

Review

OF THE IMPLEMENTATION OF WATER CODE IN MADAGASCAR



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Former Country Director of WaterAid Madagascar

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Universal access to Water, Sanitation and Hygiene

*The present document reflects the personal views of the author
on the water, sanitation and hygiene sector in Madagascar over
the last twenty years*

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 - WSSCC,
 - the European Union,
 - USAID
 - the World Bank,
 - the African Development Bank,
 - WHO (especially the JMP),
 - UNDP
 - AFD
 - JICA
 - WSUP
 - International and National NGOs working in the WASH, Health, Education and Nutrition sectors.

This document consolidates all interactions we've had over the past 20 years.

I dedicate this work to all young people who intend to invest in the WASH sector in Madagascar. **« For you, I have paved a way to follow and outstrip ».**

Disclaimer

The content of this work is in no way an expression of WaterAid's position. The opinions expressed in this publication are binding only on the author.

Translation : Prisca RANDRIAMAMPIHAVANA

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Acronyms

ACORDS	Programme d'Appui aux Communes et Organisations Rurales pour le Développement du Sud (Support Programme to Communes and Rural Organizations for the Development of the South)
AFDB	African Development Bank
ANDEA	Autorité Nationale de l'Eau et de l'Assainissement (National Water and Sanitation Authority)
APIPA	Autorité pour la Protection contre l'Inondation de la plaine d'Antananarivo (Authority Protecting the Plain of Antananarivo against Flood)
BPON	Budget et Programme par Objectif au niveau National (Programme Budget per Objective at National level)
BPOR	Budget Programme par Objectifs par Région (Programme Budget per Objective at Regional level)
CDMT	Cadre de Dépenses à Moyen Terme (Medium Term Expenditure Framework)
CITE	Centre d'Information Technique et Economique (Technical and Economic Information Center)
CNEAGR	Centre National de l'Eau, de l'Assainissement et du Génie Rural (National Water, Sanitation and Rural Engineering Center)
CTD	Collectivités Territoriales Décentralisées (Decentralized Territories)
GLAAS	Global Annual Assessment of Sanitation and Drinking-Water
INGO	International Non-Governmental Organizations
IWRM	Integrated Water Resources Management
JICA	Japanese Agency for Cooperation
JIRAMA	Jiro sy Rano Malagasy (National company for water and electricity)
JMP	Joint Monitoring Programme
LCS	Local Community Services
LDF	Local Development Fund
LT	Long Term
MDG	Millennium Development Goals
MDP	Municipal Development Plan
MT	Medium Term
NGO	Non-Governmental Organizations
NNGO	National Non-Governmental Organizations
NWRF	National Water Resources Fund
OBA	Output Based Approach
OREA	Organisme de Régulation de l'Eau et de l'Assainissement (Water and Sanitation Regulation Organization)
OWSS	Operation for Water Supply in the South
PAEAR	Rural Water Supply and Sanitation Programme
PAEPAR	Programme d'Adduction d'Eau Potable et Assainissement en milieu Rural (Water Supply and Sanitation Programme in Rural Areas)

PHS	Periodic Household Survey
PNAEPA	Programme National d'Accès à l'Eau Potable et à l'Assainissement (National Programme for Access to Clean Water and Sanitation)
PND2	National Action Plan for Decentralization and Devolution
PSEAH	Programme Sectoriel pour l'Eau, l'Assainissement et l'Hygiène (Sectoral Programme for WASH)
PSEau	Programme Solidarité Eau (Programme for Water Solidarity)
PWS	Potable Water Supply
PAEPAR	Programme d'Adduction d'Eau Potable et Assainissement en milieu Rural
PCD	Plan Communal de Développement
PNAEPA	Programme National d'Accès à l'Eau Potable et à l'Assainissement
PSEAH	Programme Sectoriel pour l'Eau, l'Assainissement et l'Hygiène
PRD	Plan Régional de Développement
RDP	Regional Development Plan
SADC	Southern Africa Development Community
SAMVA	Service Autonome de Maintenance de la Ville d'Antananarivo (Autonomous Maintenance Services for the Town of Antananarivo)
SDG	Sustainable Development Goals
SDG6	Sustainable Development Goal 6
SE&AM	Suivi Eau et Assainissement à Madagascar (Water and Sanitation Monitoring in Madagascar)
SOREA	Société de Régulation de l'Eau et de l'Assainissement (Water and Sanitation Regulation Company)
SPNS	Sanitation Policy and National Strategy
ST	Short Term
STEAH	WASH Technical Services
SWAp	Sector Wide Approach
TFP	Technical and Financial Partners
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
WALIS	Water for Africa through Leadership and Institutional Support
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WSD	Water and Sanitation Database
WSSCC	Water Supply and Sanitation Collaborative Council



Introduction





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The Water Code (Law No. 98 – 029) was voted by the National Assembly on 19 December 1998 and was published in the Official Journal of 27 January 1999. This year marks the two-decade anniversary of the Water Code. It is therefore the best time to take stock of its contribution to the water, sanitation and hygiene sector. The Code provides both a legal and a political framework to the sector and also serve as a strategic and programmatic reference tool. Several studies have been conducted by various actors to analyse and diagnose its implementation and consistency with other legal texts in force. Some of these studies focused on specific topics such as water resource management, project management, pricing, taxation, public-private partnership and many others.

To avoid repetition with documents produced previously, in this one, we will focus on the added values of the Water Code, the major constraints faced in its implementation and some reflections for the WASH sector.

The document is in some ways an extension to a document we produced in 2013 entitled **“Critical Look at the Governance of the Water, Sanitation and Hygiene Sector in Madagascar”**. We built upon that work and enriched it with literature research and personal archives.

The limitation of this study lies in the lack of confrontation of ideas with other professionals in the sector. Nevertheless, the work compiles the results of all debates and the global discussion trends in the sector.

This work provides (i) an analysis of the contribution of the Water Code to the sector of Water, Sanitation and Hygiene; three key elements considered in the broadest sense of the term, (ii) a diagnosis of the blockages to its implementation and (iii) personal reflections on how we can improve the situation of the sector and live up to the vision of universal access to water, sanitation and hygiene by 2030.

1. Chapter :

A brief reminder on the Water Code

This chapter includes a brief description of the origin of the Water Code and its content.



1.1. Institutional and structural reforms

In 1995, the water, sanitation and hygiene sector proceeded to its first sectoral reform leading to the official issuing of the Sectoral Strategy and Action Plan. The strategy intended to define the overall and operational objectives of the sector which cover its contribution to improving public health and strengthening its role in the economic and social development process¹. The Malagasy government, through the Ministry of Energy and Mines, issued the Declaration of Water and Sanitation Policy in 1997. The Declaration includes the points hereafter:

- protection, conservation, rational and integrated use of the national water resources;
- establishment of a regulatory body to ensure the fundamental principle of public services is met;
- withdrawal of the State from exploitations to focus on its roles as promoter and responsible for the development and implementation of sectoral water and sanitation policy;
- clear definition of the roles and responsibilities of all stakeholders to enable effective synergy of actions;
- provision of adequate intervention structures for public benefits that cannot be provided by the private sector;
- provision of technical support from the State to the communes, through its decentralised services, in developing, monitoring and controlling contracts between municipalities and the private sector (research and study firms, companies, NGO and private operators);
- inclusion of the private sector and NGOs in planning, operating and managing sanitation infrastructure and facilities;
- application of the principles of economic liberalization to ensure the promotion of private investors.

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1] REPORT No.: 38687 – MG, Madagascar, Public Expenditure Review, Implementation of Madagascar Action Plan: Result Analysis, Part IV: water and sanitation, World Bank, May 2007.

The following principles apply to the declaration above:

- non-free nature of water for all users;
- there is a charge for the access to water from tapstands;
- water pricing must reflect the actual cost of the water and consider the ability of the beneficiaries to pay;
- in the event of conflicts of use, the supply of drinking water for consumption and sanitation purposes takes precedence over other uses.

1.2. Water Code

The Water Code was developed on the basis of the Policy Declaration. Promulgated on 27 January 1999 in the Law **98-029** of 19 December 1998, the Water Code maps out the contours of the strategic directions of the sector and is built on the sectoral strategy. The Water Code governs (i) the state ownership of water (ii) the management, conservation and development of water resources, the organisation of public services for drinking water and sanitation of domestic waste water; (iii) the water police; the financing of the water and sanitation sector; (iv) and the organisation of the water and sanitation sector.

Despite the fact the Water Code addresses water and sanitation issues, the latter focused on liquid discharge. The Code stalled on concerns regarding solid waste, disposal of excreta and hygiene promotion. To fill the legal void, the National Sanitation Policy and Strategy, Decree No. **2008 – 319**, was issued on 28 February 2008 with the aims to preserving the health of the population and reducing the impact of pollution on the natural environment. The NSPS discusses the distribution of responsibilities and institutional organization, the performance, funding, technology and covers hygiene awareness, health monitoring, environmental monitoring, as well as crisis prevention and assistance. The Water Code and the NSPS form the legal bedrock of the WASH sector in Madagascar and gave rise to all related legal and regulatory texts.

The **13** application decrees of the Water Code were validated by the Council of Government in **2003**. The objects of the decrees are:

- 1) Order No. **2003-191** of **4 March 2003** establishing the creation and organization as well as the duties and operations of basin agencies;
- 2) Decree No. **2003-192** of **4 March 2003** defining the organization, the duties and functions of ANDEA;
- 3) Decree No. **2003-193** of **4 March 2003** relating to the operation and organization of the services for drinking water and the sanitation of domestic waste water;
- 4) Order No. **2003-791** of **15 July 2003** regulating the rates for public water and sanitation services;
- 5) Decree No. **2003-792** of **15 July 2003** on levies and spill charges;
- 6) Decree N°**2003-793** of **15 July 2003** laying down the procedure for granting authorization for water sampling;
- 7) Decree No. **2003-939** relating to the organization, assignment, operation and financing of the Public Water and Sanitation Service Regulatory Body (SOREA);
- 8) Decree No. **2003-940** of **9 September 2003** regarding the buffer zone,
- 9) Decree No. **2003-941** of **9 September 2003** on water monitoring, control of water intended for human consumption and priority of access to water resources;
- 10) Order No. **2003-942** of **9 September 2003** concerning the hydroelectric use of water;
- 11) Decree No. **2003-943** of **9 September 2003** regarding the spill, disposal, discharge, direct or indirect dumping in surface or groundwater;
- 12) Order No. **2003-944** of **9 September 2003** on the decommissioning of state-owned waterways, sections of waterways or lakes;
- 13) Decree No. **2003-945** of **9 September 2003** concerning the administrative organization for water and the transfer of skills between decentralised communities.

2. Chapter :

The added values of the Water Code to the sector

This chapter discusses the benefits and contributions of the implementation of the Water Code with a special focus on the key points and impacts on the governance of the WASH sector.



2.1. Development of policy, strategic and programmatic frameworks

2.1.1 Policies and strategies

In terms of policies and strategies, the government developed notes and strategy for the sector. Under the leadership of the World Bank, a document called Water and Sanitation for All was developed in **2004**. The document focuses on developing the access to water and sanitation in rural areas in alignment with the Millennium Development Goals (MDGs). This was the first document which outlined the investment needs in the sector. The first version of the National Programme for the Access to Drinking Water and Sanitation (PNAEPA) was designed on the basis of this document.

A Sectoral Policy Note on Water and Sanitation was formulated in **2008** to reframe the policy of the government in the sector. **2008** was a pivotal year for the sector; a department dedicated to water, to sanitation and hygiene was created following the commitment of the President of the Republic at the African Union Summit held in Sharm El Sheik, Egypt, and following the Declaration of e-Thekwini (AFRICASAN) on sanitation on July **2008**. The aim was to develop access to adequate sanitation and promote public-private partnerships.

The Ministry of Water, Sanitation and Hygiene published another note called the Strategic Guidance Note of the Water, Sanitation and Hygiene Sector in **2012**. The Note asserted the sector's vision and described its fundamental objectives which are to:

- provide leadership, coordination and good governance for the drinking water, sanitation and hygiene sector;
- make sufficient financial resources available for its activities;
- implement appropriate approaches, principles and concepts ensuring the sustainability of public services for Water, Sanitation and Hygiene.

The National Water, Sanitation and Hygiene Strategy **2013-19** was built on the guidance note of **2012**. This document received specific support from the Water Supply and Sanitation Collaborative Council (WSSCC) and includes the following strategic priorities:

- Development of access to drinking water;
- Development of access to healthy sanitation infrastructures;
- Development of the Integrated Water Resources Management;
- Development of Private-Public Partnership;
- Development of the Sector

2.1.2 Establishment of a programming system for the sector

Programming tools

The government had a few tools and instruments for programming and budgeting such as the National Programme for Access to Drinking Water and Sanitation (PNAEPA), the Government's General Policy and the Regional Programme Budget per Objective (BPOR). The first version of PNAEPA as of **2005** was designed using the World Bank's Medium-Term Expenditure Framework (MTEF) approach. The Ministry of Energy and Mines along with the key actors diagnosed the sector's institutional and structural aspects as well as the evolution in resource allocations. The PNAEPA of **2005-08** and **2008-12** include policy and development frameworks, outcome indicators, estimated needs assessment, as well as a monitoring summary. With a few exceptions, the update of the PNAEPA in **2008** used the same approach as the version of **2005-2008**. The only difference is that the one in **2005** was based on the Strategy for Poverty Reduction while the version **2008** derived from Madagascar Action Plan, the topical framework for poverty reduction and economic growth back then. The two versions of PNAEPA did not have a genuine scoreboard including a framework for monitoring expenditures, indicators on the geographical distribution of credits and on vulnerable group targets, and for monitoring recommendations on national capacity building in public resource management. The aim is to ensure consistency between budget distribution and the objectives of the sector.

The BPOR was developed by the Programme of Governance and Institutional Development financed by the World Bank in **2007** and then, fine-tuned by the Ministry of Water in collaboration with WaterAid from **2008** to **2011**.

For the period **2015-17**, UNICEF and USAID through the Water for Africa through Leadership and Institutional Support (WALIS) project also supported the implementation of BPOR in **17** regions.

This process aims at reviewing the current status and at listing in an accurate way the needs, the water and sanitation stakeholders in each municipality in each region so that, in collaboration with the mayors, the priority responses and the most appropriate implementation solutions can be defined. The BPOR also serves as a tool for mobilizing technical and financial partners for the municipality. The BPOR process was conducted in a participatory and inclusive way, with an effective presence of mayors to the workshops at the district level, although the information they provide are not **100%** reliable. The BPOR is an iterative process and is intended to feed the communal priorities enshrined in the Communal Development Plan and Regional Development Plan.

In **2018**, all BPOR of the **22** regions were consolidated into one document called National Budget and Program per Objective (BPON). The BPON became a financial planning tool for the water, sanitation and hygiene sector that takes into account the financial flows, the different target levels of SDG 6 at national level and the various technological options adapted to the different sections of the sector. The purpose of this process was to model a National Investment Plan. The reliability and the unavailability of some data do not allow achieving this at the moment.

The comparative benefits of the BPOR include:

- Streamlining of structures at central level and accountability of decentralized communities, decentralized territorial services (DTS) and stakeholders at grassroots level
- Promotion of a genuine sector leadership at national level
- Increased reliability and accuracy of database used in programming
- Ownership of the programme by local actors
- Operationalisation of a monitoring system involving local actors, a prerequisite for establishing the accountability of government at central and decentralised levels
- Equal opportunities for the 22 regions in terms of programming while maintaining the objectives of the MDGs and SDGs
- Promotion of technical responses most appropriate to each context.

2.2. Implementation of institutional arrangements/ Ministry of WASH

Ministry of Water, Sanitation and Hygiene

Before **25 July 2008**, the water, sanitation and hygiene sector was under the responsibility of the Ministry of Energy and Mines. From **1990** to **2008**, the sector was gradually entrusted to a department and a directorate before being placed under a general direction, third level of hierarchy within a ministry after the General Secretariat and the Minister's Office. Given the importance of the electricity and mining sectors to the national economy; the water, sanitation and hygiene sector was not sufficiently valorised. A long and difficult advocacy led by the technical and financial partners in the sector resulted in the creation of the Ministry of Water in July **2008** by the Decree no. **2008-829**. After a short period during which the ministry was temporarily merged with the Ministry of the Environment in February **2009**, the confirmation for

maintaining the Ministry of Water (sanitation and hygiene) was reinforced by the Decrees n°**2011-155** and no. **2012-633** until April **2017**. In the Decrees No. **2017-148** and **2017-262** as of **20 April 2017**, the Ministry was merged with the Ministry of Energy and Hydrocarbons again before becoming an independent Ministry of Water, Sanitation and Hygiene with the Decree No. **2018-548** on **14 June 2018**. In February **2019**, things returned to the starting line, and the ministry is once again merged with the Ministry of Energy and Hydrocarbons by the Decree No. **2019-026** of January **24, 2019**.

The Ministry of Water, Sanitation and Hygiene is responsible for designing, managing, coordinating, and harmonizing the general policy of the government in the field of water, sanitation, and hygiene. Its mission is to:

- engage citizens and financial partners in a better management of the water resources;
- strengthen the efficiency of the Administration and its partners, especially in the domain of water and energy supply;
- raise awareness for a change in sanitation attitudes, behaviors and habits; and
- develop synergy with other ministries and sectors concerned for a better health of the population and in order to achieve the Sustainable Development Goals (SDGs).^{2]}

In **2008**, the Ministry of Water had the following agencies attached:

- National Water and Sanitation Authority (ANDEA);
- Regulatory Water and Sanitation Body (SOREA);
- Operation for Water Supply in the South (OAES);
- Jiro sy Rano Malagasy (JIRAMA), Water Division;
- Antananarivo APIPA (Flood Protection Authority);
- Independent Maintenance Service for the Town of Antananarivo (SAMVA);
- National Centre for Water, Sanitation and Rural Engineering (CNEAGR); and
- **Diorano-WASH by the Decree No. 2011-155 of 12 April 2011.**

The scope of action of the Ministry evolved over time. Initially, it only focused on water and water resources management through ANDEA. Then, its mission

2] <http://www.mineau.gov.mg/historiques-du-ministere-et-son-ministre/>

extended explicitly to sanitation with the Decree no. **2012-633** as of **13 June 2012** instituting a new “Directorate for Sanitation and Hygiene”. The reform even went further with the establishment of a Directorate of Hygiene by the Decree No. **2017-084** on 2 February **2017**.

ANDEA

The establishment of the National Water and Sanitation Authority (ANDEA) in **2004** was the first project as part of the implementation of the Water Code by the Malagasy Government with the help of the United Nations for Development Programme (UNDP) and the African Development Bank. Although the name does not explicitly indicate it, ANDEA is responsible for implementing integrated water resources management and ensuring rational development of the water and sanitation sector. Put on hold since **2011**, ANDEA was struggling in sustaining funding, tutoring with a confusion in the roles and responsibilities assigned to the Interdepartmental Committee in charge of sanitation. The three basin agencies and the **22** regional basin committees established by ANDEA did not last long.

In fact, the Water Code provides for the establishment of a National Water Resources Fund (NWRF) funded by charges from water resources harvest and discharge of waste water. It was not put in place because of the reluctance of industrial, agricultural, tourism, electricity and drinking water operators to comply with the application decree of the Water Code. They even challenged the Decree No. **18230/2008** of **08 October 2008**, yet the fees charged by the National Water Resources Fund (FNRE) constitute ANDEA's main resources.

2.3. Efforts for the implementation of contracting authority

The Decree No. **2003-193** defines in its article **26** the criteria to be met by the Communes to fully assume the responsibility of the contracting authority:

- 1) Comply with all administrative, financial, budget and accounting obligations set out in the Acts and Regulations governing the Communes.
- 2) Have in place all appropriate services required to ensure the overall responsibilities of the Contracting Authority.
- 3) Have developed a development plan for the Public Water Service including an investment programme to be implemented over a period of, at least, five years, along with its funding method.

- 4) Have established with the State, represented by the Heritage Society, an inventory of the assets of the Water System and the debts contracted for their funding. In the absence of agreement between the said society and the commune on the content of this inventory, another inventory shall be drawn up by the Regulatory Organization imposed to the parties.
- 5) Commit, with an agreement signed with the Heritage Society, to paying off its debts to the said company and to demonstrating ability to ensure financial balance for the public water service as part of the commitment.

The fact that the Heritage Society has never seen the light of day and that its creation hasn't been inscribed as a priority to the successive governments since the implementation of the Water Code constitutes a stumbling block to the empowerment of the communes. Nevertheless, the successive ministries in charge of water, sanitation and hygiene since **2008**, each in their own way, have tried to instill a more practical version of empowerment to municipalities thanks to a close collaboration with its partners. For example, the 3rd point of the criteria was interpreted as the implementation of the Communal Plan for the Development of the Water, Sanitation and Hygiene sector (PCDEAH), the first version of which was designed by the NGO GRET. Later, that version was replicated and re-adapted by other actors such as USAID partners. The design and extension of the Technical Service for Water, Sanitation and Hygiene (STEAH) resulted from the desire to simplify the process for empowering the communes. NGOs like Interaide were the first to experiment and readapt the STEAH in the field.

On another note, the Support Programme for Municipalities and Rural Organizations for the Development of the South (ACORDS) financed by the European Union between **2004** and **2010** developed a guide aiming at supporting the municipality's work control and a guide on procurement at municipal level. The document provides local authorities and technicians a very practical guidance on the processes for planning, formalising budgets, implementing planned actions as well as monitoring and evaluation.

The Ministry of Water, Sanitation and Hygiene and the Ministry in charge of Decentralisation have also tried to establish a Memorandum of Understanding for the implementation of communal projects in the domain of water, sanitation and hygiene for the period **2013-2016** ^{3]}

3]. <https://docplayer.fr/48887785-Maitrise-d-ouvrage-communale-des-services-techniques-eau-et-assainissement-madagascar.html>

2.4. Introduction of Standards, Quality and Nomenclatures

With the financial support of the World Bank and the expertise of the NGO Taratra, a Procedures Manual was produced for the sector in **2005**. The main objective of the manual was to establish and ensure sustainable management of water and sanitation sub-projects in Madagascar. The intention was to provide all stakeholders in the sector with a reference instrument for the implementation of water and sanitation projects with technical quality that meeting national standards and ensure the facilities are sustainable and have an impact on health and local development. All of these have to be in accordance with the guiding principles of the national policy for the development of the water and sanitation sector in rural areas. Practically speaking, the manual was used to harmonize interventions in the domain of water, sanitation and hygiene in rural areas. It played a leading role in the concept of public and private partnership.

An initiative of the Ministry of Water and Sanitation supported by WaterAid and the Joint Monitoring Programme UNICEF-WHO resulted in a descriptive document on the standards for water supply sources and improved latrines following the definition of the JMP ^{4]} ^{5]}

In **2018**, the Ministry of Water, Sanitation and Hygiene officially published the new nomenclatures of the sector which includes indicators on water supply, sanitation, hygiene, integrated management of water resources, budget, and on private public partnerships. Water quality standards, financial monitoring, pricing, standardized infrastructures are also key points in this document.

Specific standards such as WASH-friendly infrastructure at school level were issued along with other standards developed by WaterAid (WaterAid in Madagascar. **2010**. Accessibility of Community drinking water, sanitation and hygiene infrastructure.

Technical Briefing Paper ed. Madagascar: WaterAid.) for water, sanitation and hygiene infrastructures accessible to persons with disabilities in collaboration with the Platform for Persons with Disabilities of Madagascar and the NGO Humanity and Inclusion. Nevertheless these standards have not yet been adopted by the government^{6]}.

4]. https://www.pseau.org/outils/ouvrages/mineau_livret_aep_madagascar.pdf

5]. https://www.pseau.org/outils/ouvrages/mineau_livret_latrine_madagascar.pdf

6] http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=11&ved=2ahUKewje_bvOj5vhAhWUDGMBHdC8C9w4ChAWMAB6BAgAEAI&url=http%3A%2F%2Fwww.inclusivewash.org.au%2FLiteratureRetrieve.aspx%3FID%3D105141&usg=AOvVaw0v5YfsTnVJ-Q4Ns8wJE_Sr

The WASH Technical Service (STEAH) is

- A service in the Commune aiming at ensuring sustainable access to water and good hygiene and sanitation conditions.
- A technical team at the Commune responsible for supporting the managers and has an overview of the WASH situation. The team is also responsible for checking the efficient use of the fund at the municipal level; informing and sensitizing users; and for conserving the records of WASH documents.

Implementation of the STEAH

- Validation of its implementation by the municipal advisors (publication by Municipal Order)
- Recruitment of a WASH Municipal Agent (ACEAH) through an open application. (An employment contract is established with the ACEAH)
- Establishment of a budget for the STEAH
- Establishment of a STEAH office for the ACEAH
- Creation of a Municipal Commission for WASH or CCEAH

Mission of the STEAH

- Follow and ensure facility servicing: support the facility managers (Water Committee or Enterprises) in ensuring their roles and respecting their commitment to maintain the facilities in good conditions
- Control and support in financial management: control the costs of servicing and management.
- Establish and approve annual budgets.

Some monitoring indicators of the STEAH

- **Facility and Water Committee:** Indicators on the facility functionalities; indicators on the recovery of annual contributions and fees from the Water Committee; Indicators on private connection monitoring.
- **Water Service:** Indicators on the STEAH budget monitoring; Indicators on the monitoring of STEAH visit and salary; Indicators on the sales of spare parts at the STEAH.
- Budget of the STEAH: between 800 000 Ar and 2 000 000 Ar (including materials + equipment + salary of the ACEAH)
- Approx. 150 000 Ar/month + Water Committee allowances)
- **Funding of the STEAH:** the water pays for water services:
- Contribution of users, fees from private connection, fees from the managers invoicing (10%); Own Investment Funds of the Commune.

2.5. Implementation of WASH Technical Services (STEAH)

As part of the empowerment of communes, the sector developed the concept of Technical Services for WASH in 2005. In reference to the draft new WASH Code, the WASH Service Technique is responsible for:

- managing the public water and sanitation service at the municipal level, including the monitoring of delegated management or direct undertakings;
- planning communal development related to Integrated Water Resources and Sanitation Management and ensuring coordination of all stakeholders involved in the sector;
- ensuring the submission of action rules (dinan'asa) and/or regulations on water, sanitation and hygiene and, if necessary, ensuring the adoption, dissemination and application of the latter, in compliance with the regulations in force, by the Mayors;
- seeking technical and financial partnerships from the stakeholders of the concerned sector with a view to developing the public water service and sanitation of the municipality;
- preserving the state ownership of water resources, as well as the WASH infrastructures/ facilities/ systems placed under its control;
- assessing, controlling and monitoring the sector of WASH at the municipal level;
- assessing, controlling and monitoring the sector of WASH at the municipal level;
- establishing appropriate services in terms of economies of scale; where required, adding proximity services at the Fokontany level to reinforce and improve the quality of services provided, particularly those related to waste collection at household level and transfer to shared waste containers, maintenance of tertiary culverts; and
- reinforcing the training of sanitation practitioners (both technicians and engineers, hydraulic engineers and hygienists).

See in the textbox how InterAide, in the framework of its project funded by the **European Union, SEDIF** and **AESN**, is implementing the concept of WASH Technical Services.

2.6. Initiative for public private partnership

The Procedure Manual contains all approaches related to the design and execution of the project, and specifies the roles of the different stakeholders (public authorities, decentralised territories, NGOs and associations, project beneficiaries, etc...). According to the law in force, municipalities are responsible for decision-making regarding the investment in water systems and for consultations on development programs for drinking water and sanitation public services in their locality. As the owner of public water services, a municipality has the obligation to ensure the development of drinking water supply and waste water sanitation services in its territory.

Practically speaking, municipalities may delegate public services through a leasing system (known as “affermage”), through a management or a concession contract. In rural areas, water supply systems are still mostly community-managed despite some positive initiatives of public-private partnerships initiated by the NGO Gret, USAID-funded projects such as RANO HP (HamPivoarana), RANON’ALA and RANO WASH. Delegation of drinking water systems in rural areas to a third party, usually a private company or a non-profit association, is hampered by the absence of interested operators. Most of the time, the activities such as feasibility studies or installation of infrastructures and servicing of drinking water supply systems in rural areas are performed by NGOs or associations.

Although the management system with direct undertakings is prohibited by the Water Code, some 2nd-grade urban municipalities and/or 1st-grade rural municipalities where the JIRAMA (Jiro Sy Rano Malagasy, the Malagasy national company for water and electricity) provides no service continue such practices. This management system involves realising and/or managing and servicing a water service directly by the municipality or through an administrative unit of the municipality. In other words, municipalities doing direct undertakings need more human, material and financial resources to cover the investment costs, ongoing operating expenses, as well as the costs of rehabilitation or extension of drinking water supply networks. And yet, the delegated management methods provided by the legal framework offer a sufficient number of choices.

NGOs such as GRET with its MEDDEA Programme funded by the European Union, AFD, Aquassistance and the Foundation Suez Environnement Eau pour tous, began to explore these management delegation methods in **2008**. The first experiment led to a hybrid delegation system consisting of an affermage contract with concession features. With the support of the MEDDEA Programme, the communes proceeded to an open call for tenders for the recruitment

of investing operators to be in charge of the detailed preliminary projects, the ownership of the project and management of works over the duration of the contract. The programme applied the principles of the Output Based Approach (OBA) by co-signing with the concerned municipality a contract with the investing operator. The latter also signs a contract with the municipality as the project owner. The challenge is to put in place incentives for the delegatee and foster an incentive policy encouraging connections and allow the network to quickly become economically viable and thus sustainable. The Programme recognizes that the model explored is not applicable to all situations in Madagascar. It is advised to rely on other contractual forms that can help establish professional management of water services.

Statistics from the Association of Private Operators and Water Distributors of Madagascar (AOPDEM) indicate that there are currently more than 50 operators across the island.

2.7. Establishment of a monitoring mechanism for the sector

In **2003**, the Ministry of Water had the Water and Sanitation Database Service (BDEA) which is the official source of information for the sector. The BDEA manages inventory sheets and registries that contain detailed information on physical, geological, hydraulic, hydrogeological, chemical and organic characteristics, and geo-location referenced in Laborde addresses (on a topographical map to **1/100,000**) of water resources (streams, lakes, marshes, swamps, springs) and water points (wells and boreholes)^{7]}.

Still, it was very difficult for the government to track the progress of the sector. There are several monitoring methods and systems, whether it concerns the monitoring of infrastructures and services or that of the use of infrastructures through household surveys and census. To ensure complementarity and harmonization, stakeholders involved in monitoring access to water and sanitation, such as the Ministry of Water, the Ministry of Health, INSTAT, WaterAid and the Diorano-WASH Coalition, proceeded to a data consolidation, reviewed and adopted a new harmonized nomenclature for water and sanitation infrastructures, based on the national policies and strategies in place for the period **2009-2011**. The exercise conducted in collaboration with the WHO/UNICEF JMP for Water Supply and Sanitation, allowed for the establishment of correspondence between the new nomenclature and the one used by JMP at international level. The sector of water in Madagascar is also subject to the Global Annual Assessment for Sanitation and Drinking Water (GLAAS) sponsored by WHO-UNICEF.

^{7]} Note of Mr Herivelo RAKOTONDRAINIBE, Hydrogeology Expert.

In **2013**, the Ministry in charge of Water, Sanitation and Hygiene developed a new IT system for monitoring the performance of the WASH sector called Monitoring Water and Sanitation in Madagascar (or “SE&AM”). The aim of SE&AM is to have a single system for planning, monitoring indicators and key activities of the sector and thus have a single reference on information needed for decision-making purposes related to the sector. The SE&AM was based on existing systems such as the BDEA and BPORs, and include innovation such as the visualisation and analysis of map data. SE&AM is a computerized tool developed on web technologies as well as online database using open source software and licenses to facilitate the access and use of the tool by the sector.

The SE&AM System is managed by the Ministry of Water, Sanitation and Hygiene through its Information System and Monitoring Evaluation Division. This division also ensures the final validation of data and online publication of sector data and reports. The regional directorates are responsible for preliminary validations of data and verification of compliance with projects or activities received with the actors. Partners or actors in the sector can also integrate their achievements in the SE&AM by using Microsoft Excel canvas or by directly filling in their data.

The Ministry of WASH decided, in February **2015**, to review the SE&AM based on the first lessons learned from this experience as well as the feedbacks from the WASH actors. The ongoing review SE&AM concerns the integration of hydrogeological data of the former BDEA, the optimization of the database components, and the mapping tools and user interfaces in order to meet the different government and stakeholder requests.

In terms of support and extension, it is advised that the Ministry of WASH reinforces the database structure by ensuring the effectiveness of liaison with other systems or processes in the WASH sector (Trackfin, BPOR, digital library, mobile data entry). Building the capacity of the Ministry on maintaining and advancing the system in the long term, while respecting and protecting the intellectual property of the Consultant designers, would be relevant as well. Likewise, capacity-building should also be organized for the Ministry’s regional directorates, municipalities and sector actors in order to enable them to take ownership of the tool. It is also recommended that the Ministry of WASH and its Technical and Financial Partners (TFP) plan for the budget necessary for the maintenance, deployment and evolution of this tool over the long term.

2.8. Concept of WASH-friendly institutions

In its first strategy, the Coalition Diorano-WASH introduced the concept of WASH-friendly institutions of WASH in **2003**. At first, the concept was applied to schools and Basic Health Centres. The concept aims at working in a more structured way at the institutional level and bringing to the front “relay persons” working for the promotion of the hygiene sector.

The Guide for WASH-friendly schools was validated in **2007**. WASH-friendly School Committees have been set up in pilot public primary schools (and a few private ones). The committee is composed of representatives of local authorities, parents, teachers, school principals, pupils, local leaders and civil society. These Committees are responsible for promoting the three key messages of WASH, supporting schools in obtaining water and sanitation infrastructures, ensuring effective management of the infrastructures and for maintaining good relations between the WASH Committee and local authorities. The creation of a WASH-Friendly School is governed by local regulations; only schools that have completed all required steps can be certified as WASH-Friendly Schools.

Following the success of WASH-Friendly schools, Diorano-WASH has implemented a similar program in the Basic Health Centres (CSB). A CSB is called WASH-friendly the moment it starts promoting the three hygiene key messages. It concerns the key hygiene practices of the medical team, visitors, patients and the broader communities. The Centre becomes a reference for demonstrating practices and promoting the water, sanitation and hygiene messages. CSBs have a role for promoting hygiene to the community. They encourage genuine changes of hygiene behaviors in the surrounding communities. In **2016**, the Concept was extended to include Health Institutions which are now called WASH-Friendly Health Institutions. The success of the program depends mostly on the availability of sanitation and drinking water infrastructures in the CSB as well as the appropriate communication.

2.9. Mobilisation of actors in the sector

The Diorano-WASH Coalition

In **2002**, at a time when the WASH sector was mobilizing every person of good will, the Coalition Diorano-WASH was born under the leadership of WSSCC. The foundation of Diorano-WASH received the support of leaders at the highest level of the country. The Coalition had as Presidents of Honor the three Ministries of Water, Health and Education. From **2002** to **2017**, Diorano-WASH, which had members in the **22** regions and in some municipalities and districts, brought together more than **200** entities from public administration at all levels, including local authorities, civil society, religious denominations, private sector and grassroots communities. Diorano-WASH stood out from the other entities by its capacity to federate almost all entities working in the water, hygiene, and sanitation sector as well as their related activities. Diorano-WASH must be among the few coalitions dedicated to a particular sector, which covered the entire national territory and survived fifteen years. The reputation of Diorano-WASH goes well beyond the Malagasy border, it served as a model for several WSSCC coalitions ^{8]}: Diorano-WASH initiated and accompanied all the major changes that had occurred in the sector over the last **15** years.

One can name without being exhaustive the validation of PSNA, the creation of the Ministry of Water, the National Campaign of Hygiene Education (initiated by the Ministry of Health and the Hygiene Improvement Project or HIP funded by USAID in **2007**), all World Water and Sanitation Days celebrations, exchanges of information and experience in the sector and the establishment of the Support Fund for Sanitation. Since the creation of the Ministry of Water in **2008**, Diorano-WASH became a platform for exchange and cooperation. The Coalition was dissolved by the Decree No. **2017-696** of August **16**, **2017**.

Platform for the Promotion of Water, Sanitation and Hygiene

The Ministry of Water, Sanitation and Hygiene subsequently created the Platform for the Promotion of Water, Sanitation and Hygiene (PNP-EAH) with the Order No. **2474/2018** of **07** February **2018**. PNP-EAH is not operational yet but its ambition is to contribute to achieving the SDGs and the vision of the Malagasy government for the well-being of the population through universal access to drinking water and use of adequate sanitation infrastructure and good hygiene, by harmonizing the sector's communication activities and strengthening partnership with and between WASH stakeholders.

^{8]} http://www.wsscc.org/sites/default/files/publications/wsscc_wash_coalition_building_guidelines_2008_fr.pdf.

Technical and Financial Partners Group

In accordance with the Paris Declaration and the Busan Agreement, the Technical and Financial Partners Group was always present for the implementation of policy guidelines adopted by the government. These partners are motivated by the principles of ownership, alignment and harmonization promoted by the government in the mid-**2000s**. There was a time when the group was managed by the African Development Bank which was the largest funding provider of the sector. UNICEF always animated the group although its membership changed over time. Among the actors members of the group are the African Development Bank, the World Bank, the European Union, JICA, AFD, USAID, UNDP and UNICEF.

Ran'Eau

Ran'Eau Network was created by the Water Solidarity Programme (PSEau) and the Technical Information and Economic Centre (CITE) in **2009**. The network was formed by non-governmental actors and actions in the sector. The Ran'Eau Network organises meetings and exchanges, makes information available and offers support to project promoters. All key thematic discussions (project management, water quality, solar-powered water pump, STEAH, sludge management, water pricing, solid waste management, etc.) over the last **10** years have been facilitated by Ran'Eau. Ran'Eau was transformed into an NGO in January **2019**, nevertheless, it kept his original mission which are:

- Inform about and valorize actors and actions in the water, sanitation and hygiene sector in Madagascar;
- Provide a space for exchanges and promote the sharing of experiences among stakeholders in the sector;
- Develop and make available resources useful to actors in the sector;
- Support project promoters in their approach; advise and guide them through specific information and tools.

2.10. Procurement contracts^{9]}

9] <http://www.mineau.gov.mg/index2.php?p=index-4.html>

The procurement contracts managed by the Ministry of Water focused mainly on works regarding the water and sanitation sector, particularly the supply of drinking water with gravity system (AEGP), the construction of offices and wells.

The Ministry of Water has a Public Procurement Management Unit (UGPMP) under the supervision of the Head of Public Contracts (PRMP) which ensures the development of Call for tenders and the awarding or even the execution of the contracts. The PRMP determines the needs for the work execution, the supply and service provisions, intellectual services including delegated work contracts, operating and project management contracts as well as the necessary IT support services to the Ministry. It refers to the various follow-up and review of the works conducted with a view to developing new contracts awarded to public authorities and/or interested public or private persons, on a contractual basis. Depending on the type of contract, notices for national tendering shall cover the entire national territory. “Regardless of its size, public contracts must respect the principles of freedom of access to public procurement, equal treatment of candidates and transparency of procedures. These principles ensure the efficiency of public procurement and proper use of public funds. They require the definition beforehand of the public purchaser needs, rigorous planning of operations providing for a competitive process, compliance with obligations for advertisement and competition, and the choice of the lowest or the most advantageous tender. These general principles shall be implemented in accordance with the rules laid down in the present Code.”

2.11. Urban Sanitation Master Scheme

UN Habitat supported the government in initiating the Urban Sanitation Master Scheme (SDAU) process for Antananarivo and its agglomerations in **2014** and entrusted to ARTELIA the steering of the process. The SDAU is a tool allowing for projections into the future with realistic and attainable goals and strategic and technical choices that set direction for the planning. It defined the relationship between municipalities as the project owners and the different actors; it also served as a reference framework for the development of the sanitation sector, in extension to the Urban Master Plan (PUDi) which is the benchmarking reference for territory development and planning. By the end of the process:

- the strategic axes and activities for the sanitation of the big city of Tana were developed;
- the phasing of interventions required to implement the SDAU was established;
- short-term priority interventions were identified;
- the responsibilities of stakeholders, and particularly the communes as the project owners, were clarified; and
- the principle of intercommunality was developed.

The process inspired the government in collaboration with the African Development Bank and the African Water Facility to develop SDAU for eight major cities of Madagascar: Toliara, Taolagnaro, Fianarantsoa, Antsirabe, Antsiranana, Nosy Be, Mahajanga, and Toamasina. The objective is to provide solutions in order to meet in a sustainable way the needs for liquid sanitation (sewage and drain sludge), stormwater drainage and solid waste management, with a view to improving health and the socio-economic conditions of the population of the cities concerned.

The purposes of the process are to:

- Equip the WASH sector with a document for guidance and planning of medium and long-term sanitation investment for the cities concerned;
- Conduct a prospective study of the evolution of the wastewater system;
- Dispose of a technical and economic management tool for proposed wastewater systems.

This specific process includes Environmental and Social Impact Studies (ESIAs) as well as Detailed Preliminary Projects (DPAs).



3. Chapter :

Constraints and challenges for the implementation of the Water Code

This chapter focuses on the factors that block the proper implementation of the Water Code. In 2013, the World Bank through its Integrated Growth Pole Project entrusted the Cabinet Tontolo Maharitra the realisation of a legal diagnosis of the Water Code. Much of the analysis, taken from the governance perspective, is reflected in this document.



3.1. Absence of the structures intended to be pillars of the implementation of the Water Code

The Decree No. **2003-193** in its article no. **26** states the establishment of an inventory of assets, debts incurred and debt payment to be done by the municipalities with the Heritage Society as it is an essential condition for their grading. The Heritage Society was never created. Likewise, the regulatory organization OREA is also required to draw up another inventory for the municipality and the Heritage Society but, despite a project financed by the European Union in **2016** for its implementation, the organization has not been set up yet. Therefore, it is quite normal if no commune has received their grading since the implementation of the Water Code. The articles **14**, **15** and **16** of the Framework Decree concerning the contract authority delegated by the Ministry in charge of water remain valid.

The absence of OREA represents an obstacle to the proper functioning of the sector given that it should:

- ensure that the project owners and water system managers meet water quality standards
- empower the communes to fully exercise their role as project managers in water systems
- define the methodology for setting public water and sanitation rates and approve rates based on proposals made by the operator, in agreement with the project owner
- develop and update an information system containing technical and financial data characterizing drinking water systems and their management performance
- monitor the execution of the development contract concluded with the state by the Heritage Society during the transitional period referred to in the Article **41** of the Water Code
- arbitrate conflicts on its agenda between actors in the Public Water Service, in particular between users and water system managers. In such case, the organisation receives the complaint of users
- give a decision on the tendering document for delegated management and its contract negotiated by the Project Owner and submitted for the organization's approval

The responsibilities of the delegated contracting authority as defined in the Framework Decree (Articles 14, 15 and 16) are as follows:

1. Organisation and perpetuation of public services and, particularly the universal water services
2. Preservation of the state-owned services placed under its control
3. Launch of call for tenders for the Delegation of public services management, negotiation and conclusion of all delegated management contracts and their amendments, including those made by mutual agreement
4. Control of public services management under the delegation management contract
5. Development of investment plans, research and implementation of State funding to carry out the investments which are the responsibility of the Project Owner, initiation of procedures for the decentralization of studies and work contracts, initiation of corresponding contracts and scheduling contract payments
6. Approval of investment plans for water systems, the funding and implementation of which are part of the responsibilities of delegated managers
7. Management of the connection funds
8. Guarantee of financial stability

- issue decisions concerning the requests of several municipalities to delegate jointly the management of water system to the same operator.
- examine annual reports published by the Project Owners and delegated managers, and ensure the control of delegated managers by the project owner.
- request the Project Owner to take a proceeding for the termination of a Delegated Manager.
- provide advice on requests for transfer from a Manager delegated to a third party, from a Delegated Management contract or for transfer of rights attached to such contract.
- decide on the requests from Project Owners to operate a water service governed in direct undertakings and define standard specifications for the operation of Water Systems under direct governance.
- define criteria for granting social connections.
- obtain informations on subcontracts and agreements on tapstand management concluded by delegated managers.

In the absence of OREA, the Ministry of Water is expected to ensure all of these roles and responsibilities. Yet, considering the lack of financial and human resources, to name but these two, it is difficult to see how the Ministry could do so. By fulfilling all of these roles, the Ministry of Water could take the roles of both judges and parties.

The absence of the National Water Resources Fund (FNRE), provided for in the Water Code in its article 73, also represents a major handicap to the sector. The fund is expected to finance the conservation, mobilization and protection of the quality of water resources, and related facilities. According to Article 69, the FNRE is financed by the fees for the exploitation of resources, the deterioration of the quality of these resources and by the modification of the water regime. In the Article 4 of the Decree of 2003-792, the FNRE also finances the management of water resources and the development of the sector of water and sanitation for the general interest. The Article 4 stipulates that the charge for water exploitation is made up of 3 parts: state fees, proportional fees and participation fees. These fees are fixed (Art 5, 6, 7) on the basis proposed by ANDEA in a joint Order of the responsible ministry.

3.2. Non-compliance with text hierarchies and legitimacy issue

The Article **77** of the Water Code (which is an Act) is very explicit about the technical and administrative guardianship of ANDEA by the Prime Minister and the Ministry of Finance and Budget. Decree No. **2008-427** of **30 April 2008**, which placed ANDEA under the supervision of the Prime Minister's Office, first respected this essence of the Water Code, by Order No. **18230/2008** of **08 October 2008**. Against all odds, a simple provision falling within the regulatory area Order No. **18230/2008** of **09 October 2008** amended the Act by delegating the role of technical guardianship to the Ministry of Water. Beyond this legal infringement, the situation gave rise to a legitimacy issue. Technically, water resources management, which is ANDEA's main mission, involves several actors in drinking water, hydroelectricity, mining, industry, agriculture, fishing, livestock and land-use planning. As is the case throughout the world, the sector of agriculture remains Madagascar's largest user of water.

In **2000**, the renewable water exploitation was estimated **14 970 km³**, including **14 313 km³** dedicated to agriculture (**95.6%**), **0.423 km³** for domestic consumption (**2.8%**) and **0.234 km³** for industry (**1.6%**). The initial design of ANDEA's technical supervision was based on evidences. The agricultural sector, notwithstanding of ANDEA's attachment to the Ministry of Water, already challenged the Articles **29, 30, 31**, which stated that "any irrigation project initiated by a legal or natural person under private law shall require the advice of ANDEA with respect to the use of both surface and groundwater water resources." Responsibles in the sector of energy also refused to comply with the charges on exploitation and discharges, arguing that, a priori, hydroelectric restores the same amount of water used without polluting it. The contestations amplified when the Prime Minister office decided that ANDEA shall report to the Ministry of Water.

Even private operators took legal actions at the Administrative Court against the Decree No **16284/08** of **11 August 2008** fixing the rates of charges for the exploitation and discharge of water which they considered illegal. The legal approach masked a refusal to recognize the essence of the fees on the discharge and exploitation, and challenged the authority of ANDEA. All of these actions have put at risk the establishment of the National Water Resources Fund (FNRE) in accordance with the Article **73** of the Water Code. FNRE is financed by exploitation fees (Art **69**). Likewise, the financial viability of ANDEA depends on exploitation and discharge fees.

3.3. Overlapping roles and responsibilities

Sanitation is a perfect example of the overlap in the water, sanitation and hygiene sector which, to date, remained unsolved. In the PSNA of the Decree **2008-319** dated **28 February 2008**, the Ministry in charge of Decentralization and Territory Planning is responsible for the implementation of collective sanitation policy, including:

- the implementation of sanitation guidelines;
- the programming and steering of works on collective sanitation infrastructures; and
- the establishment of collective sanitation services.

In another version of the PSNA according to Decree **2008-1058** of **10 November 2008**, the Ministry in charge of drinking water is responsible for the implementation of basic sanitation policy, particularly when the programmes are linked to water supply projects, including the establishment of communal sanitation services. The responsibility of the Ministry in charge of Territory Planning with regards to the implementation of the collective sanitation policy became more limited:

- the implementation of sanitation guidelines;
- the programming and steering of works on collective sanitation infrastructures;

Reality on the ground contradicts what is prescribed by the PSNA because the Ministry of Water has conducted projects of development of SDAUs while the Ministry in charge of Territory Planning continues to manage community sanitation services projects, both for solid waste management, waste water and stormwater management.

The same challenges apply in hygiene promotion. According to the Decree **2008-1058** of **10 November 2008**, the PSNA stipulates that hygiene awareness actions are the responsibility of the Ministry of Water while prevention actions to health risks and coordination of actions on health education are assigned to the Ministry of Health. The contradictions lie within the PSNA itself because hygiene promotion campaigns are the responsibility of the Ministry of Water and the coordination of health education actions by the Ministry of Health is ambiguous. As well, health risk prevention includes hygiene awareness. There is no clear delineation of roles and responsibilities between the different actors.

Given the inconsistency and some provisions of the PSNA which are no longer in line with the current context, a part of the PSNA has become null and void.

3.4. Lack of funding for the sector

The financial resources allocated to water and sanitation were in constant evolution for the period from 2000 to 2018. From USD 3.6 million to USD 26.91, it reached a peak of USD 43.42 million in 2010. The funding level decreased progressively in 2003, 2007, 2009, 2011 and 2014 due to the closure of a number of projects and to an important reduction of internal funding because of political crises. The rise recorded in 2003, 2008 and 2010 resulted from an overprogramming of activities under external funding, which led to an increase of the budget and to the programming of two projects funded by the AfDB and the European Investment Bank. The budget allocated according to the Finance Act remains very theoretical

Table capturing the evolution of resources allocated to the sector of water and sanitation in Madagascar from 2000 to 2012, million US \$													
Designation	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Budget allocated	3,60	9,02	5,63	11,59	10,91	15,91	19,73	14,94	37,20	0,00	43,42	34,04	17,57
National budget	1,14	3,44	1,96	1,52	4,28	6,91	7,73	5,17	16,80	0,00	10,30	26,03	3,88
External	2,50	5,58	3,67	10,07	6,63	9,00	12,00	9,77	20,40	0,00	33,13	8,01	13,69

Source: Finances ACT

Table capturing the evolution of resources allocated to the sector of water and sanitation in Madagascar from 2013 to 2018, million US \$						
Designation	2013	2014	2015	2016	2017	2018
Budget allocated	14,13	4,44	8,64	24,00	24,75	26,91
National budget	2,60	2,54	5,77	7,20	10,06	16,92
External	11,53	1,90	2,88	16,80	14,68	9,99

Source: Finances ACT

There is far too little funding to achieve national goals for sanitation and drinking water, both in rural or urban areas. Based on calculations done by MITI Consulting as part of the development of the Sector Investment Plan in 2018; the sector needs USD 3.3 billion or USD 231 million per year to achieve SDG 6. Even the funding planned for 2018 needs to be multiplied in order to achieve this goal. The funding situations in 2008 show that mobilizing funding is not enough, it is also essential to improve the effectiveness of financial management. The funding available in 2008 was USD 37.2 million. Out of these funding, the Ministry was able to disburse only USD 11 million, corresponding to a very low disbursement rate of 30%.

The results of Global Annual Assessment for Sanitation and Drinking Water (GLAAS) in **2017** indicate that only **30%** of the sector's funding is supported by the Government, the rest comes from external funding.

3.5. Challenges in terms of equity

So far, Madagascar occupies the fourth worst position in terms of indicators on access to water, sanitation and hygiene. According to the latest version of JMP WHO-UNICEF in **2017**, **52%** of the population of Madagascar have access to clean drinking water. The disparities between urban and rural areas are very significant. **82%** of the urban population has drinking water against **35%** in rural areas. Only **12%** of the population use improved latrines and more than **40%** continue to defecate in the open, hence a total of **9.9** million people. In Sub-Saharan Africa, the average is of **23%**. The percentage of people practicing open defecation in high-density environments is **20%**, and the number increased by **1.5** million. This represents a major risk for public health. The combination of open defecation, lack of drinking water and good practices such as hand washing with soap can cause **90%** of diarrhea cases and have a direct influence on malnutrition in Madagascar. The hygiene standards throughout the country remain very low, and that contributes to having a very high level of diarrhea. Despite the increased level of awareness about the risks of inadequate sanitation and lack of hygiene, less than **25%** of the households practice hand washing with soap^{10]}.

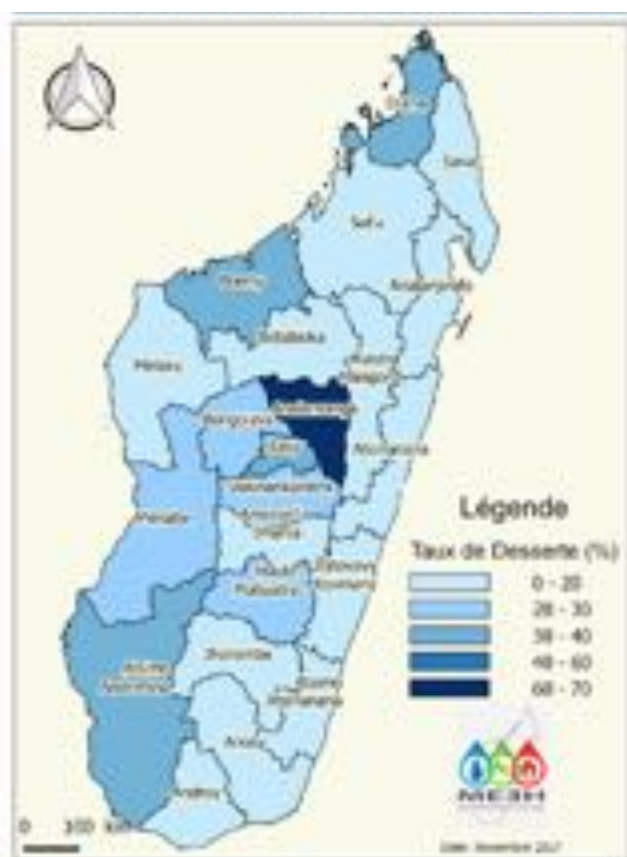
According to the JMP, the rate of access to water at least for basic level increased from **37%** to **51%**, the rate for sanitation increased from **5%** to **10%** between **2000** and **2015**.

Disparities exist between rural and urban areas, and between the regions, such as shown on the map hereafter:

- The highest access rate (between **60-70%**) is found in the Analamanga region while the lowest rates are found in the regions of Androy, Atsimo Atsinanana and Alaotra Mangoro (less than **10%**).
- Moreover, the country still faces problems related to the servicing of water infrastructures, which impact even social services such as schools and health facilities.

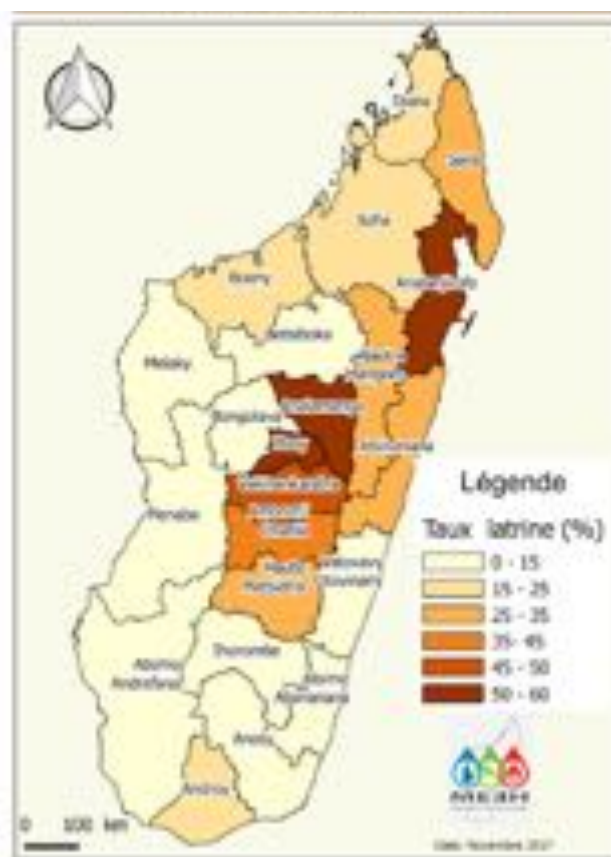
^{10]} Madagascar key result framework, MEEH - 2017

Figure 1: Rates of access to clean drinking water at national level



According to this map, the best rates are found in the regions of Analamanga, Itasy, Analanjiroro (rate of use comprised between 50% and 60%).

Figure 2: Rates of latrine use



The lowest rates on the use of latrines are found in the regions of Ihorombe, Melaky, and Vatovavy Fitovinany, with rates less than 5%.

The sub-sector of liquid sanitation is still in full development in the country. In fact, the majority of interventions in the field of sanitation focus on the use of latrines^{11]}.

In Madagascar, as well as in other countries, the poor and vulnerable populations are largely left behind in terms of access to water and sanitation. Johnny Ramanandraibe points out in his study (January 2019) “the factors explaining that household access to drinking water in Madagascar” have positive influence of the household living standards is confirmed. In other words, the willingness of households to access this resource increases with the improvement of their living standards.

11] TrackFin Initiative – Financial monitoring of WASH in Madagascar – WHO, May 2018

In fact, **5.3%** of very poor households against **19%** of very rich households get supplied with drinking water. For households with an average standard of living, **10.7%** have access to drinking water. This is justified by the fact that drinking water services in the Malagasy context are charged with fees, which is often very expensive. Moreover, the cost of private connection, and installation of wells or drilling with pump is expensive. As a result, they are inaccessible to poor households.

Apart from WaterAid's efforts to making drinking water and sanitation infrastructures accessible, accessibility standards for people with disabilities are not endorsed by the government yet. As a reminder, according to statistics, persons with all types of disabilities (blind/visually impaired, deaf-mute, with physical and mental disabilities) make up almost **15%** of the Malagasy population. The issue of accessibility also applies to elderly, sick persons, those affected by specific diseases such as HIV/AIDS, overweight persons, and those with transient difficulties such as pregnant women.

3.6. Sustainability issues

According to the Sustainability Check commissioned by the Ministry of Water, Sanitation and Hygiene, and supported by UNICEF, in **2016**; **63%** of the drinking water systems were functional at the time of visit. This percentage differs from the results of Sustainability Check of **2014** which indicated that **73%** of the systems were functional. Although it is difficult to have accurate figures on the sustainability of open defecation (SDAL) villages throughout the national territory, the Sustainability Check conducted in **2016** reveals that out of the **662** visits, **62%** were declared open defecation villages. Observations indicate that only a percentage comprised between **39%** and **57%** of the villages reported were actually Open-Defecation villages. In fact, **43%** of the villages identified as ODF villages by the WASH Committee had clear evidences of open defecation and **61%** had clear evidences or anecdotes. In terms of handwashing with soap, in **12.5%** of the communities observed, almost all households have handwashing facility. In **39.8%** of the communities observed, only a few households have handwashing facility.

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4. Chapter : Potential solutions

This chapter provides a brief analysis of the water, sanitation and hygiene sector and proposes potential solutions and options. The following table summarizes the solutions that can be explored to address the situation.

Constituents	Bottlenecks	Future options	Short, Medium and Long Term
1. Institutional and political reforms	1.1 Inconsistency and failures of the legal and regulatory framework	1.1.1 A new debate on the current version of the Water, Sanitation and Hygiene Code, review of the Code and submission for approval of the National Assembly. Ensure involvement of all stakeholders from the various sectors related to WASH	ST
		1.1.2 Develop a legal framework on hygiene and delineate its scope of action	MT
		1.1.3 Propose Decrees and Orders for the application of the new Water, Sanitation and Hygiene Code	LT
	1.2 Delay in the implementation of structures for the sector	1.2.1 Finalise the Modus Operandi and Specifications including the Business Plan of OREA	MT
		1.2.2 Establish simple structures of OREA and provide for the phasing of the evolution of its size as required	MT
		1.2.3 Revitalizing ANDEA and setting up the Watershed Agencies and the Watershed Committees based on hydrography of watershed	MT
	1.3 Absence of a clear politic and programmatic framework for the sector	1.3.1 Finalise the Sectoral Programme for Water, Sanitation and Hygiene (PSEAH) and its Operational Plan	ST
		1.3.2 Development of a National WASH Plan	LT
		1.3.3 Finalise the WASH Investment Plan	
		1.3.4 Establish a document defining the norms and standards of the sector and ensure enforceability	
	1.4 Absence of commune empowerment in its role as Project Owners	1.4.1 Establish a thematic committee on project ownership at national level	ST
		1.4.2 Set up a pool of competencies, disseminate and harmonise tools to support the process of project ownership in all ongoing programmes and projects	MT
		1.4.3 Support the process aiming at improving local taxation	MT
		1.4.4 Build capacity and reinforce specific process such as the Local Development Fund	LT
		1.4.5 Develop different forms of delegated management	MT
		1.4.6 Introduce the WASH Technical Services (STEAH)	ST

Constituents	Bottlenecks	Future options	Short, Medium and Long Term
1. Institutional and political reforms	1.5 Clarification of the roles and responsibilities of all stakeholders, including redefining the mission of the State which is present in all domains (policy and regulations, studies and planning, operationalisation and exploitation, control and regulation and funding)	1.5.1 Finalise and validate the chart of responsibilities of WASH and related sectors 1.5.2 Update the sector strategy including a modus operandi at central and decentralized levels	MT MT
	1.6 Insufficient capacity of the private sector and users to operationalize water and sanitation services	1.6.1 Implement the development strategy of private sector in the field of water and sanitation 1.6.2 Integrate microfinance in the sector and implement guarantee funds 1.6.3 Implement Based Aid Objective (Build Own Operate or Build Operate Transfer)	MT LT LT
	1.7 Poverty and vulnerability are not included in programming and budgeting	1.7.1 Definition of the criteria of poverty and vulnerability 1.7.2 Integration of these criteria in the programming and budgeting at national and decentralized levels 1.7.3 Monitor the inclusion of these criteria in the implementation phase	MT MT LT

Constituents	Bottlenecks	Future options	Short, Medium and Long Term
2. Sectoral Coordination: sectoral approach in development planning, donor harmonisation, platform gathering multiple actors frameworks to enable broader participation of non-state actors at different levels	2.1 Slow implementation of decentralisation and devolution of programming, budgeting and monitoring	2.1.1 Operationalise the National Platform for the Promotion of WASH and the process for Sector Wide Approach (SWAp)	MT
		2.1.2 Build capacity of regional and interregional directorates	LT
		2.1.3 Implement the PND2 (National Action Plan for Decentralisation and Devolution)	LT
		2.1.4 Good governance including accountability of authority to those governed, rigorous checks of legality and total transparency in the management at the communal level, through a balance of power between the executive and legislative organs	MT
		2.1.5 Greater increase of transfers from the State (equipment and subsidies) to the communes	LT
		2.1.6 Ongoing update of the BPOR	MT
	2.2 Lack of appropriate means for collecting, processing and disseminating information in the monitoring system	2.2.1 Implement the modus operandi of the SE&AM for the collection and processing of data	MT
		2.2.2 Reinforce and improve existing tools	MT
		2.2.3 Disseminate SE&AM data	LT
3. Funding of the sector	3.1 Lack of funding (multiply by 4 the current funding to reach the MDG) and delay in the establishment or release of funds	3.1.1 Develop a medium term strategy for funding mobilisation	MT
		3.1.2 Create a Unit dedicated to funding mobilisation in the Ministry of Water	MT
		3.1.3 Facilitate the sector's Coordination Unit and donors roundtables	MT
		3.1.4 Build the capacity of the Ministry of Water on budget process	MT
		3.1.5 Establish a cost-recovery framework for the operation of WASH infrastructures allowing ensuring financial balance for system management, considering the willingness and ability of users to pay	ST
		3.1.6 Ensure good dissemination of information concerning the sector funding	MT

Constituents	Bottlenecks	Future options	Short, Medium and Long Term
3. Funding of the sector	3.2 Unreliability of data regarding the funding	3.2.1 Reinforce the TrackFin and GLAAS processes	LT
		3.2.2 Set up a permanent process for budget monitoring by the Civil Society	LT
		3.2.3 Conduct reviews on public expenditures	LT
	3.3 Issues with the burn rate of the Ministry and the sector overall performance	3.3.1 Enforce the Modus Operandi 3.3.2 Support the procurement process at the government level	LT MT
4. Capacity and institutional provisions	4.1 Lack of capacity of the private sector, civil society and users to operationalize water and sanitation services and advocate for the sector	4.1.1 Improve business climate in the sector and ensure it is encouraging the private sector	LT
		4.1.2 Develop a strategy aiming at professionalising jobs in the sector of water	MT
		4.1.3 Put in place and run a Center for knowledge management in the sector	MT
		4.1.4 Reinforce the structuring of Civil Society at municipal level and strengthen their advocacy	LT
5 Sustainability and scale-up	5.1 Absence of a clear strategy for sustainability and scale-up in the sector	5.1.1 Develop a specific sustainability strategy for the three sub-sectors: water, sanitation and hygiene	MT
		5.1.2 Develop a strategy for the scaling of the three sub-sectors: water, sanitation and hygiene	MT
		5.1.3 Ensure the adoption and implementation of the strategies by all the stakeholders	LT

Conclusions



The research brought out some lessons learned from the progress reached in the implementation of the Water Code. In fact, the 20-year review of the Water Code is very positive, particularly with regards to the development of planning and budgeting instruments, such as the BPOR and SE&AM. Through the implementation of the Water Code, over the years, the Ministry of Water and Sanitation has been able to mobilise various stakeholders from different horizons. The actors, each in their own way, brought their expertise and innovation for the development of the sector. Significant progresses have also been observed in the promotion of the trilogy of water, sanitation and hygiene, which has been adopted by almost all actors. The establishment of WASH-Friendly institutions illustrates the integration of water, sanitation and hygiene. Although the situation is still far from satisfactory, the sector has been able to mobilize the private sector, which also brought both expertise and investments to the sector. As for human resources, the Ministry of Water succeeded in setting up 22 regional directorates, each composed of at least ten staffs. Strategic and programmatic documents have been produced and implemented over the past 20 years.

In terms of challenges, the sector was unable to put in place all the structures provided for in the Water Code. This undeniably slowed its implementation and sometimes created inconsistencies in the sector. The absence of ANDEA, the Heritage Society and OREA are among the most blatant examples preventing the empowerment of municipalities in terms of project management. Despite a positive evolution in the sector funding over the past 20 years, the trend does not correspond to the real needs of the sector. In 2018, the sector hardly mobilized one-tenth of its financial need. As a result, the country's current access to water

and sanitation rates placed Madagascar as the fourth largest country in the world in the field of water, sanitation and sanitation. These have dire consequences on health and nutrition. Populations in rural areas, the poor and vulnerables are left behind with regards to access to water, sanitation and sanitation.

11 years from the horizon 2030 when we ambition to achieve universal access to water, sanitation and hygiene; improvements are required on the governance perspective of the sector. To this end, a clear political framework is needed, all actors including the private sector shall be mobilized, and a policy for sustainability and scaling-up shall be implemented. The experience acquired over the past 20 years shown that strong leadership from the government is necessary in order to enable a better coordination of the sector. Building a supportive environment is also a prerequisite for achieving the vision of “water, sanitation and hygiene for all before 2030”. This implies strong involvement of civil society and the private sector alongside the government. Actors need to think about accelerating results given the gaps that need to be filled. If all ingredients, which are all the change factors^{12]}, and vectors^{13]} as well as the multiplier effects^{14]} are brought together, achieving the objective is possible.

12] Clear, pragmatic, consistent, and comprehensive legal and regulatory framework in various domains – A well-established and credible sector coordination based on result-based leadership (planning, budgeting, regulation, procurement, implementation, monitoring and evaluation, knowledge management, etc.) - A funding mechanism focusing on real needs and sustainable funding.

13] Policy on human capital focusing on the adequacy between needs and expertise; multi-level, multidisciplinary and open to different sectors and to globalization - Various structures allowing for a balance of power, culture of accountability, equity and social justice - Means appropriate to the ambitions set.

14] Work instruments designed for scaling - Mechanism for knowledge management and capitalization aiming at a greater coverage and optimal impact including equity and sustainability - Models ensuring a good balance between economic growth and inequality recovery.

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