RANO WASH

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

Quarterly Report

3rd Quarter – April 1 to June 30, 2019

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FRONT PICTURE : Household benefiting from a social connection to the water supply system, Beforona Commune, Alaotra Mangoro (Photo credit: RANO WASH)

TABLE OF CONTENTS

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 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
MoWEH	Ministry of Water, Energy and Hydrocarbon
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
SCC-EAH	Structure Centrale de Coordination du Secteur EAH (Central Coordination Structure for WASH)
SCN-EAH	Structure de Coordination Nationale du Secteur EAH (National WASH coordination Structure which includes SCC-EAH and SRMo-EAH)
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
SRMo (or SRMo-EAH)	Structure Régionale de Mise en Œuvre (Regional Implementation Structure)
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

1 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: Vatovavy Fitovinany, Atsinanana, Alaotra Mangoro and Amoron'i Mania, Haute Matsiatra and Vakinankaratra regions, Madagascar
Geographic Coverage in FY19	110 communes in 4 regions: Vatovavy Fitovinany, Atsinanana, Alaotra Mangoro, and Vakinankaratra. Activities at regional level in 2 regions: Amoron'i Mania, Haute Matsiatra
Reporting Period:	April 1 to June 30, 2019

1.1 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 is implementing the RANO WASH project.

To accomplish this goal, 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. 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.

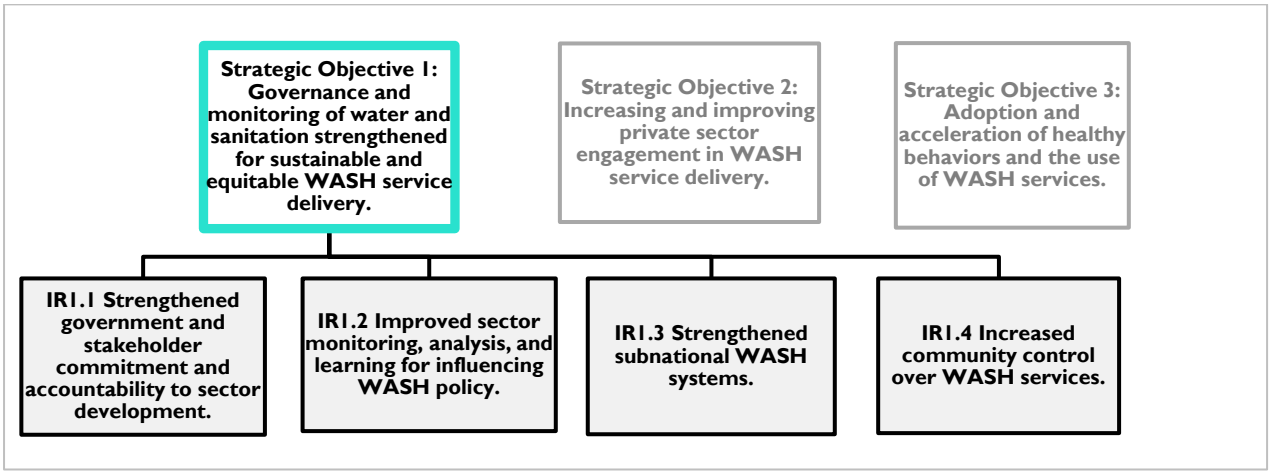
In FY2019, RANO WASH is working at communal level in four of the six selected regions: Vatovavy Fitovinany, Atsinanana, Alaotra Mangoro, and Vakinankaratra, and at regional level in two regions: Amoron'i Mania and Haute Matsiatra.

2 ACTIVITY IMPLEMENTATION PROGRESS

2.1 Implementation Status

This report covers the period from April to June 2019, which corresponds to the third quarter of the fiscal year and the third reporting quarter of the RANO WASH project.

2.1.1 Strategic Objective 1: Governance and monitoring of water and sanitation strengthened for sustainable and equitable WASH service delivery.



Key achievements:

- The Ministry formalized a national coordination structure for the WASH sector (SCN-EAH) composed of the central coordination structure (SCC-EAH) and the regional implementation structures (SRMo-EAH).
- All six intervention regions updated the *Suivi Eau et Assainissement de Madagascar* (SE&AM) following mobilizations and training from RANO WASH contributing to the availability of timely and accurate data for the Ministry of Energy, Water and Hydrocarbons (MEEH).
- RANO WASH trained local authorities [1] in 51 new communes (FY19) on municipal project management and public–private partnerships (PPP) to clearly define and socialize institutional arrangements (including stakeholder roles) and responsibilities and increase knowledge on the advantages and constraints of working with the private sector.
- Twenty-three STEAHs (commune technical services) received CLTS training to strengthen the quality and fidelity of the approach and better coordinate sanitation actors in their communes.
- Fifty-four local-level CSOs in the Vatovavy-Fitovinany and Alaotra-Mangoro regions received capacity building to increase the effectiveness of their advocacy activities to address WASH needs in their respective municipalities.
- A total of 42 out of 59 new municipalities have functioning SLCs (local dialogue structures). RANO WASH mobilized these communes so they can reflect on improving access to WASH services at the commune level during Q4.

[1] Mayor, President of the Council, and other local authorities, including School Director, Health Center Chief, Chief of Fokontany, and traditional authorities.

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.

In Q3, the Ministry mobilized its partners to set up the formalized national coordination structure for the sector (SCN-EAH) composed of the central coordination structure (SCC-EAH) and the regional implementation structures (SRMo-EAH). RANO WASH is actively participating in this initiative and will be the co-lead of the regional implementation structure in Vatovavy-Fitovinany, Atsinanana, Vakinankaratra, and Alaotra-Mangoro. This mechanism was previously known as the PNP-EAH and functioned on an ad hoc basis. A formal and regular coordination structure at the national level will facilitate sector coordination and collaboration mechanisms (such as joint planning, implementation, monitoring sector reviews, and learning/sharing among public, private, and NGO stakeholders) as well as contribute to a shared vision for WASH services for all of Madagascar. Although CSOs and the private sector actively engage with WASH actors and the government at the regional and communal levels, it is important to note that they still do not participate in the national coordination meetings. RANO WASH will continue to advocate for their participation.

Output 1.1.2 Ministry in charge of WASH institutional capacity developed to meet strategic needs.

Technical and financial partners (TFPs) provided feedback on the interim report, which outlines sector needs and the first draft of the sector plan (PSEAH). Once these are addressed[2], the costing of the PSEAH can take place. Under direction from the MEEH this quarter, the SCN-EAH will provide oversight in Q4 of the consultant's progress to finalize the report in an effort to push this forward.

Activities planned for the next quarter:

- Set up the regional coordination mechanisms and mobilize actors to participate in the coordination process. RANO-WASH will be the co-lead of the regional implementation structure in Vatovavy-Fitovinany, Atsinanana, Vakinankaratra, and Alaotra-Mangoro;
- Finalize the adapted sector tools to support the SRMo and SCN-EAH in their sector coordination activities at the national and regional levels (*e.g.*, BPOR/BPON and SE&AM);
- Under leadership from the MEEH, provide support to manage the consultation process to finalize the sector plan and initiate the costing related to it.

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

Output 1.2.1 SE&AM strengthened and extended.

Relevant WASH stakeholders in the two new FY19 regions (Amoron'i Mania and Haute Matsiatra) received training on updating the SE&AM and BPOR tools. As a result, all six RANO WASH intervention regions routinely update the SE&AM on a set schedule, with the DREEH validating the data. This represents a huge milestone for the MEEH as timely and accurate data feeding into a single national monitoring system will help drive evidence-based decisions and investments for the sector, influence policy decisions, and provide the basis for reviews on sector progress.

Data from Q1 and Q2 (October 2018–March 2019) from TFPs and communes is now available online. Several technical and organizational challenges delayed this upload, including the content of and adherence to the template, data validation, and time- and human resource–intensive paper updates from municipalities to the DREEH. As a result, the MEEH set up a committee composed of ministry officials

[2] The technical committee recommended making the country's political orientations more precise.

and TFP members to initiate an after-action review (AAR) to continually improve the SE&AM update, including improved data flow and mobile-based updates for municipalities.

At the commune level, 47 out of the 51 FY18 communes updated the SE&AM with Q3 data. A total of 13 out of 59 FY19 communes received training on how to use and update the SE&AM and began the data transfer process to the DREEH. Additional communes will receive this training in Q4, accelerating future data transfer to the DREEH.

Activities planned for the next quarter:

- Provide technical assistance to the MEEH in developing and formalizing tools to strengthen their capacity to monitor performance-based contracts;
- Advocate for a Ministry- and TFP-led SE&AM committee to develop plans for SE&AM improvements building from RANO WASH experiences;
- Continue to provide technical support to the DREEH for the SE&AM quarterly update;
- Provide training to the SRMo on the use and update of the SE&AM as well as the use of the digital library;
- Provide technical assistance to the SRMo to implement a learning program on private sector involvement in WASH services delivery at the regional level and on the use of the digital library;
- Provide technical and material support to the DREEH, including equipment and Internet connection to improve the SE&AM update process.

IR1.3 Strengthened subnational WASH systems.

Output 1.3.1 Decentralized resources available for sustained WASH service delivery.

RANO WASH supported WASH stakeholders in the six intervention regions on using the BPOR as a planning tool, including access rate, fokontany priorities, infrastructure proposed, financing needed, and annual financing needed to reach ODDs 6.1 and 6.2. This helps prepare actors for the regional planning process, to be led by the regional coordination unit (SRMo). To support the DREEH in strengthening the capacity and performance of its technical services, the project developed an STEAH aptitude test to be piloted by the end of FY19.

Box 1. Key elements in the STEAH aptitude test:

- Roles and responsibilities of communes as facility owners and the STEAH as mandated by the commune.
- Service sustainability, service quality, and beneficiary satisfaction indicators.
- Key WASH messages and WASH as a human right.
- WASH services and facilities and the key calculations needed.
- Aptitude on monitoring facilities, interpreting results from water quality testing, and undertaking beneficiary satisfaction observed during STEAH activities at the commune level.

Output 1.3.2 Commune management capacities strengthened for WASH service delivery.

In Q3, 51 communes worked on the development of their communal WASH plan. By the end, the communes finalized the assessment of the current WASH situation in their commune.

The project also trained 51 FY19 communes on municipal project management and PPPs to review and clarify their roles and responsibilities as well as discuss how to involve private operators in WASH service delivery and to apply human rights to water and sanitation in their communes. Following the training, 48 out of 51 new communes began the process of setting up the STEAHs.

All of the eight communes benefiting from FY19 construction received training and coaching on the private service delivery management model and contract management. Moreover, the project organized an exchange visit for these eight communes in sites in Haute Matsiatra and Vakinankaratra,

Table 1. Key steps in communal WASH plan development

Commune	#	RANO WASH
	1	Launch
Launch of planning process (complete)	2	Training on planning process, coaching
Assessment of current situation (complete)	3	
Vision, objectives, and strategy	4	
Identification of services option	5	Training on services option
Development of action plan	6	Coaching of commune
Implementation of action plan	7	

where water private operators are operational. The 10 communes with existing water supply infrastructure received training on the delegation contract prior to the signing to ensure all stakeholders agreed on and understood the contents.

As the final component of the training,[3] 23 STEAHs participated in CLTS training to improve the implementation and fidelity of the approach as well as strengthen the coordination of sanitation interventions. The STEAHs and the project field staff developed an action plan for CLTS implementation in their communes. The involvement of technical services in CLTS will help strengthen ownership and follow-up mechanisms.

Picture 1. Training and practical exercise of STEAH agents, Atsinanana, Ranomafana East, June 2019 (photo credit: RANO WASH).

Activities planned for the next quarter:

- Continue capacity building and support to STEAHs in FY19 communes and the aptitude test for STEAHs from FY18 communes;
- Provide on-the-job guidance and supervision for STEAHs in the communes with water supply systems;
- Continue to support the pilot communes to use ICT4D SE&AM tools;
- Provide technical assistance to 51 communes to finalize their WASH development plan.

[3] STEAH training encompasses the following: (1) core topics, functions and roles and responsibilities, planning, accountability mechanisms; (2) technical processes; (3) contract management, operations and maintenance, private sector management, financial planning; and (4) CLTS.

IR1.4 Increased community control over WASH services.

Output 1.4.1 Communes and communities with an active civil society become aware of and organized to claim their right to water and sanitation.

In Q3, RANO WASH trained 10 commune-level WASH CSOs on delegation contracts, including the roles and responsibilities in the institutional arrangements among the project owner, the private operator, and the users' associations (ASUREP). The training emphasized the importance of accountability mechanisms to increase the quality, equity, and sustainability of services. CSO members began to raise community awareness on their water rights and the importance of accountability mechanisms as well as introduced accountability tools such as a suggestion box and CARE's community score card approach.

Three regional-level WASH-CSOs updated their advocacy plans following joint training with the national WASH-CSO network (Atsinanana, Alaotra-Mangoro, and Vatovavy-Fitovinany regions). In addition, 54 local-level CSOs in the Vatovavy-Fitovinany and Alaotra-Mangoro regions received capacity building to increase the effectiveness of their advocacy activities for WASH needs in their respective municipalities. All training with CSOs emphasize water and sanitation as human rights.

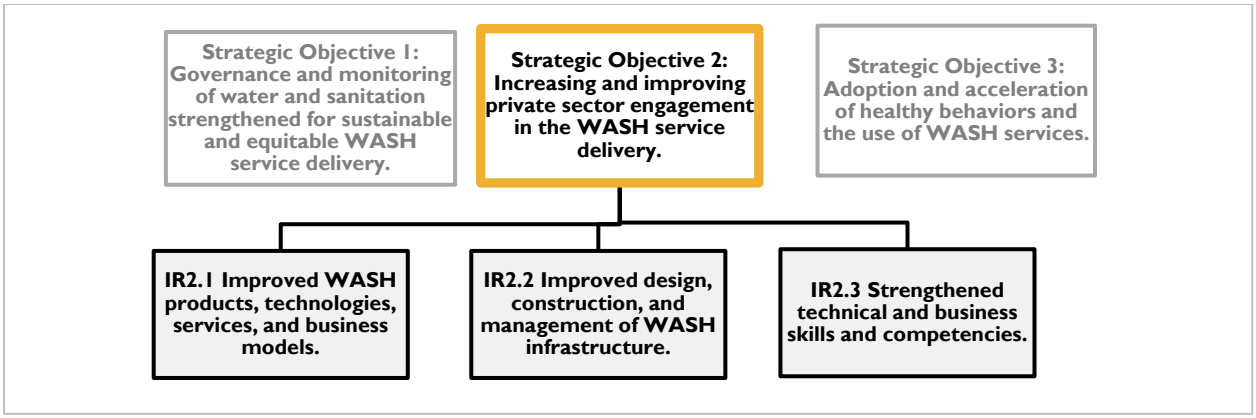
Output 1.4.2 Communes with functional WASH accountability mechanisms.

In Q3, the project set up 42 local consultation structures (SLC). The SLC is a space of dialogue among local institutions, beneficiaries, and authorities on the status of commune development, including access to WASH services.

Activities planned for the next quarter:

- Support CSOs to implement their action plan;
- Coach communes and SLCs to facilitate dialogue among all stakeholders at the local level on social issues, including access to WASH services;
- Assist communes, service providers, and communities to use accountability mechanisms;
- Implement a learning event on the application of accountability mechanisms at the communal level.

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



Key achievements:

- All tendering and contracting documentation were harmonized for RANO WASH consortium members (CARE, CRS, WaterAid), to be used for the FY19 tendering process for the eight water systems.
- The tendering process for the eight water supply systems was launched in June 2019, taking into account the lessons learned from the first 12 tenders in FY18.
- The 12 construction works scheduled for FY18 were all completed except for Andemaka, following a technical problem to be resolved.
- 1,168 people have gained access to basic drinking water services and 609 to safely managed drinking water services.
- The water supply managers and STEAHs of the 12 FY18 water systems were trained in water system operation and maintenance.
- A training workshop for preselected companies for tenders and a networking event with banks were organized to activate the procurement procedure and to improve the quality of bids for construction works and system management.
- 23,004 people have gained access to a limited sanitation service and 7,522 people to a basic sanitation service.

IR2.1 Improved WASH products, technologies, services, and business models.

Output 2.1.1 Development of a comprehensive WASH market assessment (WMA) methodology.

The team received a draft WMA report for the three new regions of Vakinankaratra, Amoron'i Mania, and Haute Matsiatra. We are finalizing this report and will disseminate it to WASH actors and USAID. An executive summary is provided as an appendix. (Annex 6. SO2 WMA Summary Vakinankaratra, Amoron'i Mania and Haute Matsiatra)

Output 2.1.2 Regional WASH market development plans drafted.

In Q3, RANO WASH facilitated discussions among regional WASH actors on the WMDP in Atsinanana and Vatovavy-Fitovinany, which led to the emergence of three main products: safe water, toilets, and sanitary pads. A business model was developed for each product (see Annex 7 SO2 Examples of Business Models: Atsinanana Region).

In Q4, RANO WASH will hold an event with all actors mobilized during the WMDP workshops to share the WMDP and plans to pilot a model of market-based sanitation. Two representatives of RANO WASH benefited from a sharing and training session held by WSUP in June on a toilet sales agents model, which will inform our market-based sanitation approach.

For Alaotra-Mangoro, the first workshop to share the WASH market study and to initiate reflections on the WMDP was held in Ambatondrazaka on June 20–21, 2019. The process will continue in Q4 to prioritize products and to develop business models.

Output 2.1.3 Type and range of financial products for available and accessible WASH services and products increased.

The project began the tendering process in June 2019. To build on lessons learned and improve the quality of bids for construction and systems management, RANO WASH organized a five-day training period for 63 preselected water private operators that will submit offers. The project will also hold an open house in early July with the support of SHOPS Plus to provide them with an opportunity to meet and conduct business with financial institutions facilitating their investment.

Activities planned for the next quarter:

- Hold workshops to present and launch the WMDP in the Atsinanana and Vatovavy-Fitovinany regions;
- Develop and implement the model of the market-based sanitation pilot project in Atsinanana or Vatovavy-Fitovinany;
- Finalize the WMDP development process in the Alaotra-Mangoro region.

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

Output 2.2.1 - Design and construction of sustainable WASH infrastructure improved

Procurement process to select operators for eight (of the 20 to be completed in FY19) water supply systems

In May and June, the DREAH validated eight APDs following technical sessions with BushProof and Sandandrano on APD results. At the end of the sessions, the roles and responsibilities of each stakeholder were defined to ensure the quality and sustainability of the services. An update on progress for the water supply systems and Water Quality Assurance Plan is provided in Annexes 8 and 9.

Picture 2. Site visit in Ampasimadinika, Mahatsara, and Niarovana Caroline (photo credit: RANO WASH).

Construction works

Seven completed water systems (of the 20 systems planned for completion in FY19) received provisional approval, and four of these systems received technical approval. These four systems are already providing water to customers while awaiting formal and ceremonial reception by the local government. Technical approval for the three remaining systems is anticipated by August 2019, at which time water service delivery will commence. The system in Andemaka is delayed because of additional rehabilitation work needed to replace old underground distribution networks.

Activities planned for the next quarter:

- Provide provisional acceptance of the Kianjanomby, Ambatofotsy, and Andemaka water systems;
- Monitor the ESF and test the water quality for the 12 completed construction works;
- Launch construction for the remaining eight water supply systems;
- Begin APS and APD for FY20 construction works.

IR2.3 Strengthened technical and business skills and competencies.

Output 2.3.1 Capacity building for private sector business systems and strengthened technical operations.

RANO WASH organized a five-day training period in partnership with Sandandrano, BushProof, the SHOPS Plus project, and the DREEH team for the seven management companies and the STEAHs of the constructed 12 water systems. The training focused on providing private operators capacity

building on the management and operation of the water systems (technical, financial, commercial, and organizational), contract management and supervision, customer needs, and the promotion of water connections and water use. The STEAHs received training on contract management and supervision as well. The workshop provided rich reflections and guidance supporting private water operators to upgrade their water systems (cash management, contract management, responsible investment, customer-focused management, and system maintenance planning) (see Annex 10. SO2 Content of Training Session for WSPs).

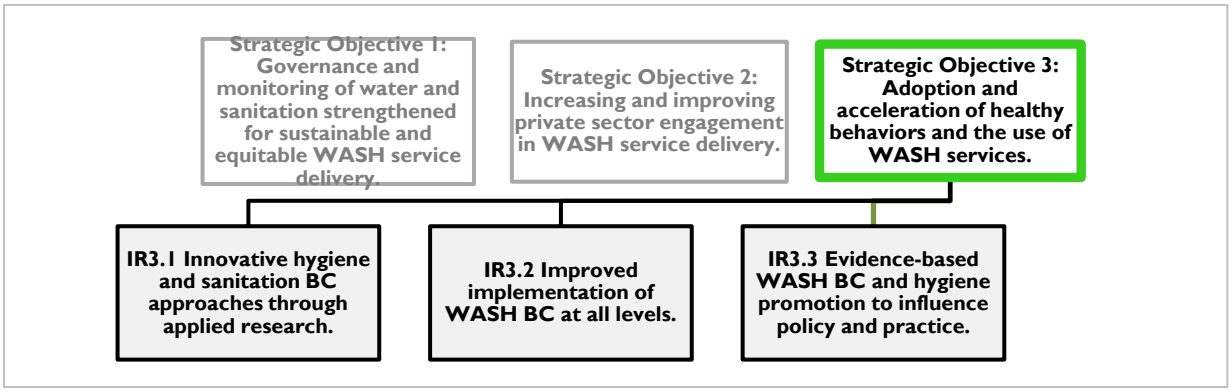
RANO WASH and SHOPS Plus will host an open house for the new preselected water service operators and the Baobab and Access banks. It will be an opportunity for (i) private providers and financial institutions to identify additional WASH business opportunities, (ii) WASH service providers to discover available financial services, and (iii) a better understanding of the advantages of the Association of Private Water Operators of Madagascar (AOPDEM).

RANO WASH continued to provide on-job training to local masons to support households to build or improve latrines. Local masons have offered their services mainly for triggered villages during Follow-Up Mandona sessions.

Activities planned for the next quarter:

- Hold an open house for new preselected water service operators and Baobab and Access banks;
- Provide on-the-job training for the water systems managers in the 12 newly constructed systems as determined during the training held at Foulpointe;
- Conduct training on construction techniques for the selected private operators in the eight water systems to improve construction quality.

2.1.3 Strategic Objective 3: Adoption and acceleration of healthy behaviors and the use of WASH services.



Key achievements:

- The preliminary steps of the second iteration of the behavior change (BC) strategy were rolled out with 1,233 local promoters and the use of the Grow-up Sticker concept, which resulted in 868 household visits.
- A training curriculum on CLTS was developed and integrated in the BC and market-based sanitation strategy, and a CLTS trainer team was set up within the project to conduct training for RANO WASH field agents and CLTS learning and training of new staff members.
- The following were formed—212 new open defecation–free (ODF) communities, 177 self-proclaimed ODF communities, 818 shared toilets, and 1,045 nonshared toilets.

- A total of 991 VSLA/SILC members bought WASH services or products (improved latrines and reusable sanitary pads).

IR3.1 Improved hygiene and sanitation BC approaches through applied research.

Output 3.1.1: Behavioral science innovations for WASH BC explored, iterated, and evaluated.

In Q3, RANO WASH began rolling out its BC strategy and developed a draft field guide for nudge activities in schools. This quarter, the team promoted the "Grow-Up: A Leading Household" reward concept to promote the six key behaviors and tap into behavioral determinants around pride, status, and self-esteem. The preliminary results are discussed further below.

The project started to design the evaluation model of this strategy, which will be evaluated and refined in Q4 with support from the LSHTM.

The RANO WASH team met with researchers from the Water Supply and Sanitation Collaborative Council (WSSCC) to ensure complementarity in CLTS/ODF research in Madagascar. The WSSCC will conduct an outcome survey with a similar scope of work as the research RANO WASH and the LSHTM planned to propose. As a result, RANO WASH will conduct a qualitative study on CLTS/ODF sustainability based on the results from the WSSCC outcome survey. These are expected in early FY20.

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

During Q3, RANO WASH began the desk review and analysis of available data. We also began conversation and exchanges with the PHE network in Madagascar. As preliminary results, 33 projects are identified as implementing PHE initiatives around family planning, basic health care services, biodiversity conservation, natural resources management, environmental education, and community mobilization. Fewer initiatives exist on income-generating activities and WASH. In RANO WASH intervention areas, seven PHE initiatives have already been implementing by other PHE network members.

Output 3.1.3: WASH–nutrition linkages researched.

In Q3, RANO WASH developed a concept note on how exactly the project will address and use the research on WASH-NUT with the detailed operational plan up to the end of the project. We needed to clarify how exactly to use this research and how it translates into a realistic timeline during the whole project.

Box 2. Four components of WASH–nutrition interventions for RANO WASH:

1. Advocacy in favor of WASH in policy, especially nutrition inclusion in WASH interventions (Baby WASH).
2. Partnership with World Bank–funded research projects.
3. A RANO WASH BC strategy, including nutrition-sensitive activities (Baby WASH).
4. Partnership with USAID health programs to coordinate activities.

Activities planned for the next quarter:

- Research on nudging in schools;
- Continue the PHE desk review and stakeholder analysis;
- Organize a learning event with WASH stakeholders on WASH and nutrition.

IR3.2 Improved implementation of WASH BC at all levels.

Output 3.2.1: WASH BC program coordination improved in RANO WASH regions.

In Q3, RANO WASH continued its participation in different working groups and initiatives to improve coordination among partners implementing BC activities. RANO WASH formed a partnership with the USAID-funded ACCESS program. In Vatovavy-Fitovinany, RANO WASH worked with the ACCESS regional team to choose communes where ACCESS will implement CLTS activities to avoid CLTS in the same communes and to benefit communes not covered by RANO WASH. RANO WASH also provided the CLTS training package for the ACCESS team as well as the trainers. In Atsinanana, RANO WASH is a member of the WASH cluster of the regional C4D platform. The regional C4D platform aims to coordinate activities on essential family practices and promote social BC by using the C4D approach.

At the national level, RANO WASH participates in ongoing discussions on the ODF certification process with the MEEH and major sanitation partners such as UNICEF, FAA, HP+, WaterAid, *etc.* This activity is ongoing, and the validated protocol will be shared when available.

Output 3.2.2: Innovative CLTS and WASH BC implementation activities.

In Q3, **212 new communities were verified as ODF** compared to 49 in Q2. Target populations constructed a total of 818 shared toilets and 1,045 nonshared toilets. Currently, about 70–80% of triggered communities become ODF, and the team is concentrating on using Follow-Up Mandona to push communities to achieve the ODF status once triggered. Most of the triggerings were undertaken in March 2019, so the results were more visible from Q3. Moreover, given the harvest period between April and June and the resulting increase in cash in hand for households, Q3 is an opportune period to ramp up sanitation activities and increase the uptake of latrines. RANO WASH also worked with local service providers, such as local masons, to develop alternative in-kind payment, such as harvested rice, to further improve household access to latrines. The project also trained staff and STEAHs in the new regions on RANO WASH's sanitation strategy, including market-based approach principles, BC strategy, and CLTS. STEAHs were included in the training to support the local government and increase their involvement and ownership of sanitation activities. (See also Annex 11. SO3 Approach to CLST)

Picture 3. Post-triggering in Tsarasambo, Andranonala, and Atsinanana (photo credit: RANO WASH).

Figure 1. Grow Up Sticker

As part of the Grow-Up Sticker rollout, 1,233 local promoters received training on participatory methods for the main delivery modalities: organized campaigns, household visits, and group

discussions. The first results are starting to show even in the early stage of the implementation. The evaluation stage will inform us on the effectiveness. The results are based on a total of 868 visited households in the span of less than three months.

Table 2. Number of household adopting a key behavior of the Grow-Up Sticker

	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	220	292	19	77	128	38

"Adopting household" means that the local promoters have visited the household at least twice and have reported the practice within the households based on three aspects:

- the presence and availability of related facility, tools, or materials used to apply the behavior;
- the knowledge of specific details of each behavior; and
- the observation of the practice within the household during the visits.

Those first results reveal that menstrual hygiene and gender issues are still the most difficult behaviors to address, while sanitation behaviors are influenced and reinforced by ongoing CLTS activities. On menstrual hygiene, LSHTM research reveals that the lack of knowledge about menstruation (complete and accurate information) contributes to menstrual hygiene issues. Motivational factors such as disgust, shame, discomfort, fear, and the lack of WASH facilities are also considered. We will then introduce more understanding on menstrual hygiene and address those drivers in the next periods.

The project also organized a field agent contest on scriptwriting for puppets and participative theater to foster friendly competition and reward. The project received a total of 32 scripts on the six BC topics. The winning scripts will be adapted to each region and will be voice-recorded and used by local promoters for mass campaigns.

Relating to the promotion of WASH-friendly institutions, the project continues to support eight health centers and 28 schools. In Atsinanana, the team and the regional public health direction organized joint field visits to follow up on the four trained health centers in Foulpointe, Ampasimbe-Onibe, Andovoranto, and Ranomafana East. These supervision visits monitored fidelity to the action plans/milestones for each health center and provided support for the difficulties encountered.

Picture 4. Students in EPP Andemaka washing hands with soap (photo credit: RANO WASH).

Poor medical waste management remains an issue in health centers. Although the WASH-friendly criteria include medical waste management, RANO WASH does not provide support and will explore a partnership with

Picture 5. VSLA members and their latrine, Andemaka (photo credit: RANO WASH).

ACCESS to help fill this gap as well as to undertake an environmental impact study on how to mitigate the potential impact of incinerators.

The project continued to initiate the WASH-friendly process in new schools and organized follow-up sessions in previous schools. In Vatovavy-Fitovinany, three new schools will be certified as Level I WASH-friendly schools. The lesson learned from this period is that the WASH-friendly process is part of a larger BC program within RANO WASH and that coordination and synergy with CLTS activities are important to create a ripple effect within the community.

In Q3, the project also developed a field guide for nudge activities in schools. The idea is to implement nudges in those WASH-friendly schools to boost handwashing practices by students. The realization of the nudges along with the rehabilitation or construction of toilets will be held in Q4.

The project also started to reach out to the Ministry of Education and the Ministry of Public Health on the sustainability issue of the WASH services and infrastructures. The health centers are more likely to be sustainable if they can establish and present an annual budget including the WASH services to the Ministry of Public Health. The project will coach health centers to establish their budget and planning. In contrast, the school WASH services are less likely to be sustainable as they lack access to resources at all levels. RANO WASH will work with other partners to explore the possibility of an advocacy strategy specific to WASH in schools.

During Q3, **991** VSLA/SILC members bought WASH products. Latrines remain the top expense among VSLA members. A total of 40 new groups were created in Alaotra-Mangoro and 20 in Vakinankaratra. The project also started the VSLA contest to promote improved latrine use, shower use, and clean kitchen use, with 187 VSLA across 17 communes participating. Winners will receive "VSLA model" certificates, and the top two VSLA models will get a multifunctional solar panel and a handwashing station. The winners will be the groups with the most members using those ideal facilities. The project also developed its VSLA strategy (see Annex 12. SO3 VSLA Strategy).

The project continued to **organize community meetings to accompany the infrastructure construction in different communities**, such as in Ilaka East, Andovoranto, Andemaka, Kianjanomby, Kelilalina, and Ambatofotsy. Those community meetings are organized to emphasize conditions for obtaining water connections, different stakeholder roles, and the PPP principles.

Relating to **WASH services marketing campaigns,** in Q3, RANO WASH organized a training workshop for private operators managing the water systems funded by the project. The workshop consisted of different topics on PPPs, gender and social inclusion, business plan design, and operation and maintenance. The project also developed a specific session on social marketing for these private operators. The objective of this session was to improve the understanding of marketing and social marketing and to build on these private operators' experiences in marketing so that they can design water-specific marketing strategies. From this training, each private operator will be coached to develop and implement their marketing plan in Q4.

Activities planned for the next quarter:

- Apply intensive Follow-Up Mandona activities and verification process for triggered communities;
- Continue BC strategy, development, and rollout of evaluation process;
- Continue community mobilization activities for infrastructure ownership activities;
- Finalize VSLA contests;
- Continue support for WASH-friendly institutions.

IR3.3 Evidence-based WASH BC and hygiene promotion shared to influence policy and practice.

Output 3.3.1 National-level networks, policies, and programs engaged for sustainable WASH BC.

In Q3, RANO WASH organized a field visit along with UNICEF, FAA/WSSCC, and the MEEH to observe and learn from sanitation field activities implementation in Analanjirofo and Atsinanana. The Minister himself, representatives from the USAID, and the ACCESS program also participated in the visit. The field visit was an opportunity for the three partners to share their activities and to compare the different approaches to achieve the ODF status. RANO WASH presented its CLTS and sanitation strategy during the visit.

Box 3. Key takeaways from the field visit
Renewal of the MEEH's commitment for the Clean Madagascar initiative for 2025 and development of an ODF standard certification. process.

Activities planned for the next quarter:

- Organize a learning event on WASH and nutrition;
- Organize a learning and sharing session on BC strategy with MEEH;
- Continue participation in national sanitation strategy (ODF certification process and scaling up of sanitation results).

2.2 Gender mainstreaming

Development of the RANO WASH gender and social inclusion strategy

In Q3, RANO WASH finalized its gender and social inclusion strategy for all RANO WASH staff to make explicit the objectives and approaches to implement and monitor the process of gender mainstreaming in all aspects of the project's interventions. The strategy describes how RANO WASH adopts the transformative gender approach, supporting the project to promote gender equality and the principle of "leaving no one behind." It is based on the three strategic objectives of the project and describes activities per strategic objective: to empower women and girls, to promote WASH-inclusive services, and to transform gender norms (see Annex 13: RANO WASH Gender and Social Inclusion Strategy).

Inclusive WASH infrastructure considering specific needs

The project staff and technicians from BushProof and Sandandrano held meetings to discuss inclusiveness in WASH infrastructures. As a result, the sanitary blocs (laundry, toilet, urinal, shower room) constructed by RANO WASH were revised to consider observations and suggestions from service users, especially washerwomen, pregnant women, children, and disabled people (see Annex 14: Minimum Requirements for Inclusive WASH Infrastructures).

Picture 6. Booth of seamstresses during World Menstrual Hygiene Day (photo credit: RANO WASH).

From awareness raised by RANO WASH on the importance of inclusive infrastructures, some initiatives are taken to design latrines while considering the specific needs of disabled people and pregnant women (*e.g.*, a latrine that meets the specific needs of pregnant women and people with disabilities).

Participation of RANO WASH in World Menstrual Hygiene Day

On June 6 and 7, the government celebrated World Menstrual Hygiene Day in Manakara. RANO WASH as well as other WASH actors supported the MEEH to organize the event. Local actors from RANO WASH intervention communes, especially seamstresses who produce sanitary pads, were mobilized to showcase their products.

Activities planned for the next quarter:

- Conduct training on "engaging men for women's empowerment" for the RANO WASH staff in July 2019 and pilot the exercises in the field;
- Organize a dialogue of women leaders on their challenges and successes;
- Coach the private operators and local structures to apply the models of inclusive infrastructures.

2.3 Implementation challenges and modifications made/issues addressed from last quarterly report

- **A pool of trainers at the regional level on different topics** (CLTS, Institutions Amies de WASH, SLC, STEAH, *etc.*) should be set up to rationalize the resources allocated for the different training sessions and to enhance the value of human resources at the regional level. It is important to set up pools of trainers that can serve all the projects and initiatives working for WASH in the intervention regions. RANO WASH has started to create pools of CLTS and STEAH trainers at the regional level. We will continue to work with other partners on other approaches because mobilizing trainers at the national level not only is difficult to carry out given the lack of trainers but also does not facilitate post-training supervision.

- **The drinking water supply system models** built and rehabilitated by RANO WASH serve the fokontanys with high population densities. Aware of the challenges of covering remote villages and the limit of water service managers to extend their services in these unprofitable villages, the

project is developing models adapted for these remote villages that can complement services already managed by private companies in the surrounding areas.

- Converting households' wishes to have **water connections** into private or social connection requests requires support activities. In Q4, RANO WASH will strengthen its support to private water system managers to activate water connections and to assist households in the fee payment.

3 MONITORING, EVALUATION, ACCOUNTABILITY, AND LEARNING (MEAL)

3.1 Performance Monitoring Plan (PMP) update

In Q3, the revised MEAL plan, including the PMP and the performance indicator reference sheets (PIRS), was approved by USAID. The MEAL data-collection tools were updated to reflect the finalized set of indicators and corresponding definitions. The updated indicator performance tracking table (IPTT) with a full list of indicators, achievements, and yearly targets is presented in Annex 4. Any future modifications to indicator definitions will be submitted in the annex to quarterly/annual reports.

3.2 MEAL system update

In Q3, RANO WASH updated data-collection tools to improve functionality, limit data entry errors, and respond to updates made to the MEAL plan. RANO WASH developed several additional forms in CommCare to track essential activity data and further digitize the MEAL system. Some 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;
- Development of checklists for SO1 activities;
- Revising CLTS forms to account for communities who were influenced by neighboring ODF villages (« TACHE D'HUILE ») and did not undergo pre-triggering.

All zone supervisors recently received Internet 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 will result in the quicker identification of data quality errors and data cleaning that must be done in the central project database.

In Power BI, the project continued developing the internal dashboard to display real-time data from project activities. This dashboard includes reports and data visualizations to monitor project achievements and guide programmatic decision making and planning. In Q4, this dashboard will be extended to include an externally facing section that can be shared with outside partners and the donor.

In addition to the continued operationalization of the project ICT4D platform, RANO WASH conducted a monitoring field visit to Vatovavy-Fitovinany that focused on the supervision of field agents and MEAL capacity reinforcement. Key field agents received direct supervision of commune- and village-level activities and received feedback on data collection. National MEAL staff assisted with the monthly review for all regional field agents to provide training on new data collection forms and review best practices for data quality assurance, tablet management, and basic troubleshooting in CommCare. Similar visits will be conducted in future quarters, rotating among other project regions.

3.3 Accountability

In Q3, RANO WASH continued promoting the Green Line/"*Ligne Verte*" in Atsinanana. The project printed 5,000 additional Green Line posters to effectively expand Green Line services into all project communes in Alaotra-Mangoro, Vatovavy-Fitovinany, and Vakinankaratra as well as the remaining project communes in Atsinanana. RANO WASH's closely tracked calls and non-sensitive call logs are summarized in weekly and monthly reports. The number of calls remains low, with demands for general information about project activities representing the majority of Green Line calls received. During monthly meetings, the field agents review how to effectively promote the Green Line to continue expanding awareness of this service.

In Q4, all posters will be distributed and posted in public settings, such as mayor's offices and health centers. Promotion activities will continue to expand awareness of project feedback mechanisms.

3.4 Activities planned for the next quarter

- Operationalization of Green Line in Alaotra-Mangoro, Vatovavy-Fitovinany, and Vakinankaratra;
- Internal data quality assessment;
- ICT4D/Database development:
  - Expansion of project dashboard to display real-time data for the external sharing of project achievements;
  - Purchase of tablets and ICT4D materials for new regions;
- Training of field enumerators and preparations for data collection for baseline study and WASH infrastructure inventory in new regions;
- Updating of RANO WASH learning agenda;
- Field visits for regional MEAL capacity building.

4 MANAGEMENT AND ADMINISTRATIVE ISSUES

Personnel

At the time of reporting, 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. RANO WASH staff, consortium members, and partners, including the Ministry counterparts, were officially informed of this change of leadership on Thursday, July 18. In this acting COP role, Sébastien Fesneau assumes all interim duties of the Chief of Party, including signatory, decision-making and representational authority on behalf of RANO WASH. Avo Ratoarijaona, RANO WASH Director of Programs, assumes interim responsibility for the full DCOP role.

The recruitment process for a new Chief of Party will be conducted in Q4. We expect this recruitment and review process to be complete and a new COP identified by September 30, 2019. In the interim, we have full confidence in the RANO WASH team and acting COP to lead project activities with success. CARE will ensure ongoing support to the Acting COP during this transition period. CARE, with leadership of the Acting COP, has engaged in an active change management process with RANO WASH staff to ensure that roles and responsibilities are clear, and staff are comfortable with this change in leadership.

Media and Communication

RANO WASH has also completed the recruitment of a Communication and Media Officer; Ms.

Vero Rabehasaina (Vero.Rabehasaina@care.org) will commence working with RANO WASH in July 2019.

During this quarter, RANO WASH has also piloted the development of story maps for each regions. An example for Atsinanana region is provided here:
https://storymaps.arcgis.com/stories/4d860fc3b46d450f8c3dc3b596269876

Startup in Amoron'i Mania and Haute Matsiatra

CARE has finalized the structure, operations, and staffing plan for the Amoron'i Mania and Haute Matsiatra regions. The selected regional coordinators and new key personnel for the two new regions will participate in the FY20 annual planning workshop scheduled for Q4.
Following the call for expressions of interest, CARE has selected 6 potential implementation partners to submit a detailed proposal for RANO WASH. The final selection will be made in July 2019.

Coordination

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

Regular communication is held with consortium partners and regional teams through periodic conferences calls, field visits, and other meetings as necessary in FY20.

Activities planned for the next quarter:

- Development and submission of FY20 annual work plan and budget;
- Recruitment of the new Chief of Party for RANO WASH;
- Development of communication and media plan for FY20–FY22.

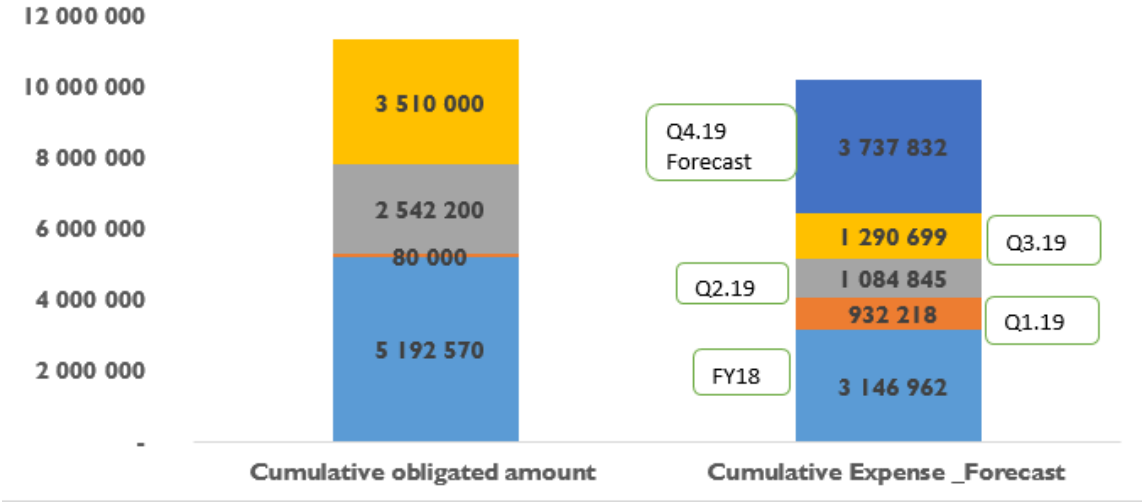
5 FINANCIAL MANAGEMENT

The project's expenses during the third quarter (April 1–June 31) of the 2019 Fiscal Year (FY19 Q3) of $1,290,699 represents a rate of 95% compared with the forecasted accrual of $1,232,153 and corresponds to a burn rate of 46% against the FY19 budget.

Line Item Description	Previous FYs (Cumulative)	Current FY, FY19 (October 1, 2018–September 30, 2019)				Current Cumulative		FY19 Burn Rate Expense vs. Budget	
		FY19 Budget	Q1 (Oct–Dec 2018)	Q2 (Jan–Mar 2019)	Q3 (Apr–Jun 2019)	Q4 (Jul–Sept 2019)	FY 19 Expense		
Salaries	353 345	492,351	136,717	111,208	156,339	-	404,264	757,609	82%
Allowances/Benefits	70 844	115,210	19,706	49,985	39,272	-	108,963	179,807	95%
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	-	32,408	82,212	43%
Equipment and Supplies	182 584	96,878	835	(970)	2 677	-	2,542	185,126	3%
Program Cost	494 877	1,341,083	56,012	134,681	244,465	-	435,158	930,035	32%
Subawards	1 542 816	4 002 561	590,737	623,646	644,893	-	1 859 276	3,402,092	46%
Other Direct Costs	108 360	188 786	24,044	39,061	39,464	-	102,569	210,929	54%
Total Direct Costs	**2 808 031**	**6,392,519**	**831,818**	**968,006**	**1,151,690**	**-**	**2,951,514**	**5,759,545**	**46%**
Indirect Costs	338 930	771,577	100,400	116,838	139,009	-	356,248	695,178	46%
Total USAID Costs	**3 146 961**	**7,164 096**	**932 219**	**1,084,844**	**1,290,699**	**-**	**3,307,762**	**6,454,723**	**46%**

RANO WASH forecasts a total expenditure of $ 3,737,832 for Q4.19 which represents a burn rate of 98% against the FY19 budget.

The chart below presents the cumulative obligated amount of $11,324,770 which gives a balance of $1.1 million by the end of September 2019.



An update on the budget and cost share is provided in Annex 2.

LIST OF ANNEXES

ANNEX 1. RANO WASH SUCCESS STORIES - QUARTERLY UPDATE Q3.19

Open Defecation-Free Status Reached in Three Days

One of the latrines with a fly-proof cover. To the left of the latrine is the brick ventilation unit. (photo credit RANO WASH)

The village of Manaoianarana in Vakinankaratra region achieved Open Defecation-Free (ODF) status in just three days after a training session led by the Caritas team about Community Led Total Sanitation (CLTS). The goal of CLTS is for villages to take initiative in promoting sanitation and hygiene in their own communities by building and using latrines and handwashing stations. ODF status is achieved in a community when all contact between feces and humans is interrupted, everyone uses latrines and everyone in the community washes their hands at the designated handwashing stations after going to the bathroom. To initiate CLTS, Caritas uses "triggering," which involves stimulating a collective sense of disgust in the community about open defecation by teaching about its negative aspects, such as increased risk of disease transmission, so that the community will want to stop practicing open defecation.

The villages in Manaoianarana took the messages of CLTS to heart after their triggering session with Caritas in mid-April of 2019. Before the triggering, Manaoianarana had two outside areas designated for defecation. One of them was right next to a tomb. In Madagascar, tombs are considered sacred ground to the families of those laid to rest, so it was offensive that this area was being used for defecation. After triggering, the community decided to clean up these areas and stop using them as a toilet, achieving ODF status in just three days. The family of the person buried in this tomb was so happy that they decided to fund the building of a new public latrine. This is a testament to a community's ability to unite and change its behavior through RANO WASH.

Now, there are eight private and two (soon to be three) public latrines, each of which is equipped with proper ventilation, a fly-proof cover, and a handwashing station in this small village of 67 people.

Two women, Seheno and Olga, are the "natural leaders" of this village, leading their community in its efforts to promote good WASH practices like latrine use and handwashing. Their efforts have been successful: community members practice proper handwashing techniques with soap and water after using the latrines, and the

One of the handwashing stations made from a jerry can, tubing, and wooden frame. The tubing sits vertically in a wooden notch when not in use to stop water flow. (photo credit RANO WASH)

community has implemented a fine for anyone who defecates outside.

Villanova University students toured Manaoianarana and saw some of the latrines and handwashing stations. The children were excited to show them how they wash their hands with soap and water, and it was clear that they were proud of themselves. They were also able to visit the newly cleaned area where people used to defecate in the open next to the tomb, where the new community latrine will soon be built. This latrine will be open to anyone in the community for a small fee so that the family that owns the latrine will be able to afford its upkeep. This community took the values of RANO WASH to heart and were able to bring about real change in their community in an impressively short amount of time. The community members reported that they were happy with the changes because the village is now clean. Manaoianarana serves as a great example of how RANO WASH is improving the lives of people in Madagascar.

Water sanitation and hygiene-related diseases kill nearly one million people worldwide each year, and 1 in 3 people do not have access to a toilet (Water.org, 2018). This is a big problem in Madagascar, where about 58% of its citizens do not have access to safe drinking water and nearly half of all households lack access to sanitation facilities (USAID, 2019). This problem is being addressed through the USAID-funded Rural Access to New Opportunities in Water, Sanitation and Hygiene (RANO WASH) project in Madagascar. The project's name also has another meaning, as in the Malagasy language, *rano* means water. RANO WASH is a five-year project (2017-2022) and is in its early stages in the Vakinankaratra region. Through the project, CARE is working closely with our partners Catholic Relief Services and a local church called Caritas to carry out a three-pronged approach: commune-level engagement, infrastructure development, and behavior change. In just a few months, this project has already seen great success.

Community members, Caritas staff, and CRS interns pose for a group photo after touring the fokontany and learning about its success. (photo credit RANO WASH)

Managing menstruation is an important step to safeguarding dignity and overall life for women

Voninera sews a sanitary napkin at home with her daughter (photo credit RANO WASH)

Voninera is a woman living in Kelilalina Center, in the district of Ifanadiana. She is energetic and hard-working and is an active member of two Village Savings and Loan Associations (VSLAs) in her community as well as being a Leading Mother.

When RANO WASH initiated village group discussions on the topic of menstrual hygiene, Voninera was among the first VLSA members to display a strong interest in the topic. When the selection process for seamstresses to make sanitary napkins was launched in her village, her fellow VSLA members nominated her.

During the technical training, she was extremely enthusiastic and when she returned home, she sewed some sanitary napkins to show her friends.

To fulfill her first order of sanitary napkins, Voninera received a loan from one of her VSLAs. She bought fabrics from thrift stores and sewed the napkins by hand because she does not have a sewing machine. She produced and sold 36 sanitary napkins at a number of different outlets, including at the local health center.

To support the celebration of World Menstrual Hygiene Day, the project launched a call to seamstresses to produce and sell sanitary napkins during the campaign events. Voninera spent 100,000 Malagasy Ariary (approximately US $28) to buy her materials and sold 178 sanitary napkins.

Proud of the changes happening around her, Voninera stated, "*The use of sanitary napkins is changing the lives of women here. Thanks to the sanitary napkins that we produce, women can manage their periods better.*"

Voninera continues to improve the sanitary napkins she produces, and her daughter has begun sewing as well.

Accessible Latrine Construction and Implementation in Madagascar

The latrine before and after the placement of the seat. (photo credit RANO WASH)

As latrine use is becoming more prevalent in the rural areas of the country, there must be a consideration of their accessibility. Many latrines are built with small holes in the ground with no seat. This requires the user to squat down and balance while doing their business. For certain members of the community this can be hard due to circumstances such as old age, disability, or pregnancy. Also, these latrines are harder to keep clean as users may miss the hole and leave defecation on the ground of the latrine. These factors led the team to brainstorm more accessible ways to use the latrine and ensure all defecation is being sent to the hole. The solution is to build a seat that users can sit on, mimicking a toilet.

The first action is the consideration of materials. The foundation of the seat must be sturdy enough to support the body weight of the user. Next, the materials need to be able to form an ellipse to mount the seat on. Lastly, the materials need to be sustainable and not wear greatly over time. With all these considerations the materials chosen were wooden planks, a metal sheet, and plastic toilet seat.

Preparation of metal sheet to form the foundation of the seat.

Nailing the planks around the metal sheet to support a person's

Securing the funnel onto the support. Each tab was trimmed and hammered. (photo credit RANO WASH)

The first piece constructed was the outer support of the seat. The seat sits about two feet tall, similar height to a normal chair. A metal sheet was cut to the proper height of the seat using a clipper taking extra caution when cutting and shaping the metal sheet as it was very sharp along the edges. The sheet was secured into the cylinder shape by nailing the wooden planks all around the sheet.

A plank was placed on both sides of the sheet for extra support and to secure the nails. One side of the cylinder support was leveled to ensure the seat will sit flat along the ground of the latrine. As the wooden planks were nailed in there was a small gap left in between the planks so the sheet was malleable to form the proper shape. Once all wooden planks were nailed, the rugged edge of the sheet was hammered flat so that there was no danger in being cut during use.

The next piece constructed was the funnel to insert inside the seat. The funnel is important to direct the defecation into the hole. It protects the inside wooden planks from being contaminated by the defecation and can easily be rinsed. The funnel was directed towards the back of the seat with a large slope running from the front of the seat to the back. The funnel shape was secured using a soldering technique and nailed to the wooden planks of the support. The sharp ends of the funnel were hammered down as before. The seat was nailed in the support as well to ensure it would not slip off before, during, or after use.

The final product was successful in holding the weight of all team members. The seat did not wobble and provided necessary comfort and accessibility.
Another objective of RANO WASH is behavioral changes, including washing hands. A tippy tap made of an *Eau Vive* bottle was secured to a slanted wooden beam. The cap had a hole so when the bottle is rotated a small stream is dispersed. This tippy tap, with soap, offers the CSB increased access to sanitation.

The next step was deployment in the commune for use at a CSB. The latrine seat was placed over an existing latrine in the commune of Amberobe. This location was chosen because the CSB needs an accessible latrine for people coming because of illness or pregnancy. The team will return to this commune to hear feedback on the design and operation. If it is well received, then there will be a push to create seats for the existing and new latrines within the RANO WASH project region.

The construction team with the latrine and the woman who runs the CSB. (photo credit RANO WASH)

In the Savana District of Vohipeno, a very conservative village, the act of open defecation becomes taboo

The village of Savana is known for being conservative: women and girls are not allowed to wear pants or shorts and men and boys are forbidden from wearing earrings and braiding their hair.

In April 2019, RANO WASH launched a Community Led Total Sanitation (CLTS) intervention in the village, providing trainings and sensitizations for its high population of 192 households and 1,650 inhabitants. The CLTS triggering was successful and areas that used to be polluted by open defecation are now clean. The village agreed to use and maintain a three-compartment public latrine that had previously been abandoned. The village also agreed to build at least six shared latrines per month until each household has a latrine.

The village has since been declared open defecation-free and the traditional leader, Randriambe, proclaimed open defecation as a taboo (fady) similar to earrings for men and pants for women. The village also wrote the ban on open defecation on a plaque that describes the village taboos and sanctions for violating these.

As Randriambe explained, , “as the traditional authority in this village, I pledged to put an end to this shameful practice. This effort has allowed us to regain our dignity.”

Signs explaining the commune’s taboos, which now include open defecation

Women wait in line to use the communal toilet in the early morning *(photo credit RANO WASH)*

RANDRIAMANDIMBISON Jean Luc

local mason in Anosibe-Ifody,

I've worked as a local mason for a long time and so when I was contacted by the President of the village council, I agreed to participate in the RANO WASH training on latrine construction.

Three of us masons in the commune participated in the training. When we returned to our commune, we agreed to work together. We now showcase our products to people in front of my shop.

We also participated in community mobilization events in the surrounding villages to showcase our Dal SanPlat.

The orders began to roll in and after only two months, we sold 30 Dal SanPlats!

When the village of Antanimarina decided to eliminate open defecation, they asked us to come build their latrines with Dal SanPlat.

They said all the latrines should be Dal SanPlat. As of today, we have built 22 latrines in the village and will continue to build more in the future.

The use of the DAL SANPLAT Adopted as a social norm by Antanimarina

The village of Antanimarina in the commune of Anosibe-Ifody used to have a bad reputation due to the open defecation around the village, especially at the entrance. Everyone would talk about the bad odor when entering the village.

However, after a joint community mobilization by community agents, a technical facilitator and three local masons in Antanimarina, the village council decided to eliminate open defecation, taking a strong step towards behavior change. The village integrated the Dal SanPlat in the construction of family latrines.

The use of the Dal SanPlat thus became a social norm in Antanimarina.

Some families with their latrines in Antanimarina
(photo credit RANO WASH)

ANNEX 2. RANO WASH COST SHARE QUARTERLY UPDATE Q3.19

Sources of Cost Sharing

RANO WASH project has identified three potential sources of cost sharing:

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

Harmonized guidance for cost sharing was finalized in June 2019, RANO WASH team will organize training for the team during the national workshop in July 2019. RANO WASH took into consideration some adjustment on the sources of cost sharing during the finalization of the guidance after receiving consortium member's feedback.

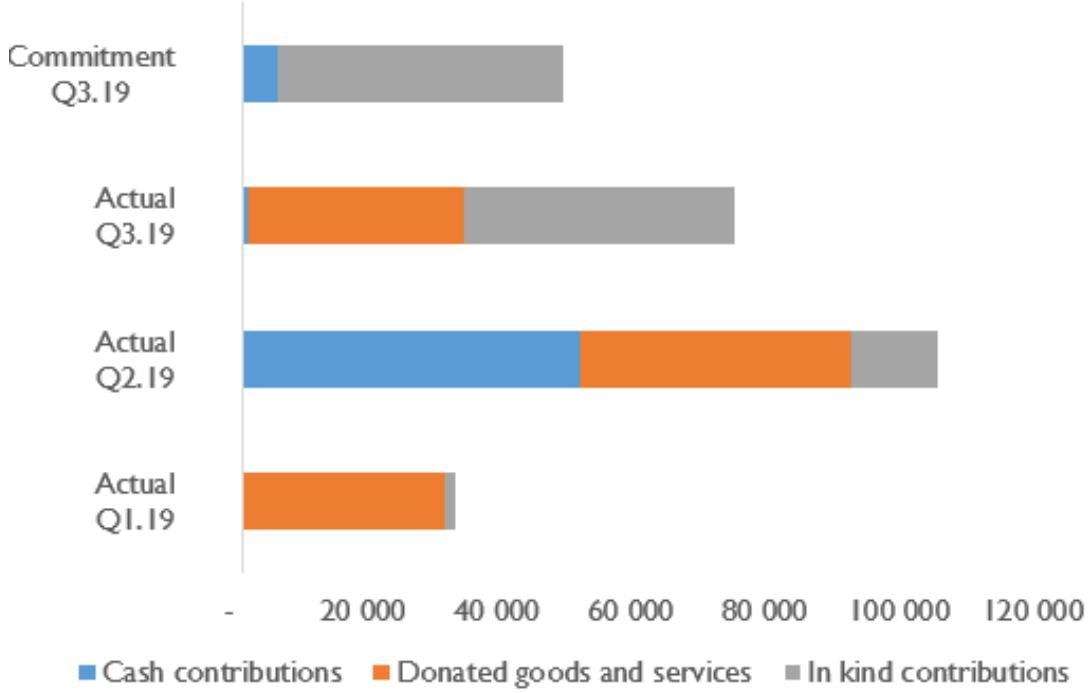
Quarterly update

The project's contribution of the 2019 Fiscal Year (FY19 Q3) represents 64% of $ 209,127 against budget FY19 of $654,910. In addition, the third quarter (April 1, 2019 to June 31, 2019) cost sharing represents $73,444, however during the same period RANO WASH committed $121,356.

The following table present the source of matching, consolidated actual as of Q3.19 (amount in $USD).

Description	Budget FY19	Actual FY18	Actual FY19.Q1	Actual FY19.Q2	Actual FY19.Q3	Total Actual FY19	%age Actual vs FY19 Budget
Cash contributions	307,460	**-**	**-**	**50,328**	**921**	**51,249**	33%
Water Service Providers	187,960	-	-	50,328		50,328	54%
Water users	34,500	-	-	-	921	921	5%
Non-USG Fundraising	85,000					-	0%
Donated goods and services	288,816	**154,784**	**30,251**	**40,464**	**32,321**	**103,036**	71%
Operating costs	176,918	138,040	18,732	39,404	21,731	79,867	90%
Program costs	111,898	16,744	11,519	1,060	10,590	23,170	41%
In Kind Contributions	58,634	**-**	**1,655**	**12,984**	**40,202**	**54,842**	**187%**
Basic sanitation users	4,500	-	-	-	37,848	37,848	1682%
Unrecovered Indirect Costs	54,134	-	1,655	12,984	2,354	16,993	63%
Total	654,910	**154,784**	**31,906**	**103,776**	**73,444**	**209,127**	**64%**
Cumulated cost share		154,784	186,691	290,467	363,911		
% vs $3m		5%	6%	10%	12%		

Figure 1. Cost sharing commitment in Q3 not yet recorded into the RANO WASH Financial system during the reporting period ($USD).



ANNEX 3. FY19 PROGRAM IMPLEMENTATION PLAN QUARTERLY UPDATE Q3.19

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	**On Track**													
National / Regional	Courtesy visit in the FY2020 two intervention regions (Haute Matsiatra and Amoron'I Mania)	**On Track**													
National	Recruitment of sub-grantees in the FY2020 two intervention regions (Haute Matsiatra and Amoron'I Mania)	**On track**													
National / Regional	Recruitment Subgrantees staff	**On Track**													
National	Selection of interventions communes in the FY2020 two intervention regions (Demand led approach)	**On Track**													
National and Regional	Office space and equipment for FY2020 two new regional offices	**On Track**													
	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	On Track													
National	Completion of recruitment of regional teams for FY20	On Track													
	Communication and Reporting, Leadership Program Planning and Review														
National / Regional	Monthly narrative report	On Track													
National / Regional	Bi-annual meeting for the whole project staff	Completed													
National / Regional	Communicate quarterly report planning schedule to partners	On Track										Q3			Q4
National / Regional	Quarterly report (financial and technical)	On Track													
National / Regional	Quarterly newsletter	Rescheduled	To be started in Q4												
National / Regional	FY2018 Annual report	Completed													
National / Regional	Quarterly plan (financial and technical)	Completed													
National / Regional	FY2020 implementation plan (financial and technical)	Not Started	To be started in Q4												
Regional	FY 20 planning for Regions	Not Started	To be started in Q4												
National	Communicate FY planning schedule to partners	Not Started	To be started in Q4												
National	Monthly COP Communication to staff	On Track													
National	Senior Leadership Team weekly meetings	On Track													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
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	**On track**													
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**													
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 Fitovinany 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 - Alaotra Mangoro region (half-day)	**On Hold**													
	Annual beneficiary-based survey														
National	Recruitment of surveyors	**Not Started**													
National / Regional	Training of surveyors	**Not Started**													

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 data collection	Not Started													
	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	Potential Risks / Delays	To be completed in Q4		W2										
National	Validation of start-up report	Rescheduled	To be completed in Q4		W4										
National	Training of surveyors and enumerators, pre-test	Rescheduled	To be completed in Q4			W3									
National / Regional	Field data collection	Rescheduled	Awaiting selection of FY20 communes				W1-3								
National	Validation of final report	Rescheduled	Awaiting selection of FY20 communes					W4							
	Promotion of the use of baseline survey data in the 3 new regions of RANO WASH														
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												

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
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 collection forms within CommCare	On Track													
National	Installation of DHIS2 development/test instance	Canceled	DHIS2 deemed unnecessary for operationalization of database/ICT4D platform												
National	Hosting of DHIS2 development/test instance	Canceled													
National	Installation of DHIS2 production instance	Canceled													
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 securing of 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														

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
National	Data Quality Assessment	Not Started													
	RANO WASH MEAL annual review														
	Annual review with MEAL regional teams and MEAL PCT team	Not Started													
	Field visit to support the operationalization of the M & E system														
National / Regional	Field visit - Atsinanana region	On Track	2nd visit rescheduled to Q4												
National / Regional	Field visit - Vatovavy Fitovinany region	Completed													
National / Regional	Field visit - Alaotra Mangoro region	On Track	2nd visit rescheduled to Q4												
National / Regional	Field visit - Vakinankaratra	Rescheduled	To be completed in August 2019												
	MEAL team training														
National	Results-Based Management (RBM) and M&E training (PCT)	Not Started													
National	Statistical analysis training (MEAL team)	Rescheduled	FY20												
National	Advanced ICT4D training	Rescheduled	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													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
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													
National	Creation of dashboard to display real-time data for strategic objectives	Rescheduled	Ongoing & will be extended in Q4												
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	Discussions between thematic groups to document best practices and lessons learned of the WASH sector	Rescheduled	FY20												
Act 1.1.1.2	Capacity building and mobilizing of private sector groups to discuss key needs for the WASH private sector development	On Track	One part will be rescheduled in FY20												
Act 1.1.1.3	Capacity building and mobilization of WASH CSOs to discuss their key priorities	On Track													
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 the setup of SCN-WASH												
Act 1.1.2.2	Study/workshop to develop costing of PS-EAH	Rescheduled	Waiting for the finalization of PSEAH												
Act 1.1.2.3	Study/workshop for the development National Plan for Investment	Rescheduled	FY20												
IR1.2 Improved sector monitoring, analysis and learning, influencing policy															
Output 1.2.1.	SE&AM strengthened and extended														

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act 1.2.1.1	Meeting with DREAH on activities for the regional SE&AM														
	Refresher training for regional team of DiMat	On Track													
	Update DiMat at the regional level (supervision and coaching)	On Track	Region V7V left for Q4												
Act 1.2.1.2	Regional support to DREAH to be operational for the SE&AM process	On Track													
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	Potential Risks / Delays													
	Coaching to RANO WASH team to update quarterly data in the SE&AM system	On Track													
	Quarterly review and coaching sessions with actors	Potential Risks / Delays													
Act 1.2.1.5	Training for Communes to pilot the SE&AM ICT4D platform	Potential Risks / Delays	will be completed in Q4												
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														

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
	Inventory of potential actors at national and regional levels	On Track													
	Organize learning events at regional level	Rescheduled	will be completed in Q4												
Act 1.2.2.2	Work with the DREAH to feed the digital library with the learning events deliverables	Rescheduled	will be completed in Q4												
Act 1.2.2.3	Facilitate learning events for the RANO WASH project on PPP	Rescheduled	will be completed in Q4												
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) expected in Q3												
Act 1.3.1.2	Training of trainers and coaching for DREAH and RANO WASH team on STEAH capacity building	Rescheduled	Rescheduled for Q4												
Act 1.3.1.3	Working session with the MoWASH on Communes' capacity building to set up and to coach STEAH	Rescheduled	Rescheduled for Q4												
Act 1.3.1.2	Conduct capacity building of the STEAH	On Track													
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	Completed													
	Working sessions with communes to develop with them PCDEAH	Potential Risks / Delays	will be completed in Q4												

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act: 1.3.2.2	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	will be completed in Q4												
Act: 1.3.2.4	Setting-up tax payment mechanism	Not Started													
	Develop tools to ensure tax recovery and management	Potential Risks / Delays	will be completed in Q4												
	Training for 20 communes on tax recovery and management	Rescheduled	will be completed in Q4												
Act: 1.3.2.5	Field visit for communes benefiting water supply systems construction	On Track													
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													
Act: 1.4.1.2	Training for Regional CSO	On Track													
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	On Track													
Act: 1.4.1.5	Coach and Follow up CSO at communal level to implement their advocacy plan	On Track													
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													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act: 1.4.2.2	Training and coaching for SLC to be operational (dialogue sessions agenda)	On Track													
Act: 1.4.2.3	Facilitate working sessions with District and Communes to implement SLCs' recommendations	On Track													
Act: 1.4.2.4	Conduct national learning event on social accountability mechanism	Not Started													
Act: 1.4.2.5	Training and coaching for communes to implement social accountability mechanism	Potential Risks / Delays	will be completed in Q4												
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	Potential Risks / Delays													
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	Potential Risks / Delays													
Act 2.1.2.3	Training and coaching for private sector actors to implement WMDP and marketing plan	Not Started													
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													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act: 2.1.3.3	Organize an "open house" to connect financial institutions and WASH service providers at the national level	Potential Risks / Delays													
Act: 2.1.3.4	Support VSLA loans to initiate WASH small business i.e. hygiene product and sanitation marketing	Not Started													
Act: 2.1.3.5	Develop communication materials related to new loan products	Not Started													
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 Bush Proof		19 APS reports provided by Sandandrano									
	Produce at least 30 APS reports for FY19	On Track													
	3 APD reports pending for FY18 planned technical study	Completed													
	Produce at least 20 APD reports for FY19	On Track							3 V7V	**8 APD produced**			New forecast: 12 out of 20 remaining AP		

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
													D reports	For the 12 APD out of 20 in the 04 regions	
	Validation meetings for APD at each commune	**On Track**							3 V7V	**8 APD validated**					
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**								**08 DAO launched**			6 DAO		12 DAO for FY20 construction
	Training and coaching for communes / evaluation committee for tenders on procurement and the water supply system management contract	**On Track**													12 committee trained for FY20 construction
	Launch the tender procedure	**Completed**											6 DAO		12 DAO for FY20 const

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
															ructi on
	Visit the sites construction with potential WSP	On Track													12 DAO for FY20 const ructi on
	Evaluation of the tenders received	Not Started										08 DAO ATS, ALM A			
Act 2.2.1.3	Develop ESF and monitor its implementation in the construction sites	On Hold													
	Develop ESF	On Track		3 FY18							8 ESF				
	Monitor ESF implementation for the 12 construction	On Track							Expe cted end for the lasts cons truct ion amo ngst the first 12						
	Monitor ESF implementation	Not Started											Ne w fore cast for the 08 rem		

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
													aining construction		
Act 2.2.1.4	Contract and Monitor water infrastructures construction and management														
	Contract water infrastructures construction and management	**Potential Risks / Delays**													
	Monitor water infrastructures construction and management	**Potential Risks / Delays**											New forecast for the 08 remaining construction		
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**											New forecast for the 08 remaining con		

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
													stru ctio n		
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	**Potential Risks / Delays**													
Act 2.3.2.2	Develop and implement a capacity building plan to the WASH private sector institution	**On Track**									New forec ast				
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	**On Track**													
Act: 3.1.1.2	Develop 4 action-research protocols	**On Track**													
Act: 3.1.1.3	Implement BCD strategy for 3 regions (V7V, ALM, ATS)	**On Track**													
	Research and analysis for gaps in knowledge/research														
	Design strategies to address key behaviors	**On Track**													
	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	**Reschedule d**													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
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)	On Track													
Act 3.2.1.2	Organize and participate in regional platform meetings to ensure coordination of activities at regional level	On Track													
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	On Track													
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	On Track													
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	On Track													
	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	On Track													
Act 3.2.2.8	Coaching for local promoters on BC communication activities	On Track													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Act 3.2.2.9	Coaching for CHV on promotion of health activities and PNSC promoter (in collaboration with MSP)	On Track													
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*	On Track													
Act 3.2.2.11	Establish new VSLA groups and coaching for previous VSLA	On Track													
Act 3.2.2.12	Encourage VSLA members to invest in WASH products/services	On Track													
Act 3.2.2.13	CLTS Triggering and FUM activities at village/fokontany level	On Track													
Act 3.2.2.14	Train and coach health facilities and schools in the WASH friendly	On Track													
Act 3.2.2.15	BC activities specific to MHM at WASH friendly schools	On Track													
Act 3.2.2.16	Celebrate and mobilize communities to create movements for change during world days	On Track													
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	On Track													
Act 3.2.3.2	Promote WASH products and services through local medias	On Track													
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	Rescheduled													

Activity Description		Status	Remarks	FY 2019											
				Q1			Q2			Q3			Q4		
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
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	On Track													

ANNEX 4. RANO WASH PMP IPTT QUARTERLY UPDATE Q3.19

#	Reference Indicator	Indicator Title	Indicator Type	Data Source	Reporting Frequency	Baseline	Revised Target LoP	Year 1 (FY 18)		Year 2 (FY 19)		Year 3 (FY 20)	Year 4 (FY 21)	Year 5 (FY 22)
								Target	Achieved	Target	Achieved	Target	Target	Target
Goal: Increase equitable and sustainable access to water, sanitation, and hygiene (WASH) services to maximize their impact on human health and nutrition and the preserve environment in 250 rural communes in Vatovavy Fitovinany, Atsinanana, Amoron'i Mania, Haute Matsiatra, Vakinankaratra, and Alaotra Mangoro regions in Madagascar.														
0.1		% of people in intervention communes with access to basic drinking water services	Impact	Baseline/ Endline survey	Baseline / Endline	10.38% (FY18 regions)	30%							30%
0.2		% of people in intervention communes with access to a basic sanitation service	Impact	Baseline/ Endline survey	Baseline / Endline	0.23% (FY18 regions)	5%							5%
0.3		% of households in intervention communes with children under age 5 reporting an incidence of diarrhea within last two weeks	Impact	Baseline/ Endline survey	Baseline / Endline	7.25% (FY18 regions)	5%							5%
SO 1: Governance and monitoring of water and sanitation strengthened for delivering sustainable WASH services														
1.1		# of intervention communes increasing WASH budget	Outcome	Communal budget	Annual	TBD	80 (cumulative)	NA	NA	NA		15	45	80
1.2	HL.8.4-1	Value of new funding mobilized to the water and sanitation sectors as a result of USG assistance	Outcome	Commune-level survey/verification	Annual	NA	$1,338,710	NA	NA	$248,710		$500,000	$480,000	$110,000
IR1.1 Strengthened government and stakeholder commitment and accountability to sector development														
1.1.1		National Sector Development Action Plan implemented	Outcome	MoWASH	Annual	Red	Green	NA	NA	Red		Yellow	Yellow	Green
OP 1.1.1 Sector coordination and learning mechanisms operating effectively under strong national leadership														
1.1.1.1		National body for WASH sector coordination operational	Outcome	MoWASH, DREAH	Annual	Red	Green	Red	Red	Yellow		Yellow	Yellow	Green
OP 1.1.2 MoWEH institutional capacity developed to meet strategic needs														

#	Reference Indicator	Indicator Title	Indicator Type	Data Source	Reporting Frequency	Baseline	Revised Target LoP	Year 1 (FY 18)		Year 2 (FY 19)		Year 3 (FY 20)	Year 4 (FY 21)	Year 5 (FY 22)
								Target	Achieved	Target	Achieved	Target	Target	Target
IR1.2 Improved sector monitoring, analysis and learning, influencing policy														
1.2.1		% of intervention communes reporting in the national WASH monitoring system (SE&AM)	Outcome	Commune-level SE&AM report	Annual	0%	86%	NA	NA	39%	69%	52%	80%	86%
OP 1.2.1 SE&AM strengthened and extended														
1.2.1.1		National WASH monitoring system (SE&AM) tracks gender-sensitive data and quality of WASH service provision	Output	SE&AM/ MEEH	Annual	Red	Green	NA	NA	Red		Yellow	Yellow	Green
OP 1.2.2 Learning agenda implemented to increase and better regulate private sector engagement in WASH														
IR1.3 Strengthened sub-national systems														
1.3.1	HL.8.3-3	# of water and sanitation sector institutions strengthened to manage water resources or improve water supply and sanitation services as a result of USG assistance	Outcome	Multi-level institutional assessment	Annual	ND	686	NA	NA	64		158	210	254
OP 1.3.1 Decentralized resources available for sustained WASH service delivery														
OP 1.3.2 Commune management capacities strengthened for WASH service delivery														
1.3.2.1		# of intervention communes engaging with private sector to provide WASH services	Outcome	Commune-level survey/verification	Annual	TBD	105 (cumulative)	NA	NA	18		75	95	105
IR1.4 Increased community control over WASH services														
1.4.1		# of WASH users groups operational in intervention communes	Outcome	Annual survey	Annual	TBD	200 (cumulative)	NA	NA	70		100	150	200
OP 1.4.1 Communes and communities with an active civil society, aware of and organized to claim their right to water and sanitation														
OP 1.4.2 Communes have functional WASH accountability mechanisms														

#	Reference Indicator	Indicator Title	Indicator Type	Data Source	Reporting Frequency	Baseline	Revised Target LoP	Year 1 (FY 18)		Year 2 (FY 19)		Year 3 (FY 20)	Year 4 (FY 21)	Year 5 (FY 22)
								Target	Achieved	Target	Achieved	Target	Target	Target
1.4.2.1		# of intervention communes with functional WASH accountability mechanisms	Output	Annual survey / Community Scorecard	Annual	TBD	200 (cumulative)	NA	NA	70	44	100	150	200
SO 2: Private sector engagement in WASH service delivery increased and improved														
IR2.1 Improved WASH products, technologies, services and business models														
2.1.1		# of new/improved WASH products and technologies implemented with RANO WASH support	Outcome	Annual survey	Annual	NA	10	NA	NA	4		4	2	0
2.1.2		# of new water and sanitation services provided with RANO WASH support	Outcome	Annual survey	Annual	NA	170	NA	NA	20		58	82	20
OP 2.1.1 A comprehensive WASH market assessment strategy developed														
OP 2.1.2 Regional WASH market development plans drafted														
OP 2.1.3 Type and range of financial products for WASH services and products available and accessible increased														
2.1.3.1		# of WSP/artisans/vendors issued loan products for investment in WASH systems	Output	Bank/MFI reports, VSLA records	Quarterly	NA	100	NA	NA	20	0	30	40	10
IR2.2 Improved design, construction and management of WASH infrastructure														
2.2.1	HL.8.1-1	# of people gaining access to basic drinking water services as a result of USG assistance	Outcome	Observations of water services, direct count of beneficiaries	Quarterly	NA	300000	22000	0	60100	1392	120000	103900	16000
2.2.2	HL.8.1-2	# of people gaining access to safely managed drinking water services as a result of USG assistance	Outcome	Observations of water services, direct	Quarterly	NA	90000	16500	0	18030	633	36000	31170	4800

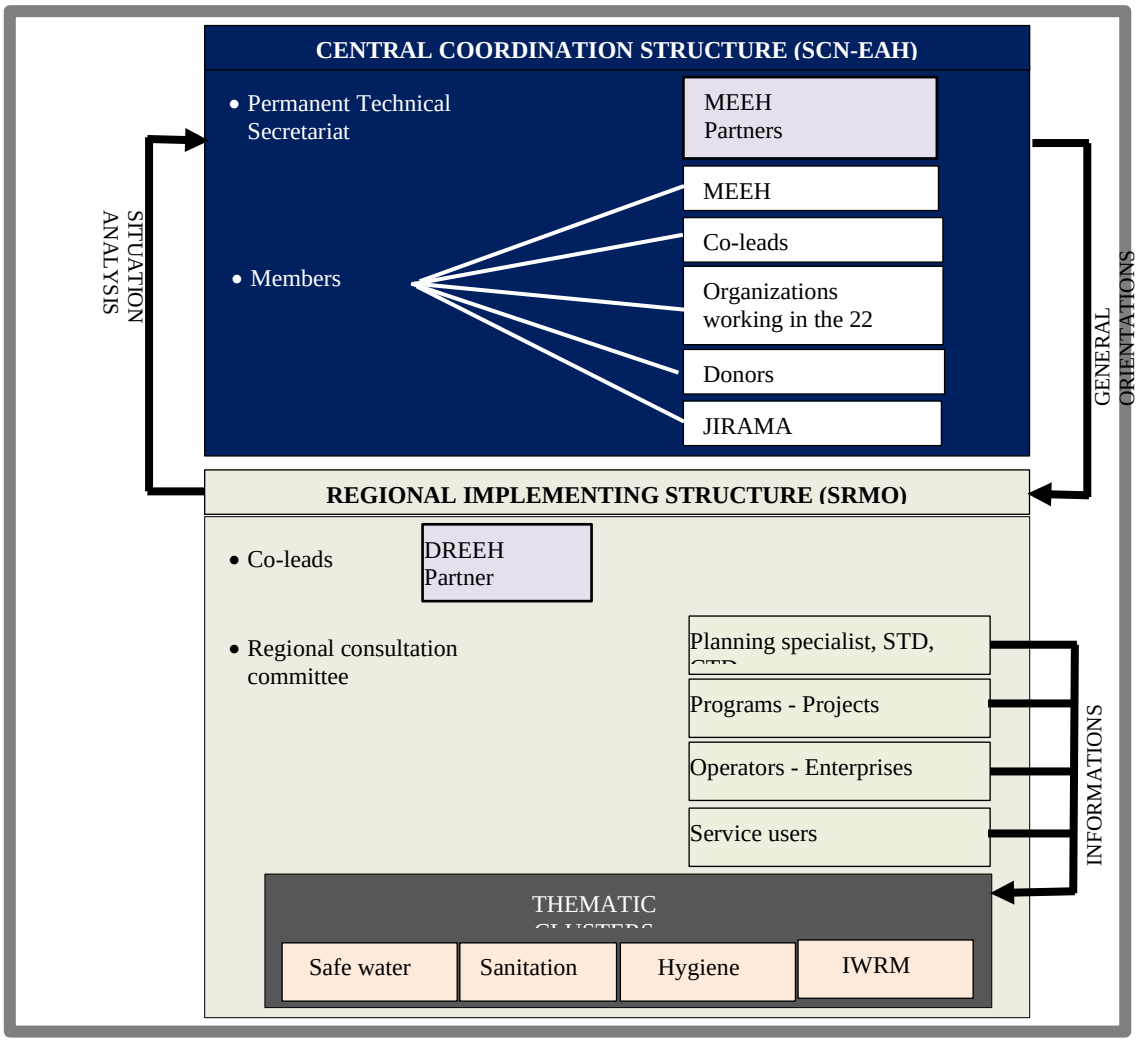
#	Reference Indicator	Indicator Title	Indicator Type	Data Source	Reporting Frequency	Baseline	Revised Target LoP	Year 1 (FY 18)		Year 2 (FY 19)		Year 3 (FY 20)	Year 4 (FY 21)	Year 5 (FY 22)
								Target	Achieved	Target	Achieved	Target	Target	Target
				count of beneficiaries										
2.2.3	HL.8.2-2	# of people gaining access to a basic sanitation service as a result of USG assistance	Outcome	Observations of sanitation facility, direct count of beneficiaries	Quarterly	NA	94500	45000	0	4500	8498	15000	30000	45000
2.2.4		# of people gaining access to a *limited* sanitation service as a result of USG assistance	Outcome	Observations of sanitation facility, direct count of beneficiaries	Quarterly	NA	375000	ND	NA	30000	36738	100000	150000	95000
2.2.5	HL.8.5-1	# of people benefiting from the adoption and implementation of measures to improve water resources management as a result of USG assistance	Outcome	Annual survey	Annual	NA	300000	ND	NA	60100	11261	120000	103900	16000
OP 2.2.1 Design and construction of sustainable WASH infrastructure improved														
2.2.1.1		# of infrastructure feasibility studies (APD and APDS reports) completed	Output	APS/APD studies	Quarterly	NA	APS: 250 APD: 140	APS: 50 APD: 12	APS: 17 APD: 12	APS: 30 APD: 20	APS: 33 APD: 12	APS: 90 APD: 62	APS: 80 APD: 46	APS: 0 APD: 0
2.2.1.2	HL.8.1-4	# of institutional settings gaining access to basic drinking water services as a result of USG assistance	Output	Design, tender, & reception documents	Quarterly	NA	265	20	0	25	10	96	124	20
2.2.1.3	HL.8.2-4	# of basic sanitation facilities provided in institutional settings as a result of USG assistance	Output	Design, tender, &	Quarterly	NA	530	20	0	50	3	192	248	40

#	Reference Indicator	Indicator Title	Indicator Type	Data Source	Reporting Frequency	Baseline	Revised Target LoP	Year 1 (FY 18)		Year 2 (FY 19)		Year 3 (FY 20)	Year 4 (FY 21)	Year 5 (FY 22)
								Target	Achieved	Target	Achieved	Target	Target	Target
				reception documents										
IR2.3 Strengthened technical & business skills and competencies														
2.3.1		# of business plans developed for offering consumer WASH products and/or services	Output	Business plan validation	Annual	NA	140	12	0	8		48	62	10
2.3.2		% increase in sales for RANO WASH-supported enterprises (average % increase in net sales for enterprises following business training)	Outcome	Routine monitoring of enterprises reports	Annual	NA	25%	NA	NA	NA		15%	20%	25%
OP 2.3.1 Capacity building for private sector in business systems and technical operations strengthened														
2.3.1.1		# of WSP/commune staff trained in improved WASH service provision	Output	Training reports	Quarterly	NA	667	NA	50	244	155	257	154	12
OP 2.3.2 Development of professional associations														
2.3.2.1		# of national professional associations / local cooperatives developed with RANO WASH support	Output	Training reports	Annual	NA	13 (cumulative)	NA	NA	1		7	13	13
SO 3 : Adoption of healthy behaviors and use of WASH services accelerated														
3.1	HL.8.2-5	% of households with soap and water at a hand washing station commonly used by family members	Outcome	Annual survey	Annual	16% (at regional level)	35%	18%	16%	22%		26%	30%	35%
3.2	HL.8.2-1	# of communities verified as "open defecation free" (ODF) as a result of USG assistance	Outcome	ODF verification report	Quarterly	NA	2500	150	56	600	404	1250	650	0
IR3.1 Improved hygiene and sanitation BC solutions through applied research														
3.1.1		# knowledge products documenting learning produced and disseminated	Output	Knowledge products	Annual	NA	20	NA	NA	2		6	6	6

#	Reference Indicator	Indicator Title	Indicator Type	Data Source	Reporting Frequency	Baseline	Revised Target LoP	Year 1 (FY 18)		Year 2 (FY 19)		Year 3 (FY 20)	Year 4 (FY 21)	Year 5 (FY 22)
								Target	Achieved	Target	Achieved	Target	Target	Target
3.1.2		# intended organizations reporting applying knowledge gained from a knowledge product to improve program, service delivery, training/education, or research practice	Outcome	Sector review reports	Annual	NA	15/25	NA	NA	NA		5/25	10/25	15/25
OP 3.1.1 Behavioral science innovations for WASH BC explored, iterated, evaluated														
OP 3.1.2 Studies of integrated population, health and environment (PHE) programming models stimulating cross-sectoral collaboration														
OP 3.1.3 WASH-Nutrition linkages researched														
IR3.2 Improved implementation of WASH BC at all levels: communities, government and private sector														
3.2.1		% communities verified ODF that remain ODF following verification	Outcome	Continuous monitoring reports/SE&AM	Quarterly	73%	75%	NA	NA	75%		75%	75%	75%
OP 3.2.1 WASH BC program coordination improved in RANO WASH regions														
OP 3.2.2 Innovative CLTS and WASH BC implementation														
3.2.2.1		# of VSLA members who reported investing in WASH services or products (latrine, water connection, etc.)	Output	VLSA survey	Quarterly	0	22400	NA	NA	3200	2217	6400	6400	6400
3.2.2.2		# of institutions achieving WASH-friendly status with RANO WASH support	Outcome	WASH-friendly verification report	Quarterly	NA	265	HF: 8 Schools:12	HF: 0 Schools: 0	HF: 10 Schools: 15	HF: 0 Schools: 0	HF: 48 Schools: 48	HF: 62 Schools: 62	HF: 10 Schools: 10
3.2.2.3		% intervention communities triggered through CLTS which become verified ODF	Output	ODF verification report	Quarterly	NA	90%	ND	NA	70%	77%	75%	80%	90%
OP 3.2.3 Marketing communications developed for WASH products and services														
IR 3.3 Evidence-based WASH BC and hygiene promotion shared to influence policy and practice														

#	Reference Indicator	Indicator Title	Indicator Type	Data Source	Reporting Frequency	Baseline	Revised Target LoP	Year 1 (FY 18)		Year 2 (FY 19)		Year 3 (FY 20)	Year 4 (FY 21)	Year 5 (FY 22)
								Target	Achieved	Target	Achieved	Target	Target	Target
OP 3.3.1 National-level networks, policies and programs engaged for sustainable WASH BC														

ANNEX 5. NATIONAL 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 6. SO2 WMA SUMMARY VAKINANKARATRA, AMORON'I MANIA AND HAUTE MATSIATRA

WASH Market Assessment:
Vakinankaratra, Amoron'i Mania and Haute Matsiatra regions

Cooperative Agreement No : AID-687-A-17-00002

July 2019

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DISCLAIMER

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TABLE OF CONTENT

I. INTRODUCTION

Under RANO WASH, CRS commissioned a WASH Market Assessment (WMA) in the regions of Vakinankaratra, Amoron'i Mania and Haute Matsiatra to understand existing supply and demand for WASH products and services and identify key entry points for market-based approaches to improve access to water, sanitation, and menstrual hygiene management.

Findings of the WASH Market Assessment are intended to inform regional stakeholders in the development of Regional WASH Market Development Plans (WMDP). These WMDPs serve as iterative action plans, which identify key actions, roles and responsibilities for strengthening local markets for WASH products and services.

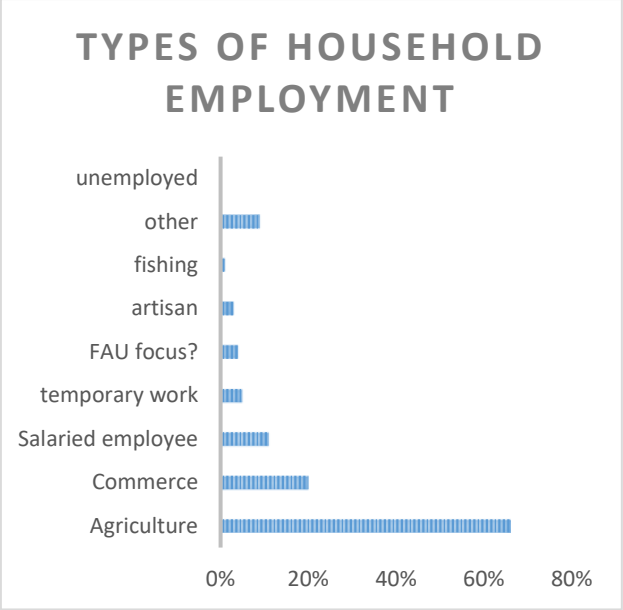
This WASH market assessment examines three key elements of the WASH market: 1) the existing supply chain for drinking water, sanitation, and menstrual hygiene products and services; 2) demand for WASH services/products, and 3) household perceptions of, motivations and barriers to access of drinking water, latrines and sanitary pads. This brief summarizes key findings of the assessment.

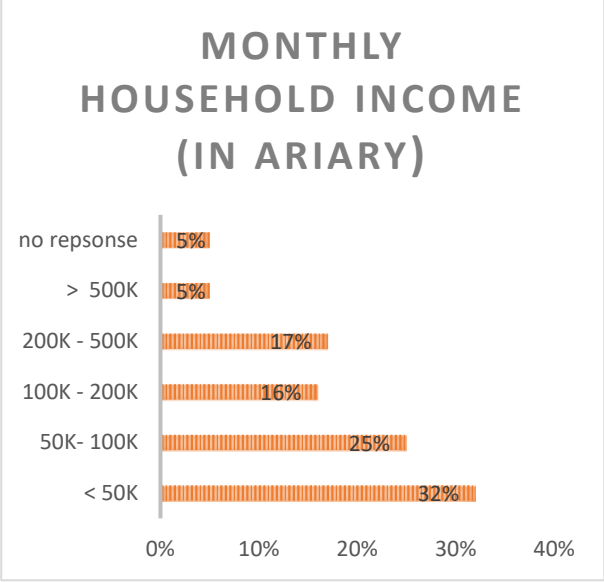
This assessment consisted of qualitative and quantitative research conducted in 51 communes across the three regions. Methods included desk review and analysis of existing data; households surveys (408); focus group discussions (6 in each region); semi-structured interviews with key stakeholders (214). More than 600 men and women contributed to the assessment. More than half of household respondents were women.

II. KEY FINDINGS

HOUSEHOLD CHARACTERISTICS

- Average household size is 5 members, though 17% of households have more than 7 members
- 84% of households have an elderly (> 60 years old) or disabled member
- A majority of households are employed in agriculture, and have a monthly income of less than 100,000 Ar ($27.30)





WATER SERVICES

- **Current access to water services is low:**
  - Amoron'i mania: 11.80% of households have access to improved water source
  - Haute Matsiatra: 23.80% have access to an improved water source
  - Vakinankaratra: 27.67% have access to an improved water source
- **Currently, fewer than one in four households pay for water services. A** majority of households access water from multiple sources, including surface water. This is particularly true during the rainy season, when surface water is readily available.
- **A majority of households that purchase water services (77%) consider them to be affordable. Current water tariffs range between:**
  - 300 – 1000 Ar/m3 for kiosk/public connections ($0.09 – 0.27 USD)
  - 500 – 1000 Ar/m3 for social connections ($0.14 – 0.27 USD)
  - 800 – 2000 Ar/m3 for private connections ($0.22 – 0.54 USD)

  To meet JMP standards for minimum consumption, an average household of 5 would need 100 L/day, and approximately three m3/month.
- **Where infrastructure is in place in the three regions, there are three models of existing water service provision and management:**
  - Community-based management
  - Small operators and managers
  - Build, invest, operate models, where private sector enterprises support initial investment in the construction of infrastructure and then operate services
- Communes have limited experience and capacity in overseeing private sector management of public services and need support to effectively lead Public Private Partnership (PPP) models.
- **Private enterprises are willing to and have invested in the initial construction of infrastructure**. Investments have not exceeded 10% of total costs.
- **Monthly profit margin for existing water supply operators varies widely, but the average profit margin is low.** Support to enterprises is needed to ensure a more robust profit margin.
  - Average monthly profit margin during the first year of operation: 74,833 Ar - 116,667 Ar (equivalent to $20 - 31 USD)
  - Average monthly profit margin in year 15: 241,000 - 450,000 Ar (equivalent to $65 – 123)
- **By and large, water operators do not have sales promotion strategies, or actively engage in sales promotion.** Some promotional activities are carried out on an ad-hoc basis, such as displays and posters. Most enterprises depend on world of mouth. Some enterprises do promote during harvest time

- **Capacity of water service providers to ensure quality services is low,** and managers have not conducted customer satisfaction surveys to better understand their clients and improve services.

SANITATION

- **Sanitation coverage is currently low per JMP criteria. However, while only half of households have a latrine, many of those households share with their neighbors.** An estimated 38 - 54% of households have a latrine.
- **Sharing latrines is a common and customary practice, even among wealthier households.**
    - More than 50% of households with a latrine share with at least 1 household. 30% of these households share with more than 5 other households.
    - While an estimated 70% of families have access to a latrine, only 18% of latrines meet JMP criteria for a basic or improved HH latrine
- **Income levels do not fully explain type of latrine used. Wealthy households do not necessarily have more sophisticated latrines than poorer households**. However, ODF is primarily practiced in lowest-income households that earn less than 50,000 Ar/month.
- **Products and services for latrine construction are perceived as expensive and of poor quality,** according to focus group discussions. Few families budget for sanitation on a one-time or recurring basis. Price is the primary determinant for product selection.
- **In the last 2 years, more than 30% of surveyed HH have constructed or upgraded a latrine**, demonstrating active demand.
- **While various sanitation options are available in regional capitals, including porcelain slabs, septic tanks, and elevated seats, very few sanitation products are available at commune and fokontany level. S**anitation supply chain actors at commune and fokontany levels are almost exclusively masons and small producers, which offer services in: digging pits, construction and installation of slabs, and construction of superstructures.
- **Families are willing to pay for a latrine, but only up to 100,000 Ar ($27 USD).**
    - Two-thirds of families are willing to pay less than 100,000 Ar ($27 USD) to build or upgrade a latrine, and 50,000 Ar ($14) annually on maintenance.
    - This willingness to pay is relatively low in comparison with the cost of goods and services. Thus, families conduct their own labor (rather than contract services) and use local materials to reduce costs of latrine construction to below 100,000 Ar.
- **Households express aspirations of clean flush-toilets located inside the home.** However, odor is a primary barrier to having latrines placed close to the home.

MENSTRUAL HYGIENE MANAGEMENT

- **There are limited information channels regarding menstruation and menstrual hygiene**; thus, women and girls have limited understanding of these topics, and taboos are common.
- **There are many existing taboos around menstruation and the use of sanitary napkins.** These include:
    - Sanitary napkins should not be disposed of in public places or in garbage bins because:
        - Wizards can find and use them to curse the wearer
        - Stray dogs can swallow them, which will "cause severe bleeding" for the girl
- **Sanitary pads and materials are available in commune centers,** including branded disposable sanitary napkins (available in shops), and washable cloth/chamoisines (commonly known as "yellow cloth," available in shops and weekly markets).
- **Half of women and girls purchase products to manage their menstruation**: 47% of women use pieces of cloth to manage their menstruation, while 28% use disposable sanitary towels, and 24% yellow rags (chamoisine). A small minority of women use baby diapers, particularly after childbirth.

MHM Product	Perceived Advantages	Perceived Disadvantages	Availability	Price
Disposable Pads	Discreet High absorption Leak prevention	Fills up quickly Itching, irritation	Shops/groceries at commune	400 Ar/unit 3,000 Ar for pack of 12
Washable Cloths / Chamoisines (yellow cloth)	Soft and comfortable Effective Non-irritating Very simple to wash Fast drying	Move a little in the underwear Thickness (non-discrete)	Weekly markets Shops	800 Ar/unit

- **Production of washable sanitary napkins is not yet common.** Apart from RANO WASH, there is only one other manufacturer of washable sanitary napkins at the regional level, the Young Leaders Projects in Fianarantsoa. **Average profit margin on the production and sale of a washable sanitary napkin is 500Ar ($0.14 USD),** representing a 17% profit margin of the total selling price of 3,000 Ar ($0.82 USD).
- At the regional and commune levels, there is no independent supply chain for sanitary napkins; they are only purchased in combination with other products. Retailers at local level do not engage in active promotion of disposable pads or yellow cloth.
- Poorer households purchase sanitary napkins and MHM products per unit, while wealthier household purchase per package.

III. RECOMMENDATIONS

WATER

- Strengthen capacity of water operators to ensure quality service provision. This includes strengthening business models; collecting and responding to customer feedback; active sales promotion of products and services; quality construction and repair; and managing scale.
- Build capacity of local government to evaluate and oversee contract management for service providers, and lead PPP models.
- Engage customers in dialogue around service provision and price. Many customers are willing to pay for quality services, particularly those that do not have existing services. However, service providers must understand customer needs and seasonal demands.

SANITATION

- Strengthen links between Community-Led Total Sanitation (CLTS) and sanitation-marketing approaches, ensuring that families are able to access sanitation options when demand is highest. Where possible, time demand creation activities for harvest seasons, when families have cash available to purchase WASH products.
- Help masons, producers, retailers, and vendors to strengthen business plans and marketing approaches, including door-to-door sales models.
- Explore credit and payment models that allow families to pay in installments. This also increases revenue for vendors.
- Ensure that strategies address shared decision-making at the household level, as women express higher demand for sanitation, but men make purchasing decisions.
- Explore building a network of actors to produce and market SanPlats, from large to small commune centers and marketing in rural communities.

MENSTRUAL HYGIENE PRODUCTS

- Strengthen information channels and increase understanding of menstruation and MHM among women and girls, and among men and boys.
- Identify and address taboos and reframe social norms around menstruation. Engage men and boys to support shifting social norms around menstruation.
- Support retailers and producers of washable pads to engage in active sales promotion and marketing. Reinforce these marketing efforts with mass media and awareness-raising campaigns.
- Bundle MHM products to meet customer needs. Continue testing the sale of MHM "kits" that meet a variety of customer needs.

ANNEX 7. SO2 EXAMPLES OF BUSINESS MODELS: ATSINANANA REGION

The WASH Market Development workshop held in Atsinanana developed the following priorities:

Water supply:

1. Dissemination of sector regulation framework and awareness raising among the population and companies on the dangers of air and water pollution and issues on water security
2. Production of seedlings for watershed and wetland protection to restore and protect ecosystems
3. **Technical studies, construction, investment and management of water supply infrastructure (Service/Product RANO WASH)**
4. Alternative water supply options
5. Bottled sodium hypochlorite solution
6. Research and installation on automated water distribution system
7. Water treatment and quality analysis

Sanitation :

1. **Latrines (Services/products RANO WASH)**
2. Dissemination of regulation framework, including laws
3. Reuse of solid waste
4. Reuse of liquid waste
5. Production of bio gas
6. Installation of a small/portable bio gas plant

Hygiene :

1. Hygiene communication materials for behavior change
2. **Washable sanitary napkins**
3. Domestic hygiene

Each WASH service and product is presented using a business model canvas.

Water Service Provider – Private Sector Service Delivery Model (Business and Management Model)

<table>
<tr>
<td rowspan="2">PARTNERS
Who are your partners ?

Supporters
• BushProof and Sandandrano
• Municipality, MEEH
• Banks/MFIs
• Engineering firms for design, control and supervision of construction works

Input Suppliers
• Pipes
• Tanks
• Valves
• Surge Vessels
• Pumping system
• Cement

Sub-contractors/ Complementary Business
• Transport</td>
<td>ACTIVITIES
What do you do?
• Invest & Build
• Supply, Manage & Operate: production & distribution of water, collection of revenues, maintenance, water quality, reports
• Demand</td>
<td>PRODUCTS
What products do you sell?
• Potable water
• Household connections
• Social connections/Standpipes</td>
<td>CUSTOMER RELATIONSHIPS
How do you know your customers?

Direct Sales: water, connections

Referrals: VSLAs, Community TAs; local government; local leaders

WATSAN mapping

Customer services (including billing/payment)</td>
<td rowspan="2">CUSTOMERS
Who are your customers?
• High income HHs
• Middle income HHs
• Low income HHs
• Ultra-low income HHs
• Institutions: schools and health facilities</td>
</tr>
<tr>
<td>RESOURCES
What resources do you have?
• Gravity-fed water systems
• Labor (daily)</td>
<td>PRODUCT VALUE
Why do people buy these products?
• Clean, constant and reliable water
• Customer support
• Easy payment and billing system</td>
<td>CHANNELS
How do you market and sell products to your customers?
• Promotional pricing
• Radio, posters
• Community marketing events
• Community Promoters
• VSLAs</td>
</tr>
</table>

COSTS What costs you money in this business?	REVENUE How do you make money in this business?
Direct costs: Operations and maintenance (minor and major repairs, extensions), Municipal taxes and fees; loan interest **Management costs:** Human resources, Operations (office), coordination and management; marketing **Risks:** non-revenue water; low consumption	• Tariffs (base and variable charges) • Capital investment (to complete WSPs initial investment)

Jumpstart Business Model and Stakeholders:

Water Service Providers will be selected through a demand-driven approach that incorporates joint criteria with the MEEH and viability of PPP. RANO-WASH will organize an initial launch event in each community to allow WSP to showcase their water supply. To further create demand, WSPs will provide promotional pricing for the first 100 households to order connections. High to low income households will be targeted given the high demand for water, with WSPs marketing social connections for lower income households not able to afford household connections.

RANO WASH has also ensured institutional arrangements necessary for a successful PPP are in place, including clear roles and responsibilities of each stakeholder, explained in a formal management delegation contract signed between the municipality, the manager and covered by the MEEH. The contract model for PPPs was developed and validated by the Government of Madagascar in FY18. RANO WASH is also providing capacity building and ongoing coaching to each stakeholder so they can fulfil their mandated role, including technical, planning, financial, management and operation. WSPs in particular will receive on going coaching and targeted capacity building.

Looking forward:

- Working with BushProof and Sandandrano to develop management models for ultra-poor and remote communities/households to ensure these segments of the population have access to sustainable water services.

Local Service Provider - Latrines

<table>
<tr>
<td rowspan="2">PARTNERS
Who are your partners ?

Supporters
• CARE
• MFIs

Input Suppliers
• Plastic
• Cement
• Sand
• Brick
• Metal rods
• Tin
• Wood/Bamboo
• Finishings

Sub-contractors/ Complementary Business
• Transport
• Carpenters
• Brick layers (superstructure)</td>
<td>ACTIVITIES
What do you do?
• Production
• Marketing
• Sales
• Siting of latrines
• Installation
• Superstructure
• Repairs/Upgrade</td>
<td>PRODUCTS
What products do you sell?
Improved latrines (DAL SanPlat, SatoPan & Eco San)
• Packages (Superstructure, slab, installation; and installation and slab)
• Addon/upgrade
• Installations</td>
<td>CUSTOMER RELATIONSHIPS
How do you know your customers?
• Sales
• Referrals: CARE TA’s, VSLAs
• Local government/local leaders</td>
<td rowspan="2">CUSTOMERS
Who are your customers?
• High income HHs
• Middle income HHs
• Low income HHs
• Ultra-low income HHs
• VSLAs</td>
</tr>
<tr>
<td>RESOURCES
What resources do you have?
• Labor (daily)
• Land
• Production materials</td>
<td>PRODUCT VALUE
Why do people buy these products?
• Affordable
• Quality
• Hygienic
• Available
• Installed
• Package available</td>
<td>CHANNELS
How do you market and sell products to your customers?
• Posters, radio
• community marketing events, brochures
• Community Promoters and Leaders
• VSLAs
• Demonstrations/Display</td>
</tr>
</table>

COSTS What costs you money in this business?	REVENUE How do you make money in this business?
Fixed costs: Equipment; operational costs (electricity, rent); transport; **Variable costs:** Labor (daily or monthly); production materials; transport; marketing	• Product sales • Bulk sales/product deals • Addons

Jumpstart Business Model and Stakeholders:

Local masons will provide two packages according to household preference and ability to pay: 1) installation, slab and superstructure; and 2) installation and slab. The first package (100 000 Ariary to 500 000 Ariary) will be marketed towards high to middle income households and the second (no more than 50 000 Ariary) to lower to ultra-low households. These will be provided as complete packages or addons. Models will include SANPLAT, Ecosan, Satopan and *siege a l'anglaise* as well as installation services, including pit digging, lining and/or septic tank, and superstructure made of either brick or local materials. RANO WASH will provide equipment and initial training to local masons on key technical and business skills. RANO-WASH-organized community marketing events will allow masons to showcase their services and products as well as provide an opportunity for potential customers (i.e. households) to ask questions and get advice. RANO WASH TAs and VSLAs will also be entry points for messaging and marketing for sanitation services (referrals) as well as a platform for households to get advice on/evaluate their sanitation options.

Looking forward:

- Train local service providers on the business, marketing, linkage and technical skills required to becoming a stronger entrepreneur
- Determine feasibility and model for integrating detailers/sales agents into the business model to further increase sales
- Networking opportunities for local masons to connect with retailers of input components

Local Service Provider – Sanitary Napkins (Social Enterprise)

<table>
<tr>
<td rowspan="2">PARTNERS
Who are your partners ?

Supporters
• VSLAs/Women's groups
• MFIs
• CARE

Input Suppliers
• Cloth
• Sewing machine

Sub-contractors/ Complementary Business
• Boutiques
• Health centers</td>
<td>ACTIVITIES
What do you do?
• Production
• Marketing
• Sales</td>
<td>PRODUCTS
What products do you sell?

Washable sanitary napkins
• Individual or bundled/packaged for customer</td>
<td>CUSTOMER RELATIONSHIPS
How do you know your customers?
• Sales
• Referrals: CARE TA's; VSLAs; schools; health facilities</td>
<td rowspan="2">CUSTOMERS
Who are your customers?
• Women of reproductive age
• Health centers
• Schools
• Church</td>
</tr>
<tr>
<td>RESOURCES
What resources do you have?
• Labor
• Sewing machine</td>
<td>PRODUCT VALUE
Why do people buy these products?
• After sales support/confidential
• Affordable
• Quality
• Hygienic
• Comfortable
• Reusable
• Environmentally friendly</td>
<td>CHANNELS
How do you market and sell products to your customers?
• Community marketing events, brochures, flyers
• Community Promoters and Leaders (schools and HFs)
• World MHM Day
• Sales points
• Detailers
• Distributers</td>
</tr>
</table>

COSTS **What costs you money in this business?**	REVENUE **How do you make money in this business?**
Fixed costs: Equipment; land/production space **Variable costs:** Labor (daily or monthly); production materials; transport	• Product sales • Bulk orders

Jumpstart Business Model and Stakeholders:

RANO WASH will launch this business model as a social enterprise to improve women and girls' ability to better manage their menstruation, provide an opportunity for dialogue and reduce the taboo on menstruation. Seamstresses will offer individual sanitary napkins and bundled sanitary napkins made from cloth in a variety of colors and patterns. RANO WASH will provide equipment and initial training to seamstresses on key technical and business skills. RANO-WASH-organized community marketing events, including an annual World Menstrual Hygiene Day and International Women's Day, will allow seamstresses to showcase their services and products to large audiences, as well as provide an opportunity for women and girls to engage in discussions on menstrual hygiene. At schools and health facilities, seamstresses will set up booths to sell sanitary napkins to women and girls.

ANNEX 8. SO2 PROGRESS OF WATER SYSTEM CONSTRUCTION WORKS

GWSS: Gravity Water Supply System

WPS: Water Pump System

Location				Technical Description	Contractor				Project Status					
Region	**District**	**Commune**	**Project Site**	**Project Description**	**Name of Water Supply Provider**	**WSP Investment Amount (USD)**	**% of WSP investment**	**Total Estimated costs excluding VAT (USD)**	**Phase**	**% Completion**	**Technical Reception**	**Provisional Reception**	**Final Reception (after 12 months warranty period)**	**Remarks**
FY18 Construction Activities (WSS)														
Alaotra Mangoro	Moramanga	Sabotsy Anjiro	**Sabotsy Anjiro**	Rehabilitation; extension and upgrading for PPP management	RPIJ	$ 20,434.11	23%	$ 89,164.94	Provisional Reception	100%	Completed	Completed	4-Jul-20	
Alaotra Mangoro	Moramanga	Beforona	**Beforona**	Rehabilitation; extension; upgrading	ACOGEMA	$ 10,435.51	16%	$ 63,471.67	Provisional Reception	100%	Completed	Completed	5-Jul-20	
Atsinanana	Toamasina II	Mahavelona	**Foulpointe**	Extension et remise à niveau	SANDANDRANO	$ 17,491.00	14%	$ 127,772.77	Provisional Reception	100%	Completed	Completed	2-Apr-20	
Atsinanana	Vatomandry	Ilaka	**Ilaka Est**	Rehabilitation & extension	LOVA VELU	$ 14,998.31	19%	$ 79,990.98	Provisional Reception	100%	Completed	Completed	10-Apr-20	
Atsinanana	Brickaville	Ranomafana	**Ranomafana Est**	Construction/Extension	LOVA VELU	$ 8,378.11	15%	$ 55,854.07	Provisional Reception	100%	Completed	Completed	21-Jun-20	

Location				Technical Description	Contractor				Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply Provider	WSP Investment Amount (USD)	% of WSP investment	Total Estimated costs excluding VAT (USD)	Phase	% Completion	Technical Reception	Provisional Reception	Final Reception (after 12 months warranty period)	
Atsinanana	Toamasina	Ampasimbe Onibe	**Ampasimbe Onibe**	Rehabilitation; extension and upgrading for PPP management	CREAT BTP	$ 6,142.25	8%	$ 81,896.67	Provisional Reception	100%	Completed	Completed	29-Apr-20	
Atsinanana	Brickaville	Andovoranto	**Ambila Lemaitso**	New construction	ATTR	$ 15,907.19	19%	$ 85,946.54	Provisional Reception	100%	Completed	Completed	9-Apr-20	
Vatovavy Fitovinany	Ikongo	Ambatofotsy	**Ambatofotsy / Ambalatenina / Ambodiara** Sakorihy	Rehabilitation & extension of 3 water systems	MICKAEL	$ 14,468.57	14%	$ 100,300.53	Technical Reception	100%	Completed		1-Aug-20	Provisional Reception scheduled for 8th August 2019
Vatovavy Fitovinany	Ifanadiana	Kelilalina	**Kianjanomby**	Construction	MICKAEL	$ 8,582.76	21%	$ 41,197.24	Technical Reception	100%	Completed		1-Aug-20	Provisional Reception scheduled for 8th August 2019
Vatovavy Fitovinany	Vohipeno	Andemaka	**Andemaka**	Rehabilitation & extension	BUSH PROOF	$ -	0%	$ 51,651.43	Construction	83%			1-Aug-20	Provisional Reception

Location				Technical Description	Contractor				Project Status					Remarks
Region	District	Commune	Project Site	Project Description	Name of Water Supply Provider	WSP Investment Amount (USD)	% of WSP investment	Total Estimated costs excluding VAT (USD)	Phase	% Completion	Technical Reception	Provisional Reception	Final Reception (after 12 months warranty period)	
														scheduled for August 2019
FY19 Construction Activities (WSS)														
Alaotra Mangoro	Amparafaravola	Amparafaravola	Ambongabe	Rehabilitation; extension; upgrading	not yet selected	pending selection of WSP		$ 146,608.36	Restricted Tendering	10-juil.-19	29th to 31th July 2019	1-Aug-19	5-Oct-19	Bid evaluation completed, Works construction duration: 65 days
Alaotra Mangoro	Amparafaravola	Amparafaravola	Betatamo	Rehabilitation; extension; upgrading	not yet selected	pending selection of WSP		$ 140,684.17	Restricted Tendering	10-juil.-19	29th to 31th July 2019	1-Aug-19	5-Oct-19	Bid evaluation completed, Works construction duration: 65 days
Alaotra Mangoro	Moramanga	Anosibe Ifody	**Anosibe Ifody**	Rehabilitation	not yet selected	pending selectio		$ 132,652.82	Restricted Tendering	10-juil.-19	29th to 31th July 2019	1-Aug-19	5-Oct-19	Bid evaluation complet

Location				Technical Description	Contractor				Project Status					
Region	District	Commune	Project Site	Project Description	Name of Water Supply Provider	WSP Investment Amount (USD)	% of WSP investment	Total Estimated costs excluding VAT (USD)	Phase	% Completion	Technical Reception	Provisional Reception	Final Reception (after 12 months warranty period)	Remarks
						n of WSP								ed, Works construction duration: 65 days
Atsinanana	Vatomandry	Niarovana Caroline	**Niarovana Caroline**	New construction	not yet selected	pending selection of WSP		$ 106,842.40	Restricted Tendering	29-Jul-19	29th to 31th July 2019	5-Aug-19	9-Oct-19	Works construction duration 65 days
Atsinanana	Brickaville	Mahatsara	**Mahatsara**	New construction	not yet selected	pending selection of WSP		$ 82,181.08	Restricted Tendering	25-Jul-19	29th to 31th July 2019	5-Aug-19	9-Oct-19	Works construction duration 65 days
Atsinanana	Toamasina II	Ampasimadinika	**Ampasimadinika**	Renovation with redesign	not yet selected	pending selection of WSP		$ 45,766.50	Restricted Tendering	25-Jul-19	29th to 31th July 2019	5-Aug-19	9-Oct-19	Works construction duration 65 days
Vatovavy Fitovinany	Ifanadiana	Antaretra	**Antaretra**	Rehabilitation & extension	not yet selected	pending selection of WSP		$ 128,473.18	Restricted Tendering	10-Jul-19	29th to 31th July 2019	1-Aug-19	5-Oct-19	Bid evaluation completed, Works construction

Location				Technical Description	Contractor				Project Status					Remarks
Region	**District**	**Commune**	**Project Site**	**Project Description**	**Name of Water Supply Provider**	**WSP Investment Amount (USD)**	**% of WSP investment**	**Total Estimated costs excluding VAT (USD)**	**Phase**	**% Completion**	**Technical Reception**	**Provisional Reception**	**Final Reception (after 12 months warranty period)**	
														duration: 65 days
Vatovavy Fitovinany	Manakara II	Lokomby	**Lokomby**	New construction	not yet selected	pending selection of WSP		$ 152,785.59	Restricted Tendering	18-Jul-19	29th to 31th July 2019	1-Aug-19	5-Oct-19	Bid evaluation completed, Works construction duration: 65 days
Vatovavy Fitovinany	Ikongo	Manampatrana	**Manampatrana**	New construction	not yet selected	pending selection of WSP		$ 87,335.99	Restricted Tendering	15-Jul-19	29th to 31th July 2019	1-Aug-19	5-Oct-19	Bid evaluation completed, Works construction duration: 65 days

ANNEX 9. EMMR & WQAP QUARTERLY UPDATE Q3.19

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, Deputy Chief of Party
• Date Submitted:	• July 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 approved 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. Some technical and provisional acceptances were carried out until Q3. 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.

Finally, new tendering processes to make 08 additional constructions for this FY19 were launched during this quarter, some evaluations will continue until the last quarter. The validation of the corresponding ESF (Environmental Screening Form), as provided for in the EMMP, and as a prerequisite before the implementation of any construction work, is currently being processed.

• 2.0 ENVIRONMENTAL COMPLIANCE MONITORING AND REPORTING

In FY18, RANO WASH worked with the Ministry of Water, Sanitation and Hygiene (MoWASH) [4] to select intervention locations for potential water supply systems. The project conducted technical feasibility and detailed design studies (APSs and APDs [5]), 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. All in all, 8 out of the 12 water supply system (WSS) construction works started since the beginning of the FY19 are currently fully functional. The acceptance of these works means that the conditions agreed in the corresponding ESF have been verified and respected by the WSP / manager - investor - builder. The remaining 04 works are awaiting the validation of their final acceptance, conditioned by the installation of a certain number of water connections defined in each design file which is currently being processed.

[4] 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)

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

Water quality also represent a challenge for these sites. However, the project is still following the protocols set out in its WQAP to manage these challenges, and continues to support managers so that they can effectively acquire 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 have been and will be shared in RANO WASH's periodic reports. The project will continue to collaborate with DGM and BNGRC. A summary table of the achievements of the RANO WASH project related to the CRM plan is included in this report.

3.0 LESSONS LEARNED

Water system managers need to be more closely coached during system operation because it was noted that most water quality non-compliances resulted from problems in understanding the operation of treatment facilities (aeration, settling, filtration, disinfection).

These issues will be closely monitored by the project for the next quarter and the necessary capacity building will be provided to these managers.

• 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 [6] (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. • This activity is still on-going and will be finalized by Q4 for those FY18 intervention communes. • The FY19 communes will benefits from the same support starting from Q1 FY20.	•

[6] 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[7]. 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.	•

[7] 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 08 potential market of management – investment – and construction of water supply systems (WSS) in Q3. • 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 on Q2, Q3, and are still on-going. However, those concerns will still be taken into account and recommended in the upcoming WMDP reports as a prerequisite particularly for sanitation marketing. • WMA reports started in Q2 for the last 03 regions (Vakinankaratra, Matsiatra Ambony, Amoron'I Mania) are still being finalized and will be completed for Q4.	•
• **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 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 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). The scenarios selected in these studies for detailed design studies (APD, where 09 reports were produced in Q2 and Q3) 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 08 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 infrastructure can contribute to adapting to climate change and	•

• **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	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 define the successful tenderers of the contracts mentioned, but work will not start 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 which are for this Q3 still being processed between the PCT and USAID in Madagascar.	•

• 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, 08 of the 12 constructions launched for the FY18 have passed the stage of provisional approval of the works and are in operation. Technical approvals were also carried out for the remaining 04 works and their provisional approval scheduled for Q4. • The validation of technical approvals is done by the project's qualified engineers (Sandandrano, BushProof, PCT) and representatives of 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 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 more constructions should be started for Q4. This additional work is in the process of contracting and validating the corresponding ESFs. 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 analyses 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 certain parameters at certain sites require a deeper control. For these particular cases, specific measures are given in the attached WQAP report and are rigorously implemented at this time to ensure the distribution of safe water for beneficiaries. • • The project is currently implementing a policy to promote access to social and private connections at construction sites. As this is a new approach, even under the PPP in Madagascar, the administration and communication strategy with beneficiaries on the

• **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**
			number 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**			
• 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 [8] 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.

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

• **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**
• **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			

• **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 3.2.2.4: 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 – Q3) • • 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 – Q3) • • 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 WMDP. This strategy should be completed in Q4.	• 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 in Q4, 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).

• **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**
• **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	• 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 are currently working closely with producers of washable sanitary napkins, 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 – Q3).	•

- ADDITIONAL COMMENTS

•

CRM Issues

• **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. The last 08 constructions for this FY19 should start in Q4 under better conditions. • 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 municipal 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 – Q3) • • BushProof and Sandandrano trained water service providers on environmental measures related to periodical water treatment.
• Surface capture		

<table>
<tr><th>• Project/Activity/Sub-Activity</th><th>• Climate change risk addressing / Impact Mitigation</th><th>• Summary Field Monitoring/Issues/Resolution
• (i.e. monitoring dates, observations, issues identified and resolved)</th></tr>
<tr><td>• Capture: Dam, Well and Drain, Pumping</td><td>• 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.</td><td rowspan="3">• 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.
•
• The IWRM main activities has been held on Q1 and Q2 (FY19) for the construction activities that has begun in FY18 Q4.</td></tr>
<tr><td colspan="2">• Groundwater well or Drilling and Pumping system</td></tr>
<tr><td>• Capture: Well and Borehole</td><td>• 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</td></tr>
<tr><td colspan="3">• Community Led Total Sanitation (CLTS)</td></tr>
</table>

• **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
- Updated FY19 EMMP: Environmental Mitigation and Monitoring Plan
- WQAP reporting sheet

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:

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).
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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:		RANOWASH 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[9]	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,

[9] 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[10] 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

[10] 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[11] 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[12] 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.

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

[12] 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; [13]
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

[13] 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 c) Community sensitization on proper handling of water after drawing it	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
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 e) Community sensitization on proper handling of water after drawing it	Visual inspection of works, review water quality reports	Continuous	Water supply manager, community

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.**[14] 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

[14] 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.

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.

• 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)

Activity description		Threshold Determinations
	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**	
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)

Activity description		Threshold Determinations
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	
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)

Activity description		Threshold Determinations
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)
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),

Activity description		Threshold Determinations
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),
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	

Activity description		Threshold Determinations
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**	
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)

Activity description		Threshold Determinations
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),
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
Act 1.2.1.6	Working with the MoWASH to assess the sectorial review performance

Activity description	
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
IR 2.3	**Strengthened technical & business skills and competencies**
Output 2.3.2	Professional Associations Development

Activity description	
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**
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

Activity description	
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 [15] (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 (tender evaluation		• Ensure that technical notation criteria, used in bid processes to train the	• Qualified enterprises are chosen by the CAO for any requested	• Record of realization should be reported	• RW PCT	• Same as above

[15] 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
committees)		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	construction activity	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**						
• Act 2.1.2.1: Work with a Consultant to develop	• Same as			• Same as	• Same as	

• **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
the regional WMDP for the previous 3 regions	above			above	above	
• Act 2.1.2.2: Develop WASH marketing plan per region		• Same as above	• Same as above			• Same as above
• 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						
• Act: 2.1.3.4: Support VSLA loans to initiate WASH small business i.e. hygiene product and sanitation marketing	• 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: 2.1.3.5: Develop communication materials related to new loan products						

• **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
• **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 validated by the beneficiary community and the MoWASH before any	• 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
		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 by the project) before launching any bid process	• Short-listed enterprises are trained on RANO WASH technical requirements before submitting for any bid process	• Record of realization should be reported regularly each quarter and while relevant.	• RW PCT	• Same as above
• Act 2.2.1.3: Develop ESF and monitor its	• Non-compliance with	• As most of RANO WASH construction	• No construction activity will start before	• Record of realization should	• 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
implementation in the construction sites	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)	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	the approval of the related ESF	be reported regularly each quarter and while relevant. A final report of Environmental Status will be done at the end of each construction activity.	• BushProof, • Sandandrano	
• 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 water is verified as safe accordingly to the approved Water Quality Assurance Plan (WQAP) of RANO WASH	• 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
• **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	• Lack of environmental issue awareness • & consideration Inappropriate and unsecured building risk	• 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.	• 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
• Act 3.2.2.13: CLTS Triggering and FUM activities at village/fokontany level						

• **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
		• • 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**						
• 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	• 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

• **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
	residue, etc.)					

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

DISTRIBUTION:

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	Tested by	Checking phase	Safety Check according to	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
Phase of detailed project	Atsinanana	Toamasina II	Ampasimbe Onibe	3/21/2018	Water stream in Ampasimbe	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	n.c	n.c	n.c	n.c	BushProof	Design	**Not Safe**	The objective of water quality analyses during the detailed	The structures in the detailed design file (APD) are a filter	Serge RANAIVOJAONA, Director of BushProof
				3/9/2018	Water spring in Ampasimbe	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	n.c	n.c	n.c	n.c	BushProof	Design	**Not Safe**			
Phase of construction of the Water Supply	Atsinanana	Toamasina II	Ampasimbe Onibe	5/16/2019	30m3 water tank in Ampasimbe	n.c	n.c	n.c	N/A	7.7	44.5	22.0	< 10	2.0	18.3	10.0	2.0	5.6	n.c	3.1	1	8.4	< 0,005	0.7	< 0,01	< 0,005	1.3	**200**	**46**	Institut	Safety	**Not Safe**	Safety validation is done at the end of all work and before operations begin by the WSP In	For the Ampasimbe Onibe system to be fully usable, it must distribute water that has been	Marcelin RANDRIATSITOHAINA - Regional Private Sector Manager (RPSM) of RANO WASH in Atsinanana
				5/16/2019	BS (social connection) Sahorana	n.c	n.c	n.c	n.c	7.6	43.8	22.0	< 10	< 0,02	18.3	30.0	0.5	6.0	n.c	2.2	1	4.2	< 0,005	0.6	< 0,01	< 0,005	1.2	**200**	**48**	Institut	Safety	**Not Safe**			
				5/16/2019	BS (social connection) Samifia	n.c	n.c	n.c	n.c	7.5	37.7	19.0	< 10	< 0,02	12.2	35.0	0.2	4.8	n.c	4.0	1	8.4	< 0,005	0.6	< 0,01	< 0,005	0.4	**200**	**25**	Institut	Safety	**Not Safe**			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between 10 and 350	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				5/16/2019	BS (social connection) Ampasimbe Primary Public School (EPP)	n.c	n.c	n.c	n.c	7.5	400.0	200.0	< 10	< 0,02	18.3	350.0	0.3	2.4	n.c	3.2	2	4.2	< 0,05	0.6	< 0,01	< 0,05	1.3	**v 200**	**20**	Institut Pasteur de	Safety validation	**Not Safe**			
				5/16/2019	BP (private connection) in Ampasimbe	n.c	n.c	n.c	n.c	7.6	400.0	200.0	< 10	< 0,02	12.2	350.0	0.4	2.8	n.c	3.0	< 0,05	8.4	< 0,05	0.5	< 0,01	< 0,05	1.8	**v 200**	**47**	Institut	Safety	**Not Safe**			
Phase of detailed project design	Atsinanana	Toamasina II	Mahavelona (Foulpointe)	4/10/2018	Barrage Ranomainty					7.2	37	37	**27**										0.1			< 0,05	0.5	n.c	n.c	Sandandrano	Design	**Not Safe**	The Ranomainty dam is a structure designed to retain rainwater	It was agreed that water quality would be closely monitored as it	Gerald RAZAFINJATO Director of Sandandrano

Phase of construction of the WSS					Testing phases	
Atsinanana					Region	
Toamasina II					District	
Mahavelona (Foulpointe)					Commune	
5/16/2019	5/16/2019	3/4/2019	3/4/2019	3/4/2019	Test date	
Château d'eau Sandandrano Foulpointe	Réservoir 100m3 Foulpointe	Monobloc of Foulpointe	Foulpointe Sandandrano's Water Tank /Chlorination point	Ranomainty water catchment (Foulpointe)	Sampling location	
					Longitude E [DD]	
					Latitude S [DD]	
					Altitude [m]	
					Debit	
6.88	6.88	7.11	6.66	6.55	Between	pH
159	139	150	150	650	≤ 1600	Electrical
79.7	71	n.c	104	39	≤ 500 mg/l	TDS (Total
<100	<100	n.c	23	53	≤ 15°C	Temperature
0.00	<0,02	n.c	<5	<10	≤ 5 NTU	Turbidity
36.6	12.2	n.c	n.c	n.c	Between 10 and 350	*Bicarbonate HCO3
15.0	15.0	n.c	Low	Low	≤ 500 mg/l	Carbonate –
1.6	1.9	n.c	n.c	n.c	≤ 12 mg/l	Potassium –
19.2	20.8	n.c	n.c	n.c	≤ 200 mg/l	Calcium –
n.c	n.c	n.c	n.c	n.c	< 20 mg/l	*Sodium –
20.0	17.5	n.c	n.c	n.c	≤ 250 mg/l	Chloride –
1	36	n.c	n.c	n.c	≤ 250 mg/l	Sulfate –
<0,05	4.2	n.c	n.c	n.c	≤ 50	Magnesium –
0.1	0.1	n.c	n.c	n.c	≤ 0.3 mg/l	Total Iron
0.18	0.17	n.c	n.c	n.c	≤ 1.5 mg/l	Fluoride – F-
<0,001	<0,001	n.c	n.c	n.c	≤ 0.01 mg/l	Arsenic
<0,005	<0,005	n.c	n.c	<0,05	≤ 0.1 mg/l	Nitrite –
1.7	1.4	n.c	<0,05	3.8	≤ 50 mg/l	Nitrate –
<1	<1	n.c	n.c	n.c	0/100ml	Coliform (TTC)
<1	<1	n.c	n.c	n.c	0/100ml	*Escherichia*
Institut	Institut	Villanova	Villanova University	Villanova	***Tested by***	
Safety	Safety	Monitoring	Monitoring	Monitoring	***Checking phase***	
Safe	**Safe**	**Not Safe**	**Not Safe**	**Not Safe**	***Safety Check according to***	
In general, parameters related to water identity and water facies		The water quality monitoring activities undertaken as part of the collaboration with the University of Villanova focused mainly on			***Comments / Interpretation***	
These results were communicated to the manager		The results were shared with the manager so that he could improve the quality of his services.			***Action taken / Mitigation measures / Action plan***	
Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana		Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana			***Individual responsible for the mitigation follow-up***	

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between 10 and 350	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				5/16/2019	BP 1 (Private connection) Foulpointe					6.9	165	83	< 10	< 0,02	42.7	10.0	1.4	21.6	n.c	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 connection) Foulpointe					7.0	178	89	< 10	< 0,02	42.7	15.0	1.5	32.0	n.c	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 (sanitary block) in Foulpointe					7.1	169	24	< 10	< 0,02	42.7	10.0	1.5	22.8	n.c	18.0	1	8.4	0.1	0.7	> 0,1	< 0,05	2.1	< 1	< 1	Institut	Safety	Not Safe				
Phase of	Atsinanana	Vatomandry	Ilaka-Est	3/6/2019	Water Tank					8.4	150	70	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	Low (< 50)	n.c	n.c	Villanova	Monitoring	Not Safe	The water quality monitoring	The recommendations	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH

Testing phases				Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
	Region	District	Commune							Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				3/6/2019	One of Ilaka Est sanitary block					6.5	167	79	**28**	**8.0**	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	Low (< 0,1)	Low (< 50)	n.c	n.c	Villanova	Monitoring	**Not Safe**			
				5/15/2019	50m3 water tank					7.6	42	21	< 10	< 0,02	6.1	5.0	3.3	1.6	n.c	9.6	< 0,05	< 0,05	0.1	0.6	< 0,01	< 0,05	< 0,05	< 1	< 1	Institut	Safety	**Safe**	The water stored in the		
				5/15/2019	MultiPEC (another sanitary block)					7.3	68	33	< 10	**14.0**	12.2	10.0	0.1	2.8	n.c	13.5	2	< 0,05	**0.8**	0.5	< 0,01	< 0,05	1.3	**30**	< 1	Institut Pasteur de Madagascar	Safety validation	**Not Safe**	Abnormal increase in turbidity in distribution systems up to this water	These results and interpretations have been shared with the system manager who is currently implementing a general cleaning of the	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana
				5/15/2019	Private connection					7.0	68	34	< 10	**8.0**	6.1	5.0	1.7	4.8	n.c	12.0	3	< 0,05	0.1	0.6	< 0,01	< 0,05	1.6	**19**	< 1	Institut	Safety	**Not Safe**	High turbidity and presence		

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between 10 and 350	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				5/15/2019	Social connection					6.7	70	34	< 10	**10.0**	6.1	5.0	0.1	3.2	n.c	13.5	6	< 0,05	< 0,05	0.5	< 0,01	< 0,05	1.4	**14**	< 1	Institut	Safety	**Not Safe**			
				5/15/2019	Social connection in Foulpointe High School					6.9	72	36	< 10	4.0	18.3	15.0	2.5	3.2	n.c	14.0	9	< 0,05	< 0,05	0.8	< 0,01	< 0,05	1.8	**12**	**1**	Institut	Safety	**Not Safe**	presence of coliform		
Phase of construction of the WSS	Atsinanana	Brickaville	Andovoranto (Ambila Lemaitso)	3/5/2019	Water catchment Ambila Lemaitso					6.8	33	26	n.c	**7.0**	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	Villanova	Monitoring	**Not Safe**	The water quality monitoring activities undertaken as part of the collaboration	The recommendations issued by the students were taken into account and	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana
				3/5/2019	Water Tank /Chlorination point (next to the catchment)					**6.0**	402	272	**30**	< 5	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	Low (< 0,1)	3.8	n.c	n.c	Villanova University	Monitoring	**Not Safe**			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between 10 and 250	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				3/5/2019	Multipec in Ambila Lemaitso					n.c	370	247	**31**	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	Low (<50)	n.c	n.c	Villanova	Monitoring	**Not Safe**			
				5/13/2019	water head tank					7.2	179	90	< 0	< 0,02	18.3	15.0	3.1	8.4	n.c	32.0	34	16.8	< 0,05	0.9	< 0,01	< 0,05	1.2	< 1	< 1	Institut	Safety	**Safe**	At the end of the work, during this checking, we can observe from these results that the water quality at Ambila Lemaitso is generally safe	The clean-up of the distribution system will be closely monitored, and water quality tests will be repeated to provide full assurance of its safety.	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in Atsinanana Tiana Zo RAKOTOARISOA,
				5/13/2019	Private water connection (Ambodi pont)					7.1	204	102	< 0	< 0,02	18.3	15.0	0.8	6.8	n.c	30.0	44	16.8	0.1	0.7	< 0,01	< 0,05	0.2	< 1	< 1	Institut	Safety	**Safe**			
				5/13/2019	Social water connection at the primary public school					7.1	220	110	< 0	< 0,02	36.6	30.0	3.4	7.6	n.c	16.0	58	4.2	0.1	0.8	< 0,01	< 0,05	1.7	**8**	< 1	Institut Pasteur	Safety validation	**Not Safe**			
				5/13/2019	Private water connection (Homeo pharma)					7.0	215	108	< 0	2.0	18.3	15.0	0.8	4.4	n.c	34.0	46	12.6	0.1	0.7	< 0,01	< 0,05	0.9	< 1	< 1	Institut	Safety	**Safe**			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	Tested by	Checking phase	Safety Check according to	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between 10 and 250	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
Phase of construction of the WSS	Atsinanana	Brickaville	Ranomafana-Est	5/13/2019	Multipec in Ambila Lemaitso					7.1	200	100	< 10	2.0	18.3	15.0	1.5	3.2	n.c	28.0	47	8.4	0.1	0.8	< 0,01	< 0,05	0.7	< 1	< 1	Institut	Safety	Safe			
				3/3/2019	Monoblo c in Ranomaf ana Est					7.6	24	17	29	< 5	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	Low (< 0,1)	n.c	n.c	n.c	Villanova	Monitoring	Not Safe	Apart from the similar interpretations already mentioned		
				3/3/2019	Main water tank of Ranomaf ana Est					6.9	27	17	30	< 10	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	Villanova	Monitoring	Not Safe	Tests for the validation of potability are done once the work is		
				5/14/2019	50m3 water tank					7.9	23	11	< 10	< 0,02	18.3	15.0	0.3	2.8	n.c	2.6	1	4.2	< 0,005	0.4	< 0,01	< 0,05	0.8	200	1	Institut	Safety	Not Safe	Generalized bacteriological contamination suggesting that	The efficiency of the chlorination system will be	Marcelin RANDRIATSITOHAINA - RPSM of RANO WASH in
				5/14/2019	FID Filter outlet					7.5	18	9	< 10	8.0	6.1	5.0	0.2	2.0	n.c	1.9	1	< 0,005	< 0,005	0.5	< 0,01	< 0,05	0.9	200	7	Institut	Safety	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between 10 and 350	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				5/14/2019	Social connection sample					7.4	22	11	< 10	< 0,02	12.2	< 10.0	1.4	2.4	n.c	2.5	< 0,005	< 0,05	< 0,005	0.4	< 0,001	< 0,005	0.5	**200 v**	**2**	Institut	Safety	**Not Safe**			
				5/14/2019	Private connection sample					7.4	22	11	< 10	< 0,02	6.1	5.0	1.1	4.8	n.c	3.0	< 0,005	< 0,05	< 0,005	0.5	< 0,001	< 0,005	0.7	**200 v**	**6**	Institut	Safety	**Not Safe**			
				5/14/2019	MultiPEC					7.5	21	10	< 10	< 0,02	6.1	5.0	1.6	5.6	n.c	1.7	< 0,005	< 0,05	< 0,005	0.4	< 0,001	< 0,005	0.6	**200 v**	**2**	Institut	Safety	**Not Safe**			
Phase of detailed project	Vatovavy Fitovinany	Vohipeno	Andemaka	4/1/2018	Well 01 (sampled for aquifer study)					**5.1**	n.c	n.c	**22**	n.c	40.0	20.0	3.0	14.0	7	10.5	25	**500**	0.4	-	n.c	n.c	n.c	n.c	n.c	BushProof	Design	**Not Safe**	The objective of water quality analyses during the detailed	The structures in the detailed design file (APD) are a filter	Serge RANAIVOJAONA, Director of BushProof
				4/1/2018	Well 05 (sampled for aquifer study)					6.7	n.c	n.c	**22**	n.c	95.0	45.0	3.2	7.0	6	9.4	24	**90**	0.1	-	n.c	n.c	n.c	n.c	n.c	BushProof	Design	**Not Safe**			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml	BushProof	Design	Not Safe			
				3/9/2018	Water Catchment (extracted from previous APD data)	47.75830	22.27844	16		6.7	532	267	26	7.5	40.0	20.0	3.0	12.0	7	10.5	25	500	0.4	-	-	n.c	n.c	n.c	n.c	BushProof	Design	Not Safe			
				3/9/2018	Captage busé					6.4	382	192	26	< 5	95.0	45.0	3.2	32.0	6	9.4	24	90	0.1	-	-	n.c	n.c	n.c	n.c	BushProof	Design	Not Safe			
				3/7/2018	Matitana na River					6.0	86	60	n.c	< 25	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	1.0	n.c	n.c	0.1	4.4	n.c	n.c	BushProof	Design	Not Safe			
Phase of construction of the WSS	Vatovavy Fitovinany	Vohipeno	Andemaka	2/14/2019	New water catchment S04 (borehole)	47.75833	22.27835	10	4.2	7.0	92	66	25	< 5	110.0	550	2.3	3.0	7	10.0	6	12.0	0.2	0.3	< 0.01	n.c	n.c	n.c	n.c	BushProof	Monitoring	Not Safe	Those borehole are not used yet, which explain why the water	As the rehabilitation of the water tank and distribution networks are still on-	Ranto RABEMANANTSOA - Regional Private Sector Officer (RPSO) of RANO WASH in Vatovavy Fitovinany
				2/14/2019	Secondment water catchment S05 (borehole)	47.75834	22.27842	10	2.8	7.2	96	66	25	< 5	95.0	45.0	2.3	2.0	6	9.0	11	12.0	0.2	0.3	< 0.01	n.c	n.c	n.c	n.c	BushProof	Monitoring	Not Safe			

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
Phase of detailed project design	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	-	-	n.c	n.c	n.c	n.c	BushProof	Design	**Not Safe**	The main concern raised from those results are related to pH and temperature	Those data has already been taken into account in the design of the water supply	Ranto RABEMANANTSOA - Regional Private Sector Officer (RPSO) of RANO WASH in Vatovavy Fitovinany
Phase of	Vatovavy	Ikongo	Ambatofots	6/20/2018	Source Ambalatenina	47.47533	21.80022	390	2.5	**5.3**	50	30	**18**	< 5	50.0	25.0	0.8	13.0	7	11.0	23	1.0	**0.7**	0.1	-	n.c	n.c	n.c	n.c	BushProof	Design	**Not Safe**	Those results belongs to	Those works have almost	Ranto RABEMANANTSOA -

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				6/19/2018	Source Ambatofotsy 1	47.49617	21.77244	393	0.5	5.2	80	40	20	< 5	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	n.c	BushProof	Design	Not Safe			
				6/19/2018	Source Ambatofotsy 2	47.49936	21.76917	389	1.3	5.1	30	15	19	< 5	30.0	15.0	1.2	1.0	6	9.3	13	4.0	0.1	0.1	-	n.c	n.c	n.c	n.c	BushProof	Design	Not Safe			
				6/20/2018	Source Ambodiara Sakorihy	47.49578	21.79108	379	0.9	5.3	70	35	19	< 5	40.0	200.0	1.4	26.0	6	8.6	21	4.0	0.1	0.2	-	n.c	n.c	n.c	n.c	BushProof	Design	Not Safe			
Phase of construction of the WSS																																		
Alaotra Mangoro				6/12/2019	Beforona, Terrain baolina (sampling water point - private connection)					7.7	65	65	19	5.2	3.7	3.0	2.4	9.6	n.c	3.5	< 0,005	4.2	< 0,005	0.4	< 0,01	0.5	0.7	< —	< —	Institut Pasteur de Madagascar	Safety validation	Not Safe	The water is bacteriologically safe but contain a major contamination by	As the main water tank fed by the two catchment structure isn't	Stephane RALAINONY - Regional Private Sector Officer (RPSO) of RANO WASH in Alaotra Mangoro
Moramanga																																		
Beforona																																		

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO_3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform	*Escherichia*	*Tested by*	*Checking phase*	*Safety Check according to*	*Comments / Interpretation*	*Action taken / Mitigation measures / Action plan*	*Individual responsible for the mitigation follow-up*
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml						
				6/12/2019	CSB II, Beforona (sampling water point - social connection)					7.8	57	57	20	1.7	6.1	5.0	0.2	6.8	n.c	4.3	< 0,005	16.8	< 0,005	0.4	< 0,001	< 0,1	0.6	<	<	Institut Pasteur de Madagascar	Safety validation	Safe	The temperature exceeds the preferred value but it do not have effect on water		
				6/12/2019	Water tank next to the FJKM church in Beforona					7.8	55	55	21	1.1	12.2	10.0	0.5	4.8	n.c	4.3	1	25.2	< 0,005	0.4	< 0,001	< 0,1	0.3	<	<	Institut	Safety	Safe	Same point related to		
				6/12/2019	Sampling water point in Masipapango (sampling water point - social connection)					7.3	50	50	20	1.2	6.1	5.0	0.8	7.6	n.c	5.7	< 0,005	33.6	< 0,005	0.3	< 0,001	0.1	0.2	<	<	Institut Pasteur de	Safety validation	Safe	The rate of nitrite reaches its admissible limit that suggests an		

Phase of construction of the WSS				Phase of detailed		Testing phases	
Alaotra Mangoro				Alaotra Mangoro		Region	
Moramanga				Moramanga		District	
Sabotsy Anjiro				Sabotsy Anjiro		Commune	
4/11/2019	3/7/2019	3/7/2019	3/7/2019	4/23/2018		Test date	
Water tank of Andriambo	Social connection	Water tank /Chlorination point	Before treatment	Water catchment structure		Sampling location	
						Longitude E [DD]	
						Latitude S [DD]	
						Altitude [m]	
						Debit	
7.5	6.9	6.4	6.7			Between	pH
343	355	151	278			≤ 1600	Electrical
344	316	317	313			≤ 500 mg/l	TDS (Total
349	127	323	127	24		≤ 15°C	Temperature
1.5	0.10	0.1<	0.1<			≤ 5 NTU	Turbidity
12.2	n.c	n.c	n.c			Between	*Bicarbonate HCO3
n.c	n.c	n.c	n.c			≤ 500 mg/l	Carbonate –
1.8	n.c	n.c	n.c			≤ 12 mg/l	Potassium –
6.4	n.c	n.c	n.c			≤ 200 mg/l	Calcium –
n.c	n.c	n.c	n.c			< 20 mg/l	*Sodium –
5.0	n.c	n.c	n.c			≤ 250 mg/l	Chloride –
6	n.c	n.c	n.c			≤ 250 mg/l	Sulfate –
21.0	n.c	n.c	n.c			≤ 50	Magnesium –
0.1	n.c	n.c	n.c			≤ 0.3 mg/l	Total Iron
0.5	n.c	n.c	n.c			≤ 1.5 mg/l	Fluoride – F-
0,01<	n.c	n.c	n.c			≤ 0.01 mg/l	Arsenic
0,1<	Low	Low	Low			≤ 0.1 mg/l	Nitrite –
0.6	Low	Low	Low			≤ 50 mg/l	Nitrate –
20>	n.c	n.c	n.c	2400>		0/100ml	Coliform (TTC)
5	n.c	n.c	n.c	340		0/100ml	*Escherichia*
Institut	Villanova	Villanova	Villanova	Institut Pasteur de		***Tested by***	
Monitoring	Monitoring	Monitoring	Monitoring	Design		***Checking phase***	
Not Safe	**Not Safe**	**Not Safe**	**Not Safe**	**Not Safe**		***Safety Check according to***	
In general, parameters	The water quality monitoring activities undertaken as part of the collaboration with the			The main purpose of RANO WASH		***Comments / Interpretation***	
The cleanliness of	The recommendations issued by the students were taken into account and communicated to			The design of the treatment unit must		***Action taken / Mitigation measures / Action plan***	
Stephane RALAINONY - Regional	Stephane RALAINONY - Regional Private Sector Officer (RPSO) of RANO WASH in Alaotra Mangoro			Gerald RAZAFINJATO Director of Sandandrano		***Individual responsible for the mitigation follow-up***	

Testing phases	Region	District	Commune	Test date	Sampling location	Longitude E [DD]	Latitude S [DD]	Altitude [m]	Debit	pH	Electrical	TDS (Total	Temperature	Turbidity	*Bicarbonate HCO3	Carbonate –	Potassium –	Calcium –	*Sodium –	Chloride –	Sulfate –	Magnesium –	Total Iron	Fluoride – F-	Arsenic	Nitrite –	Nitrate –	Coliform (TTC)	*Escherichia*	Tested by	Checking phase	Safety Check according to	Comments / Interpretation	Action taken / Mitigation measures / Action plan	Individual responsible for the mitigation follow-up
										Between	≤ 1600	≤ 500 mg/l	≤ 15°C	≤ 5 NTU	Between 10 and 350	≤ 500 mg/l	≤ 12 mg/l	≤ 200 mg/l	< 20 mg/l	≤ 250 mg/l	≤ 250 mg/l	≤ 50	≤ 0.3 mg/l	≤ 1.5 mg/l	≤ 0.01 mg/l	≤ 0.1 mg/l	≤ 50 mg/l	0/100ml	0/100ml	Institut	Monitoring	Not Safe			
				4/11/2019	Social connection in Mangabe					7.4	34	34	9	2.3	12.2	n.c	1.2	6.4	n.c	5.3	3	16.8	0.1	0.5	< 0,01	< 0,1	0.7	200	—						
				6/3/2019	Water tank of Andrianambo					7.5	66	66	10	4.8	3.7	3.0	1.3	21.2	n.c	12.1	3	50.4	0.1	0.3	< 0,01	0.006	0.5	<	—	Institut	Safety	Safe	After this second test and review of the chlorination		
				6/3/2019	Social connection in Mangabe					7.4	60	60	10	12.0	12.2	10.0	1.3	16.4	n.c	9.6	8	42.0	0.1	0.3	< 0,01	0.008	0.8	<	—	Institut	Safety	Safe			

ANNEX 10. SO2 – TOPICS COVERED IN 3RD TRAINING SESSION FOR WATER PRIVATE OPERATORS

Training curriculum		
1. PUBLIC-PRIVATE PARTNERSHIP (PPP) - RANO WASH PPP water service Model - Linkage with financial institutions (MFIs - Banks)		**5. WATER QUALITY: analysis and treatment** - Analysis of the performance of a water system - Monitoring of the "Water Quality Assurance Plan" - Water Quality Reminder - Case study and problem identification - Water analysis - Health investigation - Water treatment technology
2. GENDER AND SOCIAL INCLUSION - ACCOUNTABILITY - Gender and Social Inclusion: Inclusive service - Water key tips related to Gender and Social Inclusion in the Management and Operations Systems - Accountability: Payment terms and prices - Types of connections - Monitoring of water and service quality		6. **Monitoring of the water quality assurance plan** -Water identity - Water facies - Health-related elements as a decision-making tool for monitoring water quality - Water Quality Reminder: Microbiological Contamination - Physico-chemical -Case study and problem identification - Water analysis - Health investigation - Water treatment technology
		7. BUSINESS PLAN - Business plan model -Simulation Exercises
3. MANAGEMENT DELEGATION CONTRACT - Responsibilities and contractual commitments of each party - Reminder of the regulatory texts - Performance indicators for monitoring contractual commitments for service provision		8. **TECHNICAL AND FINANCIAL REPORTING** - Reporting template - Technical and financial achievements: number of subscribers, production and water consumption history, revenue - expenses - taxes - challenges encountered
4. OPERATION & MAINTENANCE Reminder on Operation and Maintenance: - Control of the maintenance and servicing (O&M) of special equipment (electrochlorinator – Dose pump) installed on the AEP network - Organization of the Operation - Maintenance Planning - Monitoring of the water supply system performance / functionality		**9. SOCIAL MARKETING** Social Marketing on increasing water connections and consumption: Theory - Discussion - Sharing
		10. CLIENTS MANAGEMENT - Subscriber management - Invoicing (with different tools)

ANNEX 11: RANO WASH APPROACH TO CLTS

How Do We do CLST?

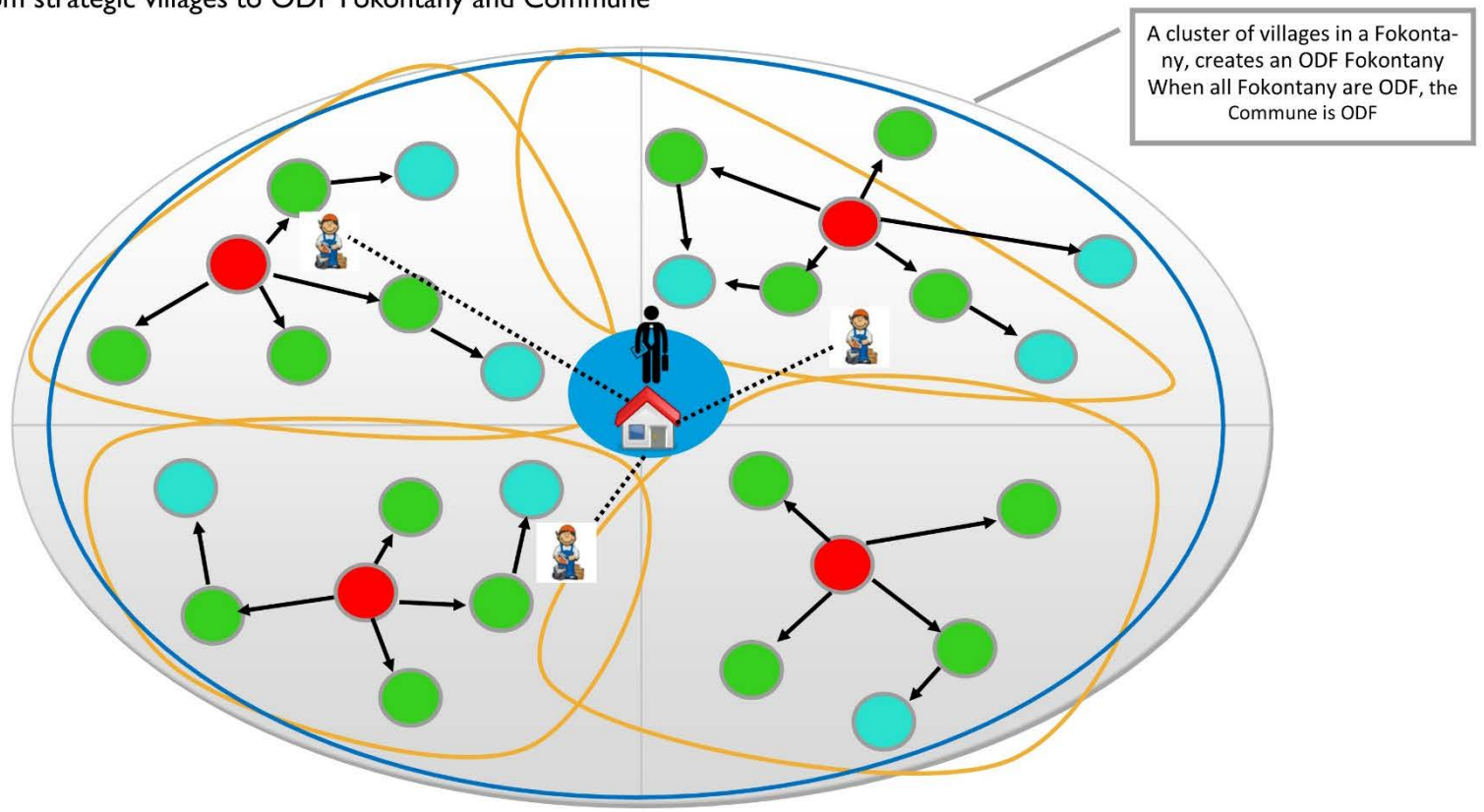
A step-by-step guide inspired by the RANO WASH Field Agent training curriculum

This step-by-step guide completes the CLTS strategy that RANO WASH has developed. It delves into the steps that needed to be achieved in implementing a CLTS process at village level, how RANO WASH specifically realizes each step, and who is realizing this step as well as Dos and Don'ts for people who are not familiar with the process. Note that this process is completed with institutional triggering at Communal level.

Key Step	Objective	Activities	Responsible	Do's	Don'ts
Pre triggering	Identify strategic villages to do triggering, identify key information on how to perform the triggering	- Gather information on the village: WASH situations, leaders, habits and customs, make appointment with the community	Trained field agents	- Work with authorities and leaders - Make sure that there is open defecation in the community – do a transect to identify open defecation areas	- Reveal your intentions to talk about open defecation - Hurry to identify natural leaders
Triggering	Make the whole community realize that they are eating their own feces – inspire disgust and shame but also self-esteem Push community members to decide to become ODF Identify natural leaders Establish an action plan for latrines	- Use triggering exercises such as community mapping, feces calculations, oro-fecal transmission, community transect…	Trained field agents	- Facilitate the participation of whole community: no discrimination - Encourage discussions, especially with children - Make people laugh and enjoy the session (until they don't -because of disgust and shame) - Dress up like community members	- Educate people, give them solutions or ask them to do things - Shake hands or eat with community members - Be too polite, or too mild – triggering plays on emotions - Insist if the community members want to continue to eat their own feces - Take photos until they decide to become ODF

Key Step	Objective	Activities	Responsible	Do's	Don'ts
Follow-up Mandona	Push households within communities to construct and use improved latrines Push communities to transform and eliminate open defecation areas	- Organize community visits of the constructed latrines and ask key questions: do you think this toilet is flyproof? Do you think everybody at home or all your guests can use this toilet? Do you think that this toilet stops you for eating feces? What can you do? - Encourage communities to take actions ***immediately***	Trained field agents with identified natural leaders	- Congratulate households and communities for their efforts - Create genuine competition between households and community members - Encourage the community to identify the "ideal" latrine that they would like to replicate – here the local mason can play a big role - Encourage all community members to improve ***immediately*** their latrines	- Forget to ask questions about gender and social inclusion - Provide unsolicited technical solutions - Stay too long and provide opportunities for community to ask something from the project - Forget to work with institutions such as school, health center, church to have flyproof latrines
ODF Verification Process	After self-proclamation, the verification process allows authorities to recognize and attribute the ODF status	- Transect and comprehensive visit of the village - Questions and answers with community members including children	Verification committee comprised of local authorities, natural leaders from another village and trained field agents as observers	- Make sure the community is self-proclaimed ODF and requesting verification - If the community is not ODF yet, explain the reasons why - Establish an action plan with the community and ask for a return date - If the community is deemed ODF, celebrate with the community – encourage and congratulate - Establish a written report	- Ignore children and their practices

Our path from strategic villages to ODF Fokontany and Commune



ANNEX 12. RANO WASH VSLA STRATEGY

A Village Savings and Loans Association (VSLA) is a group of 15 to 25 people who save together and make small loans from these savings. VSLAs offer members the opportunity to save frequently in small quantities and to access credit on flexible terms in order to carry out small income-generating activities and thus improve their daily lives. VSLAs are, by design, financially and institutionally sustainable, and can continue to operate independently after a training period of nine to twelve months. They are both social and financial capital for rural households.

RANO WASH uses VSLAs to improve rural household incomes so that they can more easily access quality WASH services. VSLA use their loans to invest in small income-generating activities mostly as retailers for rice, honey, cinnamon or coffee beans. The average amount of a loan is 30$ that they have to repay in three months. VLSA have the highest repayment rates in the microfinance industry. In addition, in its support for the professionalization of small private operators, RANO WASH also focuses on the potential of these VSLA groups or their members to become private WASH service providers later, which contribute to the sustainability of the availability of WASH services at the community level.

KEY INTERVENTIONS

RANO WASH's interventions are structured around four main areas:

Promotion of healthy behaviors and use of WASH services

Through their positive influence, both financially and socially, VSLAs facilitate the promotion of healthy behavior practices and the use of services. This is reflected in the consideration of VSLA members as targets in behavior change campaigns. VSLAs are also connected to water, sanitation and hygiene service providers, who can organize targeted marketing campaigns for members and/or offer service offers or products with ease of payment. The project also organizes a VSLA contest to promote an ideal latrine, shower and kitchen among members, according to their own definitions. The project also facilitates the linking of VSLA with health centers so that members can benefit from universal health coverage (CSU). Finally, the project sets up specific VSLA for young people so that they can have a good savings and management culture.

Professionalization of Village Agents (VA)

Village Agents or VAs are dynamic, motivated VSLA members who have the necessary skills to set up and create other groups. The implementation of VAs solves the problem of sustainability of VSLAs by providing the community with skills to create, train and support new groups, even after the ending of the project VAs can also continue to support the increase of uptake/demand of WASH services and products. The groups themselves are paying the VAs to assist and provide them with support prior to a contract according to the possibilities of each group and the quality of services provided by the VA. The professionalization of VAs ensures the quality of their services, which must comply with the ethics of the VA profession. RANO WASH supports the VAs identified at the level of already functional groups, is inspired by CRS' Private Service Provider (PSP) professionalization model and participates in discussions on this point with members of the Madagascar Savings Group Promoters

3

Linking VSLA groups with formal financial services

RANO WASH contributes to connecting VSLA groups with formal financial institutions. This is to provide them ways to secure their funds through research and testing of various solutions, including the use of mobile technology and partnerships with banks and microfinance institutions. The security of VSLA funds is essential to ensure that the savings and loan solution tailored to poor rural communities continues to be available, and that VSLAs members can steadily increase their incomes and access and use WASH services and products. Linking VSLA groups to formal financial institutions also allow them to be aware of available services that meet their needs such as having an account, getting a larger credit, or transferring money etc.). RANO WASH is also participating in the ongoing discussions with the Madagascar Savings Group Promoters Network (RPGEM) on these issues.

4

Support VSLAs to become WASH service providers

RANO WASH also supports VSLA groups to realize their potential to become WASH service providers. Indeed, the WASH market offers interesting opportunities for local service and product providers, and VSLA groups can exploit this potential market by becoming suppliers themselves. They can invest in the WASH market, individually through loans within VSLA, as in the case of local masons or seamstresses for example, but also as a group, by joining forces to become private water system managers or a company specializing in sanitation. RANO WASH thus provides technical support for this possibility.

CHANGE PROJECTION

2019

Leading VSLA groups adopting key WASH behaviors
New VSLA groups strengthened by the project
Partnership in linking VSLAs with financial institutions developed

2020

Leading VSLA groups adopting key WASH behaviors
New VSLA groups strengthened by the project
VSLA linkage service model with financial institutions piloted at least in one region

2021

Leading VSLA groups adopting key WASH behaviors
New VSLA groups strengthened by the project
VSLA linkage service model with financial institutions piloted at least in one region

2022

Leading VSLA groups adopting key WASH behaviors
New VSLA groups created by Village Agents strengthened by the project
VSLA linkage service model with financial institutions piloted in other regions

ANNEX 13. RANO WASH GENDER AND SOCIAL INCLUSION MAINSTREAMING STRATEGY

USAID
FROM THE AMERICAN PEOPLE

RANO WASH

Gender and Social Inclusion Mainstreaming Strategy

Cooperative Agreement No : AID-687-A-17-00002

April 2019

This publication was produced for review by the United States Agency for International Development. It was prepared by .RANO WASH Program Coordination Team

DISCLAIMER

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TABLE OF CONTENT

ACRONYMS AND ABREVIATIONS

CARE	Cooperative for Assistance and Relief Everywhere
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CIDE	Convention Internationale des droits de l'enfant
CSO	Civil Society Organization
CRS	Catholic Relief Services
GEWV	Gender Equality and Women's Voice
PANAGED	National Action Plan for Gender and Development
ODDIT	Organe de Développement de la Diocèse de Toamasina
PNPF	National Policy for the Promotion of Women
RANO WASH	Rural Access and New Opportunities for Water, Sanitation and Hygiene
SAF FJKM	Sampan'Asa Fampandrosoana – Fiangonan'i Jesoa Kristy eto Madagasikara
SLC	Structure Locale de Concertation
WASH	Water Sanitation and Hygiene

I. OVERVIEW

This document has been developed to determine the main guidelines for gender mainstreaming and inclusive approach for RANO WASH. The document includes the basic elements as well as the different normative frameworks at international and national levels, related to the aspect of promoting gender equality in the RANO WASH project. It identifies the purpose of the gender strategy, and sets the objectives with reference to the project's three strategic objectives: promotion of local governance, private sector engagement in the provision of WASH services and products, and the promotion of healthy behaviors. Performance indicators are defined based on proposals for actions to be arranged in the project period, from 2019 to 2022.

This document should be treated as a living document, which can be adapted with new information and context as the implementation continues. In particular, the ongoing gender analysis in selected regions and new needs or opportunities identified by the RANO WASH consortium partners and stakeholders, requires that this strategy evolve over the coming years. This strategy is sufficiently focused to drive real change in the WASH sector while remaining flexible and adaptive to be able to respond to new needs or ideas.

II. OBJECTIVE, KEY ISSUES, BACKGROUND AND APPROACH FOR GENDER AND SOCIAL INCLUSION

2.1. RANO WASH PROJECT

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 is implementing the RANO WASH project.

To accomplish this goal, 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.

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.

2.2. OBJECTIVE

The gender and social inclusion mainstreaming objective of RANO WASH is to identify opportunities and points of entry for gender integration into all program activities.

To achieve the development objectives of the United States Agency for International Development, it is essential to promote gender equality and to promote the status of women and girls, with special emphasis on:

i) promoting inclusive growth by strengthening women's economic empowerment;
ii) ending gender-based violence through programs for the most vulnerable populations, with a focus on violence prevention;
iii) increase the voice of women and girls in decision-making, leadership and science, including through innovative methodologies;
iv) encourage traditional and non-traditional partners to invest.

The strategy aims to guide the RANO WASH project on its interventions in approach and strengthening activities, aiming for a greater and lasting impact at the level of women, men, girls and boys, women and men, children and people with disabilities, different social strata in access and control of services related to water, sanitation and hygiene, promoting gender equality.

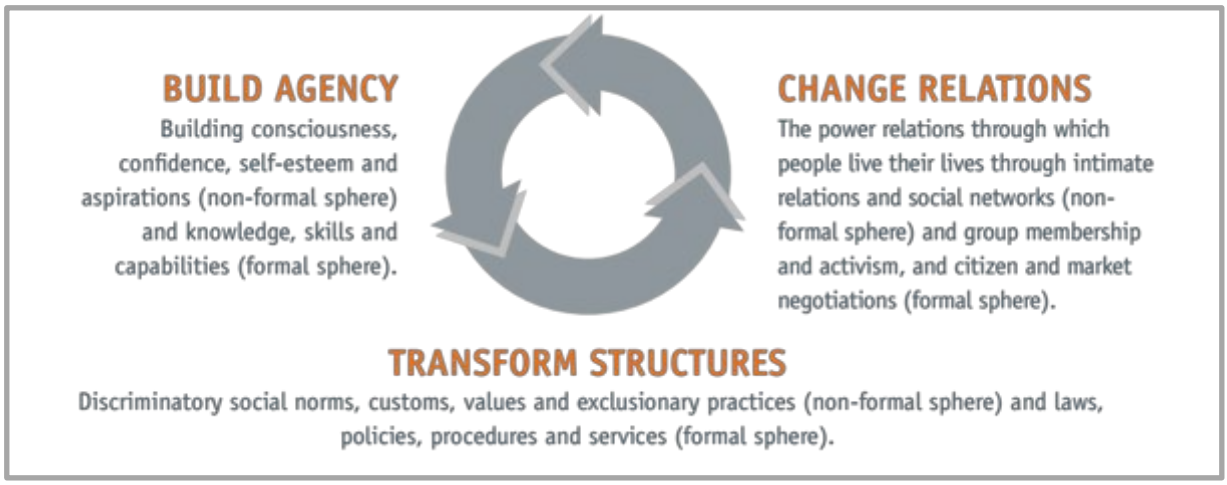
The strategy also incorporates a 'Do no Harm' approach and tools to avoid reinforcing existing gender stereotypes.

2.3. KEY STAKEHOLDERS

- CARE, Wateraid, CRS, Sandandrano and BushProof, as consortium members, integrate the aspects of gender equality, social inclusion and principles of protection of sexual exploitation and abuse in their respective project activities and project locations and into their staff onboarding and training.
- Sandandrano and BushProof, responsible for the technical surveys, technical oversight over the construction of water infrastructures, and capacity building activities of WASH service / product companies, ensure that i) services and products provided are accessible to all social categories without discrimination, and ii) women and men have the opportunity to use their talents and abilities to become professional providers of WASH services / products.
- Regional implementing partners such as ODDIT, Ny Tanintsika, SAF FJKM, CARITAS Antsirabe can overcome the various obstacles related to marginalization and inclusion through their connections to the community.
- The different ministries, state departments, local authorities are also involved in the strategy by stimulating an environment conducive to gender equality and social inclusion. They will ensure the sustainability and scaling up of the project's efforts through our partnership.

2.4. KEY ISSUES FOR THE RANO WASH PROJECT

In line with CARE International's unified framework on women's empowerment promoting gender equality and CARE Madagascar's gender strategy, the challenges and context for gender are based on three main themes:



Build agency - self-esteem

Building agency focuses on an individual's self-confidence, knowledge, aspirations and skills. This is an essential pieces of increasing gender equity for women and girls in Madagascar due to traditional inequalities. In terms of access to education, young boys are much more privileged than girls. The often excessive work of girls and housewives, especially in rural areas, prevents them from getting information or training. Women and girls mostly operate in informal spaces. The specific hygiene needs of women and girls are poorly understood and considered at the household, community and institutional levels. Women's mobility is limited, which hinders opportunities to access training sessions or meetings. Low levels of education, illiteracy and women's economic dependence on their husbands are major constraints to the dignity and independence of women and girls.

Change relations - change relationship between women and men

The Malagasy socio-cultural environment is based on the supremacy of man. Malagasy customs grant privileges to the man. The major decisions at the household level and at the community level, and especially at the institutional level, are mainly made by men: choice of latrine site, expenditure on hygiene or sanitation services or products, etc. not entitled to land inheritance and they have difficulties to access the means of production (e.g lands, cattle, technology). This situation puts the woman in a relationship of dependence, even submission, that prevents her from engaging in viable economic actions and contributing to decision-making.

Transform structures – social norms and policies

It isn't enough to change individual levels – or the relationship between men and women in the home. It is also essential to look at how policies and norms affect gender inequality and reduce the ability of females to reach their full potential. Social norms dictate the silence of women in the public sector, the low representation of women and girls in spaces for consultation, or decision-making. The specific needs of women and girls in menstrual hygiene are compounded by society's misperception of menstruation, which is commonly referred to as "fadimbolana", literally translated "it's taboo to talk about it." Importantly, many places in Madagascar have a history of child marriages – parents essentially selling their young daughters to another family for a bride price. The Constitution and laws in Madagascar do not restrict or promote gender equality in political and public participation. However, in relation to male participation, women's participation is minimal, due to social, cultural and traditional constraints.

The traditional gender roles and constraints are found in all RANO WASH project intervention areas. However, in the region of Vatovavy Fitovinany, especially with the Antemoro ethnic group, women's status is noticeably below that of women in other contexts. This situation presents barriers for women to enjoy their right to expression, decision-making, participation in management and access to water, sanitation and hygiene services.

2.5. NORMATIVE FRAMEWORKS

The following conventions, policies and strategies have been taken into account in the development of this strategy:

- **The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW**) was adopted on 18 December 1979 by the United Nations General Assembly. The Convention recalls the inalienable rights of women, half of the world's population. The spirit of the Convention is inspired by the fundamental principles of the United Nations, which once again proclaimed their faith in the fundamental rights of man, in the dignity and worth of the human person and in the equal rights of men and women. In Madagascar, especially in view of the reality in the RANO WASH intervention areas, fundamental human rights are still far from being respected due to the lack of a favorable system.

- The International Convention on the Rights of the Child (CRC), or the Convention on the Rights of the Child, is an international treaty adopted by the United Nations General Assembly on November 20, 1989. Many initiatives are emerging in recent times in Madagascar to fight against the non-respect of children's rights. Good results have been recorded, but major challenges remain, especially for children in rural areas, in terms of access to basic socio-sanitary and educational services.

- The National Policy for the Promotion of Women (PNPF) was elaborated in 1995 by the Government of Madagascar, with the objectives of studying the problem of women's rights and the enhancement of the legal status of women. This policy demonstrates the State's commitment to the advancement of women by helping them to acquire their rights through various forms of intervention. The situation of the category of women grouped and working in formal economic spaces is more improved and not women living in the most remote areas.

- **The National Action Plan for Gender and Development (PANAGED)** was developed following a provincial and national participatory process in 2003. In the framework of the effective participation of women in economic growth, the Plan's document 'National Action Gender and Development aims to contribute to the improvement of the living conditions of populations, especially rural women, by achieving the goal of gender equality. The National Gender and Development Action Plan comprises three components: (i) the main program of gender mainstreaming in development institutions, programs and projects; (ii) improving the economic efficiency of women; (iii) the specific program and the improvement of the legal and social status of women. Although this action plan expired in 2008, it remains a reference framework for gender promotion activities. Many programs are making progress in promoting gender equality through health and education sectors specifically.

- The Government of Madagascar has developed a strategic code for the integration of the gender dimension in the projects and programs of each institution. Strategies to improve the status of women, increase their participation in community life, and promote and protect the rights of women have been developed. One of the strategies adopted was the involvement of men in promoting gender equality, to be understood by both sexes.

- CARE International, which is the lead of the RANO WASH project, embraces the Gender Equality and Women's Voice (GEWV) approach. CARE International is integrating GEWV activities into all its programming. CARE Madagascar has aligned itself to this agenda through this gender strategy and integrating the Women's Empowerment Framework (agency, relations, structure) into all relevant activities within RANO WASH.

III. GENDER AND SOCIAL INCLUSION MAINSTREAMING STRATEGY FOR RANO WASH

3.1. RANO WASH VISION FOR GENDER EQUALITY AND SOCIAL INCLUSION

"By 2022, in the RANO WASH intervention zone, we see women, girls, men, young people, boys, children, people with disabilities, with access to WASH products and services. They become people responsible for their own development, living in an environment where social justice is conducive to the development of each and everyone."

This vision implies a state of improvement in access to services related to water, sanitation and hygiene and a level of control by the women, men and young people over the operations and management of the system. At the end of the project, RANO WASH aims to reduce the inequalities that present a major obstacle to the empowerment of women and girls. Among these inequalities: the tacit discrimination of women in the decision-making sphere, the non-consideration of the specific needs of women, girls and persons with disabilities, the failure to take into account ideas or opinions youth groups in social development, violence against women and girls, and the lack of female participation in the WASH sector.

To this end, the RANO WASH project adopts the "transformative gender" approach, which is a decisive factor in promoting gender equality and the principle of "leaving no one behind" to consider all social categories: vulnerable, marginalized, excluded, including people with disabilities and the elderly. The project intends to transform unequal gender relations to promote empowerment, control over resources, decision-making and support for women's empowerment, and include both men, youth and people having a disability in the process.

3.2. MEANS AND RESOURCES

The RANO WASH project proposes a gender strategy with reference to the three strategic objectives of the project and plans to mobilize resources and corresponding resources.

The project provides resources and tools to reduce gender inequalities among staff and partners through all of its approaches and intervention activities.

The principal initiative is the establishment of gender focal points and the organization of group to conduct learning and training sessions on gender and social inclusion in each region. The group of Gender Focal Points group is mandated to facilitate the mainstreaming of gender and social inclusion

within the project. It ensures the coordination and support of gender and social inclusion for reflections, orientations, common learning and contributions of elements for documentation. The gender focal points ensure that RANO WASH is continually learning and adapting its strategy to address needs and gaps of women, girls and other vulnerable groups.

As part of the training and consultation activities organized with the RANO WASH project, arrangements will be made to consider the specific needs of the participants to encourage attendance and comfort: infant areas for lactating women, a place to wash for women during menstruation, accessible toilets, facilities adapted for the disabled, etc.

3.3. GENDER AND SOCIAL INCLUSION STRATEGIC ACTIVITIES FOR RANO WASH

The gender strategy is based on the three strategic objectives of the project. Under each strategic objective we describe the activities which have been or will be designed to better integrate women and transform gender norms.

1) Strengthening the governance and monitoring system of the WASH sector

Given the low representation of women in decision-making bodies, there is a risk that the specific needs of women and girls may not be taken into account through the WASH planning process. Thus, the RANO WASH project will mobilize all local actors for inclusive participation of women, men, youth and people with disabilities-groups. Feminist groups in the country will be consulted to ensure that RANO WASH approaches are inclusive or aware of all overlapping activities. For example, organizations that work on preventing child marriage might have activities that affect or are affected by RANO WASH activities. Women and girls want to participate, but often feel limited by their ability. Therefore, RANO WASH will partner with other organizations to ensure improvements for participants in the following areas: confidence and public communication, negotiation, leadership, group management.

a. Reductions in gaps between males and females in access to/control over economic, political and social resources

Activity	Description (what are examples of how this will be done?)	Expected outcome (how is this transformative)
Set-up a local structure of consultation at the municipal level, including men, women, young people, people with disabilities	For municipal-level WASH activities RANO WASH will facilitate the creation of a group for the municipal authorities to consult on WASH works. The group will be made up of people with different socio-economic backgrounds and from different areas.	Development actions are concerted with the participation of citizens at the municipal level. This activity is transformative because it a) consults beneficiaries on feasibility of WASH activities (giving them a voice and interaction with the local government) and b) consults women and people of diverse background.

Activity	Description (what are examples of how this will be done?)	Expected outcome (how is this transformative)
Strengthen communication on the rights of all, related to WASH and citizenship	The project will develop communication which views WASH from a rights perspective: behavior change activities and discussion topics.	This activity is transformative because it does not just inform people about the importance of WASH – but goes beyond to describe that this is a right that they should demand and respect.
Strengthen the capacities of partners (civil society, authority) to take gender and social inclusion (GESI) into account through their actions	Although not all partners can be thoroughly trained on gender and social inclusion – each partner will receive principles they are expected to adhere to in their work. Each partner will receive an explanation of GESI principles during a 2 hour meeting.	This activity is essential because it expands the focus of gender equality and social inclusion beyond the core RANO WASH partners to all partners working in the participant areas.
Support the Ministry of WASH's Monitoring and Evaluation Directorate to adjust WASH sector monitoring indicators to be gender sensitive	The project will work with the WASH Ministry M&E staff to review and revise indicators	Gender-sensitive indicators for data collection will help with understanding of gaps or successes in certain areas.

b. Reductions in the prevalence of gender-based violence

Activity	Description	Expected outcome
Strengthen the communication of the rights of women and girls, WASH and beyond	The project will develop forms of communication promoting the rights of women and girls in WASH.	The rights and needs of females in the area of WASH is "easily" understood and communicated – so this will be a jumping-off point for discussing other sensitive issues surrounding females, such as gender-based violence or elevated risk due to lack of WASH.
Use and continually improve reporting mechanisms for people, particularly promoting women, youth, the elderly	RANO WASH will establish a Feedback and Complaints that static and feedback or complaints are given anonymously at any time.	A feedback mechanism will enable anyone and everyone to give feedback on program design and interventions so RANO WASH

Activity	Description	Expected outcome
and the illiterate people to share feedback	Examples: ☐Share information with all community members, including the most marginalized, about: RANO WASH and its partners; the projects; ☐Ensure that awareness raising reaches people of all genders, ages and abilities in all locations where RANO WASH will operate. Consider literacy levels, local context, vulnerability, multiple languages, cultural as well as linguistic translation when designing information sharing materials.	activities can continually improve to serve those most in need. Examples: ☐Consult with community members to understand their preferences for channels to provide feedback and complaint and receive responses, including preferences around how to provide sensitive complaints, particularly for women, children and other vulnerable groups. ☐Make all possible efforts to include the full spectrum of community members paying particular attention to different levels of ability, inclusion and power dynamics.
Conduct mobilization of women and young people to bring their voices to the different structures, i.e. starting with small groups	RANO WASH will initiate active discussions among women's groups and youth groups.	When women and youth come together with their peers they will have more confidence and agency to share their experiences, complaints and their needs.

c. Reductions in constraints that prevent women and girls from leading, participating fully in and influencing decisions in their societies

Activity	Description	Expected outcome
At national level support the Ministry of Population, Social Protection and Promotion of Women to finalize the national policy related on Gender Equality Policy	RANO WASH will participate technically and / or financially in the working sessions, formally or informally in the activities, following the collaboration with the Ministry of Social Protection, Population and Women's Empowerment.	A national policy will increase the government's accountability towards achieving gender equality in all programming activities.
At local level: strengthen civil society organizations (CSOs) to defend rights of customers in WASH services	As already mentioned in SO1, in the reinforcement of the local governance at the common level, this civil society will be composed of the users of the WASH services and products, which will ensure that the rights of the users are respected.	Organizations defending the rights of users in WASH right of users to have quality services and rights of communities to have fair and sustainable services.

Activity	Description	Expected outcome
At local level : strengthen the capacity of women in CSOs to promoting their leadership (e.g. public speaking, negotiation, conflict management)	Women members of these CSOs will benefit from capacity building on public communication modules, conflict management,	This will be transformative for women since it will give them the capacity for increased leadership and confidence in the public sphere, in committees, in their community and in their household.
Develop a country-level group, or if more feasible, local-level groups, where women leaders can come together to discuss challenges and solutions for WASH and leadership.	Women from the public and private sectors and from community groups will be mobilized to participate in these sharing forums	Women leaders will be united to brainstorm and encourage other women to transform their homes and their communities to respect and address their needs.
RANO WASH will develop a system to support female staff members	RANO WASH will develop a system available to all female staff members that consists of mentoring, coaching, sharing, etc.	Creating an internal group will allow female staff to voice their concerns, challenges and solutions together – both work related and personal.

Together with the Monitoring and Evaluation Directorate of the Ministry in charge of WASH, reflection and work sessions will be organized with a view to adjusting the monitoring and evaluation system integrating the gender dimension and social inclusion.

Gender specific objective related to SO 1: Promote the commitment of men, women and young people as decision-makers in the consultation spaces by strengthening responsive and gender-responsive governance in the sector Water Hygiene Sanitation.		
Results	Indicators	Activities
Objective 1: The level of representation of women and youth in community organizations supported by the project is increasing.	Indicator 1: 30% of the members of the consultation structures are women and young people.	Strengthen the capacity of women in the field promoting their leadership (public communication, negotiation, leadership, group management)
Objective 2: The specific needs of women, girls and persons with disabilities in WASH are discussed openly	Indicator 2: The sector monitoring and evaluation system includes at least three indicators to assess the promotion of gender equality	Support the Monitoring and Evaluation Directorate of the Ministry in charge of WASH on the adjustment of the monitoring and evaluation system

2) Increasing private sector commitment to the provision of WASH services

RANO WASH will engage the private sector in the provision of services and products related to water, sanitation and hygiene, but more importantly for the gender strategy this project will build capacities of WASH service providers to provide universally accessible and non-discriminatory services. The project will implement activities aimed at women's economic empowerment by avoiding reinforcing the stereotype of activities traditionally assumed for women or men (local masons for men or women as seamstresses). This approach aims to improve their income through economic activities around WASH. By exploring local talent, the project will develop training activities and connect these new entrepreneurs to financial institutions.
Additionally, in terms of service users, the project provides for the promotion of WASH products and services that take into account the different specific needs of the socio-cultural and economic categories of households, men, boys, girls and persons with disabilities, based on their aspirations and ability to pay.

a. Reductions in gaps between males and females in access to/control over economic, political and social resources

Activity	Description	Expected outcome
Develop accessible, comfortable and suitable WASH service models that are sensitive to the needs of men, women, young people, children, and people with disability in homes, communities, schools and health centers	RANO WASH will consult men, women, young and people with disabilities to understand needs and desires in WASH services	Models will be better designed and re-designed to respond better to the needs of everyone, and will therefore be more sustainable
Establish a social connection for vulnerable households for water supply	As RANO WASH creates opportunities for household water connections, there will also be a model for example: female-headed HHs or vulnerable HHs: 10 HHs connected to a system share the total amount, so they divide by 10 / And between them, they can join a system of per-equity according to their contract and convenience.	Vulnerable households will access water services in a way that is most appropriate for their needs, but still being sustainably managed.
Set up a private water connection for HHs that can afford it	RANO WASH will facilitate private connections for households able to pay for water services.	Private connection for households will inevitably improve the quality of life of females living in that house due to more access to water and decreased time collecting water.

Activity	Description	Expected outcome
Promote local talent for making and producing WASH infrastructure and services	RANO WASH intends to include local people, interested or already investing in the production of WASH products and / or services.	RANO WASH will expand local talent so all have ability to improve their income through the production of WASH products and services
Adopt a market-based WASH approach with procedures for reaching the underserved	Although RANO WASH will promote a markets-based approach to delivering WASH services, there will also be a component built-in to bring WASH services to the vulnerable and/or underserved.	WASH services will be monitored for their success reaching the underserved.

b. Reductions in the prevalence of gender-based violence

Activity	Description	Expected outcome
Develop MOUs/training with WASH service providers on non-discriminatory policies	Organize training sessions with service providers on how to deliver services and make payment plans in non-discriminatory ways.	This activity will help WASH service providers to cater to the needs of the non-majority.
Organize technical trainings for the production and supply of WASH services and products (manufacture of san plat slab, manufacture of sanitary napkins)	RANO WASH will organize technical trainings where women will be highly encouraged to attend.	Women and men attending the technical training will also have a 30 minutes' introduction on gender equality and why any gender can do any job.

c. Reductions in constraints that prevent women and girls from leading, participating fully in and influencing decisions in their societies

Activity	Description	Expected outcome
Facilitate the link between WASH service providers with financial services and consulting services	RANO WASH will facilitate links between service providers and financial institutions in order to allow for access to capital that traditionally is unavailable to WASH businesses.	Women-led service providers have access to financial support services for their activities
Facilitate the link between WASH service providers and local community groups	RANO WASH will ensure that WASH service providers are communicating regularly with relevant community groups to	WASH service providers consulting and communicating with local groups will increase the sustainability and effectiveness of

Activity	Description	Expected outcome
	ensure transparency and accountability.	WASH services for community members of diverse backgrounds

Gender specific objective related to SO 2: Engage the private sector in the provision of equitable services and products related to water, sanitation and hygiene for all.		
Results	Indicators	Activities
Objective 1: WASH services and products are available and accessible to different community groups, including vulnerable groups, by promoting women's economic empowerment.	Indicator 3: WASH services and products adapted to households and individuals according to their respective specificities are developed	Promote WASH services / products that take into account the needs of households and individuals according to their specificities
	Indicator 4: Number of women and men reporting improved income through economic activities around WASH	Implement activities aimed at women's economic empowerment

3) Adoption of healthy behaviors and the use of WASH services

Multiple behavior change studies show that awareness-raising activities alone fail to ensure the adoption of a reliable and sustainable change in behavior. Through its interventions, RANO WASH implements a transformative approach facilitating the adoption of healthy behaviors that allow each person to live without WASH-related health problems, to live in safety and dignity in an environment where WASH is favorable to all.
The goal is for household members to adopt healthy behaviors through a supportive environment for gender equity.
Thus, RANO WASH will develop an approach facilitating the adoption of healthy behaviors, considering the gender-specific needs of members of the community. Social norms change will be achieved by:

- Promoting messages reflecting relevant standards at the community level and institutions.
- Organization of discussions on gender dynamics at the community level to influence decision-making at household and community level
- Initiation of discussion of women leaders on their experiences / challenges to become leaders and to exercise their position.

a. Reductions in gaps between males and females in access to/control over economic, political and social resources

Activity	Description	Expected outcome
Adopt 3 levels to influence change: HH, community and mass media by using leaflets, radio, street drama, puppets, SmS, etc.	Key messages in WASH will be shared through mass communication for information to all, at the level of the men and women community groups for discussion and challenge of standards, and at the household level for support and support in the adoption of behaviors	Perceived level of change at the community and household levels tends to improve
Broad communication on "easy" options for challenging harmful social norms	Through the use of messages that have not been used from now on affecting social norms and that have impacts in the adoption of social and individual behavior: call to action for men on menstrual hygiene, ...	Messages defying social norms, narrowing gaps between men and women to increase women's power of control over them.
Adopt peer to peer sharing and learning	Especially at the youth level, exchanges between pairs will be organized to discuss the benefits, the constraints of the adoption of a behavior. This in order to support each other for behavior change tips.	Groups of women, men and youth discussing themes emerge as social resources for empowering men and women
Use male champions, small doable actions and gender model (using grow-up stickers tool)	Through the ideation approach, the project congratulates households where men and women help each other to support their families in practicing healthy behaviors. The complementarity of men / boys and women / girls in daily tasks in the practice of recommended healthy behaviors is part of a criterion of being a model in gender.	Men and women both recognize the increased involvement of men and the benefit of their involvement.
Involve local groups, local leaders as promotors of gender equality and agents of change; partner & learn from existing groups	In order to gain the support of local leaders who hold community-accepted practices, the project works with these traditional local leaders to reach out to informal local groups.	The involvement of local groups and leaders in behavior change activities reinforces the roles of secondary target groups
Adopt models for WASH friendly schools and health facilities (including nudges)	At the level of institutions: health facilities and schools, project interventions target users of these institutions, including patients and	Behavioral change efforts focus not only at the community level but also at the level of institutions that present themselves as a

Activity	Description	Expected outcome
	those accompanying patients to health facilities and also school children. It is a model of the ministries of health and education by which the project aligns itself.	formal space for the acquisition of good behavior, which will subsequently be scaled up.

b. Reductions in the prevalence of gender-based violence

Activity	Description	Expected outcome
Co-design infrastructure with access for women, children and people with disability	Future users of the infrastructure will be consulted to obtain their opinions, their aspirations on the model of adapted WASH infrastructure, and comfortable for better access to infrastructure.	The social dimensions of infrastructure that promote the full use of services by women, children and persons with disabilities are considered in the design of the infrastructure plan.
Strengthen link between VSLA and WASH	VSLA groups provide a channel for effective behavior change activities, and the provision of WASH products and services can be facilitated by their savings and credit provision.	VSLA group members are sourcing WASH products and services.
Promote messages against GBV – collaborate with local anti-violence groups and efforts	The project will align with the approaches and activities undertaken by local groups that are committed to gender-based violence, which is part of the Ministry's policy in charge, through WASH-related interventions.	Messages against gender-based violence are heard and understood and relevant.
Conduct training sessions near communes to facilitate women's mobility and availability	In order to provide complete and solid training for the development actors, the project taking into account the mobility capacity and their availability so that the sessions are held in the proximity of their municipality and according to their availability.	By training or capacity transfer and cascading skills, so that capacities remain at the local level.
Understand local schedules so people are available for behavior change activities (see daily used time and seasonal availability)	Conduct preparation activities during periods of unavailability of communities to be able to effectively grasp the seasons of availability, not only in time, but also resources (eg: investments in WASH products coinciding with	The organization of activities for behavioral change is implemented following consultations with targets according to their convenience (temporal, resource, aspiration, and motivation).

Activity	Description	Expected outcome
	the harvest period, the time for discussions groups / peers depending on the accessible place and the time available to not charge more women)	

c. Reductions in constraints that prevent women and girls from leading, participating fully in and influencing decisions in their societies

Activity	Description	Expected outcome
At the national and regional level: hold discussion sessions for women leaders to discuss their challenges to exercise their position and power and share	Discussion spaces between women leaders (entrepreneurs, authorities, traditional, NGO / Association leaders) will be organized to share their challenges as leaders.	These sessions highlight the challenges and strategies developed by these women, which can be shared and motivated by other women to develop their leadership capacity.
At local and community level: * Promote VSLA group membership and strengthen engagement and transparency	VSLA groups provide spaces for mutual reinforcement among members of the group, where the learning of transparency is reinforced.	VSLA group members are gaining more and more empowerment capacity. The by-laws that bind group members help group members become more and more mature in life in a socially-accepted society.
At local level : Conduct interactive discussions at the using the men's engagement tool	Through the organization of the discussion sessions, the project initiates and reinforces the commitment of men / boys related to the WASH theme for the empowerment of women / girls	Interactive Discussion Sessions Contribute to Social Transformation Approaches, Targeting Men as Support and Support for Women's Empowerment

Gender Specific Objective for SO 3: to implement a transformative approach that facilitates the adoption of healthy behaviors and a gender equitable attitude		
Results	Indicators	Activities
Objective 1: Household members adopt healthy behaviors through an environment conducive to gender equity.	Indicator 5: Number of broadcast messages defying harmful standards.	Promote communication messages that defy harmful standards
	Indicator 6: Number of model households taking common responsibilities between men and women in WASH activities.	Conduct interactive discussion sessions at the community level using the Men's Engagement approach for Women's Empowerment
	Indicator 7: Number of shared tools that describe the challenges faced by women leaders.	Organize discussion sessions with women leaders at the regional and national level to discuss their challenge to exercise their position

IV. MONITORING AND EVALUATION

A monitoring and evaluation system accompanies the RANO WASH project's gender strategy. It includes quantitative and qualitative indicators that aim to evaluate the project's performance for a fixed period of time:
- The tool "gender marker" which is a tool developed by CARE International to appreciate gender mainstreaming will be used at the beginning, mid-term and at the end of the project in order for the project to evaluate the scope of activities.
- Evidence and capture tools will be developed, as well as qualitative data such as case studies, success stories, or stories of change.
- The monitoring indicators of this strategy feed into the monitoring system of the RANO WASH project.

4.1. GENDER MARKER

The gender marker is a self-assessment tool that measures the level of gender integration into a program (from harmful to transformative), according to the CARE Gender continuum. The gender marker can track, improve and support effective and gender-sensitive programming. The gender marker is used in addition to monitoring, evaluation and accountability systems, which measure results for all members of the target population.

Gender Marker	Initial evaluation	October 2018
	Mid-term evaluation	March 2020
	Final evaluation	March 2022

4.2. MONITORING OF RANO WASH GENDER STRATEGY

The following table summarizes the list of indicators to assess the implementation of the RANO WASH gender strategy. Among these indicators, there are indicators that relate to the project's performance monitoring indicators.

Indicator	Explanation	Data collection tools	periodicity
Indicator 1: 30% of the members of the consultation structures are women and young people	From the SLC identification sheet and CSO groups, evaluate the number of men, women and youth-youth in an organization for men and women under 30 years old	Refer to the tool already used in SO1 on SLC and OSC	quarterly

Indicator	Explanation	Data collection tools	periodicity
Indicator 2: The sector monitoring and evaluation system includes at least three indicators to assess the promotion of gender equality	These are indicators related to access, control and change of social norms related to WASH.	Discussions and research of evidence with the SESAM manager on the nomenclature and indicators of the WASH sector	annually
Indicator 3: RANO WASH promoting WASH services / products tailored to vulnerable households and people with disabilities	Services and products in water, sanitation and hygiene newly promoted by RANO WASH that vulnerable households and people with disabilities have access to.	Photos / success story	quarterly
Indicator 4: Number of women and men reporting improved income through economic activities around WASH	These are women and men newly invested in the production or supply of WASH products or services following the intervention of the project	Data collection form	annually
Indicator 5: Number of broadcast messages defying harmful standards	These are the types of messages used by stakeholders, local promoters to challenge harmful social norm	List of messages from reports from local stakeholders or developers	quarterly
Indicator 6: Number of model households taking common responsibilities between men and women in WASH activities	Model households show a common decision, translated into a mutual support between woman-man, girl-boy, adult-young, valid person- person with a disability to adopt healthy behaviors	List of households have completed behavior change, and have six petals in the grow-up stickers approach	quarterly
Indicator 7: Number of Shared Capitalization Tools Reflecting the Challenges Facing Women Leaders	From the discussion sessions of women leaders at the regional and national level, the results of the discussion will be shared.	List of shared tools	annually

ANNEX 14: MINIMUM REQUIREMENTS FOR INCLUSIVE WASH INFRASTRUCTURES

RANO WASH team had a work session to discuss on inclusive WASH infrastructures taking in account feedbacks from users in intervention communes. The models discussed concern the technical design plan, as well as the most appropriate types of materials and equipment to the specific needs of users. Technical plans and models developed before the end of FY19

The criteria covered the following infrastructures:

- Urinal
- Toilet/latrine
- Shower
- Public washhouse
- Hand washing device with soap
- Water point in the monoblock

1- URINAL IN PUBLIC FACILITIES

Common criteria:

- Separate the urinal for men from that for women
- Ensure that the place of the doors does not disturb anyone (passers-by or users)
- Sloppy access to the entrance (ensure that the required space is available)
- Put instructions for the use of the equipment in the compartment

For women	For men
- Ensure that the urinal facilities do not wet women's feet - Set up footprints to help women orient themselves for use - Preferably use the Turkish toilet - Install a washing device inside the urinal compartment to facilitate intimate hygiene for women - Ensure that women's pee flows directly into a suitable weir (and not through another compartment) - Preferably install the hand washing device with soap in the urinal compartment so that the woman can wash her hands just after use (before touching the tap)	- Install a hanging surface for sloping urinal along the wall, with border, so that this is suitable for men of all sizes (tall, short, boys) - Ensure that the width of the hanging surface is sufficiently receptive so that users can approach it, avoiding the dispersal of pee - Place footprints on a square indicating both the orientation of users and the number of people who can use the urinal at a time. - Place a small hole water hose over the channel and pour a small quantity of water permanently - Clean and avoid unpleasant odors. - Set up a hand washing device with soap just outside the urinal

2- TOILETS/LATRINES INSIDE THE MONOBLOCS AND AT THE LEVEL OF THE INSTITUTIONS

Common criteria:

- Separated the men's and women's toilets, with access symbol: male and female image
- Sloped access to the entrance
- Use well closed and easy to use locks

- Put instructions for the use of the equipment in the compartment
- Put paper or washing device depending on the behavioral practice of people in the locality, after defecation
- Put a hook to hang the garment inside if necessary
- Place a covered garbage bin in the compartment
- Install a hand-washing device with soap in the compartment
- Set up a folding chair for pregnant women
- Install ramps and support points on which people with mobility difficulties so that they can rely on it at the entrance and after defecation

For women

- Preferably use a Turkish toilet,
- Install a washing device inside the compartment to wash
- Install footprints to indicate the direction of use in the compartment

3- SHOWERS IN MONOBLOCKS, AT SCHOOL OR HEALTH CENTER

Common criteria:

- Separate the shower compartment for men from that for women
- Set up access symbols: Male image for men and female image for women
-Sloped access to the entrance
- Use lockers that are securely closed on the inside of the door and easy to use
- Put instructions for the use of the equipment in the compartment
- Put paper or washing device depending on the behavioral practice of people in the locality, after defecation
- Put a hook to hang the garment and a shelf inside if necessary
- Install ramps and support points on which people with mobility difficulties can rely at the entrance and after the shower
- Install a fixed "chair" on which a person with a physical disability can use - in concrete or stainless steel so as not to become a place for the exchange of germs
- Place a covered bin inside the shower compartment
- Use non-slip tiles for the floor
- Install a volumetric water cube to measure water consumption together
- Install a ventilation system

For women

- Install menstrual friendly system (possibility of installing intimate toilet with bucket and water container, or flexible water hose)

4- PUBLIC LAUNDRY

Criteria:

- Sloped access to the entrance
- Provide instructions for the use of the equipment: water supply, washing surface, tap
- Design a technical plan for the laundry basin according to ergonomic standards and the typical sizes of local women
- Install ramps and support points on which people with mobility difficulties can rely at the entrance
- Set up a covered bin in place
- Use non-slip tiles for the floor
- Install a volumetric water cube

- Laundry surface: put a molding to protect the weir from water, so as not to get the laundresses too wet
- Install a sloped access according to the availability of space for installation
- Ensure the evacuation of wastewater into a weir
- Study the possibility of separating the compartment by laundress to avoid scattering of dirt
- Install face to face compartments of laundry basins or circles like ones for women to discuss while doing the laundry.

Remarks :

- To make the system profitable, diversification of sales products, incorporation of offices the sales of WASH products: soap, sodium hypochloric, water safe, sanitary towels, etc.
- Develop 3 models of laundry basins according to available area
- Develop a user, management and maintenance guide for each type of infrastructure

5- HANDWASHING DEVICES WITH SOAP AT THE MONOBLOC AND INSTITUTIONS (Health facilities and schools)

Criteria:

- Preferably hard, concrete
- Easy access,
- Installed on a slope to allow use for different people of different sizes
- if at school: respect the size of pupils who can use it
- Located at the entry/exit of the block
- Receive sloping water and pour it into a green space for an environmental perspective
- Location of soap at a height accessible to children and adults

6- WATER POINT IN MONOBLOCKS

Criteria:

- Location: not in the same part of the hygiene and sanitation compartments
- Easy access for people: women, children, men, young people, people with disabilities
- Install at the outlet of the pipe tap to facilitate the orientation of the water in the water collection container, so as not to waste water, but also to facilitate access for people in difficulty to properly target the opening of the water collection container

KEY ILLUSTRATIONS

1. TOILET ACCESSIBLE FOR PEOPLE WITH VISUAL DISABILITIES

Sarah Quaye using the accessible toilet in the Weinzon Community, Paynesville, Liberia.

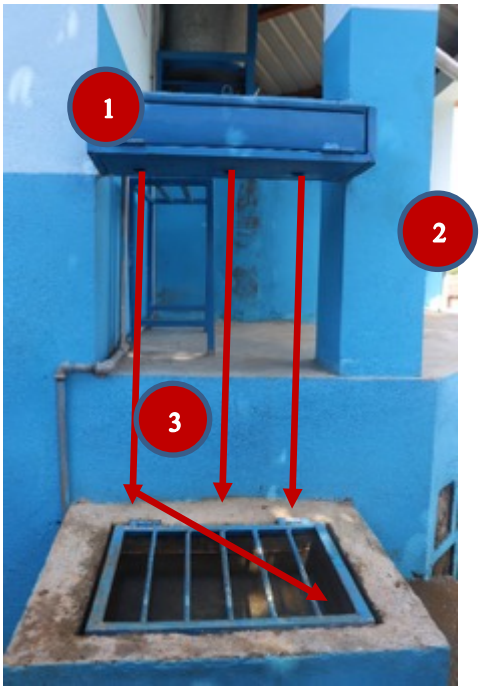
Credit: WaterAid/ Ahmed Jallanzo

1. With markers on the alleys
2. Safe and secure alleys

2. SHOWER FOR PEOPLE WITH DISABILITIES

1. A fixed chair that allows the person with a disability to sit while taking a shower
2. Safe and secure alley
3. With ramp
4. Faucet
5. Shower palm with flexible hose
6. with wardrobe
7. With wall ventilation
8. Non-slip floor

3. WATER POINT NEAR MONOBLOCK



1. Located at the infrastructure part, away from hygiene and sanitation facilities
2. Safe and secure alleys for users
3. Move the pipe until the water reaches the water collection container directly