.2: Regional WASH market development plans drafted**						

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)**	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution**
						• Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
• Act 2.1.2.1: Work with a Consultant to develop the regional WMDP for the previous 3 regions	• Same as above	• Same as above	• Same as above	• Same as above	• Same as above	• Same as above
• Act 2.1.2.2: Develop WASH marketing plan per region						
• Act 2.1.2.3: Training and coaching for private sector actors to implement WMDP and marketing plan						
• **Output 2.1.3: Type and range of financial products for WASH services and products available and accessible increased**						
• Act: 2.1.3.2: Invite financial institutions to participate in the Regional WMDP presentation to engage them in the potential WASH market	• Same as above (Act: 2.1.1.1.)	• Same as above (Act: 2.1.1.1.)	• Same as above (Act: 2.1.1.1.)	• Same as above (Act: 2.1.1.1.)	• Same as above (Act: 2.1.1.1.)	• Same as above
• Act: 2.1.3.4: Support VSLA loans to initiate WASH small business i.e. hygiene product and sanitation marketing						
• Act: 2.1.3.5: Develop communication materials related to new loan						

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
products						
• **IR 2.2: Improved WASH products, technologies, services and business models**						
• **Output 2.2.1: Design and construction of sustainable WASH infrastructure improved**						
• Act 2.2.1.1: Conduct APS and APD	• Inappropriate Water Supply System (WSS) Criteria: Location (Distance, proximity to vulnerable / sensitive area, land tenure,); Water security (quality, quantity, sustainability); Technology (Type, Size, Number, Standards); Climate change risk (flooding, drought…); … • Inappropriate or Insufficient consideration of Climate change risk (flooding, drought…)	• Ensure that appropriate design of WSS in designed for the appropriate location with regards to population that need to be serve (water demand, geographical location) • Ensure that the best water resource (spring, groundwater, surface water) is used, based on accurate data related to their capacity of production in adequation with targeted people water demands, for any WSS design. • Ensure that both feasibility (APS) and detailed project design (APD) results are always communicated and	• APS and APD reports should be communicated to and validated by the community and the MoWASH before any use. Those communications should include the type of potentially mobilizable water resource, their mobilization technic / method (catchment box, dam, borehole, …). • APS / APD reports taking into account Climate Change Attenuation / Adaptation	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT • RW Studies Contractors – • And particularly Sandandrano and BushProof (which belong to RANO WASH IP Consortium)	• Same as above

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
		validated by the beneficiary community and the MoWASH before any construction • Identifying, Planning and Applying appropriate actions aiming to the Attenuation of or Adaptation to Climate change impact / risk				
• Act 2.2.1.2: Select short list of enterprises for construction and investment-management	• Risk of non-sustainable water supply infrastructures	• Ensure that technical notation criteria, used in the bid processes, advantage enterprises that are having confirmed experiences, and / or qualified human resources, and having confirmed capacity for cost-sharing, in order to ensure a good quality of implementation, and sustainability of each requested WASH infrastructure construction activity	• Minimal requirement for qualification of enterprises is set-up when building the bid short-list	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT and consortium members	• Same as above
		• Train short-listed enterprises about the technical minimum requirement (established	• Short-listed enterprises are trained on RANO WASH technical requirements before	• Record of realization should be reported regularly each	• RW PCT	• Same as above

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
		by the project) before launching any bid process	submitting for any bid process	quarter and while relevant.		
• Act 2.2.1.3: Develop ESF and monitor its implementation in the construction sites	• Non-compliance with environmental paper applicable to the RANO WASH project: 22 CFR 216, HPN-IEE, Malagasy regulation related to environment, project issued documentation (EMMP, WQAP, CRM Plan)	• As most of RANO WASH construction activities have no significant adverse impact on environment, a detailed environmental and climate change related concerns analysis will be provided on the Environmental Screening Form (ESF) related to each construction site	• No construction activity will start before the approval of the related ESF	• Record of realization should be reported regularly each quarter and while relevant. A final report of Environmental Status will be done at the end of each construction activity.	• RW PCT, • BushProof, • Sandandrano	• Same as above
• Act 2.2.1.4: Contract and Monitor water infrastructures construction and management	• Risk of non-sustainable water supply infrastructures. • Non-respect of the quality, norms and standards as linked to the environment and the water quality – and management sustainability.	• Following the technical standards of each WSS identified and respecting water quality standards and environmental norms	• Technical standards and environmental norms are respected during the construction activities and validated by the appropriate experts / engineers (at least an acknowledged by the project, and another provided by the MoWASH) • • The quality of the	• Record of realization should be reported regularly each quarter and while relevant. A final report of completion will be done at the end of each construction activity.	• RW PCT, • BushProof, • Sandandrano	• Same as above

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
			water is verified as safe accordingly to the approved Water Quality Assurance Plan (WQAP) of RANO WASH			
• **IR 2.3: Strengthened technical & business skills and competencies**						
• **Output 2.3.1: Capacity building for private sector in business systems and technical operations strengthened**						
• Act 2.3.1.1: Provide on-the-job technical training on management to private companies	• Risk of non-sustainable water supply infrastructures.	• Ensure that the WSP is well-trained on-the-job relatively to Operation & Maintenance (O&M) of its Water Supply System.	• Proof / documentation of effective support provided to WSP by the project field partners (subgrantees),	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT, • BushProof, • Sandandrano, • Dir-WASH	• Same as above
• **SO3. Adoption of healthy behaviors and use of WASH services accelerated**						
• **IR3.2 Improved implementation of WASH behavior change at all levels: communities, government and private sector**						
• Output 3.2.2: Innovative CLTS and WASH BC implementation						
• Act 3.2.2.4: Basic and advanced CLTS training for staff • Act 3.2.2.13: CLTS Triggering and FUM activities at	• Lack of environmental issue awareness • & consideration Inappropriate and unsecured building	• Include environmental measures in training programs. • These measures will concern the respect of the safety distance between the bottom of the latrine pits and the water table,	• Preventive measures against environmental problems caused by the multiplication of latrines are considered during the follow-up phases	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT • RW Subgrantees	• Same as above

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
village/fokontany level	risk	as well as the horizontal distance between a latrine and a well or other groundwater withdrawal point. • • Train local masons aiming to promote improved and secured latrine building after the village has been verified as ODF.				
• **Output 3.2.3: Communication Marketing developed for WASH products and services**						

• **Project/Activity/Sub-Activity**	• **Identified Environmental Aspects or Impacts**	• **Mitigation Measure(s)** •	• **Monitoring Indicator(s)**	• **Monitoring and Reporting Frequency**	• **Responsible Parties**	• **Field Monitoring/Issues/Resolution** • Field monitoring needs to be adequately addressed i.e. monitoring dates, observations, issues identified and resolution
• Act 3.2.3.1: Implement marketing campaign on WASH products and services in communes where products and services are available	• A risk of increased groundwater pollution could occur if the promotion of latrines was proposed in the absence of adequate environmental mitigation measures. • • Potential spreading of dirt due to the multiplication of waste from WASH products (soap packaging, used sanitary napkin residue, etc.)	• Ensure that environmental concerns (distance between the bottom of the latrine pit and the water table) are taken into account in any latrine promotion strategy. • • Promote the use of recyclable/reusable products (such as washable sanitary napkins) or biodegradable products to minimize environmental impacts •	• Environmental measures are taken into account in any latrine promotion activity within the project. • • WASH products and services promoted in an environmentally friendly way	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT • RW Subgrantees	• Same as above

USAID APPROVAL OF EMMP

Approval:		
	[NAME], Activity Manager/A/COR [***required***]	Date
Clearance:		
	[NAME], Mission Environmental Officer [***as appropriate***]	Date
Clearance:		
	[NAME], Regional Environmental Advisor [***as appropriate***]	Date
Concurrence:		
	[NAME], _____ Bureau Environmental Officer [***as appropriate***]	Date

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EMMR Annex 3 Water Quality Update Q4

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
Phase of detailed project design (APD)	Atsinanana	Toamasina II	Ampasimbe Onibe	3/21/2018	Water stream in	49.35467	17.63561	156	3.0	8.2	70	35	20	< 5	45.0	20.0	1.3	-	2	8.1	6	28.0	**0.5**	-	< 0,01	nc	nc	nc	nc	BushProof	Design	**Not Safe**	The objective of water quality analyses during the detailed design phase of the	The structures in the detailed design file (APD) are a filter and disinfection unit because surface water potentially	Serge RANAIVOJAONA, Director of BushProof
				3/9/2018	Water spring in	49.38122	17.63308	54	0.2	**4.9**	70	36	26	< 5	100.0	50.0	1.3	32.0	1	0.9	8	24.0	0.2	-	< 0,01	nc	nc	nc	nc	BushProof	Design	**Not Safe**			
Phase of	Atsinanana	Toamasina II	Ampasimbe	5/16/2019	30m3 water tank	nc	nc	nc	N/A	7.7	44.5	22.0	< 10	2.0	18.3	10.0	2.0	5.6	nc	3.1	1	8.4	< 0,05	0.7	< 0,01	< 0,05	1.3	**> 200**	**46**	Institut Pasteur	Safety validation	**Not Safe**	Safety validation is done at the end	**Q3 Update:** For the Ampasimbe Onibe system to	Marcelin RANDRIATSITO HAINA -

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				5/16/2019	BS (social	nc	nc	nc	nc	7.6	438.8	220.0	< 0	< 0,002	18.3	300	0.5	6.0	nc	2.2	1	4.2	< 0,005	0.6	< 0,001	< 0,005	1.2	V 200	48	Institut Pasteur	Safety validation	Not Safe			
				5/16/2019	BS (social	nc	nc	nc	nc	7.5	377.7	190.0	< 0	< 0,002	12.2	350	0.2	4.8	nc	4.0	1	8.4	< 0,005	0.6	< 0,001	< 0,005	0.4	V 200	25	Institut Pasteur	Safety validation	Not Safe			
				5/16/2019	BS (social	nc	nc	nc	nc	7.5	400.0	200.0	< 0	< 0,002	18.3	350	0.3	2.4	nc	3.2	2	4.2	< 0,005	0.6	< 0,001	< 0,005	1.3	V 200	20	Institut Pasteur	Safety validation	Not Safe			
				5/16/2019	BP (private	nc	nc	nc	nc	7.6	400.0	200.0	< 0	< 0,002	12.2	350	0.4	2.8	nc	3.0	< 0,005	8.4	< 0,005	0.5	< 0,001	< 0,005	1.8	V 200	47	Institut Pasteur	Safety validation	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
Phase of detailed project	Atsinanana	Toamasina II	Mahavelona	4/10/2018	Barrage Ranomainty					7.2	37	37	27										0.1			<0.05	0.5	nc	nc	Sandandrano	Design		The Ranomainty dam is a	It was agreed that water quality would be closely	Gerald RAZAFINJATO Director of Sandandrano
Phase of	Atsinanana	Toamasina II	Mahavelo	3/4/2019	Ranomainty					6.5	60	39	35	<10	nc	Low	nc	nc	nc	nc	nc	nc	nc	nc	nc	<0.05	3.8	nc	nc	Villanova	Monitoring	Not Safe	The water	The results were shared	Marcelin RANDRIATSIT OHAINA -

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				3/4/2019	Foulpointe					6.6	150	104	32	<5	nc	Low	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	<0,05	nc	nc	Villanova	Monitoring	Not Safe			
				3/4/2019	Monoblo					7.1	150	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Villanova	Monitorin	Not Safe			
				5/16/2019	Réservoir					6.8	139	71	<10	<0,02	12.2	15.0	1.9	20.8	nc	17.5	36	4.2	0.1	0.7	<0,01	<0,05	1.4	<1	<1	Institut	Safety	Safe			
				5/16/2019	Château					6.8	159	79	<10	2.0	36.6	15.0	1.6	19.2	nc	20.0	1	<0,05	0.1	0.8	<0,01	<0,05	1.7	<1	<1	Institut	Safety	Safe	In general, parameters	**Q3 Update:** These results were communicated to the	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml							
				5/16/2019	BP 1 (Private					6.9	165	83	<10	<0,02	427	100	1.4	216	nc	18.0	1	4.2	0.1	0.7	>0,1	<0,05	1.7	<1	<1	Institut	Safety	Not Safe			
				5/16/2019	BS 1 (Social					7.0	178	89	<10	<0,02	427	150	1.5	320	nc	18.0	1	4.2	0.2	0.7	<0,01	<0,05	2.8	<1	<1	Institut	Safety	Safe			
				5/16/2019	MultiPEC 1					7.1	169	24	<10	<0,02	427	100	1.5	228	nc	18.0	1	8.4	0.1	0.7	>0,1	<0,05	2.1	<1	<1	Institut	Safety	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
Phase of construction of the WSS	Atsinanana	Vatomandry	Ilaka-Est	3/6/2019	Water Tank					8.4	150	70	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low (<50)	nc	nc	Villanova University	Monitoring	Not Safe	The water quality monitoring activities undertaken	The recommendations issued by the students were taken into account and communicated to the WSP in	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana
				3/6/2019	One of Ilaka Est sanitary					6.5	167	79	28	8.0	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low (<0,1)	Low (<50)	nc	nc	Villanova University	Monitoring	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				5/15/2019	50m3 water tank					7.6	42	21	<10	<0,02	6.1	5.0	3.3	1.6	nc	9.6	<0,05	<0,05	0.1	0.6	<0,01	<0,05	<0,05	<1	<1	Institut Pasteur de	Safety validation	Safe	The water stored in	**Q3 Update:** These results and interpretations have been shared with the system manager who is currently implementing a general cleaning	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana Tiana Zo RAKOTOARISOA
				5/15/2019	MultiPEC (another					7.3	68	33	<10	**14.0**	12.2	10.0	0.1	2.8	nc	13.5	2	<0,05	**0.8**	0.5	<0,01	<0,05	1.3	**30**	<1	Institut Pasteur de	Safety validation	Not Safe	Abnormal increase in		
				5/15/2019	Private connection					7.0	68	34	<10	**8.0**	6.1	5.0	1.7	4.8	nc	12.0	13	<0,05	0.1	0.6	<0,01	<0,05	1.6	**19**	<1	Institut Pasteur de	Safety validation	Not Safe	High turbidity and		

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				5/15/2019	Social connection					6.7	70	34	<10	**10.0**	6.1	5.0	0.1	3.2	nc	13.5	6	<0,005	<0,005	0.5	<0,001	<0,005	1.4	**14**	<1	Institut Pasteur de	Safety validation	**Not Safe**			
				5/15/2019	Social connection in					6.9	72	36	<10	4.0	18.3	15.0	2.5	3.2	nc	14.0	9	<0,005	<0,005	0.8	<0,001	<0,005	1.8	**12**	**1**	Institut Pasteur de	Safety validation	**Not Safe**	presence of coliform		
Phase of	Atsinanan	Brickaville	Andovo	3/5/2019	Water					6.8	33	26	nc	**7.0**	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Villanova	Monitorin	**Not Safe**	The water	The recomme	Marcelin RANDRIA TSITOHAI

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				3/5/2019	Water Tank /Chlorination					6.0	402	272	30	< 5	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low (< 0,1)	3.8	nc	nc	Villanova University	Monitoring	Not Safe			
				3/5/2019	Multipec in Ambila					nc	370	247	31	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low (< 50)	nc	nc	Villanova University	Monitoring	Not Safe			
				5/13/2019	water head					7.2	179	90	< 10	< 0,02	18.3	150	3.1	8.4	nc	32.0	34	16.8	< 0,05	0.9	< 0,01	< 0,05	1.2	< 1	< 1	Institut	Safety	Safe	At the end of	**Q3 Update:** The clean-up	Marcelin RANDRIATSIT OHAINA -

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml							
				5/13/2019	Private water					7.1	204	102	<10	<0,02	183	150	0.8	6.8	nc	300	44	16.8	0.1	0.7	<0,01	<0,05	0.2	<1	<1	Institut	Safety	Safe			
				5/13/2019	Social water					7.1	220	110	<10	<0,02	366	300	3.4	7.6	nc	160	58	4.2	0.1	0.8	<0,01	<0,05	1.7	8	<1	Institut	Safety	Not Safe			
				5/13/2019	Private water					7.0	215	108	<10	2.0	183	150	0.8	4.4	nc	340	46	12.6	0.1	0.7	<0,01	<0,05	0.9	<1	<1	Institut	Safety	Safe			
				5/13/2019	Multinec in					7.1	200	100	<10	2.0	183	150	1.5	3.2	nc	280	47	8.4	0.1	0.8	<0,01	<0,05	0.7	<1	<1	Institut	Safety	Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml							
Phase of construction of the WSS	Atsinanana	Brickaville	Rangomafana-Est	3/3/2019	Monobloc in Rangomafana					7.6	24	17	29	< 5	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low (< 0,1)	nc	nc	nc	Villanova University	Monitoring	Not Safe	Apart from the similar interpretations	Tests for the validation of potability are done once the work is completed, and	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana
				3/3/2019	Main					6.9	27	17	30	< 10	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Villanova	Monitorin	Not Safe			
				5/14/2019	50m3 water					7.9	23	11	< 10	< 0,02	18.3	150.0	0.3	2.8	nc	2.6	1	4.2	< 0,05	0.4	< 0,01	< 0,05	0.8	> 2000	1	Institut Pasteur	Safety validation	Not Safe	Generalized	**Q3 Update:** The efficiency of the	Marcelin RANDRIATSITOHAINA - RPSM of

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml							
				5/14/2019	FID Filter outlet					7.5	18	9	<10	**8.0**	6.1	50	0.2	2.0	nc	1.9	1	<0,05	<0,05	0.5	<0,01	<0,05	0.9	**>2000**	**7**	Institut Pasteur	Safety validation	**Not Safe**				
				5/14/2019	Social					7.4	22	11	<10	<0,02	12.2	10.0	1.4	2.4	nc	2.5	<0,05	<0,05	<0,05	0.4	<0,01	<0,05	0.5	**>2000**	**2**	Institut Pasteur	Safety validation	**Not Safe**				
				5/14/2019	Private					7.4	22	11	<10	<0,02	6.1	5.0	1.1	4.8	nc	3.0	<0,05	<0,05	<0,05	0.5	<0,01	<0,05	0.7	**>2000**	**6**	Institut Pasteur	Safety validation	**Not Safe**				

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				5/14/2019	MultiPEC					7.5	21	10	<10	<0,02	6.1	5.0	1.6	5.6	nc	1.7	<0,05	<0,05	<0,05	0.4	<0,01	<0,05	0.6	>2000	2	Institut Pasteur					
																														Safety validation				
Phase of detailed project design	Vatovavy Fitovinany	Vohipeno	Andemaka	4/1/2018	Well 01					5.1	nc	nc	22	nc	400.0	200.0	3.0	14.0	7	10.5	25	500	0.4	-	nc	nc	nc	nc	nc	BushProof	BushProof Design	Not Safe			
				4/1/2018	Well 05					6.7	nc	nc	22	nc	95.0	45.0	3.2	7.0	6	9.4	24	90	0.1	-	nc	nc	nc	nc	nc	BushProof	BushProof Design	Not Safe			
				3/9/2018	Water	47.758 30	22.278 44	16		6.7	532	267	26	7.5	400.0	200.0	3.0	12.0	7	10.5	25	500	0.4	-	-	nc	nc	nc	nc	BushProof	BushProof Design	Not Safe	The objective of water quality	The structures in the detailed design file (APD) are a filter and disinfection	Serge RANAIVOJAONA, Director of BushProof

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				3/9/2018	Captage					6.4	382	192	26	<5	95.0	45.0	3.2	32.0	6	9.4	24	90	0.1	-	-	nc	nc	nc	nc	BushProof	Design	Not Safe			
				3/7/2018	Matitana					6.0	86	60	nc	<25	nc	nc	nc	nc	nc	nc	nc	nc	1.0	nc	nc	0.1	4.4	nc	nc	BushProo	Design	Not Safe			
Phase of construction of the	Vatovavy Fitovinany	Vohipeno	Andemaka	2/14/2019	New water	47.758 33	22.278 35	10	4.2	7.0	92	66	25	<5	110.0	550.0	2.3	3.0	7	100.0	6	120.0	0.2	0.3	<0.01	nc	nc	nc	nc	BushProof	Monitoring	Not Safe	Those borehole are not used	As the rehabilitation of the water tank and distribution	Ranto RABEMANANTSOA - Regional Private Sector Officer (RPSO) of RANO WASH
				2/14/2019	Secondment	47.758 34	22.278 42	10	2.8	7.2	96	66	25	<5	95.0	45.0	2.3	2.0	6	90.0	11	120.0	0.2	0.3	<0.01	nc	nc	nc	nc	BushProof	Monitoring	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				9/21/2019	New water catchment	47.75833	22.27835	10	nc	6.8	92	46	26	**6.0**	36.6	300.0	3.0	0.4	nc	<0,005	6	5.0	0.1	0.4	<0,001	**0.2**	3.8	<1	<1	Institut Pasteur de	Monitoring	**Not Safe**	The borehole or groundwater, currently being	The connections are still cut until the problem is solved.	Serge RANAIVOJAONA, Director of BushProof
				9/21/2019	Water tank in	47.76142	22.27736	30	nc	7.4	102	51	26	4.0	305	250	2.9	2.0	nc	<0.005	3	4.0	0.1	0.4	<0.001	0.1	2.3	<1	<1	Institut Pasteur de	Safety validation	**Safe**			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				9/21/2019	Social water				nc	7.2	102	51	25	6.0	36.6		2.5	0.4	nc	<0.05	1	4.0	0.1	0.3	<0.01	0.1	3.1	1	<1	Institut Pasteur de	Safety validation	Not Safe			
Phase of detailed project	Vatovavy Fitovinany	Ifanadiana	Kelilalina	3/23/2018	Source Kianjanomby	47.57073	21.22831	690	1.6	6.2	26	13	22	<5	45.0	20.0	0.7	14.0	-	-	1	13.0	0.1	-	-	nc	nc	nc	nc	BushProof	Design	Not Safe	The main concern raised from	Those data has already been taken into account in the	Ranto RABEMANANTSOA - Regional Private Sector Officer (RPSO) of RANO WASH in

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
Phase of construction of the WSS	Vatovavy Fitovinany	Vohipeno	Kelilalina	9/14/2019	Water tank in	47.57567	21.23814	637		6.9	49	27	26	2.0	<1	nc	0.2	1.2	nc	8.6	<0,05	1.0	0.2	0.2	<0,01	<0,1	2.0	<1	<1	Institut	Safety	Safe	The first 02 samples of the distribution and	N/A	N/A
				9/14/2019	Water kiosk					6.9	31	15	27	2.0	6.1	nc	<0,05	3.2	nc	0.5	<0,05	<0,05	0.1	0.2	<0,01	<0,1	1.7	<1	<1	Institut	Safety	Safe			
				9/14/2019	Filtration	47.57100	21.22742	724		6.6	27	13	27	4.0	<1	nc	1.1	1.2	nc	1.2	<0,05	5.0	**0.5**	0.2	<0,01	<0,1	1.9	<1	<1	Institut	Monitoring	**Not Safe**			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
Phase of detailed project design (APD)	Vatovavy Fitovinany	Ikongo	Ambatofotsy	6/20/2018	Source	47.475 33	21.800 22	390	2.5	5.3	50	30	18	<5	500.0	255.0	0.8	130.0	7	110.0	23	1.0	0.7	0.1	-	nc	nc	nc	nc	BushProof	Design	Not Safe	Those results belongs to the 03 systems of Ambatofotsy	Those works have almost been achieved in Q3, and the in the left data have all been taken into account for their	Ranto RABEMANANTSOA - Regional Private Sector Officer (RPSO) of RANO WASH in Vatovavy Fitovinany
				6/19/2018	Source	47.496 17	21.772 44	393	0.5	5.2	80	40	20	<5	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	BushProof	Design	Not Safe			
				6/19/2018	Source	47.499 36	21.769 17	389	1.3	5.1	30	15	19	<5	300.0	150.0	1.2	1.0	6	9.3	13	4.0	0.1	0.1	-	nc	nc	nc	nc	BushProof	Design	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				6/20/2018	Source Ambodiara	47.49578	21.79108	379	0.9	5.3	70	35	19	<5	400.0	200.0	1.4	26.0	6	8.6	21	4.0	0.1	0.2	-	nc	nc	nc	nc	BushProof	Design	Not Safe			
Phase of construction of the WSS	Vatovavy Fitovinany	Ikongo	Ambatofotsy	9/17/2019	Water Tank in	47.49369	21.76389	278	nc	6.8	22	11	25	2.0	6.1	5.0	2.4	<0.005	nc	<0.005	3	1.0	0.1	<0.005	<0.001	<0.1	2.0	8	<1	Institut Pasteur de	Safety validation	Not Safe	Presence of coliform despite the fact	Arrêter la distribution d'eau jusqu'à ce que le gestionnaire soit effectivement	Ranto RABEMANANTSOA - Regional Private Sector Officer (RPSO) of RANO WASH in Vatovavy Fitovinany
				9/17/2019	Social water				nc	7.0	30	15	27	6.0	12.2	10.0	2.8	<0.005	nc	<0.005	3	<0.005	<0.005	0.1	<0.001	<0.1	1.8	10	<1	Institut Pasteur de	Safety validation	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				9/17/2019	Water tank in	47.487 08	21.789 00	263	nc	6.9	44	22	25	<0.02	122.2	100.0	0.9	0.8	nc	<0.05	<0.05	1.0	<0.05	<0.05	<0.01	<0.1	2.2	<1	<1	Institut	Safety	Safe	Apart from temperature		
				9/17/2019	Social water				nc	6.9	40	20	25	<0.02	6.1	50.0	0.2	0.4	nc	<0.05	<0.05	1.0	<0.05	<0.05	<0.01	<0.1	2.3	<1	<1	Institut	Safety	Safe			
				9/17/2019	Water tank in	47.476 67	21.803 19	275	nc	6.9	41	21	26	<0.02	244.4	200.0	1.5	8.8	nc	<0.05	2	<0,05	<0.05	<0.05	<0.01	<0.1	1.8	<1	<1	Institut	Safety	Safe	Apart from temperature		
				9/17/2019	Social water				nc	6.9	43	22	25	<0.02	244.4	200.0	1.3	8.0	nc	<0.05	1	1.0	<0.05	<0.05	<0.01	<0.1	1.3	<1	<1	Institut	Safety	Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
Phase of construction of	Alaotra Mangoro	Moramanga	Beforona	6/12/2019	Beforona, Terrain baolina					7.7	65	65	19	**5.2**	37	30	2.4	9.6	nc	3.5	<0,05	4.2	<0,05	0.4	<0,01	**0.5**	0.7	<1	<1	Institut Pasteur de	Safety validation	**Not Safe**	The water is	**Q3 Update:** As the main water tank fed by the two	Stephane RALAINONY - Regional Private Sector Officer (RPSO) of RANO

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				6/12/2019	CSB II. Beforona (sampling					7.8	57	57	20	1.7	6.1	5.0	0.2	6.8	nc	4.3	<0,05	16.8	<0,05	0.4	<0,01	<0,1	0.6	<1	<1	Institut Pasteur de	Safety validation	Safe	The temperature exceeds the		
				6/12/2019	Water tank					7.8	55	55	21	1.1	12.2	10.0	0.5	4.8	nc	4.3	1	25.2	<0,05	0.4	<0,01	<0,1	0.3	<1	<1	Institut	Safety	Safe	Same point		
				6/12/2019	Sampling					7.3	50	50	20	1.2	6.1	5.0	0.8	7.6	nc	5.7	<0,05	33.6	<0,05	0.3	<0,01	0	0.2	<1	<1	Institut	Safety	Safe	The rate of		

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				8/28/2019	Water					7.5	80	72	21	1.0	48.8	<0,05	0.3	10.8	nc	13.8	4	15.0	0.1	0.1	<0,01	<0,05	0.4	<1	<1	Institut	Follow-up	Safe	Between the June 12, 2019 analysis and these results, the issues		
				8/28/2019	Water					7.4	78	70	21	1.0	36.6	<0,05	0.1	11.2	nc	13.1	1	11.0	0.3	0.2	<0,01	<0,05	0.5	<1	<1	Institut	Follow-up	Safe			
				8/28/2019	Water tank of					7.4	81	73	21	0.9	36.6	<0,05	1.2	12.4	nc	14.2	1	11.0	0.5	0.4	<0,01	<0,05	0.8	<1	<1	Institut Pasteur de	Follow-up	Not Safe			
				8/28/2019	Water					7.3	42	38	21	2.1	30.5	<0,05	1.4	7.6	nc	6.0	2	13.0	0.1	0.2	<0,01	<0,05	0.3	<1	<1	Institut	Follow-up	Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
Phase of detailed	Alaotra Mangoro	Moramanga	Sahatsy Anjiro	4/23/2018	Water catchment								24															> 2400	340	Institut Pasteur de	Design	Not Safe	The main purpose	The design of the treatment unit	Gerald RAZAFINJATO Director of
Phase of	Alaotra Mangoro	Moramanga	Sahatsy Anjiro	3/7/2019	Before treatment					6.7	28	13	27	< 10	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low	Low	nc	nc	Villanova	Monitoring	Not Safe	The water quality	The recommendations	Stephane RALAINONY - Regional Private

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml							
				3/7/2019	Water tank					6.4	51	37	23	<10	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low	Low	nc	nc	Villanova	Monitoring	Not Safe				
				3/7/2019	Social connection					6.9	35	16	27	10.0	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	Low	Low	nc	nc	Villanova	Monitoring	Not Safe				
				4/11/2019	Water tank of					7.5	34	34	9	5.1	12.2	nc	1.8	6.4	nc	5.0	6	210.0	0.1	0.5	<0,01	<0,1	0.6	>200	5	Institut Pasteur de	Monitoring	Not Safe	In general,	The cleanliness of the network has	Stephane RALAINONY - Regional Private	

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude	Debit lps	pH	Electrical	TDS (Total	Temperatu	Turbidity	*Bicarbonat	Carbonate	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium	Total Iron	Fluoride –	Arsenic	Nitrite –	Nitrate –	Coliforme	Escherichia	Tested by	Checking phase	Safety Check according	Comments / Interbretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Betwee	≤ 1600	≤ 500	≤ 15°C	≤ 5 NTU	Betwee	≤ 500	≤ 12	≤ 200	< 20	≤ 250	≤ 250	≤ 50	≤ 0.3	≤ 1.5	≤ 0.01	≤ 0.1	≤ 50	0/100ml	0/100ml						
				4/11/2019	Social connection					7.4	34	34	9	2.3	122.2	nc	1.2	6.4	nc	5.3	3	16.8	0.1	0.5	<0,01	<0,1	0.7	>2000	11	Institut Pasteur de	Monitoring	Not Safe			
				6/3/2019	Water tank of					7.5	66	66	10	4.8	3.7	30	1.3	21.2	nc	12.1	3	50.4	0.1	0.3	<0,01	0.06	0.5	<1	<1	Institut	Safety	Safe	After this second test and		
				6/3/2019	Social					7.4	60	60	10	12.0	12.2	10.0	1.3	16.4	nc	9.6	8	42.0	0.1	0.3	<0,01	0.08	0.8	<1	<1	Institut	Safety	Safe			

ANNEX 14. SUMMARY CHRONOLOGY OF WASH PPP MODELS IN MADAGASCAR

Type of PPP contract	Project Name	Implementing Agency	Financing	Year
Design, Build, Finance, Operate and Maintain (DBFOM) (30-year delegation contract)	Délégation de Gestion des Points d'Eau Collectifs (PEC) de la Commune Rurale de Sabotsy Namehana	**SANDANDRANO / Commune Sabotsy Namehana**	Sandandrano private fund	1999
Design, Build, Finance, Operate and Maintain (DBFOM) (5-year delegation contract)	Délégation de Gestion des Points d'Eau Collectifs (PEC) de la Commune Rurale d'Ivato Aéroport	**SANDANDRANO / Commune d'Ivato**	Sandandrano and Ivato Commune	2004
Design, Build, Finance, Operate and Maintain (DBFOM) (15-year delegation contract) Payback of the investment spread over 2 years	Délégation de Gestion des Points d'Eau Collectifs (PEC) de la Commune Rurale d'Ankaraobato	**SANDANDRANO / Commune rurale d'Ankaraobato**	Sandandrano and Ankaraobato rural Commune	2004
Design, Build, co-Finance, Operate and Maintain (DBco-FOM) (25-year delegation contract) (*Provision of a part of the pipping by BM*)	**PAEPAR** Alimentation en Eau Potable de la Commune rurale d'Ambohijanaka- Appui au développement du PPP pour la gestion et l'exploitation des 30 petits centres semi-urbain	**SANDANDRANO / Commune Ambohijanaka**	World Bank	2004- 2006
Build, co-Finance, Operate and Maintain (Bco-FOM) (15- 25-year delegation contract) (*Provision of a part of the piping by World Bank*	Mise en place d'un modèle de gestion privée des systèmes d'AEP dans les 02 sites potentiels retenus parmi les 06 localités étudiées	**FID** (Fonds d'Investissement pour le Développement)	World Bank	2007
Design, Build, co-Finance, Operate and Maintain (DBco-FOM) (10-30% co-financing et 90-70% subvention) (15-20-year delegation contract)	**MEDDEA I** Mise en place de mécanismes durables pour développer l'accès à l'eau potable et à l'assainissement dans les zones rurales - Madagascar	**GRET**	**AFD, Aquassistance, UE**, Région Auvergne, Région nord Pas-de-Calais, Agence de l'eau Loire Bretagne, Syndicat des eaux d'Ile de France, Fondation Suez Environnement initiatives	2008 - 2013
- Leasing Contract (affermage) (Design-Build 18 water systems done by the Project.) (10-year *Leasing*	**RANO HP**	**CRS** in consortium with **CARE**, **BushProof**, **Sandandrano**	**USAID**	2009-2012

Type of PPP contract	Project Name	Implementing Agency	Financing	Year
contract after water system construction) - Co-Finance, Operate and Maintain (co-FOM) for 2 water system (20-year delegation contract)				
- Leasing Contract (affermage) (Design-Build 10 water systems done by the Project. 15-year *Leasing contract after water system construction*)	**RANON'ALA**	**CRS** in consortium with, **BushProof**, and **Sandandrano**	**USAID**	2009-2012
Build, Invest, Operate, Transfer (BIOT) on **Sanitary Bloc** Land provided by the Commune of Antananarivo, Water connexion with Jirama's network 100% Private Operators financing (5-10-years management delegation contract)	L'amélioration de l'accès des ménages pauvres à l'eau potable, à l'hygiène et à l'assainissement en milieu Urbain Cas de la Commune d'Antananarivo et ses communes périphériques	**WSUP**	DFID, and others…	2012-2021
Leasing Contract (affermage) Operate and Maintain (OM) (15-year)	**PAEAR** **(**Projet d'Alimentation en Eau Potable et Assainissement en milieu Rural**)**	**Private Operator**	**BAD**	2013
Leasing Contract (affermage) , Operate and Maintain at Commune Level (Design-build assigned to engineering firm and SME). (100% project subsidy)	Section **WASH**	**UNICEF**	DFID – Ambassades (COREE, Allemagne, JAPON, …)	2014 – 2019
Co-Finance, Operate and Maintain (co-F, OM) (15-20-year management delegation contract)	**MEDDEA 2** Mise en place de mécanismes durables pour développer l'accès à l'eau potable et à l'assainissement dans les zones rurales - Madagascar	**GRET**	Agence française de développement (**AFD**), Aquassistance, Union européenne (**UE**), Région Auvergne, Région nord Pas-de-calais, Agence de l'eau loire Bretagne, Syndicat des eaux d'Ile de France, Fondation Suez Environnement initiatives	2015

Type of PPP contract	Project Name	Implementing Agency	Financing	Year
Build, co-Finance, Operate and Maintain (B,coFOM) *(10 - 20% WSP,* *90 - 80%* Project Subvention *VAT 20% state share)* (20-year delegation contract)	**RANO WASH**	**CARE** in consortium with **CRS**, **WAM**, **BP**, **SD**	**USAID**	2017-2022
Design, Build, co-Finance, Operate and Maintain (DBco-FOM) (5% share of Commune, 20% < Private Operators co-financing 80 -95% Project Subvention) (25-year delegation contract)	**RATSANTANANA 2019**	**HELVETAS**	W.P. Schmitz Foundations on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ)	2019

ANNEX 14. LIST TRAINING FY19

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
1	Commune	Strengthening the CSO WASH at Communal level	Training on win win advocacy, role and attribution, implementation, approach based on human rigth	**CSO WASH members at Communal level**	616	553	1169	Oct 18 to July 19	04 Régions FY19
2	Régional	Training on WASH-friendly schools	Build capacities of teachers on how to integrate WASH messages in classes	**Teachers**	108	168	276	November 2018 to june 2019	Atsinanana, Alaotra Mangoro, Vatovavy Fitovinany
3	Régional	Training on WASH-friendly health centers	Build capacities of health center staff on how to practice WASH messages within the health centers	**Heatlh center staffs**	19	71	90	November 2018 to june 2019	Atsinanana, Alaotra Mangoro, Vatovavy Fitovinany
4	National	Training of trainers on VSLA	Build the capacities of field workers on how to create and train VSLA groups	**Field workers**	39	11	50	November 2018 and March 2019	Manakara, Antsirabe
5	National	Regional consultation on WASH sectorial program (PSEAH)	Consultation for etablishing the WASH sectorial program (PSEAH)	**All WASH organisation working at Bongolava et Vakinankaratra Regions**	128	32	160	Nov and Dec 18	Antsirabe, Ampefy, Toamasina, manakara
6	Régional	Training on accountability mechanism - Atsinanana - Alaotra Mangoro - Vakinankaratra - Vatovavy Fitovinany	Induction on the accountability mechanism and operating process at the communal level. Strengthen community capacity control through participation in the accountability mecanism.	**Worker fields and member of Commune**	50 8 74	23 4 23	0	nov 18 and Aug 19 16 Aug 2019 07 and 08 aug 2019	Ambatondrazaka Antsirabe Manakara
7	Commune	Accountabity mechanism	Training on Accountability mechanism, implementation, functionning and cycle	**Concellor members, staff of Commun, SLC member, users**	445	105	550	Nov 18 to Sept 19	04 Régions FY19
8	National	Training of trainers - Gender sensitive community mobilization approach and	Strengthen capacity on community mobilization and technical facilitation to effective and rationnal intervention involving community and local opportunities.	**PCT and regional team of RANO WASH**	20	9	29	01 december 2018	Tanà

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
		facilitation techniques							
9	National	Training on STEAH - WASH Framework - Services sustainability	Strengthen STEAH capacity to ensure roles and responsibilities , operating and WASH sustainability services at municipal level	**STEAH**	24 60 58	6 7 6	0	03 to 07 Dec 2019 22 to 26 July 2019 26 to 30 Aug 2019	Antananarivo
10	Régional	Gender sensitive community mobilization approach and facilitation techniques	Strengthen capacity on community mobilisation and technical facilitation to effective and rationnal intervention involving community and local opportunities.	**Field workers**	98	43	141	December 2018, January and February 2019	Atsinanana, Alaotra Mangoro, Vakinakaratra, Vatovavy Fitovinany
11	ATS Region	Workshop on the restistution and validation of WMA and initiation process of WMDP	WMA study report and presentation of the PDMW development steps	**DREEH/ONG/COMPANIES /WATER SYSTEM MANAGER/CNEAGRA/DR SP/REGION/DRPPSPF/MA CONS/IMF/VOAMAMI**	15	4	19	11-12 Dec 18	Tamatave
12	V7V Region	Workshop on the restistution and validation of WMA and initiation process of WMDP	Development of an introduction to PDMW and business model for WASH markets	**CL/ML/JIRAMA/Private company/STEAH/STD/OSC EAH/DrEAH/CVSLA/DR**	27	10	37	17 au 18 jan 2019	Manakara
13	National	Tips for conducting WASH market assessment gender sensitive	Develop gender sensitive methodology and approach related on WASH market assessment	**Firm in charge of the assessment**	2	4	6	jan- feb 2019	Tanà
14	Régional	VSLA training	Build capacities of VSLA members to be able to make savings and grant loans	**VSLA members**	248	720	968	January to september 2019	Atsinanana, Alaotra Mangoro, Vakinakaratra, Vatovavy Fitovinany

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
15	ATS Region	Workshop on the WMDP elaboration process	In-depth analysis of problems by key products and services	**DREEH/BUSINESSES/ONG /ONG/WATER SYSTEM MANAGER/VILLAGE AGENT/IMF/DRPPSPF/MA CONS**	10	4	14	4-Feb-19	Tamatave
16	National	Exchange session with gender focal point	Discuss the gender time line of RANO WASH project and finalize the gender strategy and social inclusion	**Gender focal point**	12	13	25	06 feb 2019	Tana
17	ATS Region	Workshop on the WMDP elaboration process	Development of a business model per market share Satisfying priority actions: Water - Water Sanitation - Hygiene	**STD/Bank-IMF/Company/Water Manager/Region/DrEEH/ML /ONG/VOAMAMAMI/MAC ONS/DRSP**	16	4	20	20 au 22 fevrier 2019	Foulpointe
18	National	PCD EAH integrating gender and social inclusion aspect	Strengthen capacity on methodology and approach enabling to communal WASH planification taking account of the socio-cultural context and the specific needs of all categories of people in the community.	**Regional Directions on WASH, SO1 team, District responsibles**	15	8	23	27 feb 2019	Tanà
19	National	Training of trainers on Development of PCDEAH	Sharing procedure, activities and analysis for developping PCDEAH	**02 DREEH /Region District Responsible SO1 team at regional level**	15	8	23	27/02/2019 au 01/03/2019	Antananarivo
20	National	AOPDEM meeting	Evaluation of the needs of AOPDEM members	**EAH Sector companies members of AOPEDM**	11	3	14	28-Mar-19	Lacity
21	National	Training of trainers on ICT4D	Initiation of mwater et application with SE&AM updating data and follow up the user satisfaction on using Smartphone	**TA, MEAL RW Région, STEAH**	18 25	4 6	0	13, 14 Mars 2019 20 to 24 Aug 2019	Antananarivo Moramanga

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
22	Régional	Launch and training on SE&AM and BPOR - Vakinankaratra - Amoron'i Mania - Haute Matsiatra	Training on using SE&AM online user interface and updating process. Training on BPOR and consultation of BPOR data.	**STEAH, DREEH, private sectors, Mayor, Chief of Districts**	11 15	7 7	0	25 to 28 Mars 2019 24 to 26 Avril 2019 02 to 05 Avril 2019	Antsirabe Ambositra Fianarantsoa
23	Régional	Training in quick win advocacy - Antsinanana - ToT TA and SZ of Vakinankaratra - CSO Vakinankaratra team - CSO Vatovavy Fitovinany team - CSO Alaotra Mangoro	CSO regional General Assembly and training in quick win advocacy	**Regional and communal OSCEAH**	12 17 50 49	6 6 18 20	0	13 au 15 Mars 2019 10 to 12 Avril 2019 12 to 14 Aout 2019 April and sept 2109 April and Lujy 2019	Toamasina Antananarivo Antsirabe Ifanadiana and Manakara Moramanga
24	Commune	Project Owner Communal (MOC)	Training on the roles and responsibilities of staff at the commune level, PPP, contract monitoring, WASH service at the commune level	**Staff member of the Commune, councillor member**	890	347	1237	March to May 2019	04 Régions FY19
25	National	Tips on held an advocacy initiative taking account minority groups needs.	Develop appropriate methodology and approach taking account of the minority group needs.	**OSC**	12	6	18	12 april 2019	Tanà
26	Régional	Training on Grow-Up sticker approach	Build capacity on "grow-up sticker approach": six behaviors to promote, activities (household visits, group discussions, mass sensitization), household selection, duration, tools	**Local promoters**	384	738	1122	april to september 2019	Atsinanana, Alaotra Mangoro, Vakinakaratra, Vatovavy Fitovinany

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
27	Régional	Training on washable hygienic pad	Teach seamstresses on how to make a washable hygienic pads and on how to have a simple business plan	**Seamstresses**	9	25	34	April to june 2019	Vakinankaratra, Atsinanana
28	ATS Region	PDMW presentation meeting	Development of a business model per market share Satisfying priority actions: Water - Water Sanitation - Hygiene	**DrEEH/Company/NGO**	7	3	10	10-Apr-19	Bureau RW-ATS
29	Regoin V7V	Workshop on the WMDP elaboration process	Development of a business model per market share Satisfying priority actions: Water - Water Sanitation - Hygiene	**CL/ML/JIRAMA/Private company/STEAH/STD/OSC EAH/DrEAH/CVSLA/DR**	27	10	37	16-Apr-19	Manakara
30	National	Training of companies on call for expressions of interest	Procurement under PPP RANO WASH	**Companies in the EAH Sector**	51	10	61	April 24 to 25, 2019	CRS
31	National	Training of Companies on Fraud	Knowledge of fraud penalties	**Companies in the EAH Sector**	51	10	61	April 24 to 25, 2019	CRS
32	National	PPP and Finance WASH Training	Understanding delegated PPP management and WASH business plan	**Companies in the EAH Sector**	51	10	61	April 24 to 25, 2019	CRS
33	National	Training of Companies on Ferrocement	Capacity building of Agents of private operators pre-select 2019 wishing to invest in the management of EAH services	**Companies in the EAH Sector**	51	10	61	April 24 to 25, 2019	CRS
34	National	Training of companies on the market at a global and fixed price	Explanation of the procurement process under PPP RANO WASH	**Companies in the EAH Sector**	51	10	61	April 24 to 25, 2019	CRS
35	Régional	CLTS training	Build capacity on CLTs approach: pretriggering, triggering, Follow-Up Mandona, verification process, sanitation marketing, CLTS and gender	**Field workers**	77	39	116	May 2019	Atsinanana, Alaotra Mangoro, Vakinakaratra, Vatovavy Fitovinany

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
36	National	Training of managers of the 12 water supply systems, implemented by RANO WASH, in the management of delegated management contracts	Strengthen the capacity of water system managers and STEAHs set up by the project for all different aspects of water system management and operation according to 10 themes and customer satisfaction, Support participants to develop and provide WASH products and services accessible for all, taking account of social and cultural context.	**Permanent Staff of Operator or managers, Financial Staff of the manager, Chief Operating Officers, STEAHs of the municipalities involved, including a Mayor replacing the STEAH of Foulpointe, DREAH representatives from the three regions, (Atsinanana, Alaotramangoro, Vatovavy 7 Vinany) RANO WASH Regional Teams, Pools of trainers (Financial Specialist "SHOPS PLUS - RANO WASH", Public Private Partnership Specialist of RANO WASH, Specialist in the operation of the water supply system of SANDANDRANO and BUSHPROOF, Water infrastructure specialist technicians of RANO WASH, BC Specialist of RANO WASH)**	32	9	41	May 20-24, 2019	Foulpointe
37	Régional	Mobilisation of SLC - Vatovavy Fitovinany - Vakinankaratra - Alaotra Mangoro	Communal mobilisation , set up and training on the procedures	**Mayor, Deputy mayor, TA, SLC's member**	30 28 60	3 9 16	0	12 au 16 Mai 2019 27 et 28 Mai 2019 04 au 07 juin 2019	Manankara Antsirabe Ambatondrazaka

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
38	National	Training on ASUREP	Familiarize ASUREP roles and duty, and planning at local level	**Communal OSC where there are supply water and ASUREP**	18	5	23	22 au 23 Mai 2019	Antananarivo
39	National	Training of trainer of SE&AM	Training on using SE&AM to the DREEH team	**DREEH team members and MEEH**			0		Antananarivo
40	Régional	Mobilisation and SLC process setting up	Set up SLC	**Mayor and councillors**	30	3	33	14 may 2019	Manakara
41	ALMA Region	Training of CAO members from Anosibe Ifody and Amparafaravola	Training on Procurement under PPP RANO WASH, reminder of the situation and next steps, validation of restricted lists and launch of AOR	**DREEH/MAYOR/WATER USER/MEMBER OF THE MUNICIPAL COUNCIL**	6		6	19-Jun-19	Moramanga
42	ALMA Region	Workshop on the restistution and validation of WMA and initiation process of WMDP	WMA study report and presentation of the PDMW development steps	**CL/ML/JIRAMA/Private company/STEAH/STD/OSC EAH/DrEAH**	28	6	34	June 19-20, 2019	Ambatondrazaka
43	ATS Region	Training of CAO members and launch of AORs for Ampasimadinika, Mahatsara and Niarovana Caroline	Training on Procurement under PPP RANO WASH, reminder of the situation and next steps, validation of restricted lists and launch of AOR	**DREEH/MAYOR/WATER USER/MEMBER OF THE MUNICIPAL COUNCIL**	4	0	4	24-Jun-19	Tamatave
44	Régional	Training of trainer of SLC - Vatovavy Fitovinany field work team - Alaotra Mangor field work team	Involve implementations organisation in the SLC process setting up.	**Field workers and District responsibles**	36 32	2 16	0	18 to 20 June 2019 5 to 19 june 2019	Manakara Moramanga and Ambatondrazaka

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
45	National	Exchange visit	Appropriation of members on communal project management and the implementation of the private management system to ensure the sustainability of the services	**Mayor, President of the councillor, STC**	22	7	29	17 to 22 June 2019	Fianarantsoa, Antsirabe
46	Régional	Training of trainer in SLC process setting up	Increase community control by improving the dialogue between the goverment and the governed at communal level	**Worker fields, District responsible, Regional team**	17	10	27	18, 19 june 19	Manakara
47	Commune	Gouvernance Analysis	Training on commune self-assessment in terms of diagnosis on local governance, and WASH Sector improvement	**Staff member of the Commune, councillor member**	37	31	68	June and Aug 219	Alaotra Mangoro and Vakinankaratra
48	Commune	Etablishnig an Communal Plan on WASH (PCDEAH)	Process, concept	**Staff member of the Commune, councillor member and SLC members**	207	131	338	June to Aug 19	Vatovavy Fitovinany ALAOTRA MANGORO VAKINAKARATRA
49	National	"Men's engagement approach"	Develop the capacity of the partner actor on man engagement approach for women empowerment	**Gender focal point**	10	13	23	08 July 2019	Manakara
50	National	Requirements criteria for WASH infrastructure inclusive	Develop capacity on desing and set up WASH inclusive infractructure	**Sandrandrano, Bush proof, and Ministry partners**	4	6	10	July-Aug 2019	
51	ALMA Region	Workshop on the WMDP elaboration process	Identification of products and services to be developed and Development of business models by market share satisfying priority actions: Water - Water Sanitation - Hygiene	**CL/ML/JIRAMA/Private company/STEAH/STD/OSC EAH/DrEAH**	28	6	34	18-Jul-19	Ambatondrazaka

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
52	ALMA Region	Workshop on the WMDP elaboration process	Development of a business model per market share satisfying priority actions: Water - Water Sanitation - Hygiene	**DREEH/MAYOR/WATER USER/MEMBER OF THE MUNICIPAL COUNCIL**	34	13	47	August 14 to 16, 2019	Moramanga
53	National	Training on ICT4D	Use of smartphon for infrastructures inventary and benefiaciary satisafaction servey	**STEAH,worker fields, MEAL, RSE**	25	6	31	20 to 24 Aug 2019	Moramanga
54	Regional	Promote women and girls'leadership	Discuss challenges, develop together solutions that women and girls face for promoting their leadership	**Women and girls leader from Alaotra Mangoro**	0	23	23	3-Sep	Amparafaravola
55	National	Exchange session on gender and Behavior change strategy	Share the gender and behavior change strategy of RANO WASH	**National stakeholders**	16	13	29	3-Sep	
56	National	Technical and financial Monitoring	Strengthening the DREEH Team on technical and Financial Monitoring of the infrastrucuture inmplemented on the own region. Share with Haute Matsiatra team the Monitoring model	**DREEH team, Mayor, Private Manager of water supply, STEAH**	22	8	30	17 and 18 sept 2019	Fianarantsoa
57	Régional	Improvement of tax revenue - Alaotra Mangoro	Strengthen capacity communal governance for using all modality to improve tax revenu and increase WASH budget at municipal level . Mobilize to be participants to be taxpayer Improve local own resources	**Mayor, Deputy mayor, STC, STEAH**	71	10	81	24 to 27 Sept 2019	Moramanga
57	Régional	Improvement of tax revenue - Vakinankaratra	Strengthen capacity communal governance for using all modality to improve tax revenu and increase WASH budget at municipal level . Mobilize to be participants to be taxpayer Improve local own resources	**Mayor, Deputy mayor, STC, STEAH**	21	2	23	26, 27 Sept 2019	Antsirabe

N°	Level	Topic	Objectives	Participants	Number		Total	Date	Place
					Men	Women			
57	Régional	Improvement of tax revenue - Vatovavy Fitovinany	Strengthen capacity communal governance for using all modality to improve tax revenu and increase WASH budget at municipal level . Mobilize to be participants to be taxpayer Improve local own resources	**Mayor, Deputy mayor, STC, STEAH**	64	27	91	12 to 20 sept 2019	Manakara and Ifanadiana
58	National	GLASS	Workshop on GLASS framework	**All WASH organisation working at national level**	45	7	52	25-Sep-19	Ampefy

ANNEX 15. WASH – FRIENDLY SCHOOL PROCESS

In Q4, RANO WASH participated in multiple national-level working sessions on how to improve the WASH-friendly process in schools. While the project still uses the WASH-Friendly process described in national guidelines, RANO WASH is testing some additions and modifications that seek to ensure all actors, from regional to school level, have a sense of ownership and are ready to take responsibility at each step. The focus is on improving technical and management support for WASH committee members, as these are the actors tasked with monitoring progress and ensuring schools meet standards. This was validated by the Ministry of Education (MoNE). RANO WASH's next step will be implementation, along with the advocacy for a national endorsement from the MoNE and other actors. Only schools that have demonstrated clear willingness and commitment to improve their WASH situation will be supported by the project to maximize available project resources and collective action

	Key step	Expected result	Activities by RANO WASH staff	Remarks
1	Engage local and regional actors in the WFS process	School managers (FEFFI) and Commune, as well as MoNE at district and regional level (CISCO and DREN) demonstrate willingness to support WFS process	- Inform on the WFS process and its importance - Clarify the roles and responsibilities of each actor to achieve the WFS status - Establish a partnership agreement between the school and RANO WASH, with Commune's involvement as project owner (maître d'ouvrage)	
2	Support the school (management staff or FEFFI[28], teachers, pupils, parents) and the Commune (through STEAH) to undertake an initial self-assessment of the school's WASH situation	The school community and the Commune are aware of the WASH situation and decide to take action	- Facilitate an initial self-assessment of WASH situation: WASH behaviors and practices, access to WASH services and facilities, SWOT analysis, resources analysis - Facilitate restitutions of results to all stakeholders to allow feedbacks and strengthen ownership	The self-assessment has two components: (i) WASH practices and behaviors, management and sustainability issues,(ii) situation in relation to water and sanitation facilities and technical studies
3	Support the setting up of a school WASH Committee	The WASH committee is set up at school level. It will work with the FEFFI and will focus on improving access to WASH services and practices within the	- Identification of key members within school community: teachers, parents, students, managers	STEAH, as well as district level authorities are always

[28] FEFFI *(Farimbon'Ezaka ho Fahombiazan'ny Fanabeazana eny Ifotony)* is the official management structure established in each public school in Madagascar since 2015

	Key step	Expected result	Activities by RANO WASH staff	Remarks
		school community. WASH committee is the key structure to lead the WFS process to achieve the WFS status.	- Facilitate the definition of clear roles and responsibilities of committee members - Facilitate the development of an action plan to achieve WFS status	involved as much as possible through restitution, information sessions, etc.
4	Support the organization of training sessions for school WASH committee members and teachers	School WASH committee members have the organizational and managerial skills to lead the WFS process Teachers have the technical skills to integrate WASH messages and behavior change activities in the daily lessons for students	- Organize and hold training sessions for WASH committee members - Facilitate the organization of training sessions for teachers	Training sessions for WASH committee members can be conducted by project's staff using the handbook developed by MoNE Training sessions for teachers can only be done by trained trainers from the MoNE RANO WASH will support the MoNE to identify and train regional trainers, as well as improve the training curriculum
5	Support the setting up of management - operations and maintenance plan of infrastructure	WASH committee members have the technical skills to operate and maintain WASH facilities, as well as management plan to ensure sustainability An operation and maintenance plan is available	- Organize and hold technical training for WASH facilities management, operation and maintenance - Support the development of a management, operation and maintenance plan	The commune, as project owner, will play a big role in the discussions and the involvement for the operationalization of the management and maintenance plan

	Key step	Expected result	Activities by RANO WASH staff	Remarks
6	Support the construction or rehabilitation of WASH infrastructure (toilet, hand-washing system, shower…)	The school meets the required criteria in relation to access to water and sanitation facilities	- Support the school to develop a context-specific inclusive infrastructure plan - Support the school to construct or rehabilitate those infrastructures by mobilizing their own resources or partly fund the construction works	Infrastructure construction or rehabilitation is not funded by RANO WASH in its entirety. The WASH committee, along with the FEFFI, are encouraged and supported to mobilize their own resources to improve their WASH facilities. RANO WASH will support part of the required facilities, including access to improved latrine, access to safe water and handwashing devices.
7	Organize regular follow-up and technical support sessions to encourage the school to be able to self-proclaim as WFS	The school community practice WASH behaviors and use WASH facilities WASH Committee members use the management plan to make sure the facilities are always in good shape The school community self-proclaims as WFS	- Provide technical or organizational insights on how to manage WASH services and activities, including behavior change activities such as nudges, within the school - Organize regular follow-up with MoNE responsible at district and regional level - Encourage stakeholders to bring potential issues to be discussed within SLC	

This process is specific for RANO WASH's current support to schools as part of the WASH Friendly process. A similar process will be developed with the MoPH. However, the project is aware that the WASH-Friendly process requires high levels of advocacy to address issues related to sustainability of access to WASH services. As WASH in schools is not yet considered as priority, there is a lack of specific budget

allotted to WASH expenses in FEFFI and Commune budget. Advocacy will need to work to negotiate increases in investment for schools, in parallel to the support listed above.

ANNEX 16. GREEN LINE UPDATE Q4.19

RANO WASH GREEN LINE

The Green Line or «Ligne Verte» is an accountability tool used by the RANO WASH program. This accountability system uses a telephone hot line, which allows all beneficiaries and community members to express their views and provide feedback on the RANO WASH activities being implemented in their communities. During monthly meetings, field agents review how to effectively promote the Green Line among community members to expand awareness of this service. Posters advertising the Green Line are posted in public places, such as mayor's offices and health centers, to maximize visibility in project intervention communes. About three posters were distributed to each fokontany in the intervention communes.

Two numbers can be used to make calls :

364
for TELMA network users

032 32 037 07
for ORANGE network users

Green Line calls are received during office hours (8am - 5pm) from Monday to Friday and are free (cost = 0 Ar).

Who can use the Green Line?
Anyone involved in RANO WASH activities or interested in the project may use the system, including project staff

People can call for the following reasons:

- Requests for information on project activities or use of the Green Line

- Feedback (positive or negative) and recommendations,

- Complaints or grievances related to project activities or staff, etc.

The Green Line system is not appropriate for the following:

- Tracking information that does not concern RANO WASH and its partners,

- Replacing local authorities or making legal decisions,

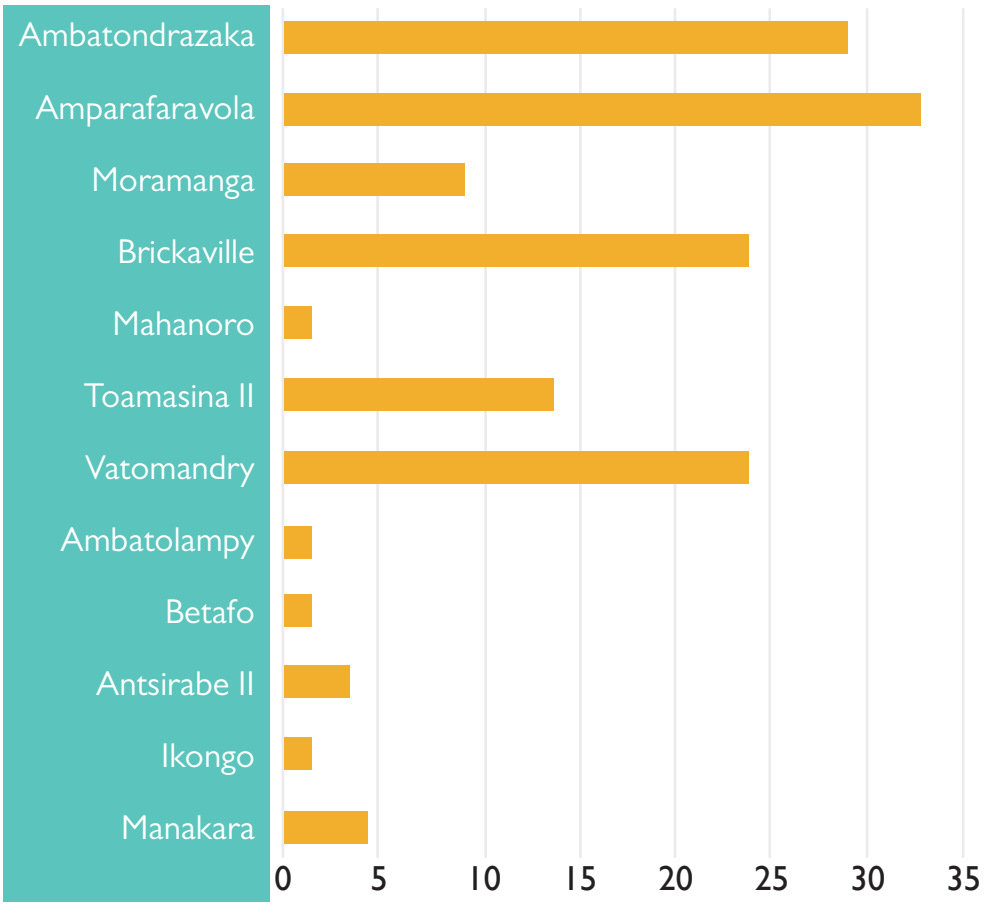
- Providing solutions for conflicts between community members.

Sensitive information received during calls is kept confidential and is responded to as quickly as possible. Calls may be anonymous. The caller does not need to share his/her name, but should state the reason for calling and the general location of the call, if relevant.

FY19 Green Line Calls

Region	District	Number of calls
ALAOTRA MANGORO (ALM)	Ambatondrazaka	29
	Amparafaravola	33
	Moramanga	9
ANTSINANA (ATS)	Brickaville	24
	Mahanoro	1
	Toamasina II	14
	Vatomandry	24
VAKINAKARATRA (VKN)	Ambatolampy	1
	Betafo	1
	Antsirabe II	3
VATOVAVY FITOVINANY (V7V)	Ikongo	1
	Manakara	4
	TOTAL	**144**

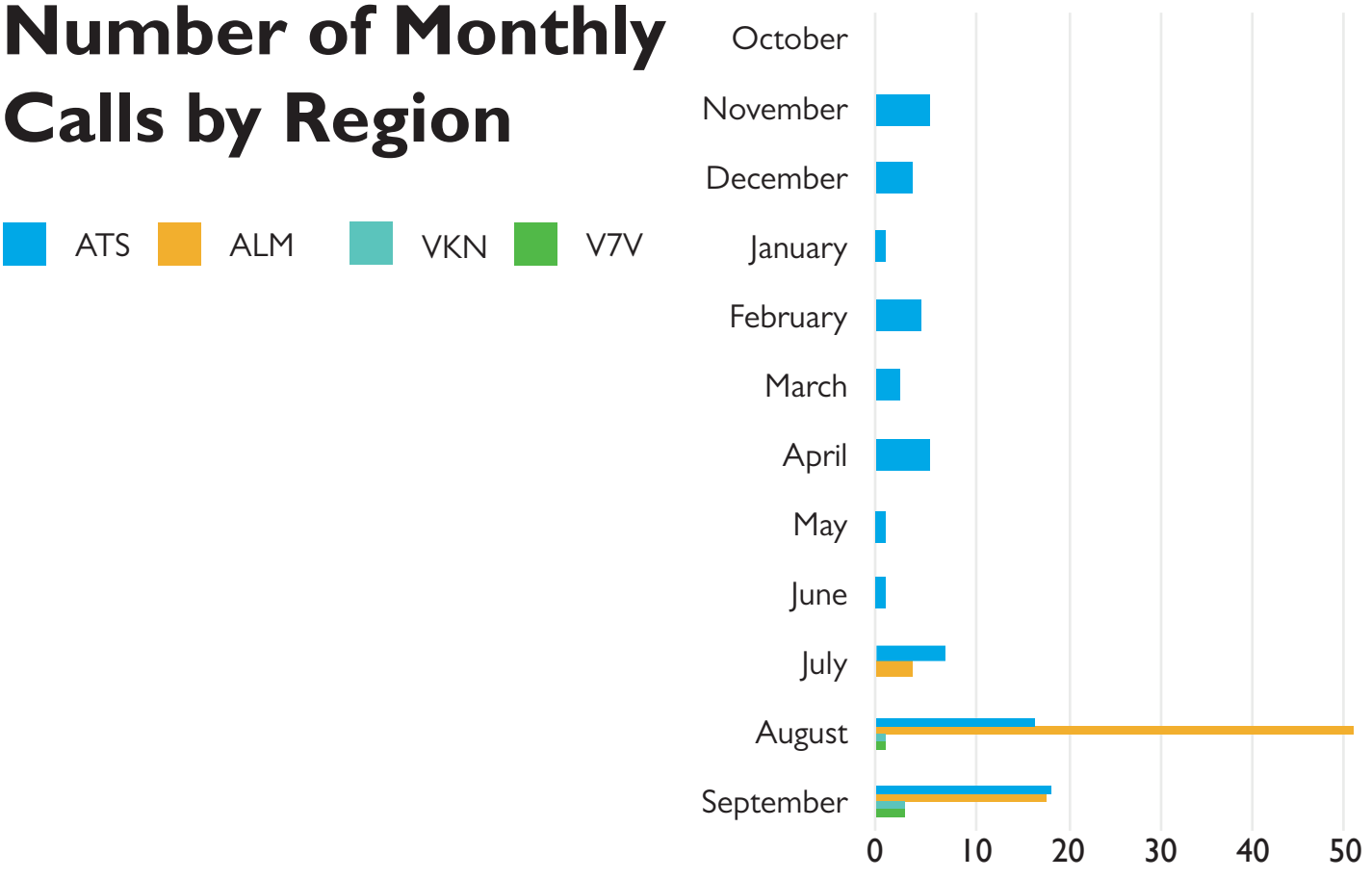
Percentage of calls by District



Number of Calls per Month

Month	Total number of calls	Number of calls in ATS	Number of calls in ALM	Number of calls in VKN	Number of calls in V7V
Oct 2018	0	0			
Nov 2018	5	5			
Dec 2018	3	3			
Jan 2019	1	1			
Feb 2019	4	4			
Mar 2019	2	2			
Apr 2019	5	5			
May 2019	1	1			
Jun 2019	1	1			
Jul 2019	10	7	3		
Aug 2019	69	16	51	1	1
Sept 2019	43	18	17	4	4
Total	144	63	71	5	5

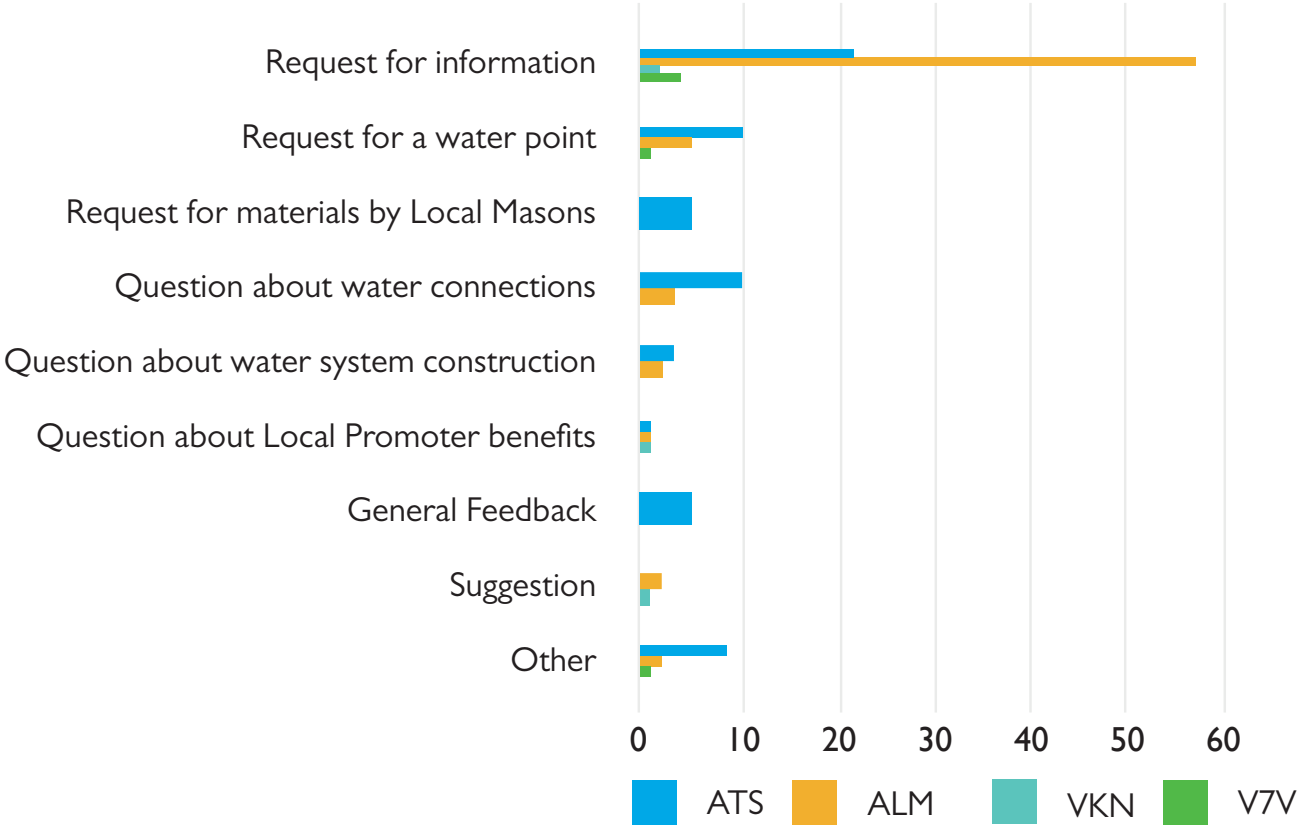
Number of Monthly Calls by Region



Reason for the call

Reason	Total number of calls	ALM	ATS	VKN	V7V
Request for information about the project and green line	83	56	21	2	4
Request for a water point	16	5	10	0	1
Request for materials by Local Masons (t-shirt, mold, etc.)	5	0	5	0	0
Question or comment about water connections (private or shared)	13	3	10	0	0
Question about water system construction	5	2	3	0	0
Question about local promoter benefits	3	1	1	1	0
Feedback	5	0	5	0	0
Suggestion	3	2	0	1	0
Other	11	2	8	1	0

Classification by type of call



ANNEX 17. COMMUNICATION AND MEDIA UPDATE Q4.19

The RANO WASH Communications team is responsible for effectively documenting and disseminating project achievements, results, best practices, and lessons learned to a broad audience at the international, national, and local levels. The team also provides communication assistance to the project coordination team and regional teams.
FY19 Communications strategy focused on developing and finalizing branding and marking products. The main activities carried out were the design of various visibility supports of the project (Flyers, banners, roll ups, flagpoles and institutional videos of the project), the collection of success stories of the project at the regional level, the constitution of a project image bank, the strengthening of press relations, the support in the organization and the realization of various events within the project (Example: handing-over delegation contract, etc.).

Media

the main media coverage of the project for FY19

- **Chez Moi**. The most important was the filming of a video as part of "Chez Moi," a series of programs between USAID and TVM. The 51-minute video was shot in Foulpointe and based on a scenario developed by the Chief of Party (CoP), with technical support from USAID. The video presented the WASH situation of the population and RANO WASH accomplishments in this area. The video was broadcast on TVM's "Chez Moi" show at the beginning of Q3.
- Broadcasting of a 3-minute advertorial report on National Television following an ODF village celebration in Androfia, Alaotra Mangoro region.

Social media and website

- **USAID field monitoring visit** from Amy Fowler and Catherine Korona of Global Health USAID headquarters in the USA to Sabotsy Anjiro in the Alaotra Mangoro region, which resulted in a story being published on the USAID website (https://usaidpubs.exposure.co/water-works)
- RANO WASH website will be launched in November 2019 and will be hosted by CARE Madagascar website server. The website will present project activities and will also be a resource center for relevant WASH resources (PPP, behavior change, etc). The site is set up in French and will be accessible via this link: http://www.ranowash.org

Brand refresh

The RANO WASH consortium logo has been refreshed, as CARE International refreshed its visual identity in September 2019 (monochrome logo).

List of success stories collected in FY19

Product	Title	Region	Period	Total	Total FY19	Status
success stories	"Local consultations: The first step toward visible actions"(Ranomafana-East)	Vatovavy Fitovinany	Q1	2	20	Published and disseminated To be published on RANO WASH website and social media in November
	Investing in water, hygiene and sanitation means investing in health (Andovoranto)	Atsinanana				
success stories	The rehab of 'Zappy': Community dialogue leads to impactful change (Mahabo)	Vatovavy Fitovinany	Q2	3		Published and disseminated To be published on RANO WASH website and social media in November
	Engaging Peace Corps Volunteers in RANO WASH communities (Ambila Lemaitso)	Atsinanana				
	Honorine, a woman following her dream in Foulpointe (Foulpointe)	Atsinanana				
success stories	Open Defecation-Free Status Reached in Three Days (Manaoianarana)	Vakinakaratra	Q3	5		Published and disseminated To be published on RANO WASH website and social media in November
	Managing menstruation is an important step to safeguarding dignity and overall life for women (Kelilalina)	Vatovavy Fitovinany				
	Accessible Latrine Construction and Implementation in Madagascar	Vatovavy Fitovinany				
	In the Savana District of Vohipeno, a very conservative village, the act of open defecation become taboo	Vatovavy Fitovinany				
	The use of the SANPLAT slab adopted as a social norm by Antanimarina (Anosibe Ifody)	Alaotra Mangoro				

Product	Title	Region	Period	Total	Total FY19	Status
success stories	«Together for an Open Defecation Free Village » (Ambinaninony)	Atsinanana	Q4	10		To be published on RANO WASH website and social media in November
	"A well, water close to home, it's also a good investment when you are a member of a VSLA" (Amboditavolo)	Atsinanana				
	"New habits for a better living condition" (Ilaka East)	Atsinanana				
	" The cleanest fokontany in the municipality"(Bongabe Foulpointe)	Atsinanana				
	"Where hygiene rules become habit" (Ranomafana East)	Atsinanana				
	"Model Local Promotor" (Andemaka)	Vatovavy Fitovinany				
	"Kings and Accountability" (Amboanjo)	Vatovavy Fitovinany				
	"A young entrepreneur who makes his living from public latrines and showers" (Foulpointe)	Atsinanana				

Madagascar
Plague and Measles

FINAL REPORT

CHV participant in the campaign, phase 1 Commune of Ambohibary District of Moramanga District Antsirabe 2, Alaotra Mangoro

I OVERVIEW

From August to December 2018, USAID provided RANO WASH with a specific funding allocation of $ 80,000 to support plague preparedness activities, with an extension period until the end of the plague season in April 2019. After the decline of the plague status in December 2018[1], USAID has authorized RANO WASH to use the fund to help the Ministry of Public Health (MoPH) to respond to the unprecedented outbreak of measles in the last 10 years. From September 3, 2018 to April 21, 2019, the measles

epidemic recorded 139,550 registered cases; 902 deaths in health facilities, and affected 107districts in 22 regions[2].

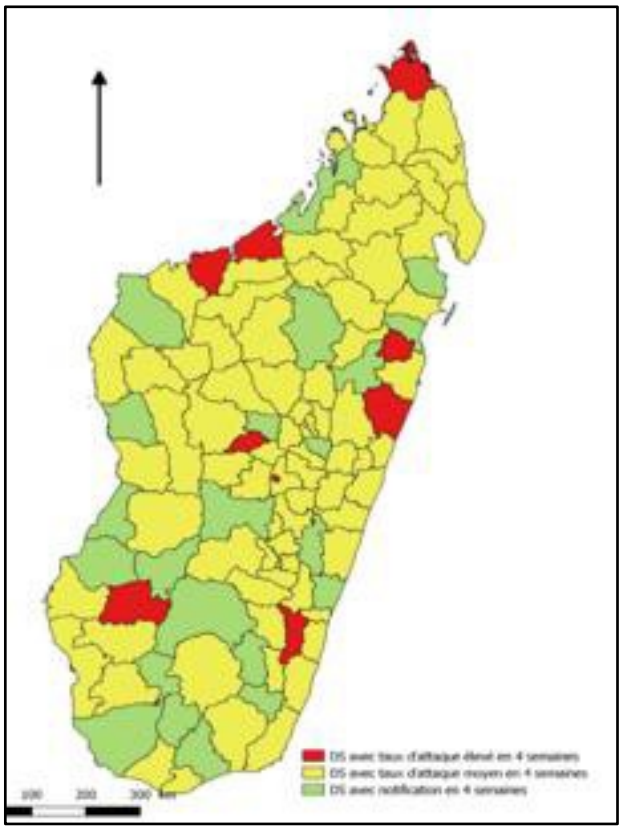


Figure 1. Measles attack rate per district (April 2019)
Source : Commission Nationale de la lutte contre la Rougeole

The current final report provides an overview of the activities and results after these two national emergency activities that the project undertook in its five intervention regions (Atsinanana, Alaotra Mangoro, Vakinankaratra, Amoron'I Mania, and Vatovavy Fitovinany). RANO WASH did not intervene in Haute Matsiatra to avoid overlapping with World Bank who did heavy plague and measles interventions there.

[1] 60 confirmed cases throughout the island with 49 cases of pneumonic plague and 19 cases of bubonic plague and 18 deaths

[2] Sitrep S16 MoPH, April 25, 2019

1. BACKGROUND

USAID provided RANO WASH with an initial funding allocation of $80,000 to support plague preparedness activities from August to December 2018 and has approved an extension period until the end of the plague season (April 2019).

The main objective of RANO WASH's plague preparedness and outbreak prevention is to support and strengthen the surveillance system and to sensitize at all levels, especially at the community level, to prevent outbreaks of plague during its transmission season in the 6 regions identified for RANO WASH: Haute Matsiatra, Amoron'I Mania, Vakinankaratra, Atsinanana, Alaotra Mangoro and Vatovavy Fitovinany.

Moreover, USAID allowed RANO WASH to use the fund for supporting MoPH in its response to the unprecedented large Measles outbreak that began in week 35 of 2018 in the Antananarivo-Renivohitra. Indeed, from December 2018, while activities on plague slowed down, RANO WASH responded to requests for support in the up-surging Measles outbreak. From September 3, 2018, to April 15, 2019, the MoPH recorded 135 067 registered cases; 884 deaths in health facilities and 107 districts touched within 22 regions.

One of the strategies for responding to the measles epidemic is the interruption of virus transmission. The MoPH and health partners organized vaccination campaigns among children aged 6 months to 9 years in 114 districts. The main factors of success of this campaign were the quality of the implementation and more particularly the strict application of the directives, the supervision, the monitoring, the rapid evaluation, and the post-campaign investigation by MoPH technicians. Thus, campaign supervision by MoPH's central technicians in collaboration with the technical and financial partners was necessary.

Taking into account the specific skillset needed for dealing with outbreaks, RANO WASH integrated a public health doctor into the team on a consultant basis. The doctor is specialized in communication, training, and supervision of community health interventions, including during outbreaks. In addition, this consultant worked previously for a USAID community health funded project and thus had a long experience on working on the field with community health volunteers (CHV), commune health centers (CSB) and the MoPH decentralized structures and staffs.

2. OBJECTIVES

The main objectives of plague preparedness, disease prevention and measles outbreak response are

(i) **to provide organizational and logistic support to the Ministry of Public Health** (MoPH) staff in activities related to plague detection and screening in hotspot sites at the onset of the outbreaks,

(ii) **to support and strengthen the health monitoring system** to raise awareness at all levels, especially in the community, on plague epidemic and on measles outbreak and

(iii) **to participate in meetings and events organized at the national level** for the coordination and collaboration on plague response and prevention.

3. MAIN ACTIVITIES

The following activities were undertaken during the emergency period:

1. **Support the MSP by strengthening the monitoring system**. The monitoring system should be able to provide clear and precise instructions on the information circuit in the event of plague and measles epidemic. Basic health center teams were trained by the MoPH at district level to be able to use and follow this information circuit. RANO WASH supported the organization of these trainings by providing technical expertise through a hired consultant doctor, by developing working tools and by providing logistical resources for the team of trainers from the MoPH.

2. **Raise awareness on how to deal with a case of illness whether plague or measles**

   a. Development of sensitization tools: flyers
   b. Development of monitoring tools
   c. Radio spots designs and broadcasts

3. **Work with media to fight rumors**

4. **Contribute in the supervision of the measles vaccine response campaigns**: interrupting virus transmission is one of the strategies to fight the measles epidemic. The MoPH and health partners organized vaccination campaigns for children aged 6 months to 9 years in 114 districts. The measles outbreak occurs in a context of low routine vaccination rates.
5. **Support health center staffs to supervise Community Health Volunteers** in organizing sensitization activities, active case-finding, follow-up of contacts, such as family members and neighborhood, in case of epidemic.
6. **Participate in meeting and action at national and regional levels in order to coordinate interventions and to share the progress**.

Taking into account the specificity needed to cope with epidemics, RANO WASH hired as a consultant a public health doctor specialized in communication, training and supervision of community-based health interventions in general and epidemics in particular.

2 4. KEY ACHIEVMENTS ON PLAGUE INTERVENTION

- **1455** CHVs were trained and **634** CHVs received posters on plague prevention in collaboration with the SIMR[3]. The training package consisted of the following topics: (1) knowledge on plague, mainly prevention methods, transmission, clinical signs and actions to be taken in the event of a suspicious or confirmed case, (2) contact tracing,

  (3) communication and sensitization techniques, (4) use of monitoring tools

- **1945** people were educated on plague prevention through household visits. **3608** people attended group discussions on plague prevention, and the plague awareness mass communication activities reached **31,981** people with 20,177 women and 11,831 men.
- RANO WASH provided various logistics support for MoPH to allow them to carry out high stakes missions: detection of plague in sensitive sites at the beginning of the

[3] Surveillance Intégrée des Maladies et des Ripostes (Integrated Surveillance of Diseases and Riposte)

epidemic, investigate a suspicious case in Mandialaza by providing support for the communication and shipping of suspect case samples to the Pasteur Institute, provide transportation means of MoPH personnel for field detection

KEY MESSAGE FOR PLAGUE

"Tohizantsika hatrany ny ezaka natao hamongorana ny aretina pesta '

"Continuons à poursuivre nos efforts pour lutter contre la peste"

"Let's continue our efforts to fight the plague"

- Participation in meetings and joint actions organized at the national level for coordination and collaboration and plague prevention.
- Collaboration with media: development of key points to promote for Door-to-Door communication for media editors whose aim is to provide accurate and up-to-date information for the population, and to avoid all rumors
- Reproduction and dissemination of four (4) radio spots on plague prevention twice a day by two different stations, respectively in Atsinanana, Alaotra Mangoro, Vatovavy Fitovinany
- Design, reproduction and delivery to the government as well as distribution at the commune and community levels, of sensitization tools: 45,000 posters on plague prevention, 3,000 on plague transmission and 3,000 on plague clinical signs

5. KEY ACHIEVMENTS ON MEASLES OUTBREAK INTERVENTION

- Provide logistics means for central supervisors to oversee immunization campaigns in Alaotra Mangoro, Vatovavy Fitovinany and Vakinankaratra during the first phase and the third phase of the vaccination campaign. 6,046,310 children from 9 months to 9 years were targeted for these vaccination campaigns at national level.
- 12,000 flyers, 600 measles posters and 1,200 handbook guides for Community Agents on measles prevention were produced and distributed in RANO WASH intervention regions
- Six (06) radio spots to raise awareness about measles prevention were designed:
  - Immunization routine,
  - Vitamin A supplementation for children and nursing mothers

Summary at the end of RANO WASH intervention on measle outbreak

- ✓ 140,935 registered cases
- ✓ 1280 cases of IgM + and
- ✓ 139 655 cases confirmed by epidemiological link
- ✓ 902 reported deaths - 711 occurred in health centers and 191 community deaths verified by CHV.
- ✓ 340 unqualified community deaths without a linear list.
- ✓ The fatality rate (the proportion of fatal disease-related cases in relation to the total number of cases affected by the disease) is 0.64% (902/140935)
- ✓ The highest mortality is recorded within 9 to 11 months age group
- ✓ 108 out of 114 districts affected in 22 regions

- Actions to take in case of measles signs
- Recommendation to call 910 to know more or ask questions

- **10,080 broadcasts** of these radio spots from February to April 2019 through 2 daily broadcasts by 2 different stations respectively in Atsinanana, Alaotra Mangoro, Vatovavy Fitovinany

- Participation in measles coordination and communication meetings and committees with MoPH lead and various partners such as USAID, UNICEF…
- Active fight against rumor in collaboration with UNICEF and MoPH: collect and analyze rumors and misinformation related to measles and suggest actions to mitigate those rumors and misinformation

KEY MESSAGE FOR MEASLES

"Ndao hiaraka, hiaro ny zanatsika amin'ny kitrotro"
"Ensemble protégeons nos enfants de la rougeole, faisons-les vacciner"
"Together, let's protect our children from measles, get them vaccinated"

6. FINANCIAL REPORT

RANO WASH

Cooperative Agreement No:	AID-687-A-17-00002
Grant Period:	June15, 2017 to Sept 30, 2019
Fiscal Year:	FY19
Report Period:	August 1, 2018 to Sept 30, 2019

#	Description	Expenses
1	Coordination & logistics	$12,921
2	Communication material	$ 9,043
3	Monitoring & training	$ 20,019
4	Field visits	$ 2,491
	TOTAL expenses	**$ 44,473**
	Obligated Amount _Mod#03	**$ 80,000**
	Balance	**$ 35,527**

7. CONCLUSION

Less devastating than during the previous season, the plague remains low and continues to rage in several districts of Madagascar. RANO WASH took a part to raise awareness of the Malagasy population. The disease is more mastered, however, there is the need to stay aware and vigilant because of the recurring epidemic season.

Despite the beginning of the measles epidemic since September 2018, RANO WASH has assumed its responsibilities to sensitize the population to vaccinate its children.

The main success factors of this campaign were the quality of the implementation and more particularly the strict application of the guidelines, the supervision, the follow-up, the rapid evaluation and the post-campaign survey.

The supervision of the campaign by the central technicians of the MoPH in collaboration with the technical and financial partners was therefore necessary.

Annex 1- Plague and Measles epidemiological status (Source Ministry Of Public Health)

VAOVAO MAHAKASIKA NY ARETINA PESTA ETO MADAGASIKARA NANOMBOKA NY 01 AOGOSITRA HATRAMIN'NY 15 MARSA 2019

Districts	PB (n_c=93)		PP (n_c=14)		Total cas confirmés
	Vivant	Décédé	Vivant	Décédé	
Manandriana	19	1		2	22
Tsiroanomandidy	9	6	1	4	20
Ambositra	8	5			13
Midongy Atsimo	9	1		1	11
Ambalavao	7			1	8
Befotaka	6				6
Ambatofinandrahana	4	1			5
Miarinarivo	1			3	4
Anjozorobe	2	1			3
Faratsiho	3				3
Manjakandriana		3			3
Moramanga	3				3
Ankazobe	1	1			2
Arivonimamo			1	1	2
Betafo	1				1
Mandoto	1				1
Total	**74**	**19**	**2**	**12**	**107**

Figure 2 Measles status (Source SIT REP number 16)

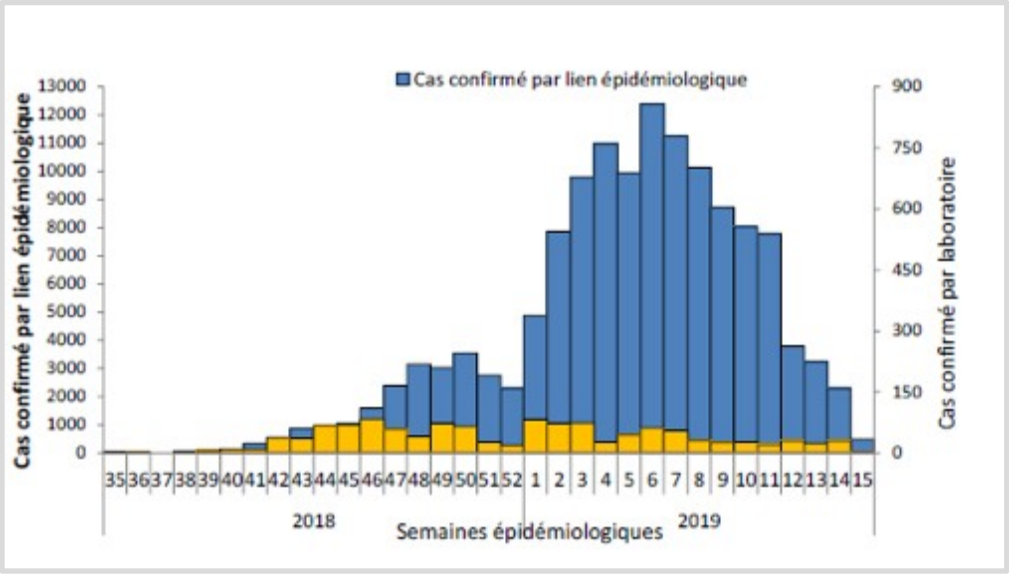


Figure 3 Weekly evolution of measles cases, Madagascar, 03 Sept 18 – 14 Apr 19

Tableau I : Premier quintile des districts ayant les plus forts taux d'attaque de rougeole pour chacune des 4 dernières semaines,

Madagascar, S12 à S15, 2019Régions	Districts	Nombre de cas par districts					Taux d'attaque au cours des 4 dernières semaines			
		S12	S13	S14	S15	Total	S12	S13	S14	S15
ATSINANANA	MAHANORO	758	487	335	12	1592	273	175	121	4
ANALANJIROFO	VAVATENINA	190	191	182	72	635	86	87	83	33
ALAOTRA MANGORO	ANDILAMENA	174	258	37	31	500	153	227	32	27
VAKINANKARATRA	MANDOTO	61	184	174	16	435	27	81	77	7
BOENY	Mahajanga II	169	118	119	10	416	222	155	156	13
SUD-EST	BEFOTAKA	148	155	41	22	366	241	252	67	36
ITASY	SOAVINANDRIANA	129	97	66	20	312	57	43	29	9
ATSINANANA	VATOMANDRY	69	139	81	14	303	38	77	45	8
VAKINANKARATRA	Antsirabe I	109	81	73	22	285	47	35	32	10
BOENY	MITSINJO	111	68	69	10	258	131	80	81	12
DIANA	AMBANJA	66	99	74	9	248	30	45	34	4
SUD-OUEST	BENENITRA	17	19	15	3	54	34	38	30	6
ANALANJIROFO	Nosy-Boraha (Sainte Marie)	7	15	18	4	44	27	57	69	15
Total		2008	1911	1284	245	5448				

13 districts dans 9 régions notifient 55% du total des cas rapportés de ces quatre dernières semaines au niveau national. Par conséquent, une intensification des interventions dans ces districts est nécessaire.
Parmi ces 13 districts, Antsirabe I a déjà bénéficié de la riposte vaccinale en janvier.

Figure 4 Sitrep Measles15 April 2019 – MoPH

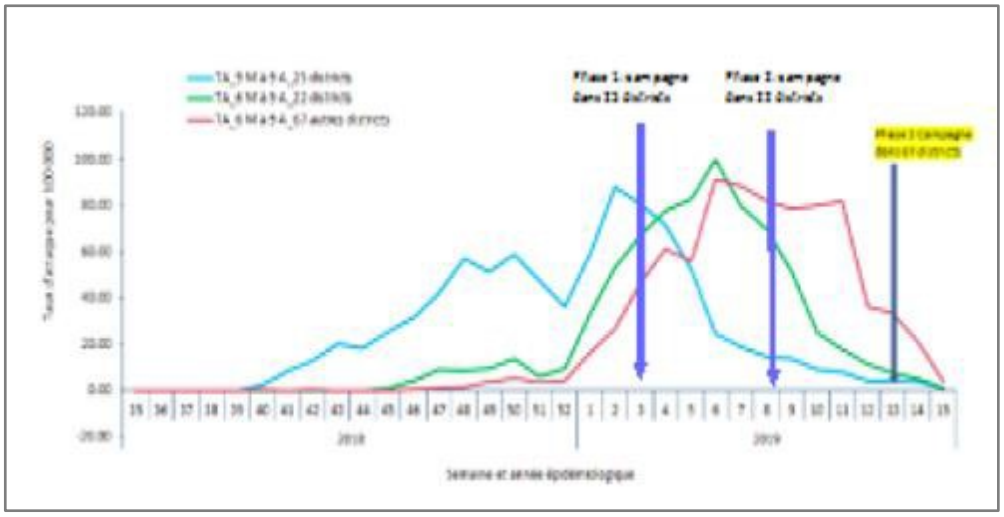


Figure 5 Comparative weekly evolution of measles attack rate by age group 03 Sept 18- 14 Apr 19

Annex 1- Pictures

CHV trained in plague with poster awareness in Ambatolampy district

The team of trainers, responsible for collaboration with SMIR SSDS Ambatolampy - DPS Antananarivo-RANOWASH - the 2 chiefs CSB of Andranotapahina district Ambatolampy

Partners Communication workshop with the audio and television media on Plague and Measles in collaboration with the DPS at the Live Hotel in January

CHV in simulation

CHV participant in the campaign, phase I Commune of Ambohibary District of Moramanga District Antsirabe 2

Immunization site at a Christian school in Ambinany Fiadanana commune of Faratsiho Region district Vakinankaratra

Pre campaign household survey in Ampanotokana District Faratsiho

National Coordination Committee NCC Measles, press conference with the Minister of Public Health, USAID Representative, WHO, UNICEF, DVSSE, COP RANOWASH on the epidemiological situation Measles and vaccine response campaign on January 2019

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ANNEX 19. TOR OF SCNEAH COORDINATION STRUCTURE

SITUATION

Access to safe drinking water in Madagascar, which affects less than half of the population, reflects the country's overall socio-economic development, with low school enrolment, poor maternal and child health, and malnutrition in many regions, particularly in rural areas. De facto, the adoption of the most basic hygiene practices by the majority of the population is still very difficult, such as open defecation free, menstrual hygiene management, or handwashing with soap. Inadequate management of excreta and waste in general, as manifested by the lack of sanitation infrastructure, exacerbates the poverty of the population, resulting in activities that are just for survival in increasingly polluted environments, where water resources are under increasing pressure from human activities, and even more vulnerable to climate change.

Madagascar committed itself in 2030 to achieving 100% access to safe drinking water and 100% access to improved latrines. In order to resolve the country's development gap and fight poverty, the Malagasy State, through the Ministry of Energy, Water and Hydrocarbons (MEEH), has taken the initiative to achieve the following objectives, as stipulated in its performance contract by 2023:

- 70% of the population will have access to sustainable and affordable drinking water services;

- 90% of the population will be ODF and will practice handwashing with soap;

- 55% will use the basic toilets.

Local actors must play an important role and have direct responsibilities in the implementation of the five lines of action to be undertaken to achieve these objectives. Indeed, the involvement of both central and local stakeholders is essential to (i) accelerate access to drinking water, (ii) intensify actions to develop access to sanitation and hygiene, (iii) promote integrated water resources management, (iv) prepare and implement the National Drinking Water Plan in crisis situations, (v) develop and validate the sector's framework documents. With this in mind, the MEEH will implement the actions related to its performance contract by effectively involving local authorities and partners in all phases. To this end, a coordination structure at national level and a regional implementation structure will be created in each of the 22 regions for the implementation of the Water, Sanitation and Hygiene (WASH) performance contract. The main purpose of the two structures, as steering and animation bodies, will be to pool efforts to achieve the sector's objectives by 2023.

1. THE WASH NATIONAL COORDINATION STRUCTURE (SCN-EAH))

PURPOSE:

The National Coordination Structure aims to define, coordinate and monitor the actions of all actors in order to achieve national objectives in terms of WASH by 2023.

ORGANIZATION

The SCN-EAH is composed of the Central Coordination Structure (SCC-EAH) and the Regional Implementation Structures (SRMo-EAH).

The Central Coordination Structure (SCC-EAH)

ORGANIZATION

The Central Coordination Structure includes a Permanent Technical Secretariat and members.

The Permanent Technical Secretariat is provided by the MEEH supported by a Partner chosen from among the members.

The members are made up of:

- The senior managers of the Ministry of Energy, Water and Hydrocarbons
- Regional Co-Leads (22 partners and 22 Regional Directors of MEEH)
- Donor representatives: UNICEF and USAID
- National organizations: RAN'EAU, HP+, WSSCC
- JIRAMA

The composition of the members may be revised as required.

ATTRIBUTIONS

The SCC-EAH prepares and shares general guidelines on Water, Sanitation and Hygiene to the various stakeholders and implementation structures. As such, the SCC-EAH:

- Establishes the national program for commitment 2030 and the achievement of the 2023 objectives in particular;
- Coordinate the implementation of the national program:
    - Contributes to the mobilization of financial and technical resources,
    - Ensure the implementation of action plans,
    - Consolidates the results of regional actors,
    - Monitor and evaluate the achievement of objectives at the national and regional level,
    - Ensures the harmonization of WASH operational practices,
    - Organizes the National Platform for the Promotion of the EAH Sector (PNP-EAH)
- Organizes an annual national consultation and sharing forum for the

capitalization and sharing of achievements and good practices;
- Provides guidance for national policies and strategies

OPERATION

SCC-EAH interacts with Regional Implementation Structures through Co-Leads.

A permanent Technical Secretariat is created with the support of the MEEH and a partner appointed annually on the basis of consultation between all members of the structure.

The Permanent Technical Secretariat is responsible for data collection, compilation and exploitation of results at the national level. It also organizes the various meetings between the actors.

The composition of the members of the Central Coordination Structure may be revised from time to time according to changes in the co-leads partners.

The Central Coordination Structure meets every three months.

2. REGIONAL IMPLEMENTATION STRUCTURE (SRMO-EAH)

SPECIFIC OBJECTIVES:

- Ensure the implementation of actors' interventions at the regional level, in a coordinated manner through:
    - The establishment of a regional program for the 2030 commitment and the achievement of the 2023 objectives in particular;
    - Participatory planning of actions to be undertaken at the regional level to: ensure complementarity of actions and avoid overlaps, ensure the distribution of actors according to needs and priorities, ensure the harmonization of approaches defined at the national level;
    - Support for resource mobilization for planned actions, which consists of: establishing a regional plan for EAH financing, followed by an advocacy approach towards central partners and decision-makers, and ensuring the alignment of stakeholders through the consistency of their own action plans with regional planning;
- Coordinate the collection of indicators from implementing partners at the regional level through:
    - The Ministry's database with the support of the section in charge of monitoring and evaluation of the Regional Directorate;
    - Compilation and analysis of results in relation to the objectives of the regional plan;
    - Dissemination of information and sharing of experiences;
    - The reorientation of interventions, as well as the integration of information into local plans;
    - Reporting at the central level.

ORGANIZATION

The Regional Directorate in charge of the WASH ensures the leadership of the actors and the coordination of activities with the most active partner in the region. They are called Co-Leads.

The Co-Leads organize a Regional Consultation Commission (CRC) of regional WASH actors to plan and implement programs and projects related to the objectives of the Performance Contract at regional level.

The Regional Consultation Commission brings together the actors and stakeholders in WASH at the Regional level: public and private, programs and projects, representatives of users and beneficiaries.

The Regional Consultation Commission is organized into thematic working groups according to needs (drinking water, sanitation, hygiene, IWRM, others).

DUTIES OF CO-LEADS

The Co-Leads are the main interlocutors of the various actors working in the WASH sector for the implementation of the performance contract at the Regional level. Their duties consist of:

- Ensure an open and participatory dialogue between stakeholders throughout implementation;
- Pool their efforts to achieve the objectives set out in the Performance Contract;
- Mobilize other government entities (other sectoral ministries, ...) and their regional breakdowns or related bodies for effective coordination and implementation of established action plans;
- Regularly exchange information on progress and qualitative and quantitative results in order to improve their collaboration;
- To convey the concepts, virtues and importance of the Performance Contract in their respective fields of competence;
- Implement a control and monitoring system to assess the proper implementation of actions;

Specific roles of DREEH:

- Ensure that the actions of the various partners are consistent with State policies;
- Ensure compliance with legislative and regulatory frameworks, as well as compliance of interventions with national standards;
- Make available its financial contribution, human resources, logistical, administrative and educational services necessary according to the possibilities;
- Ensure that the actions of the various partners are consistent with State policies;
- Establish an enabling environment to achieving the objectives of the

Performance Contract, particularly from an institutional and regulatory point of view, taking into account the constraints already identified in the sector;
- Prepare with his Co-Lead the commission's work plan and present it to the members;
- Organize coordination meetings and workshops with its Co-Lead;
- Validate the orientations of the interventions and support stakeholders in advocacy for the mobilization of the necessary resources;
- Ensure that data are collected and processed in such a way as to produce results at each deadline;
- Ensure the preparation of activity reports with all stakeholders, validate them and ensure their transmission to regional and central authorities.
- Prepare the monthly report of activities carried out at the regional level to the Central Ministry;
- Ensure the Technical Secretariat.

Roles of the partner:

- Support the DREEH in the animation of the commission;
- Contribute to the research and mobilization of funding from the EAH Sector in the Region;
- Mobilize WASH actors at the regional level to share and make available sufficient human resources, logistics, administrative and educational services for the implementation of action plans.
- Ensure a significant funding for the regional action plan according to the available budget;
- Contribute to the development of a common work plan with monthly objectives and the research for the necessary means to achieve them;
- Contribute to the implementation of the planning and common orientations decided at the level of the Regional Implementation Structure (SRMo);
- Contribute to data sharing as part of a reliable and effective monitoring and evaluation system for EAH actions at the regional level;
- Contribute to the review of the implementation of planning and orientations decided at the level of all stakeholders;
- Contribute to the establishment of a reliable and effective monitoring and evaluation system for EAH actions at regional level;
- Contribute to the relaunch and mobilization of regional actors for the collection of the information necessary for the preparation of activity reports according to the deadlines previously set in the work plan;

OPERATION

The Co-leads organize a planning meeting with monthly objectives for one year with the regional consultation commission, in accordance with national guidelines and programs.

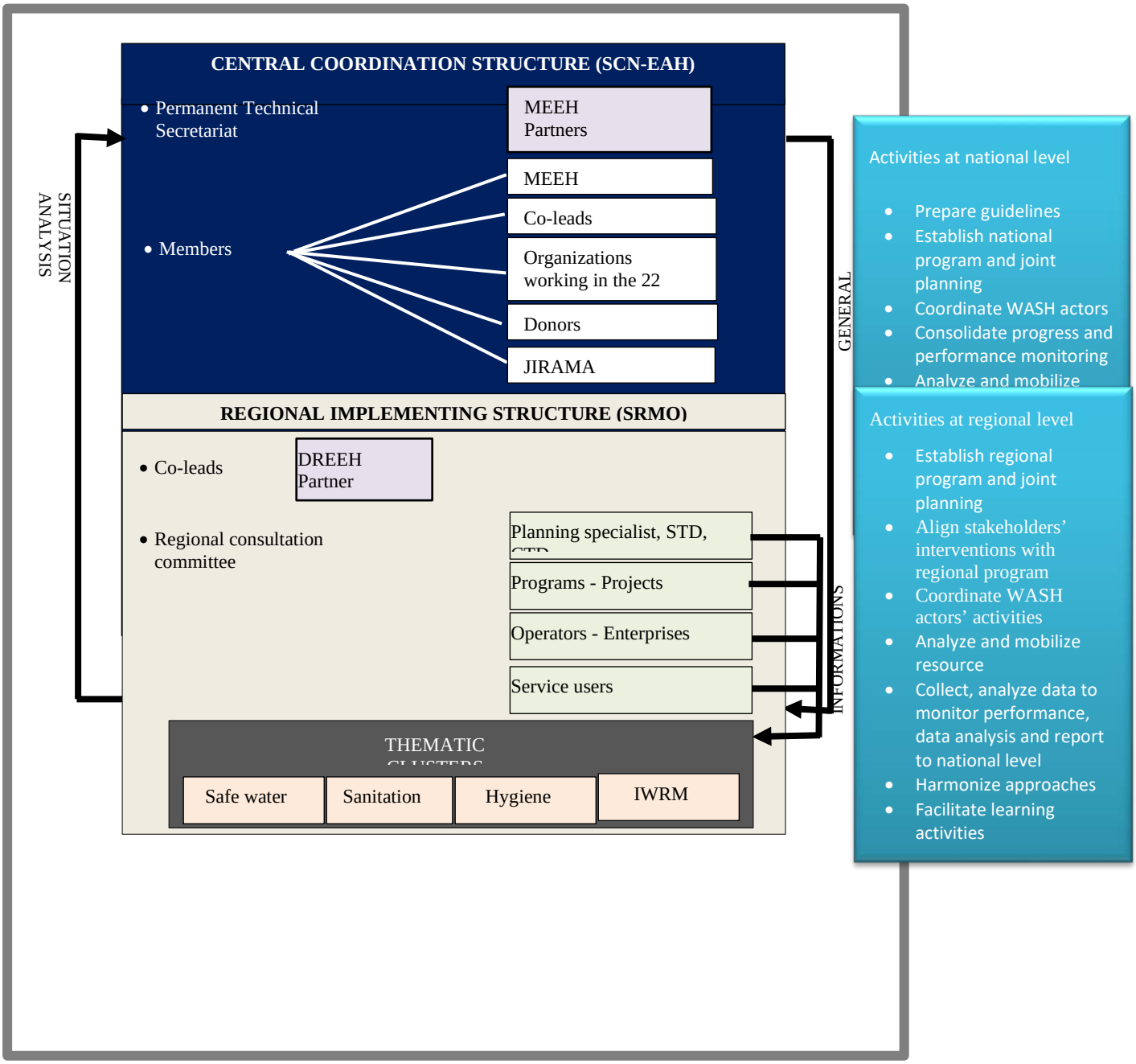
They also organize meetings to report results, monitor and evaluate, and validate regional activity reports at least every two months with thematic working groups.

Thematic meetings between actors can be organized by the Co-Leads if necessary.

ACTIVITIES (not exhaustive)

- Mapping of all actors and WASH activities by Region, District and Municipalities;
- Implementation of a regional monitoring and evaluation mechanism, with production of tools (e. g. grids-monitoring and evaluation frameworks);
- Organization of various workshops and meetings (planning, sharing, etc.);
- Prepare the commission's work plan and present it to the members;
- Organize coordination meetings and workshops;
- Prepare and send the report of activities carried out in the region to the Central Ministry;
- Implementation of action plans;
- Compilation of data and information (regional syntheses);
- Reporting of activities at central level;
- Pleadings;
- Animation;

NATIONAL AND REGIONAL WASH COORDINATION STRUCTURE



Legend

CTD Collectivités Territoriales Décentralisées (Decentralized Territorial Collectivities)
DREEH Direction Régionale de l'Energie, l'Eau et des Hydrocarbures (Regional Direction of Energy Water and Hydrocarbon)
IWRM Integrated Water Resource Management
Jirama state-owned electric utility and water services company in Madagascar.
MEEHMinistry of Energy Water and Hydrocarbon
STD Services Techniques Déconcentrés (Decentralised Technical Services)
SCN-EAH- Structure de Coordination Nationale de l'Eau l'Assainissement et l'Hygiene (WASH National Coordination Structure)
SRMo Structure Régionale de Mise en Œuvre (Regional Implementation Structure)

ANNEX 20. MEAL - SCREEN CAPTURES OF THE POWER BI DASHBOARD

CONTENTS

This document presents screenshots of some elements of the RANO WASH online database developed through Power BI.

1. 1.HOME

On the home page for online consultation of the RANO WASH project data, you can see the following:

2. CLTS
3. Groups
4. Situation by field agent (TA)
5. Community Actors
6. Trainings
7. Census
8. Six key behaviors
9. Reusable Menstrual Pads
10. VSLA (Village Savings and Loan Associations)
11. Activities by Commune
12. Dalle San Plat
13. Households having improved latrines with basic or limited service
14. WASH-Friendly Schools
15. WASH-Friendly Health Centers
16. SO1 – Commune level
17. SO1 – Regional Level
18. SO1 – National Level

These elements are represented in the screenshot (fig1) below.

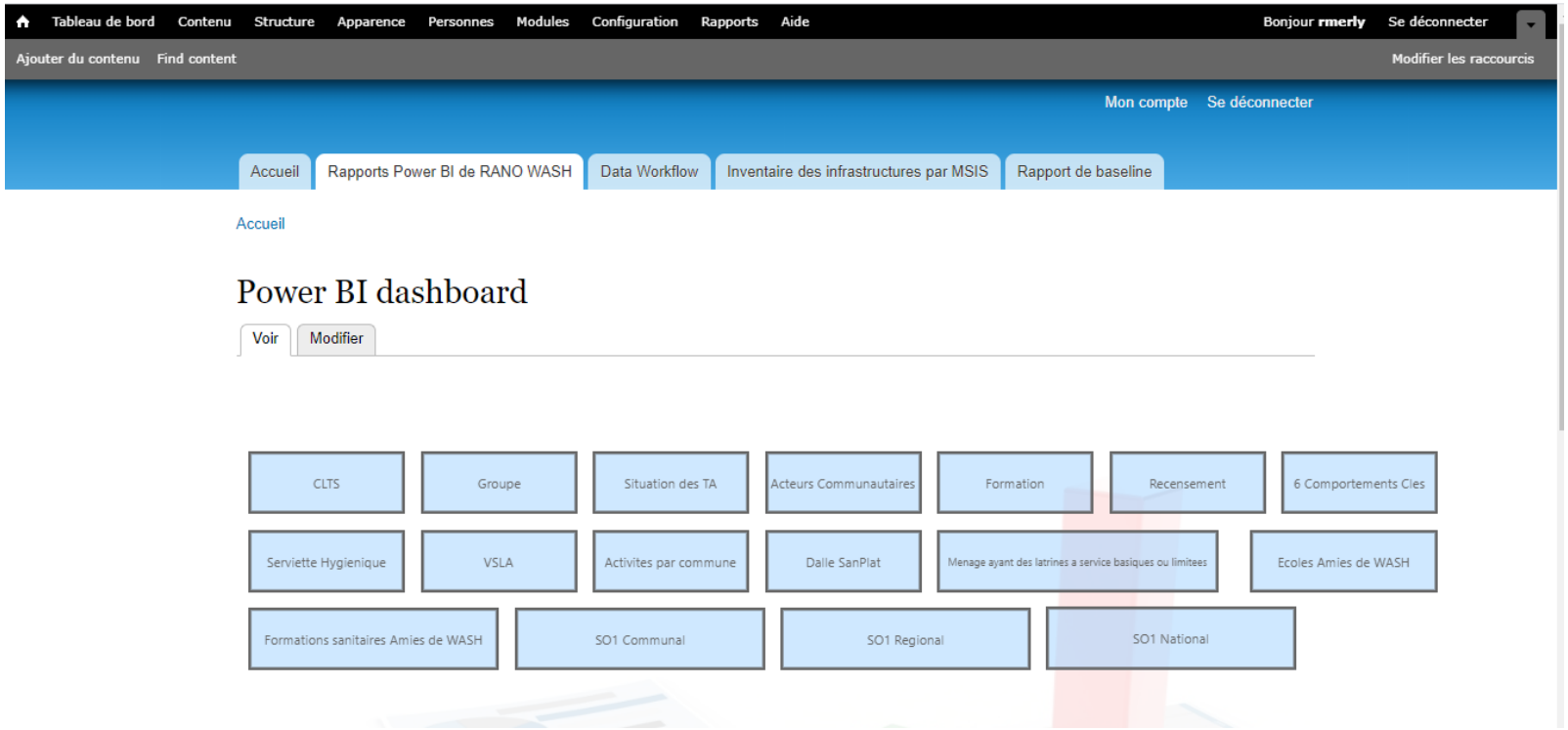


Figure 7

19. 2.GROUPS

Figure 2 below is a representation of the groups in the intervention areas of RANO WASH. The filter can be selected according to the type of group, such as:

- WASH Users Associations
- Civil Society Organizations
- Local Consultation Structure (SLC)
- Village Savings and Loans Assocations

Apart from that, regions can also be used as a filter, i.e. it is possible to display the number of CSOs for a defined region.

20.

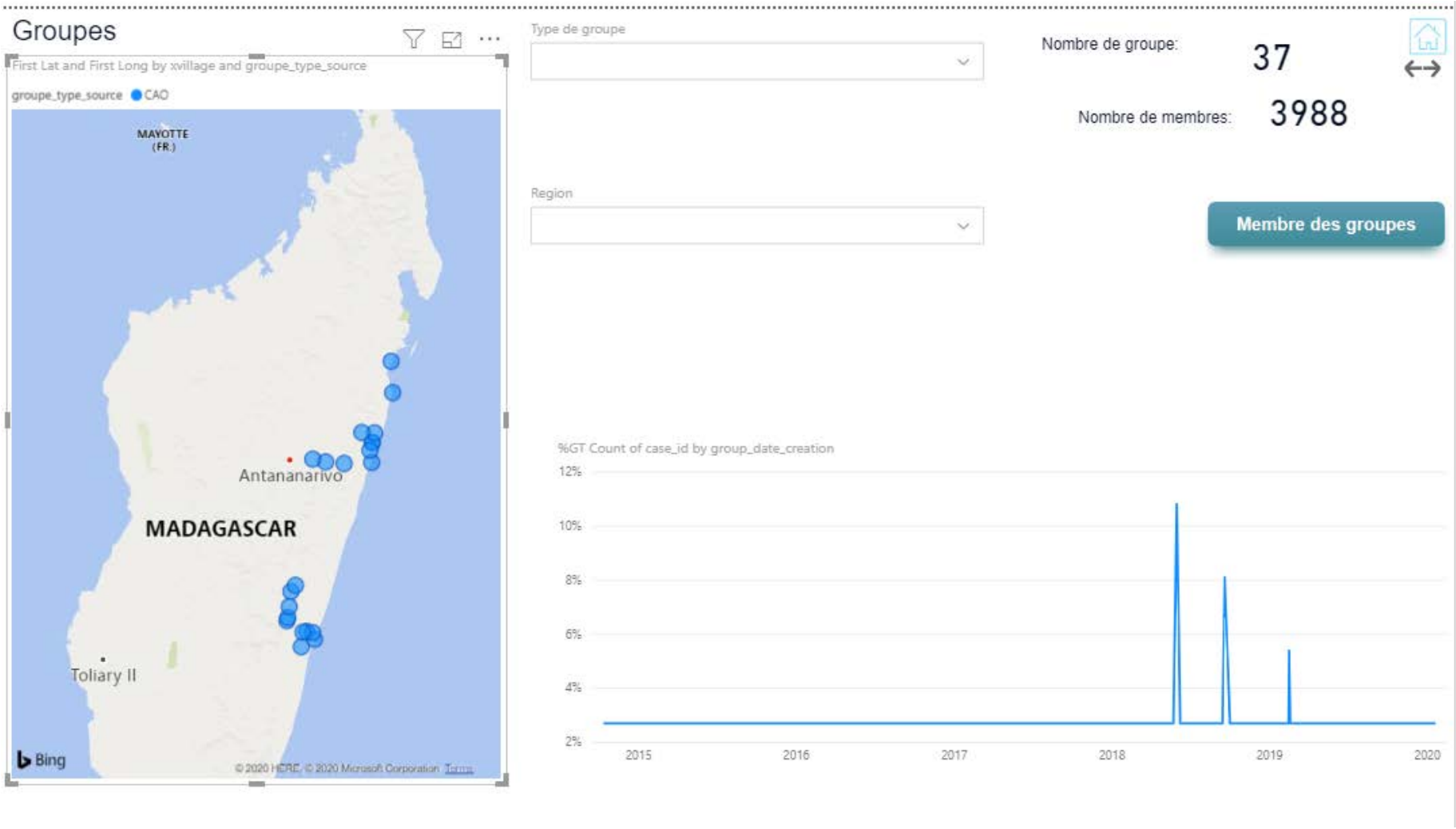


Figure 8

21. 3.CENSUS

A census of beneficiaries was made for the RANO WASH project in order to have the number of beneficiaries of all project activities.

This census was also carried out in order to respond to the disaggregations of the project indicators and other data needs (gender, wealth quintile, people with disabilities, etc.).

Figure 3 below illustrates some information related to these census data, such as the age of individuals, the number of male and female individuals, household income-generating activities, household sources of drinking water, etc.

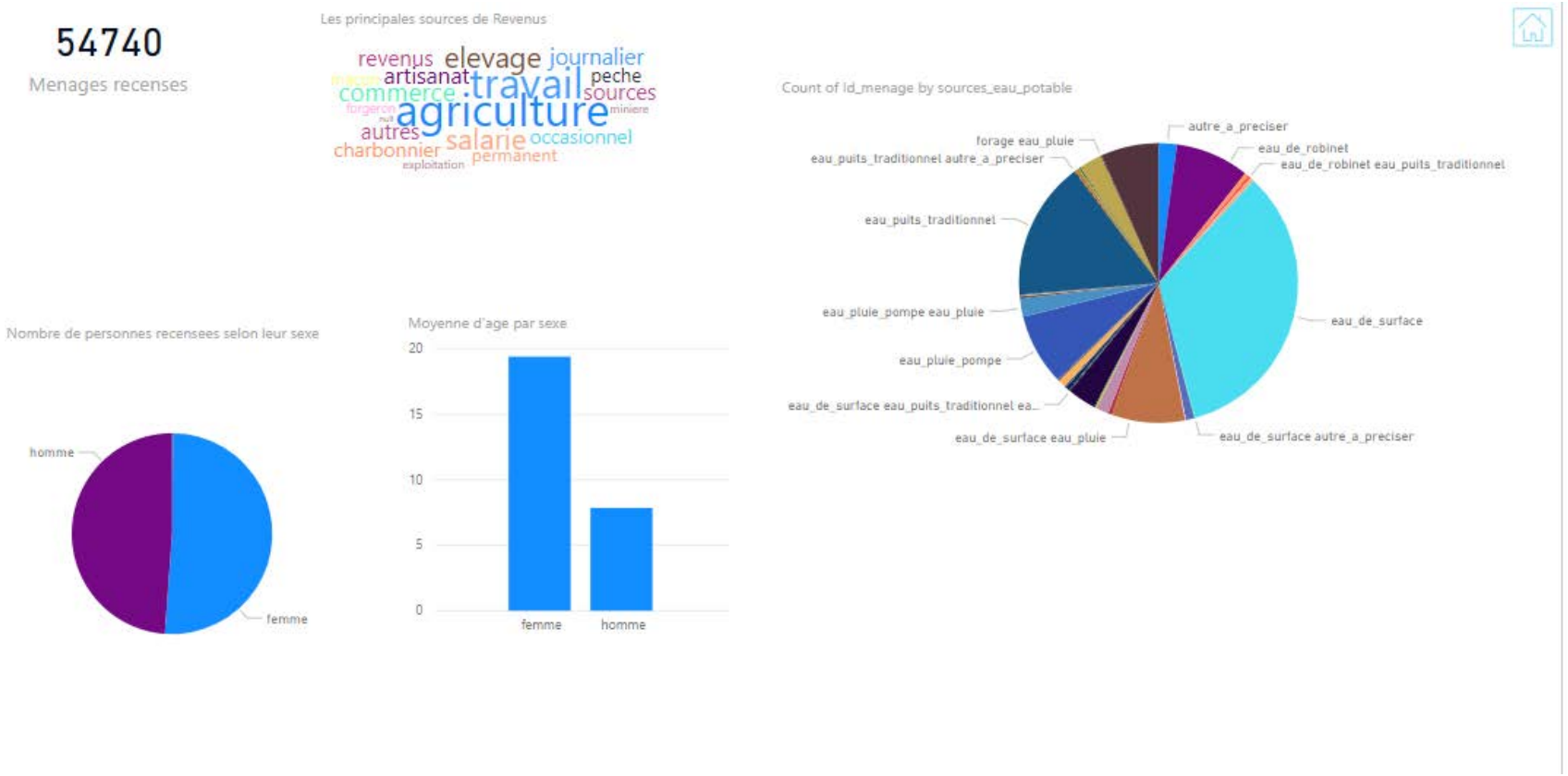


Figure 9

22. 4.SITUATION BY TECHNIAL ASSISTANT (TA)

A table reflecting the activities of the field agents (TA) is also available in the RANO WASH dashboard.

The TA is responsible for several project activities, and in this example, the following CLTS elements can be seen in the dashboard for each TA:

• Number of villages auto-proclaimed open defectation free (ODF) by a TA

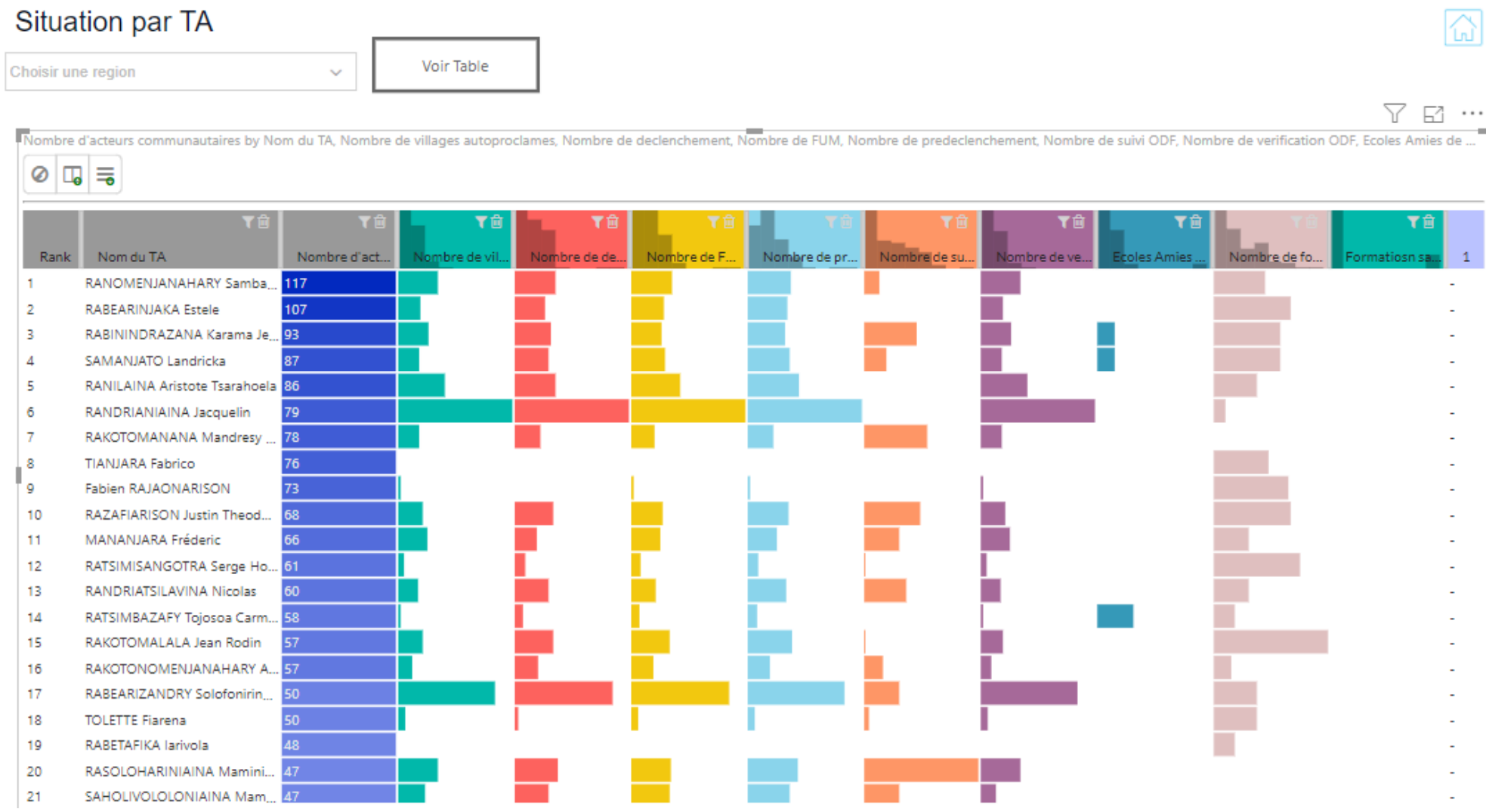
• Number of triggerings completed

• Number of FUM

• Number of post-ODF verification monitorings

• Number of ODF verifications, etc.

Figure 4 below is an illustration of these elements.



Rank	Nom du TA	Nombre d'act...	Nombre de vil...	Nombre de de...	Nombre de F...	Nombre de pr...	Nombre de su...	Nombre de ve...	Ecoles Amies ...	Nombre de fo...	Formatiosn sa...	1
1	RANOMENJANAHARY Samba...	117										-
2	RABEARINJAKA Estele	107										-
3	RABININDRAZANA Karama Je...	93										-
4	SAMANJATO Landricka	87										-
5	RANILAINA Aristote Tsarahoela	86										-
6	RANDRIANIAINA Jacquelin	79										-
7	RAKOTOMANANA Mandresy ...	78										-
8	TIANJARA Fabrico	76										-
9	Fabien RAJAONARISON	73										-
10	RAZAFIARISON Justin Theod...	68										-
11	MANANJARA Fréderic	66										-
12	RATSIMISANGOTRA Serge Ho...	61										-
13	RANDRIATSILAVINA Nicolas	60										-
14	RATSIMBAZAFY Tojosoa Carm...	58										-
15	RAKOTOMALALA Jean Rodin	57										-
16	RAKOTONOMENJANAHARY A...	57										-
17	RABEARIZANDRY Solofonirin...	50										-
18	TOLETTE Fiarena	50										-
19	RABETAFIKA Iarivola	48										-
20	RASOLOHARINIAINA Mamini...	47										-
21	SAHOLIVOLOLONIAINA Mam...	47										-

Figure 10

23. 5.ODF VERIFICATION

In this part of the dashdoard, it is possible for each user to display the ODF verified villages, by region, district, Commune, etc.

It is also possible to display these villages according to the ODF verification date. It is possible to filter data by year, by quarter, by month and even by a defined day. Figure 5 is an illustration of this data for ODF villages.

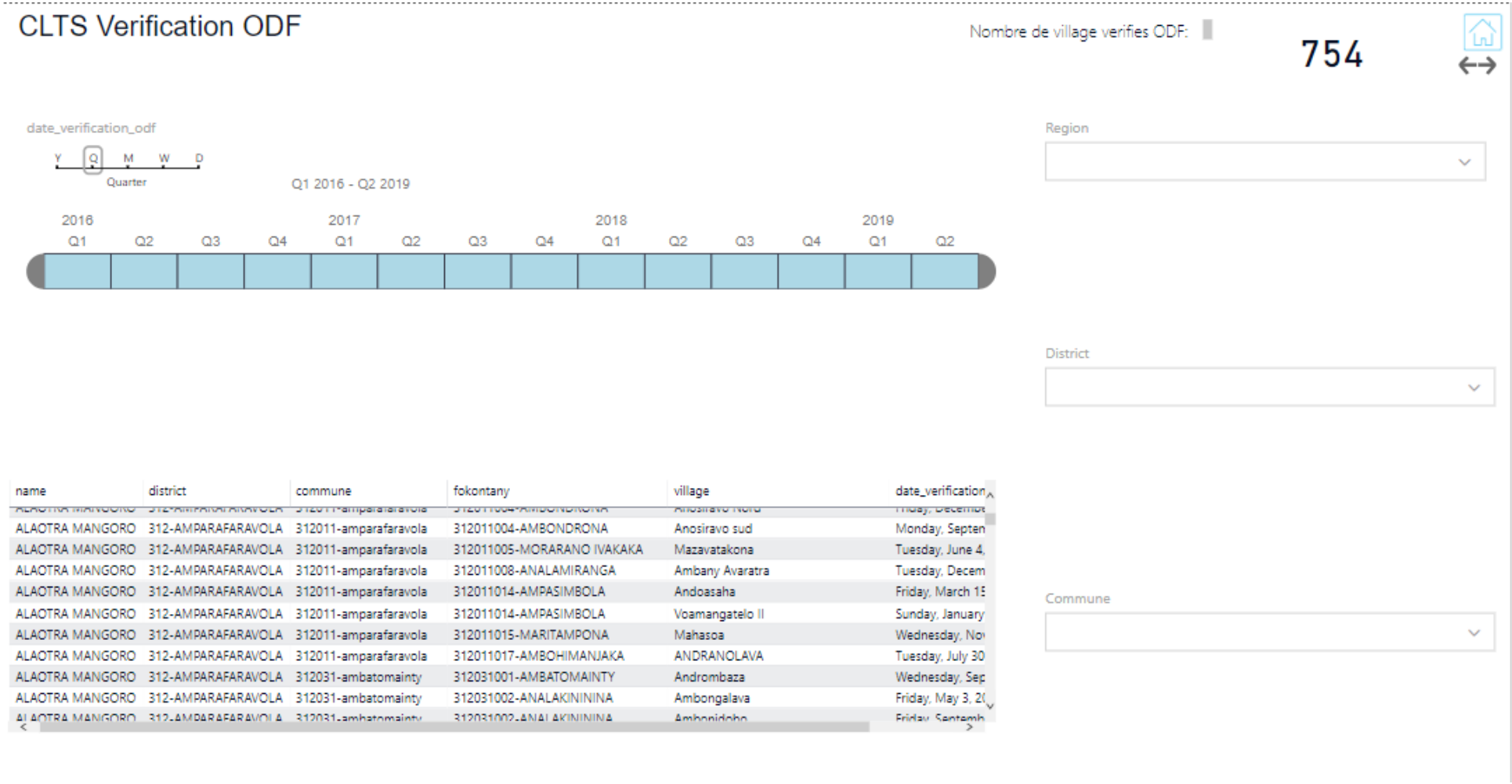


Figure 11

24. 6.TABLE RELATIONSHIPS

In order to meet all of the RANO WASH indicators, 72 tables are interconnected (see Figure 6).

Each of these tables are the results of queries since via data extraction from CommCare.

The data inside these tables is updated daily, to get the closest situation to field level activities.

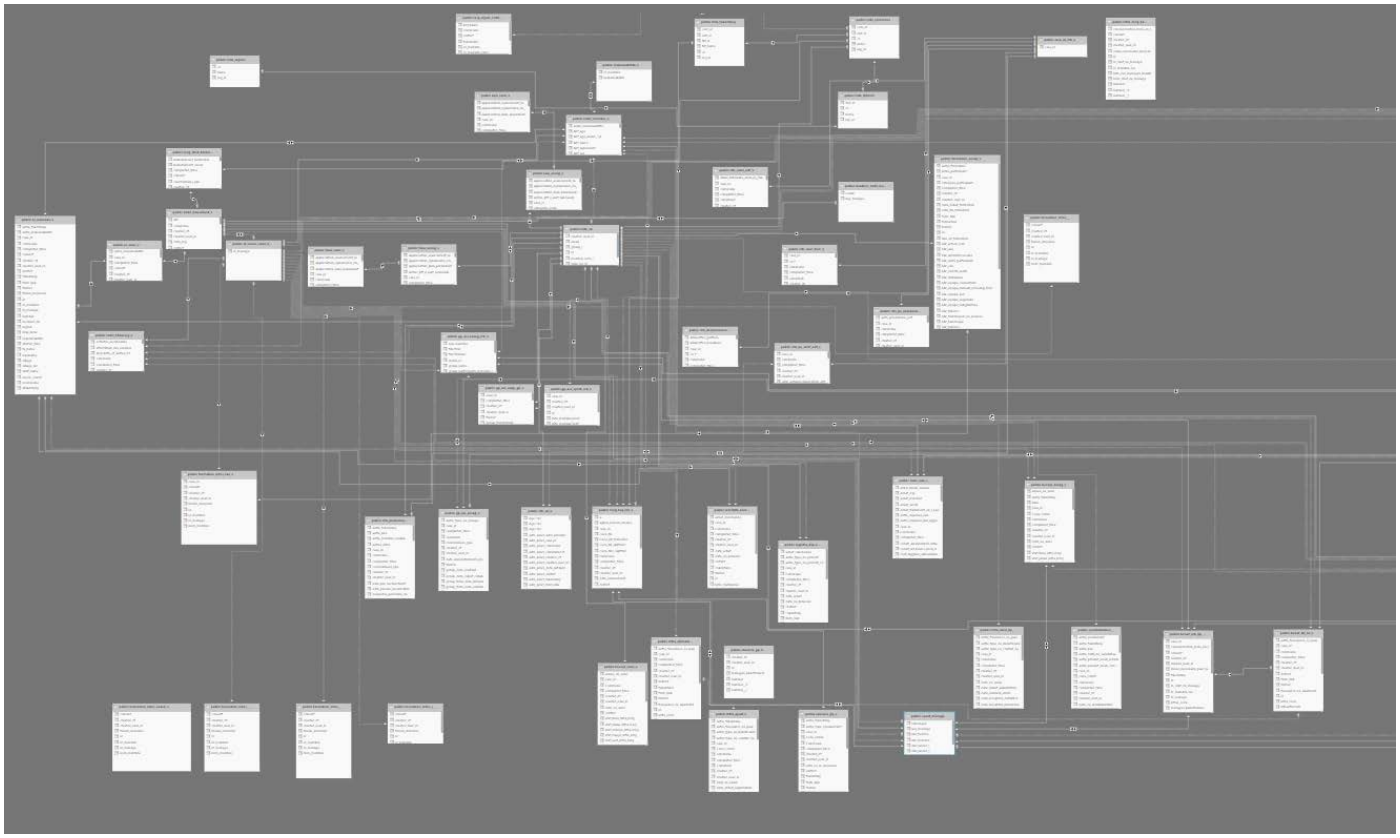


Figure 12