Rwanda
Positioning Survey for the Dutch water sector

Aidenvironment

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Contents

Glossary

Abbreviation	Explanation
AfDB	African Development Bank
CEPGL	translated: Big Lakes Economic Community
CSO	Civil Society Organizations
DFI	Development Finance International
DRC	Democratic Republic of the Congo
EDPRS	Economic Development and Poverty Reduction Strategy
EKN	Embassy of the Kingdom of the Netherlands
EU	European Union
GoR	Government of Rwanda
IDA	International Development Association
IFI or IFIs	International Financial Institute(s)
IWRM	Integrated Water Resource Management
JADF	Joint Action Development Forum
JMP	Joint Monitoring Program
MASP	Multiple Annual Strategic Plan
MDG or MDGs	Millennium Development Goal(s)
MIGA	Multilateral Investment Guarantee Agency
MINAGRI	Ministry of Agriculture and Animal Resources
MINALOC	Ministry of Local Government
MINICOM	Ministry of Trade and Industry
MININFRA	Ministry of Infrastructure
MINIRENA	Ministry of Natural Resources
NBI	Nile Basin Initiative
NGO or NGOs	Non Governmental Organization(s)
NWP	Netherlands Water Partnership
OBK	Organization for Development of the Kagera River
ODA	Official Development Aid
PMC or PMCs	Product Market Combination(s)
PPP or PPPs	Public Private Partnership(s)
PSD	Private Sector Development
PSO or PSOs	Public Service Organization(s)
REMA	Rwanda Environment Management Authority
RSSP	Rural Sector Support Project
RVO	Rijksdienst voor Ondernemend Nederland
RWF	Rwandan Francs
SME	Small and Medium sized Enterprises
SPAT	Strategic Program for Agricultural Transformation
SWF or FDW	Sustainable Water Facility of Fonds Duurzaam Water
WASAC	Water and Sanitation Company

WASH	Water, Sanitation and Hygiene
WB	World Bank

Executive Summary

Introduction:
The aim of the water positioning survey is to identify opportunities, product market combinations (PMCs), strategies, and approaches for the Dutch water sector in Rwanda. Chapter 1 gives an overview of the current water situation and the water sector, chapter 2 provides insight in the current activities, opportunities, and potential PMCs that are present for the Dutch water sector, and chapter 3 elaborates on the (positioning) strategies to enter and operate on the market.

Demand (pressing needs):
The IMF identifies climatic vulnerability, such as flooding and droughts, as the main internal risk to growth and poverty reduction in Rwanda. Creating opportunities for more climate-resilient agriculture, for example through the construction of extensive irrigation facilities, could lead to more sustainable economic growth, as the agriculture sector employs 90% of the labor force. Losses of fertile soil due to deforestation, especially in upper watersheds, and unplanned land use changes have resulted in serious erosion problems. Lack of adequate budgets, institutional capacities (human resources, insufficient cooperation) and knowledge on IWRM are binding constraints for Rwanda to meet its increasing multiple water demands, while sustaining important economic, environmental and social functions. Although there is a large need, especially in rural areas, for WASH service delivery, budgets from main donors are declining.

Current interest and activities of Dutch organizations:
Dutch organizations active in Rwanda focus mainly on WASH, IWRM and agriculture. Water for food production as well as water for other productive purposes are seen as most interesting.

Potential product market combinations:
Product market combinations are mainly seen in supporting the current reform of the agricultural sector and further development IWRM sub-sector. This can include technical support on the integration of water and soil conservation measures in agricultural practices, water management and land-use plans. Sustainable WASH service delivery (mainly in rural areas), but more importantly capacity strengthening of local CSO's is an area which should be build upon.

Suggestions on positioning strategies for future activities:
Dutch organizations can assess opportunities in Rwanda through the current contacts of the EKN with governmental and private sector players in the agricultural sector. Dutch organizations can assess opportunities for local tenders, supported by the Dutch Embassy through its connections in the Joint Action Development Forum (JADF) which is recognized by Rwanda as the key platform for business integration, as well as opportunities of joint EU programming. Opportunities through instruments like FDOV and G4AW could be assessed, since there is a growing local private sector in the agricultural sector. This report provides several insights into the current strategies of several Dutch organizations already active in Rwanda.

This positioning survey is not a fully fledged marketing survey or report. This survey elaborates on the (current/base line) activities of the Dutch water sector and flags potential opportunities and product market combinations. The survey makes suggestions on possible positioning strategies for Dutch sector players. To make a well balanced decision on entering or operating on these markets we recommend organizations to perform an in-depth due diligence themselves.

1. Country profile

This chapter provides an overview of all relevant basic information on the country in general and the water sector specifically. The chapter has three parts: 1) facts and figures on the country, 2) the (physical) water situation, and 3) the water sector, describing the institutional setting and framework. Part 3 ends mentioning the Dutch Government strategy on cooperation.

1.1 Facts

Government type:	Democratic republic
Political situation:	When Rwanda became independent in 1962, it was a poor underdeveloped country. In the 1990's, the country went through a phase of very dramatic interactions between the two ethnicities of the Hutu's and the Tutsi's, which has resulted in a genocide with many deaths as consequence. Since the year 2000, Paul Kagame of the Rwandan Patriotic Front (RPF) is the ruling president and he is the most powerful actor in the government. Political participation of other parties is highly influenced which results in limited decision making power of possible opponents of the ruling party. A number of parties have been banned officially from participation (e.g. MDR and the Party of Democratic Renewal). The government is embedded onto the village level, a system that works effectively throughout the country. State and religion are separated.
Stability:	Despite its constant economic growth, Rwanda is still highly dependent on foreign development aid in the future. Donors, however, keep a sharp eye on the relationship between Rwanda and DRC with regard to their political and military involvement as well as illegal exploitation of mineral resources in DRC. This can all have effects on the international reputation and future economic development of Rwanda. The

	country has relative low corruption compared to neighboring countries.
Language:	Kinyarwanda, French, English, Swahili
Population:	12,337,138
Population growth:	2.63%
Economic growth (GDP growth in %):	4.7 (2013), 7.2% (2014), 7.4% (2015), 7.4% (2016)
GDP (PPP):	USD 16.37 billion (2013)
GDP (PPP) per capita:	USD 1,500 (2013)
Unemployment rate (in%):	3.4%
Inflation rate + forecast 2020 (in %):	-3.1% (2014), -3.59% (2015), 0.19% (2020)
Foreign direct investments (in % of GDP):	1.5%
ODA in % of GNI:	12.3%
Imports:	USD 1.937 billion (2013)
Import partners:	Kenya (17.3%), Uganda (15.6%), UAE (8.9%), China (7.2%), India (5.6%), Tanzania (5%), Belgium (4.5%), Canada (4.1%)
BTI index on banking system:	8. Rwanda is still heavily dependent on agriculture, of which only one-third of the products reach the national market. The government is making efforts to improve the conditions for a diversified and market based economy. This contains property rights, anti corruption measures as well as attracting private foreign investments. It is possible that access to credit and investments are, however, influenced by the government. Foreign investments are still limited and investors seem to be reserved. In Rwanda, 72% of the population has access to banking. The sector is largely privatized, with 49% owned by foreign investors and 30% by the government.
Doing business index:	48 out of 189
WEF Global competitive index:	64 out of 144

1.2 The water situation

1.2.1 Physical description of the water situation

Rwanda is bordered by Uganda, Tanzania, Burundi, and the Democratic Republic of the Congo. Despite the proximity to the equator, due to the altitude, the climate is tropical temperate. Rwanda has a substantially constant temperature during the year and an average annual rainfall of 1200 mm, ranging from 800 to 2000 mm by region. There are two rainy seasons: one with a peak in April and one with a (lower) peak in November. Despite the fact that rainfall is well distributed throughout the year, there exists spatial and temporal fluctuation. For example, the northern and western provinces experience abundant rainfall, while simultaneously the eastern and southern provinces are heavily affected by extensive dry periods. The whole country is at a fairly high elevation, with a geography dominated by mountains in the west, savannah in the east, and numerous lakes throughout the country. The steep slopes and high mountains are prone to severe erosion. According to recent estimations, half the country is suffering from moderate to severe erosion. In addition, two thirds of cultivated land is prone to acidity and exhaustion, due to the lack of land. Environmental issues are

deforestation from uncontrolled cutting of trees for fuel, overgrazing, soil exhaustion and erosion. These factors will have a deteriorating effect on the quality of water supplies in Rwanda, and decrease accessibility to clean water sources in general.

Most of Rwanda belongs to the headwaters of the Nile Basin; the only exception is the western part that is part of the Lake Kivu water basin (and of the Congo Drainage Basin). The river system is abundant and dense. Rwanda has two trans-boundary lakes: on the northern shore of Lake Kivu the Rwandan/DRC border town of Goma is located; on the southern shore Bukavu. The Rusizi River drains the Lake to the South, into Lake Tanganyika, the world's second largest freshwater lake. The total area of the wetlands in the country is estimated at about 165 000 ha Apart from the Kagera Park, no wetland is protected. However, five wetlands have been described as being of crucial importance for the protection of biodiversity in the context of the Ramsar Convention. Groundwater is a key element for the hydrology of Rwanda. More than 3/4 of river flows originates from groundwater. Rwanda has a special monitoring and investigation program is dedicated to monitor and map groundwater resources. (Source: Rwanda National Water Resources Master Plan, http://exaqt.info/node/3). Data on ground water and aquifers in Rwanda is incomplete. However information available estimates that the discharge for the available resource is 66m3/second and there are about 22,000 recognized sources which have a discharge of 9.0 m3/sec (NBI 2005, Kabalisa 2006).[1]

With the exception of the large alluvial plains and of the volcanic terrains, most aquifers are of local extent and do not extend over large areas. The greatest need for groundwater exploitation is in the eastern part of the country where water is needed for cattle and human consumption. (Source: Rwanda Irrigation Master Plan)

1.2.2 Climate and climate change

Analysis of rainfall trends show that rainy seasons are tending to become shorter with higher intensity. This tendency has led to decreases in agricultural production and events such as droughts in dry areas; and floods or landslides in areas experiencing heavy rains. Heavy rains have been observed especially in the northern and the western province. These heavy rains combined with deforestation and poor agricultural practices have resulted in soil erosion, rock falls, landslides and floods which destroy crops, houses and other infrastructure (roads, bridges and schools) as well as loss of human and animal lives. Prolonged droughts are frequent in the east and southeast of the country. Droughts are often responsible for famine, food shortages, a reduction in plant and animal species and displacement of people in search of food and pasture. At times this has led to conflicts over different land uses such as with protected areas.
(Source: http://www.rema.gov.rw/soe/chap9.php)

1.2.3 Pressures on water sources

Total renewable water resources:	9,5 cu km
Fresh water withdrawal:	5,56 cu km/yr

Rwanda's wealth of natural water resources is under increasing pressure from a combined high population growth (2.6%), high population density (over 530 people/km2) and fast economic development resulting in changes in land-use, infrastructural and urban development, water abstraction and mining. Effects of this pressure are exacerbated by the fragility of the natural systems, since the majority of land has steep slopes with altitudes ranging from 900 to 4,700m and a relatively high rainfall of 1,250mm on average. Trends show that Rwanda's water demand through

[1] VIA Water Rwanda report, Aquastat and http://www.rema.gov.rw/soe/chap7.php

2020 will increase by up to 10 times. Main demand drivers are agriculture, currently accounting for 70% of water demand in Rwanda and responsible for up to 80% of the increase in demand, population growth and increasing living standards water supply; consumption patterns and industry / power generation. Despite these strongly increasing demands, water stocks and flows in Rwanda are not well-monitored, let alone known. Systematic information on, and regulation of water use, effluents and wastewater discharge are hardly known.[2]

1.2.4 Irrigation

Irrigated land: 96,25 sq km in relation to total area: 26,338 sq km

In 2003, the government of Rwanda embarked on swamp reclamation under the Rural Sector Support Project (RSSP, World Bank/IDA) with major focus on large-scale rice production. In 2004, The Marshland Master Plan was initiated. Marshes were drained and water tanks built to store water for irrigation, especially for rice production. By the end of 2020, 40 000 ha of swampland will have been reclaimed. However, full exploitation of the swamps in their natural form is difficult because they are often completely flooded and the expense of installing drainage systems is unaffordable. The rehabilitation and construction of irrigation infrastructure in Rwanda is of paramount importance. The most commonly used method is flood irrigation. Where irrigation has been introduced, doubling of yields is commonly achieved. Additional benefits include the overall modernization of Irrigation Master Plan for Rwanda agricultural production through the introduction of quality inputs such as hybrid seed, mechanization, chemicals, fertilizers, extension systems and knowledge support.[3]

1.2.5 Flooding of river systems

Heavy rainfall, in combination with natural factors like topography, is having great impact in some areas. Floods and landslides are the main disasters in the high altitude regions mainly during the rainy seasons. Indeed in light of Rwanda's topography, the potential for flash flooding in many parts of the country is ever present. The results of human activities, poor farming practices, deforestation and environmental degradation have aggravated the impacts of floods on people, agriculture and the physical infrastructure. The 'flood and landslide risk zones' derived from the analysis of frequencies of daily rainfall exceeding 50 mm, are located in the southern, northern and western province (MINITERE 2006). These zones have been largely deforested, and now experience heavy rains which have caused extensive flooding and landslides, rock falls, soil erosion, destruction of crops, houses and infrastructure roads, bridges and schools) as well as losses of human and animal lives. Cases of floods and landslides are often associated with outbreaks of water-borne and water-related diseases like malaria, diarrhea, cholera and viral infections mainly through the contamination of wells and ground water. [4]

1.2.6 Coastal zones and maritime areas

Not applicable

1.3 The water sector

1.3.1 Public sector

Water activities by the Government of Rwanda are covered by a number of ministries and departments:

[2] Analysis and intervention logic for water – IWRM programme

[3] Rwanda Irrigation Master Plan

[4] http://www.rema.gov.rw/soe/chap9.php

- The Ministry of Natural Resources (MINIRENA) hosts the department dealing with IWRM (RNRA-IWRM). MINIRENA hosts two semi- autonomous institutions: Rwanda Natural Resources Authority (RNRA) and Rwanda Environment Management Authority (REMA); in charge of environmental monitoring including Environmental Impact Assessment compliancy.
- the Ministry of Agriculture and Animal Resources (MINAGRI), among others responsible for agriculture, irrigation, agro-industrial use, water demand, livestock and fisheries;
- the Ministry of Infrastructure (MININFRA), among others responsible for urban and rural potable water supply, hydro / geothermal power development, navigation on waterways and meteorology) which hosts Water and Sanitation Company WASAC;
- the Ministry of Local Government (MINALOC), among others responsible for urban and rural potable water supply development and supervision of District/Sector Committees) and;
- the Ministry of Trade and Industry (MINICOM), amongst others responsible for industry and tourism);
- The Ministry in Charge of Cabinet Affairs is, among others, responsible for supervision of Inter-ministerial Committees;
- The Ministry of Finance and Economic Planning allocates budget to water sector development. Rwanda Development Board, reporting directly to the President's Office, issues Environmental Impact Assessments.[5]

The National Water Commission creates water resource development plans and programs to support the Ministry's policies. Rural water supply, management of water resources and sanitation are the responsibilities of the Ministry of Natural Resources. The Ministry of Natural Resources also helps with national water policy, represents the government in intergovernmental organizations and promotes international and regional cooperation on water resources issues. At district level, basin committees are responsible for preparing district level water management plans. The district basin committees have the power to dele-gate authority for management of water resources and water infrastructure to local water user associations. The use of water for agricultural purposes is governed by the Ministry of Agriculture and Animal Resources. Rwanda is currently delegating all water supply and sanitation service responsibilities to communities and districts, with the exception of planning, regulation, hygiene promotion, monitoring, and over-sight. A new 'National Water Agency' should catalyze the decentralization process through increased technical assistance, thereby strengthening local level efforts and ensure self-sufficiency. To complement these plans, the National Investment Strategy aims to promote increased private sector participation to attract investment and operate and maintain infrastructure. (Source: source VIA Water Rwanda report)

As mentioned in the Rwanda Irrigation Master Plan, Rwanda participates in various initiatives aimed at regional / trans-boundary development of water:

- The Nile Basin Initiative (NBI).
- The Organization for Development of the Kagera River (OBK).
- Big Lakes Economic Community (CEPGL).

1.3.2 Legislation

The National Water Resources Management Policy is the latest development in Government's consistent and continuous efforts to strengthen the water resources management sub-sector. It replaces the 2004 policy and has been necessitated by the ill-alignment between the 2004 policy and Water Law No. 62/2008, which embraced many modern and cutting-edge principles of sustainable

[5] Analysis and intervention logic for water – IWRM programme

water resources. Additionally, the government has been introducing reforms in the water sector that have significantly changed the context for water resources management and rendered the 2004 policy out of date. With the promulgation of a law establishing the RNRA with the mandate to lead the management of natural resources across sectors, there is potential to achieve a coordinated approach to water resources management, in line with the Integrated Water Resources Management concept. In order to address the capacity limitations being faced by the sector, it will require concerted efforts in resource mobilization, human resource development and institutional capacity building.

There is a law defined on regulating the use, conservation, protection and management of water resources (Law No 62/2008 of 10/09/2008). This law defines the rules to the use, conservation, protection and management of water resources. It determines provisions for public water domain, the institutions in charge of water domain, planning in water domain and regime of water use, sanitation of water used, particular provisions for domestic and animals' purposes, easement, public works related to water and sanitation, international cooperation on shared waters as well as penal provisions. According to this law, water is a good belonging to state public domain. Its use constitutes a recognized right in force to all in the scope of laws and regulation in use. Also, protecting and using water resources in Rwanda in the natural balance respect are of general interest and constitutes an imperative duty for all , notably the state the local communities, private sector, civil society and citizens.[6]

The overall objective of the National Water and Sanitation Policy is to "ensure sustainable and affordable access to safe water supply, sanitation and waste management services for all Rwandans, as a contribution to poverty reduction, public health, economic development and environmental protection". Currently, the government bodies, international development partners and non-government stakeholders cooperate through a Sector Working Group (SWG) framework, where they meet quarterly to discuss access to water and sanitation progress against set targets and share experiences. The establishment of the WASAC in August 2015, with the mandate to implement water, energy and sanitation infrastructure, is a key element of the Government's approach to ensure that the set of national targets on water and sanitation will be met by 2020.

1.3.3 Public sector current spending and investment plans

Below an overview is given of public sector current spending and investment plans, related to water.

Public spending and plans	Theme	Amounts (in Euro) per fiscal year		
		2014 / 2015	2015/2016	2016/2017
Economic Transformation	Environment and Natural Resources	24,365,800	5,215,030	9,102,570
	Agriculture	18,818,400	16,448,400	22,653,300
	Water and Sanitation	1,372,360	1,567,650	1,547,430
	Energy	181,369,000	247,455,000	237,159,000
Rural Development	Environment and Natural Resources	20,699,900	11,808,200	9,129,520
	Agriculture	58,555,600	68,289,900	74,415,100
	Water and Sanitation	7,321,610	6,642,790	7,299,000
	Energy	2,936,360	3,951,880	3,256,040
Productivity and Youth	Environment and Natural	237,935	214,306	724,833

[6] http://www.minirena.gov.rw/index.php?id=128

Employment	Resources			
	Agriculture	357,816	860,896	807,860

Source: http://www.minecofin.gov.rw/fileadmin/General/2014-17-BFP.pdf

1.3.4 Private sector

Rwanda has steadily reformed its commercial laws and institutions since 2001 with support from the World Bank Group. Rwanda was named the top reformer in Doing Business 2010, having jumped 76 places from 143 to 67 in the annual ranking of 183 countries, the biggest improvement ever by any country. As a result of the government's commitment to reform, it is now easier, faster and less expensive to do business in Rwanda. A Doing Business unit has been set up within the Rwanda Development Board (RDB) and is effectively leading the preparation and implementation of the investment climate reform agenda through enhanced public-private dialogue.[7]

Next to this, there is a Private Sector Cluster which is jointly coordinated by the USAID and the Ministry of Commerce, Industry, Investments Promotion, Tourism and Cooperatives.[8]

1.3.5 NGOs and knowledge institutes

Rwanda has benefited from tremendous economic growth, implementing major infrastructure development projects. However, civil society in Rwanda remains in an embryonic state, due to a variety of practical constraints. The overwhelming majority of Rwandans suffer from extreme poverty; about two-thirds of the population lives on less than $1 per day. This level of poverty limits engagement in activities not directly related to survival. The lack of education also limits the ability of people to access various sources of information and limits their capacity to interact with formal institutions of the state. The vast majority of Rwandan CSOs are grassroots associations focused on issues of livelihood, with little capacity to engage on public policy issues in a more strategic way. Likewise, it has been difficult for urban-based advocacy CSOs to make connections to grass-root CSOs.[9]

As mentioned in Rwanda Irrigation Master Plan, international NGOs involved in the country's programs on irrigation include:

- SNV-Netherlands, which supports local governance and participatory democracy,
- German Development Service, which provides M&E,
- CARE International, which promotes HIV/AIDS mitigation and, in parallel with Duterimbere, innovative community finance,
- The Clinton-Hunter Development Initiative, which promotes international market integration.

1.3.6 Pressing needs

Climate-resilient agricultural reform

The IMF (2013) identifies climatic vulnerability, such as flooding and droughts, as the main internal risk to growth and poverty reduction in Rwanda. Creating opportunities for more climate-resilient agriculture, for example through the construction of extensive irrigation facilities, could lead to more sustainable economic growth.

[7] http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,contentMDK:23276948~menuPK:141311~pagePK:34370~piPK:34424~theSitePK:4607,00.html

[8] http://www.devpartners.gov.rw/index.php?option=com_content&task=view&id=23

[9] http://www.icnl.org/research/monitor/rwanda.html)

Reform of the agricultural sector and building technical capacity on irrigation
The agriculture sector employs 90% of the labor force, but food and nutrition needs of the population cannot be met (MINECOFIN 2002). Agriculture, despite its high potential, does not contribute substantial revenue to the economy. This situation results from both low yields and declining prices in global markets. According to the Rwanda 2020 Vision, weaknesses in the agriculture sector stem from many factors, some of which are long-standing, amongst others: production factors such as manpower, elementary tools and water are assigned low value. The introduction of irrigation, together with associated agricultural operations, can mitigate these shortcomings. However, no comprehensive irrigation development policy or strategy has yet been developed. The current human resource capacity of irrigation stakeholders in Rwanda is characterized by low technical capacity. Irrigation personnel are present, but the level of training and technical capacity on irrigation principles and applications are insufficient.[10]

Reducing soil erosion and quick runoff and enhancing water quality in major lakes and rivers
Deforestation, especially in upper watersheds, and unplanned land use have resulted in serious erosion problems causing degradation million ha. According to recent estimations, half the country is suffering from moderate to severe erosion. This has a significant impact on water flows downstream and the deterioration of the water quality of rivers, lakes and marshes due to sedimentation and pollution. Due to high nutrient concentrations, water hyacinth is forming a plague in some lakes and rivers, including Lake Victoria, and Cyohoha Rwero, and Nyabarongo and Kagera Rivers.[11]

Challenges in achieving WASH targets
The main challenges, as identified in a case study commissioned by WaterAid (produced by Development Finance International (DFI)), in WASH are financial resources, high production and operation costs and the absence of regulation and coordination.

Development of Rwanda's IWRM sub-sector
Lack of adequate budgets, institutional deficiencies (human resources, insufficient cooperation) and awareness on IWRM are binding constraints for Rwanda to meet its increasing multiple water demands in the medium term until 2020-2040, while sustaining important economic, environmental and social functions. Budget for IWRM is partially solved through the water permit system, which offers an opportunity to address the lack of adequate budgets. The constraint of institutional deficiencies consists of a complex and incomplete IWRM governance framework, resulting in inadequate coordination and alignment, and weak organizational capacities.[12]

Capacity building and engagement of CSOs at national level in policy influencing
The lack of education limits the ability of people to access various sources of information and limits their capacity to interact with formal institutions of the state. The vast majority of Rwandan CSOs are grassroots associations focused on issues of livelihood, with little capacity to engage on public policy issues in a more strategic way. Likewise, it has been difficult for urban-based advocacy CSOs to make connections to grass-root CSOs.

Developing a hydrological database
The Government is making an effort to establish modern, computerized hydrological databases and a national monitoring system. The present assessment is based on data collected by various foreign

[10] Rwanda Irrigation Master Plan

[11] Aquastat

[12] Analysis and intervention logic for water – IWRM programme

consultants and summarized by MINIRENA. Information regarding the quantity and quality of water resources is inadequate, and most of the available data are often unreliable. Resources for collecting and processing the basic data on hydrology and hydrogeology are also insufficient.

1.3.7 Dutch cooperation and priorities

In line with the Dutch development priorities, Rwanda's Vision 2020 and the Government of Rwanda's Division of Labor, the three priority areas in the Rwanda Multi-Annual Strategic Plan for the period 2014-2017 have been defined:

- Security and Legal Order,
- Food Security and
- Water Resources Management.

The outcomes are ambitious, but so is Rwanda's Vision 2020 and the new poverty reduction strategy EDPRS-II). The bilateral program will focus on key interventions contributing to this economic transformation while at the same time ensuring enhanced food security, access to justice for all, more democratic space and managing water resources in a sustainable way. Investing in the three focus areas contributes to the overall stability in the region. There are two outcomes defined in the MASP that are focusing on water:

Outcome 2: Increased capacity of government and private sector representatives in the field of food security

- The Embassy reinforces the Agricultural Chamber of the Private Sector Federation so that it can strengthen the link with its members and raise agribusiness related issues with the Government. The Embassy will also continue to play a leading role in the Private Sector Development sector working group and the local economic development sector working group.
- The development of the agribusiness sector in general and the capacity of SMEs in particular will be strengthened through the Agri-sector Development Facility and other business facilitation instruments.
- Government agencies will be strengthened so that they can improve their services to companies and contribute to food security. For instance, our agricultural experts support the Ministry of Agriculture in the fields of inspection and certification services, legislation for plant breeders' rights and phytosanitary matters.
- Cooperatives and their service providers will be strengthened.

Outcome 3: Increased access to healthy food for very young children
Chronic malnutrition will be reduced by 5% per year through a program coordinated by UNICEF including NGOs, the government and knowledge institutes. A unique feature of the program is that knowledge institutions (Kigali Health Institute supported by Wageningen University) feed research into the program, while internships within the implementing organizations help students from Kigali Health Institute to become nutritionists with practical experience. The program takes place at district level, reinforcing and implementing the district plans to eliminate malnutrition.

Opportunities
The Embassy will explore the following options for new activities under the outputs as described above:

- The way the chronic malnutrition program has been set up is quite innovative and the Embassy will try out this concept for 3.5 years. This timeframe is however too short to eliminate chronic malnutrition and follow-up activities will need to be looked into.
- Deepen the focus on youth employment and look into possibilities to further integrate Technical and Vocational Training in the food security program. Possibilities of twinning

Rwandan universities to their Dutch and regional counterparts through the Nuffic/NICHE program, thereby looking especially at Dutch knowledge of applied sciences will be explored.

- Exploring opportunities in the agricultural sector on which the Netherlands have added value and which are complementary to the activities of other donors.
- Closely look into the sustainability of the land program, amongst other things the maintenance of the registration system.
- Increase the sustainability of our interventions at the local level. This will be done for instance by exploring linkages between Dutch programs and local tax revenue collection.
- Consider further support to the Joint Action Development Forum (JADF), which is recognized by Rwanda as the key platform for business integration at the local level.
- Further explore opportunities of joint EU programming in the field of nutrition stunting, (diversification of agriculture), agriculture (for instance horticulture value chain) and local economic development (in the field of agriculture).

2. Chances and opportunities

This chapter presents the results of the web survey among Dutch water sector players, completed by the main observations derived from previous (existing) market studies and interviews with water professionals and strategic actors within the Dutch water sector (please refer to Appendix 1 providing an overview of the method of research). The first section describes the current situation. The second section describes the most important trends, linking the current situation with future opportunities, which is the topic of the third section. This chapter ends by identifying promising product market combinations (PMCs).

2.1 Current situation

2.1.1 Progress on MDGs

MDG 7c:

- Not on track
- Drinking Water: 65% total improved
- Sanitation: 55% total improved

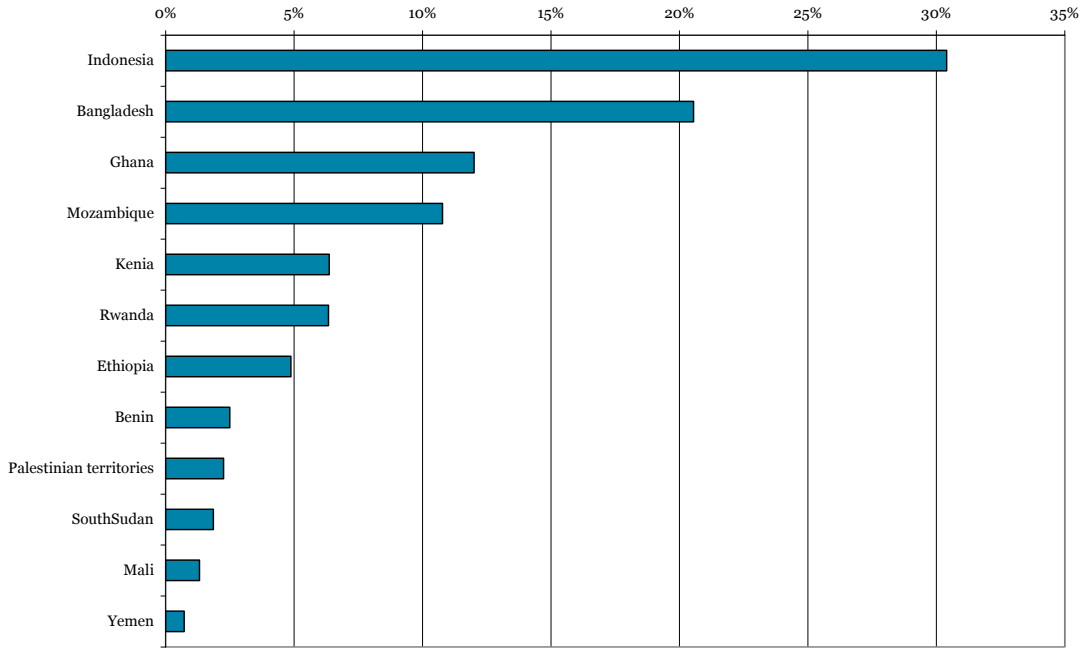
The Ministry of Finance has allocated top priority for development partner funding to other sectors, leaving the water and sanitation sector with a smaller share of the national budget. One example is the World Bank, which has increased its focus on the energy sector. Other development partners have withdrawn from the water and sanitation sector altogether. According to the Government's own estimates there is a funding gap for water supply of over RWF 300 billion and a funding gap for sanitation of RWF 40 billion. (Source: Case study commissioned by WaterAid, produced by Development Finance International (DFI)).

2.1.2 Dutch sector involvement

The share of total Dutch exports in the water sector to the 12 OS-countries is estimated at 25% of total Dutch exports in this sector, equaling about € 60 million[13]. Figure 1 shows the breakdown of these exports over the various OS-countries. The share of Rwanda is 6% of this total.

[13] This estimation is based on the sample results of the web survey. Starting from this value relative export shares of the various regions and countries have been determined for the sample. Since the sample may not represent the whole water sector in an optimal way, the research cannot draw any hard or general conclusions. The actual value of export will be higher, but this value can only be obtained with sample results once the whole population is known. Getting to know the population is complex and cannot be realized in the context of this study. Another complicating factor lies in the fact that large projects (especially those in water construction) may influence export figures drastically and lead to large fluctuations over time. For the sample of the web survey no such 'disturbing' projects have been found. The method used in this survey is in line with the method used for WEX 2014, which are also based on sample results.

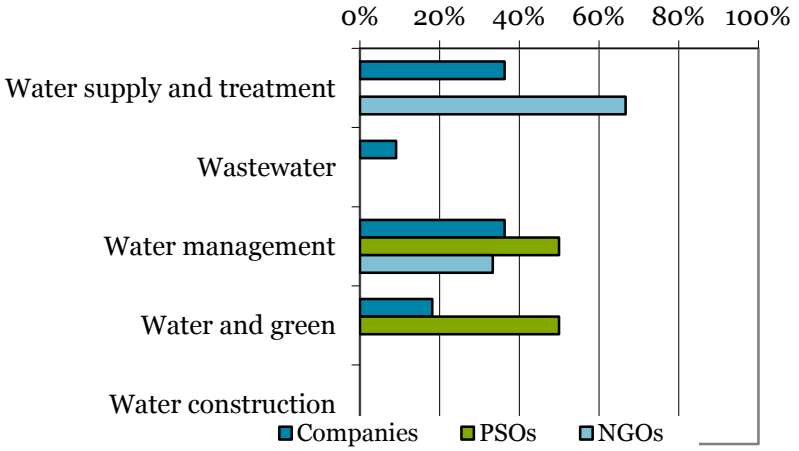
Figure 1 Breakdown of Dutch exports in the water sector to the 12 OS-countries, in % of turnover (N = 60)



Source: Web survey Panteia, 2014/2015.

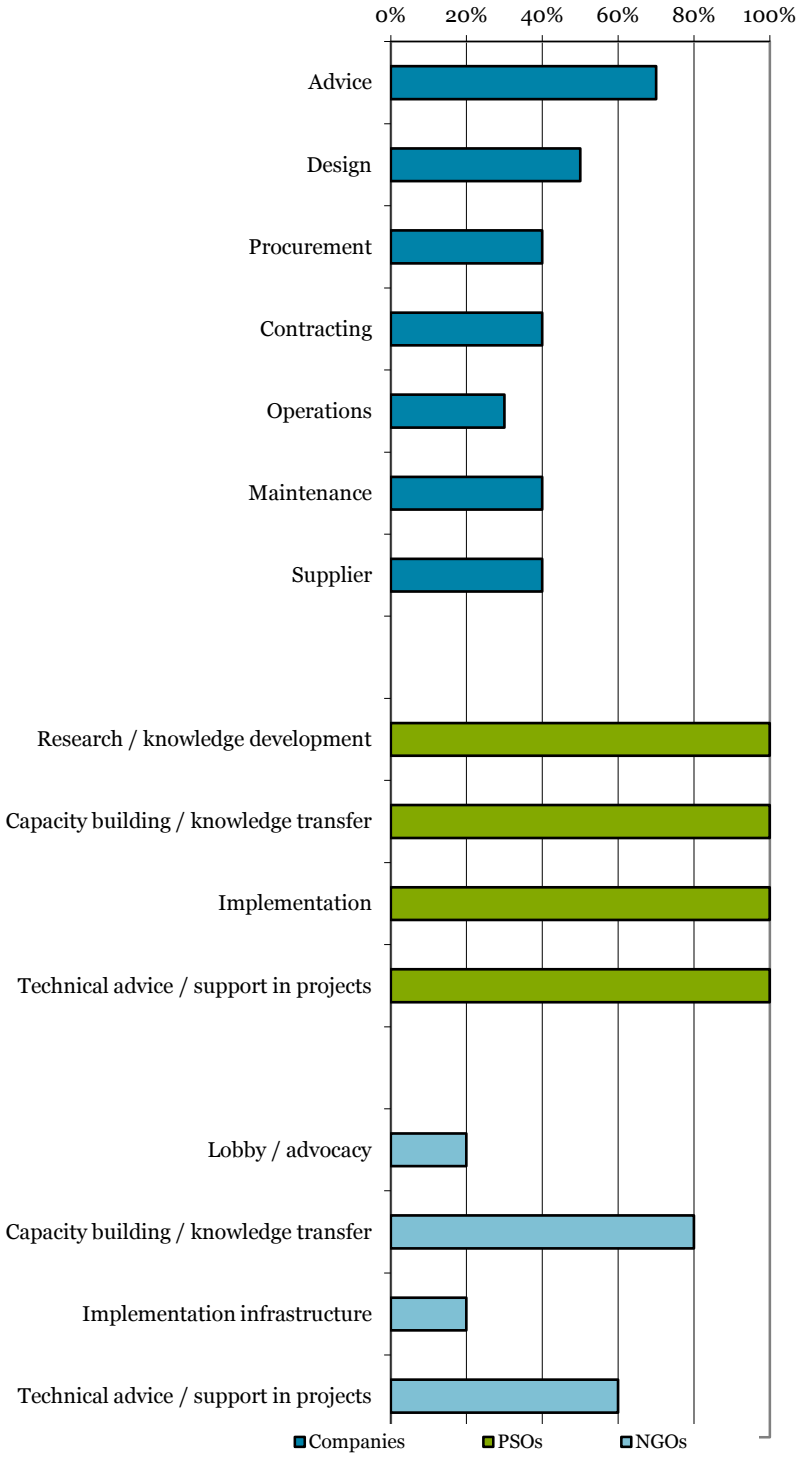
Current activities and activity areas in various subsectors in Rwanda, resulting from the web-survey, are given in figure 2 and 3.

Figure 2 Current activities of Dutch companies (N=11), PSOs (N=2), and NGOs (N=3) in the various subsectors of Rwanda, in % of total observations



Source: Web survey Panteia, 2014/2015

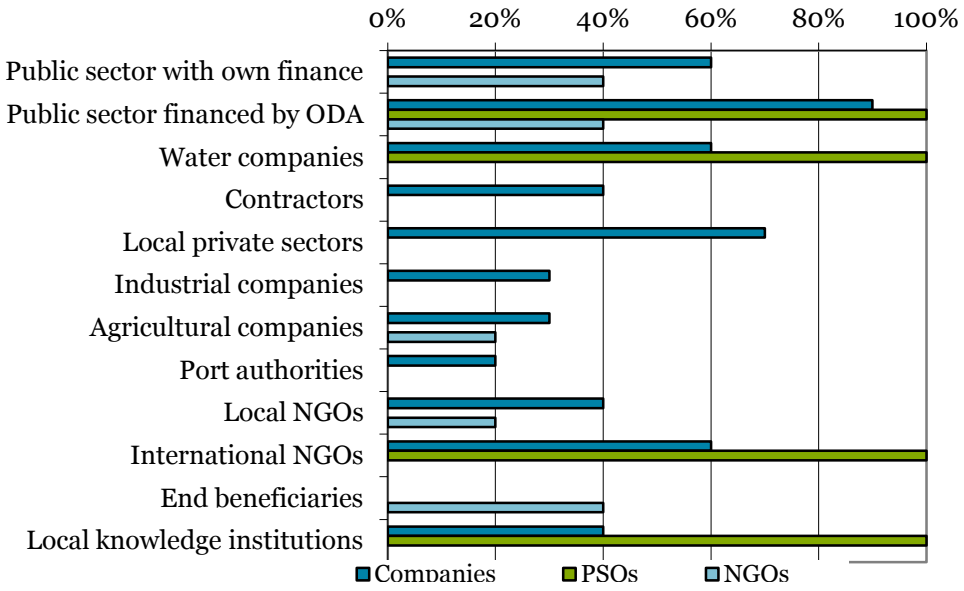
Figure 3 Current activity areas of Dutch companies (N=10), PSOs (N=1), and NGOs (N=5) in Rwanda, in % of respondents (multiple answers possible)



Source: Web survey Panteia, 2014/2015

Client groups of Dutch parties in Rwanda

Figure 4 Current client groups of Dutch companies (N=10), PSOs (N=1), and NGOs (N=5) in Rwanda, in % of respondents (multiple answers possible)



Source: Web survey Panteia, 2014/2015

2.1.3 Dutch support programs

There is only one project on water resulting from the "Resultaat Fiche" of the Dutch embassy. This project is finalized.

	Name of project	Theme	Actual spending 2013	Implemented by	Type
25239	Technical assistance to the water department	Water management	210,000	CDP	Research institute and companies

Source: resultaat fiche EKN

Other Dutch support programs amount up to over 19 million euro for the period 2011 – 2018. The main support programs are NUFFIC, FDOV, PSI and FDW. Only FDW focuses directly on water and it is not known if the other support programs have a linkage with water.

Program	Nr of projects	Total budget	Period	Most relevant sectors
FDOV	2	€5.249.205,00	01-07-2013 / 30-06-2018	Agriculture & Food
FDW	1	€ 2.611.783,00	01-04-2012 / 31-03-2017	Water
PSI	7	€ 3.947.598,00	01-07-2011 / 28-02-2017	Agriculture & Food/Chemistry
PUM	30	€ 150.000,00	01-01-2014 / 31-12-2014	Agriculture
Agri Pro	?	€ 223.000,00	01-01-2014 / 31-12-2014	Agriculture

Focus				
CBI	2	€ 283.972,00	01-01-2008 / 31-12-2015	Market intelligence
NUFFIC	4	€ 6.782.015,00	01-02-2011 / 31-12-2016	Agriculture, Environment, Private sector development
FNV	14	€ 174.980,00	01-01-2013 / 31-12-2016	Cross sectorial
Edukans	1	€ 101.133,00	01-01-2014 / ?	Health
Total	**61**	**€ 19.523.686,00**		

Source: DDE

2.2 Trends

2.2.1 Pressing needs

A pressing need can be seen as a local need or demand related to water in the specific country. Below the most pressing needs resulting from desk-research and consultations with experts are summarized, which are described in more detail in paragraph 1.3.6.. This list is not exhaustive and there is now priority given in the sequence of these pressing needs.

- Climate-resilient agricultural reform
- Reform of the agricultural sector and building technical capacity on irrigation
- Reducing soil erosion and quick runoff and enhancing water quality in major lakes and rivers
- Challenges in achieving WASH targets
- Development of Rwanda's IWRM sub-sector
- Capacity building and engagement of CSOs at national level in policy influencing
- Developing a hydrological database

2.2.2 Government plans and agenda

The governmental agenda is focusing on economic transformation, mainly in the Energy and Infrastructure sector, and on boosting private sector development. Below the main governmental plans are summarized.

- The government has developed a six-tier strategy to fight poverty. The strategy, resulting from a series of consultations on development challenges, is an integral part of Rwanda's Vision 2020, which spells out a medium-term development strategy for the country. As a first phase of this strategy, the government prepared a Poverty Reduction Strategy Paper (PRSP) which focuses on six broad priority areas: Rural development and agricultural transformation, Human development, Economic infrastructure, Good governance, Private sector development, Institutional capacity building. The government recently completed and adopted its second PRSP, now called the Economic Development and Poverty Reduction Strategy (EDPRS2). In order to achieve the government's long-term development goals, the EDPRS has a strong focus on growth through improved economic infrastructure and greater agricultural productivity.(Source: Rwanda Irrigation Master Plan)
- The main objective of the Economic Transformation thematic area is to propose an ambitious, prioritized and coherent cross-sectoral strategy to sustain rapid growth and facilitate transformation to meet Vision 2020 revised targets. In terms of EDPRS 2, Private

Sector Development (PSD), the Energy and Infrastructure sector form the backbone for economic transformation.

- The Rwandan Government has committed to reaching ambitious targets in water supply and sanitation, with the vision to attain 100% service coverage by 2020. The national policy sets out the sector's contribution to achieving Rwanda's Vision 2020, the MDGs and Economic Development and Poverty Reduction Strategy (EDPRS) targets. To accelerate the move towards the national 2020 targets of 100% access to water supply and sanitation country wide, Rwanda adopted a 7-year program to achieve 100% access to improved water supply and sanitation facilities by 2017. (Source: Case study commissioned by WaterAid, produced by Development Finance International (DFI)). Rwanda is currently delegating all water supply and sanitation service responsibilities to communities and districts, with the exception of planning, regulation, hygiene promotion, monitoring, and over-sight. A new 'National Water Agency' should catalyze the decentralization process through increased technical assistance, thereby strengthening local level efforts and ensure self-sufficiency. To complement these plans, the National Investment Strategy aims to promote increased private sector participation to attract investment and operate and maintain infrastructure.
- The main objective of Rwanda's agriculture policy is to intensify and transform subsistence agriculture into market-oriented agriculture. The policy promotes small-scale irrigation infrastructure development in selected marshlands while preventing environmental degradation. Rice cultivation is prioritized for import substitution. (source: Rwanda Irrigation Master Plan). The Strategic Program for Agricultural Transformation (SPAT)—Programme Stratégique pour la Transformation de l'Agriculture (PSTA) in French—will serve as the operational framework for the implementation of the EDPRS agricultural investment program. Its strategic objective is to achieve the targets defined in the larger planning frameworks of the EDPRS and Vision 2020.
- For Rwanda's Irrigation Master Plan, the focus is on the intensification and development of sustainable production systems. The program aims to achieve sustainable and intensified production systems in the cropping and animal resources sectors. The activities to be undertaken and the targets to be realized to achieve the above development objectives are organized into six sub-programs: sustainable soil conservation, marshland development, irrigation development, support for the supply and utilization of agricultural inputs, improvement and diversification of animal production, improvement of food access and vulnerability management.[14]

2.2.3 Agenda of donors and funders

- The four main donors are the World Bank, AfDB, EU and DFID, who contribute about 72.2 percent of budgetary grants for the budget. The main donors are shown in the table below.
- The Ministry of Finance has allocated top priority for development partner funding to other sectors, leaving the water and sanitation sector with a smaller share of the national budget. One example is the World Bank, which has increased its focus on the energy sector. Other development partners have withdrawn from the water and sanitation sector altogether.
- The World Bank Group (WBG) Country Partnership Strategy for 2014-2018 (CPS) is framed around three thematic areas; accelerating economic growth that is private-sector driven and job-creating, improving the productivity and incomes of the poor through rural development and social protection, and supporting accountable governance through public-financial management and decentralization. The CPS is jointly prepared by the International Development Association (IDA), the International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA). It builds on the government's second

[14] Rwanda Irrigation Master Plan

Economic Development and Poverty Reduction Strategy (EDPRS2) and on its proposed Division of Labor (DoL) among Development Partners (DPs). The portfolio currently comprises nine local and six regional active projects with net commitment of $681 million. Approximate shares are agriculture (34%), energy (27%), capacity building /skills development (6%), transport (14%) and social protection (18%)

- The Dutch Embassy is considering to further support to the Joint Action Development Forum (JADF), which is recognized by Rwanda as the key platform for business integration at the local level and to explore opportunities of joint EU programming in the field of nutrition stunting, diversification of agriculture, horticulture value chain and local economic development. This does not only relate to water

Main donors and ODA budgets (in million euros)				
Development partner	**2013 - 2014**	**2014 - 2015**	**2015 - 2016**	**2016 – 2017**
World Bank (incl. demobilization)	60.2	105.4	105.4	101.7
African Development Bank	23.1	20.3	20.3	20.3
DfiD (incl. FTI)	93.1	104.7	101.7	101.7
European Union (EU)	63.5	61.7	58.4	58.4
Germany	14.2	5.5	4.4	0
Netherlands	2.5	9.3	9.3	0
Belgium	10.7	9.9	9.9	9.9
Global Fund (SBS)		87.2	85.8	78.1
Total	**267.3**	**404.1**	**395.3**	**370.1**

Source: MINECOFIN, Rwanda

2.2.4 Macro developments in agriculture, industry, etc

Real GDP growth slowed in 2013 in part due to poor performance in agriculture and the lagged effects of the suspension of budget support disbursements in 2012. Estimates indicate that industry and services were the primary drivers of growth in 2013, while growth in agriculture, though modest, was stronger compared to 2012. The key growth drivers in the short and medium term include recovery in the services sector, increased productivity in the agriculture sector and the sustained implementation of the public investment program. Structural reforms to improve productive capacities, particularly in agriculture, are expected to contribute to a reduction in food prices and ensure that headline inflation remains below the central bank's medium-term inflation target of 5.0%. Current account deficits are expected to persist in the short to medium term as strong demand for intermediate, capital and energy products continues to outstrip the expanding but still narrow export base. The share of export earnings to imports increased to 32.0% in 2013 compared to 27.0% in 2012. (Source: African Economic Outlook (AEO) 2014)

The contribution of the private sector to the economy and poverty alleviation remains limited—only about 400 enterprises exist in Rwanda, of which half have fewer than 50 employees. Private sector development remains hampered mainly by the perception of high political risks and the high cost of infrastructure services (to a lesser extent) by the weakness of the financial sector.

The outlook for the Rwandan economy depends on the maintenance of peace and stability in the Great Lakes region as well as Rwanda's reform program. In the absence of peace in the region or a significant reform program, growth, even under positive conditions, would remain below 6% per annum (the minimum needed to reach the 1990 poverty level by 2020). If the situation were to deteriorate, growth could be reduced to 2–3% percent (the current level of demographic growth). Regional cooperation, especially in the infrastructure sectors, is therefore prerequisite to economic growth. Rwanda is making good progress. The country joined both the Common Market of Eastern and Southern Africa (COMESA) and the East African Community in 2007.

2.3 Opportunities

2.3.1 Past and current opportunities

The table below gives some examples of projects with Dutch involvement are presented including financial characteristics, resulting from the web survey. A more extensive list of Dutch water related projects can be found in Appendix IV.

Projects mentioned by companies and institutions	Dutch finance or mix?	Financial sources
Lake Victoria Water and Sanitation Program	No Dutch finance	AfDB
PPP Sugar cane	Mix of Dutch and foreign finance	Food Security/ Private
Restructuring EWSA to WASAC and REG	No Dutch finance	IFC
Projects mentioned by NGOs	**Dutch finance or mix?**	**Financial sources**
SEA en IWRM	Full Dutch finance	DGIS
Support to APEIER	Full Dutch finance	DGIS
EIA support to Rwanda Development Board	Full Dutch finance	DGIS

Source: Web survey Panteia, 2014/2015

2.3.2 Future opportunities

- The key governmental projects and programs of the economic transformation thematic area that have been allocated resources in the 2014/15 financial year include those in Agriculture, Energy, Transport, ICT, Urbanization, Private Sector Development and Environment and natural resources, amongst which Geothermal Resource Development, Lake Kivu Monitoring and Management Project and Immediate Action Irrigation Project (GFI). Other projects and programs in the agriculture and water management sector that have been allocated resources in the 2014/15 financial year are: Gishwati Land and Water Management (GLWM), Support To Strategic Plan For Agriculture Transformation (PSTA III), RSSP : Rural Sector Support Project (Phase II), PAIRB: Projet D'appui Aux Infrastructures Rurales De La Region Naturelle De Bugesera, KWAMP: Kirehe Watershed Management Project, National Rural Water Supply and Sanitation Program (PNEAR) , Rural Water Supply and Sanitation II (PRSC-PEAMER), Lake Victoria Water Supply and Sanitation Project Phase II (LVWATSAN II) and Water Supply in Butare 2eme Phase. (Source: Ministry of Finance, http://www.minecofin.gov.rw/fileadmin/General/2014-17-BFP.pdf).
  Specific thematic programs:

- Collecte et Utilisation des Eaux de Pluie - CUEP is a rainwater harvesting pilot project introduced in Eastern and Southern Provinces of Rwanda (i.e. Bugesera, Rwamagana, Kayonza, Gatsibo, Kamonyi and Nyaruguru Districts) by MINELA with support of African Water Facility (AWF/ADB) and the Food and Agricultural Organization (FAO) development partners. The main objective of the project was to improve the living conditions of the targeted groups through the protection and sustainable management of the natural resources (soil and water).
- *Water Hyacinth Control Project.* Goal: To improve the quality and the quantity of water resources for socio-economic development of the country. Objectives: To remove water hyacinth from water bodies and reuse it by local communities in order to improve their livelihood. Current Activities: Manual removal of water hyacinth in lakes and rivers. Reuse of water hyacinth as organic fertilizer and for making hand crafts
- *Rehabilitation of degraded ecosystem.* Degraded Watersheds Rehabilitation Project Goal : To improve the quality and the quantity of water resources for socio-economic development of the country. Objectives: To protect the river banks by creating a buffer zone of 10 m from the rivers. (source: Rwanda National Resources Authority, http://rnra.rw/index.php?id=28)

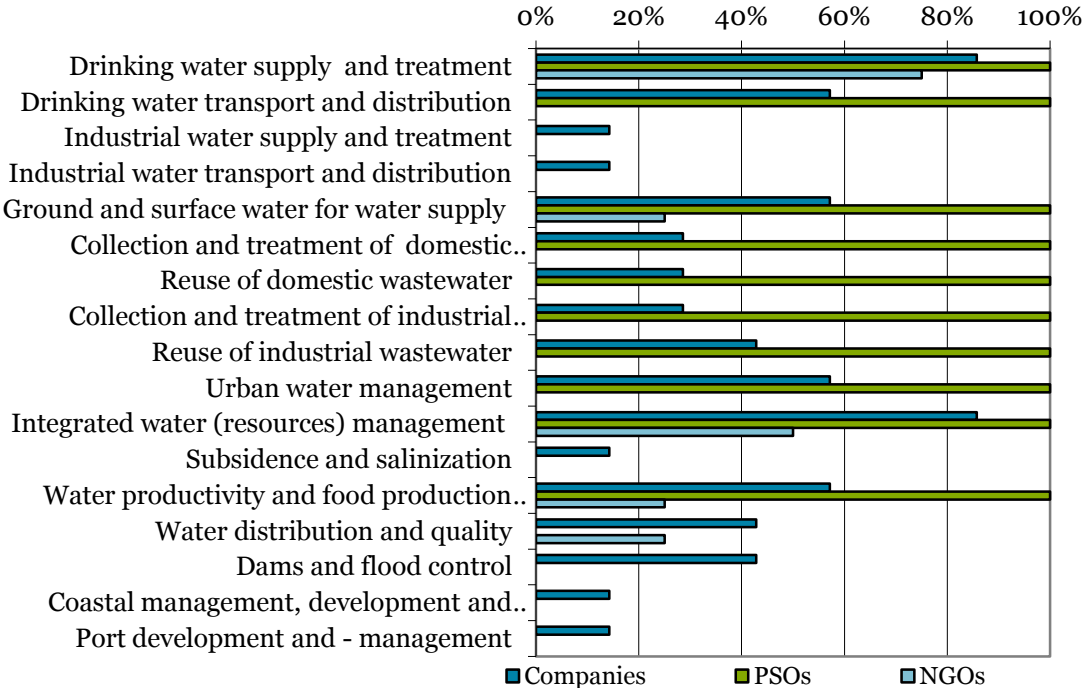
- Many development and financing partners are supporting water dependent activities in Rwanda, such as irrigation, hydropower and water and sanitation, e.g. World Bank, African Development Bank, International Fund for Agriculture Development and some bilateral donors, including Germany, Japan, Korea, the Netherlands, Sweden and United Kingdom. However, support for the IWRM sector is meager. Early 2013, probably for political/financial reasons, USAID prematurely ceased funding of IWRM program 'Rwanda Integrated Water Security Program RIWSP), after having funded the preparation of a capacity assessment of the IWRM sub-sector USAID, 2012). Rwanda is also member of a number trans-boundary or international bodies influencing or involving in IWRM.[15]

A more extensive list of projects and programs supported through international donors can be found in Appendix IV.

In general, resulting from the web survey as given in figure 5, Dutch organizations are mostly interested in integrated water resources management, drinking water supply and treatment and groundwater and surface water supply, followed by water productivity and food security. For the other sub-sectors is substantial lesser interest amongst the respondents. NGOs show main interest in drinking water supply and treatment, ground water and surface water supply and integrated water resources management. This could be explained by the fact that budget for WASH is decreasing in Rwanda, although the need remains high and therefore has a lot if interest from NGOs to respond to this need. On the other hand, budget in the agricultural sector is increasing. In the cross-overs (figure 6) we see that the main interest lies in Water & Food for all Dutch sector organizations.

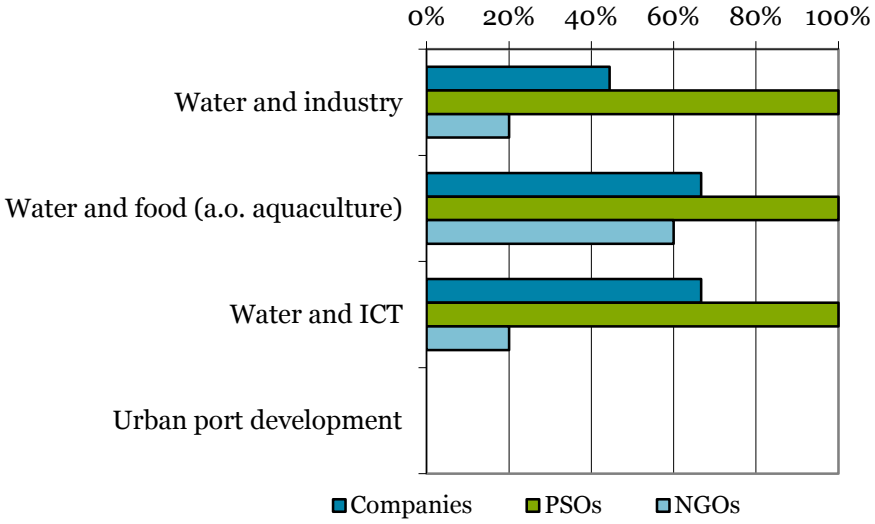
[15] Analysis and intervention logic for water – IWRM programme

Figure 5 Promising areas in Rwanda according to companies (N=7), PSOs (N=1) and NGOs (N=4) active in Rwanda, in % of respondents (multiple answers possible)



Source: Web survey Panteia, 2014/2015

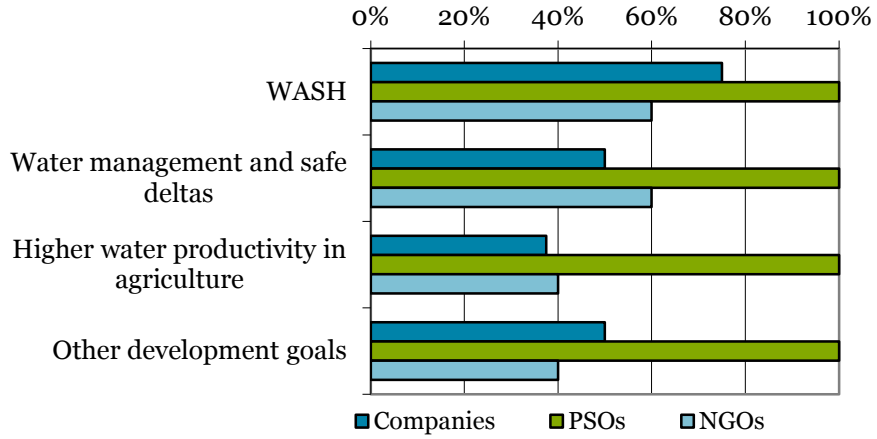
Figure 6 Promising cross-overs in Rwanda according to companies (N=9), PSOs (N=1) and NGOs (N=5) <u>active</u> in this country, in % respondents (multiple answers possible)



Source: Web survey Panteia, 2014/2015

In figure 7 we see that companies (including water boards and knowledge institutes) don't show a clear differentiation between different development sectors. On average they show 20 – 25% interest in each of the sectors. For NGOs we that the main interest remains in WASH, closely followed by water productivity in agriculture. This relates directly to the main interest in the cross-over water and food.

Figure 7 Development opportunities in Rwanda according to companies (N=8), PSOs (N=1) and NGOs (N=5) <u>active</u> in this country, in % respondents



Source: Web survey Panteia, 2014/2015

Other development goals, resulting from the web survey:

- Awareness raising and knowledge development through knowledge sharing programs.
- Mapping and monitoring of droughts, rainfall, flooding, ground water flows etc, yield prediction systems, Agricultural insurances, access to micro-credit.
- Integrated land use planning and seeking trade-offs between development and ecological values. Water, food and energy nexus through integrated catchment/basin/ecosystem approaches for water and land use management -- for disaster risk (flooding and drought) reduction, wetlands for water quality and quantity (in urban and peri-urban areas), for sustainable livelihoods programs.
- Governance and institutional development, financial arrangements, stakeholder engagement and cooperation, horizontal en vertical policy alignment
- Climate change adaptation measures
- Cross-over between water and energy
- Water & ICT: mapping, market intelligence, data use, monitoring, GPS info, private sector engagement in BOP market.
- Business development in WASH services chain and re-use chains
- SRHR / Health Systems Strengthening

Opportunities (input from survey for analysis)

- Agribusiness
- Integrated Water Resources Management in the Lake Kivu region (Comesa-EDF funding)
- Technical support for water company (WASAC)
- Technical support in SEA's for national and regional level in IWRM plans
- 3R solutions as measures for flooding and erosion

2.4 Product-Market Combinations

Below a list of potential Product Market Combinations for the Dutch water sector in Rwanda are given. These are directly linked to the pressing needs as defined in paragraph 1.3.6. and the opportunities resulting from chapter 2.

Demand

Reform of the agricultural sector (rain-fed irrigation and precision agriculture) and building technical capacity.

According to the Rwanda 2020 Vision, weaknesses in the agriculture sector stem from many factors, some of which are long-standing, amongst others: production factors such as manpower, elementary tools and water are assigned low value. The introduction of rain-fed irrigation and precision agriculture, together with associated agricultural operations, can mitigate these shortcomings. No comprehensive irrigation development policy or strategy has yet been developed and human resource (technical) capacity is low. Next to this, the IMF (2013) identifies climatic vulnerability, such as flooding and droughts, as the main internal risk to growth and poverty reduction in Rwanda. Creating opportunities for more climate-resilient agriculture, for example through the construction of extensive irrigation facilities, could lead to more sustainable economic growth.

Product

- Sub-sectors / themes: Water&Food, irrigation, climate change
- Services / Products: Technical Support and products on climate-resilient agriculture, like developing irrigation plans, introducing efficient irrigation technologies (including rain-fed irrigation and precision agriculture). For example, knowledge institutes could support in research on raising yields in rain-fed agriculture. Products could be early warning systems, precision agriculture and climate insurance products. Technical Support on value chain development in the agricultural sector, focusing on water use, related to fruit processing and horticulture.

Market

Government staff, agricultural private sector players, knowledge institutes.

Demand

Development IWRM sub-sector

Lack of adequate budgets, institutional deficiencies (human resources, insufficient cooperation) and awareness on IWRM are binding constraints for Rwanda to meet its increasing multiple water demands in the medium term until 2020-2040, while sustaining important economic, environmental and social functions. Budget for IWRM is partially solved through the water permit system, which offers an opportunity to address the lack of adequate budgets. The constraint of institutional deficiencies consists of a complex and incomplete IWRM governance framework, resulting in inadequate coordination and alignment, and weak organizational capacities.
(Source: Analysis and intervention logic for water – IWRM programme). Next to this, the Government is making an effort to establish modern, computerized hydrological databases and a national monitoring system. Information regarding the quantity and quality of water resources is inadequate, and most of the available data are often unreliable. Resources for collecting and processing the basic data on hydrology and hydrogeology are also insufficient.

Product

- Sub-sectors / themes: IWRM, water governance
- Services / Products: Technical Support on water governance, strategic planning and financing and services like hydrological maps and modeling. Next to this, training programs that build capacity on IWRM.

Market

Government staff, agricultural private sector players, knowledge institutes.

Demand

Water and soil conservation

Deforestation, especially in upper watersheds, and unplanned land use have resulted in serious

erosion problems causing degradation. According to recent estimations, half the country is suffering from moderate to severe erosion. This has a significant impact on water flows downstream and the deterioration of the water quality of rivers, lakes and marshes due to sedimentation and pollution as well as leading to loss of fertile agricultural land. Due to high nutrient concentrations, water hyacinth is forming a plague in some lakes and rivers, including Lake Victoria, and Cyohoha Rwero, and Nyabarongo and Kagera Rivers.

Product

- Sub-sectors / themes: IWRM, water management, water quality
- Services / Products: Technical support on the integration of water and soil conservation measures, like water harvesting and buffering measures, into water management and land-use plans.

Market

Government staff, (I)NGOs

Demand

Sustainable WASH service delivery and capacity strengthening CSO's

The main challenges, as identified in a case study commissioned by WaterAid (produced by Development Finance International (DFI)), in WASH are financial resources, high production and operation costs and the absence of regulation and coordination. Next to this, the vast majority of Rwandan CSOs are grassroot associations focused on issues of livelihood, with little capacity to engage on public policy issues in a more strategic way. Rainwater harvesting has large potential for water supply, especially in rural areas.

Product

- Sub-sectors / themes: WASH
- Services / Products: Building capacities of CSOs on lobby and advocacy on WASH. Technical Support on sustainable WASH service delivery. Technical Support on integrating rainwater harvesting in WASH programs and projects.

Market

CSOs, NGOs, government staff.

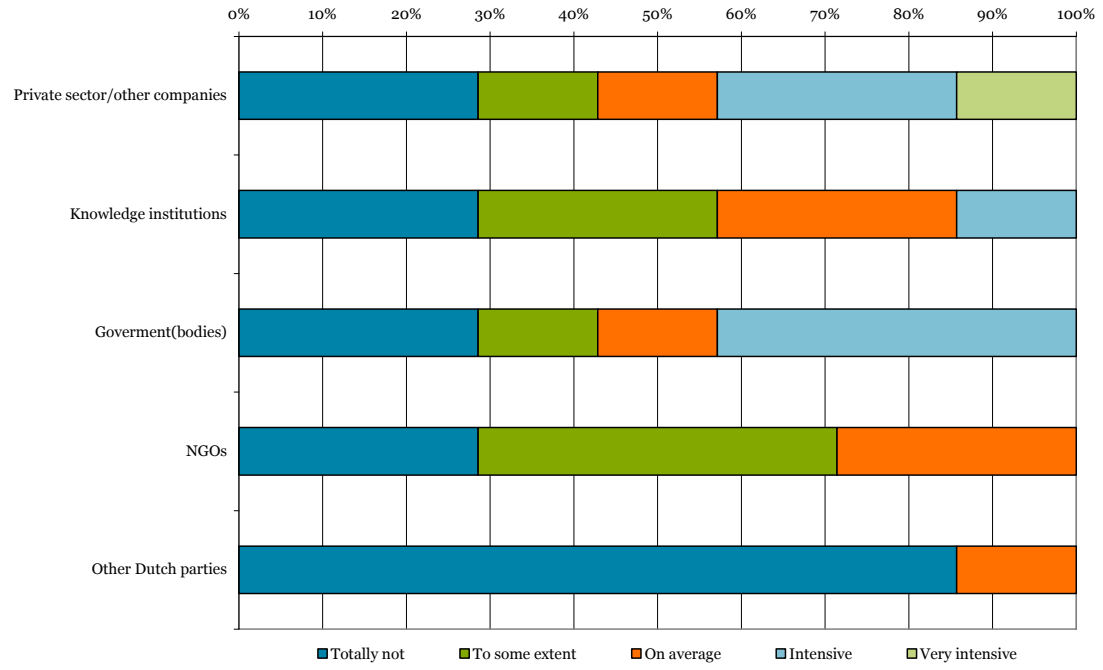
3. Market entry strategies

To convert market opportunities into business requires a plan: a market strategy. Strategic interviews and results from the web survey, completed with desk research on existing market studies provided valuable insight in different market (entry) strategies. The chapter starts by describing how Dutch organizations cooperate with parties, projects and programs. The second section describes how activities within the water sector are being financed. How Dutch organizations operate on the market is part of section three. Section 4 describes lessons learnt, while section 5 describes the major bottlenecks and drivers. The chapter ends by suggesting specific positioning strategies per potential product market combination (PMCs).

3.1 Entering or re-entering the country

Figure 8 provides an indication of the status and intensity of the cooperation of Dutch parties with various other parties in Rwanda, such as private sector/other companies, knowledge institutions and government(bodies). Cooperation with government(bodies),and private sector/other companies appears to be the most intense: 43% of the companies state that cooperation with these parties is (very) intense.

Figure 8 Intensity of cooperation of Dutch companies with various parties in projects and programmes in Rwanda, in % of respondents (N=11)

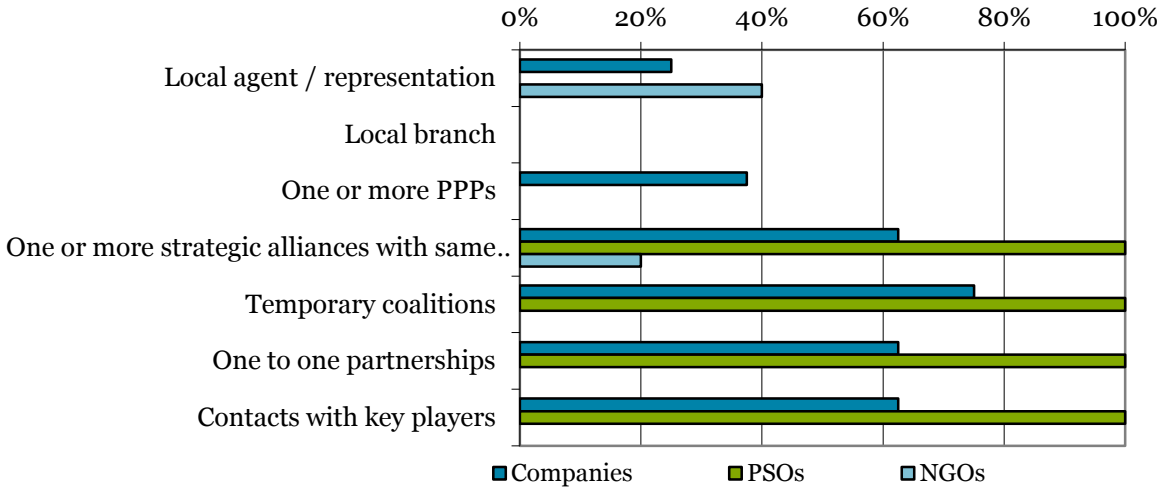


Source: Web survey Panteia, 2014/2015

3.2 Cooperation and business development alternatives

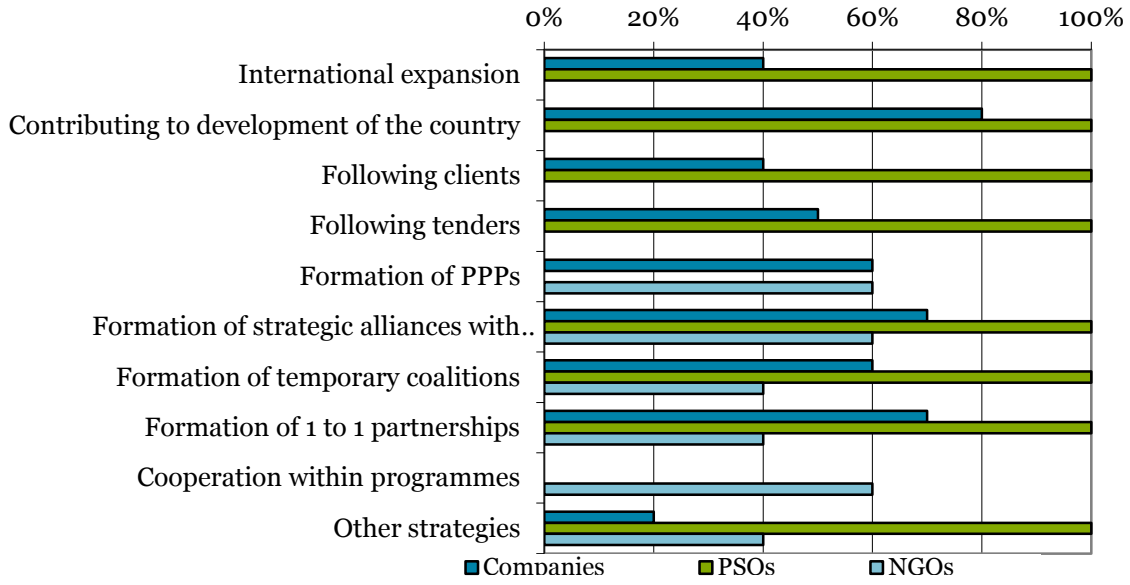
In figure 9 and 10 current strategies and representation of Dutch organizations in Rwanda are given, resulting from the web-survey.

Figure 9 ***Current representation characteristics of Dutch companies (N=8), PSOs (N=1) and NGOs (N=5) in Rwanda, in % of respondents (multiple answers possible)***



Source: Web survey Panteia, 2014/2015

Figure 10 ***Current strategies Dutch companies (N=10), PSOs (N=1) and NGOs (N=5) in Rwanda, in % of respondents (more answers possible)***



Source: Web survey Panteia, 2014/2015

3.3 Successes and lessons learned

Interviewee #29, a knowledge institute, works through larger Nuffic/NICHE supported programs in Rwanda. They have been successful through partnerships with local knowledge institutes and large network of alumni in the countries they are active in.

This is also reflected in the strategy used by interviewee #11. They work through long term relationships with local knowledge institutes and jointly develop and acquire projects in the public and private sector markets, making use of alumni networks. Next to this, they learned that their independent status, as being a knowledge institute, is recognized by clients as an important asset.

Interviewee #3 has won the tender for the Technical Assistance of the Integrated Water Resources Management Project, which is a project between the Dutch Embassy and the Rwanda Government. The consortium also includes SNV and Belgian company SHER. SHER has local offices in Rwanda. The strong consortium, the excellent reputation of all organizations involved and the combined track record led to a competitive positioning and eventually in winning the tender. They are already executing the project Energy Water and Sanitation Authority (WASAC) Reform and Transformation for IFC / World Bank. The project is in the finalizing stage and involved the development of a strategic business and financing plan for the water and sanitation sector for the newly created water utility company WASAC.

Interviewee #44 is the trusted engineer of the Government of Rwanda. They worked on the development of the business plan for an investment program with a total value of $2 billion. This program offers many opportunities for SME specifically in agribusiness and food processing. A key success factor was that interviewee #44 was prepared to absorb the costs for preparing the business plan. The investment program itself is funded by the Rwanda Government through “Private Placement”. Besides this, they follow a step by step approach, which consists of:

- Participating in tenders and be successful in winning and executing projects
- Project based presence, sometimes with Dutch government support, mostly by following private sector clients, such as contractors, water companies or industry.
- Multiple projects, building on local presence and experience
- Representative office, stepping up business development and project implementation
- Branch office or local company, as a basis for a permanent local presence

Cooperation with other parties is key in this approach, especially to access the international market. They look for partners based on complementarity of skills, know-how, geographical presence or capacity.

3.4 Drivers and bottlenecks

Bottlenecks

- The water and sanitation budget is competing with other government priorities, such as energy, agriculture, transport, education and health. The Ministry of Finance has allocated top priority for development partner funding to other sectors, leaving the water and sanitation sector with a smaller share of the national budget. One example is the World Bank, which has increased its focus on the energy sector. Other development partners have withdrawn from the water and sanitation sector altogether.
- There is a lack of capacity of CSOs at national level. Most CSOs work at grass root level on livelihood development. There is limited capacity of CSOs to influence national level programs.

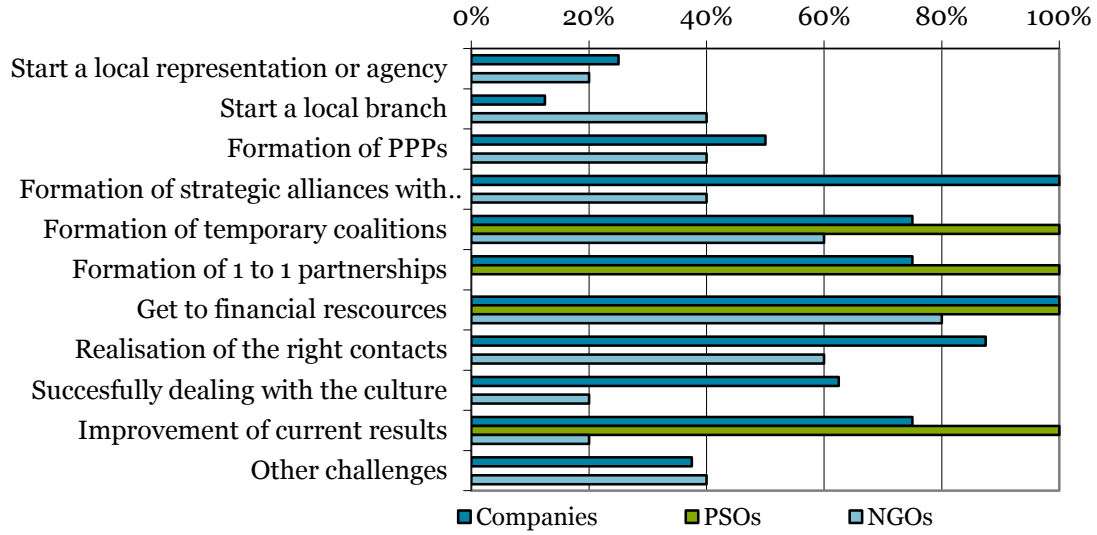
- There are pertinent policy and legal issues for the Government of Rwanda to tackle in order to set the right environment for implementation of irrigation schemes. Quite often, the lack of incentives has resulted in the collapse of many an irrigation project. The government will have to develop policies geared towards the reduction of energy tariffs and cost of irrigation equipment. The government should also offer tax rebates for the importation of irrigation equipment (Source: Rwanda Irrigation Master Plan). On the other hand, the recent debate goes into the direction of full operation and maintenance cost recovery by the water users, which means that irrigation will not be feasible everywhere (for instance where pumping costs are high), and may be restricted to high value crops in order to make it profitable.
- Availability of skilled professionals.

Drivers

- Rwanda is currently delegating all water supply and sanitation service responsibilities to communities and districts, with the exception of planning, regulation, hygiene promotion, monitoring, and over-sight. The newly created 'National Water Agency' should catalyze the decentralization process through increased technical assistance, thereby strengthening local level efforts and ensure self-sufficiency.
- The National Investment Strategy aims to promote increased private sector participation to attract investment and operate and maintain infrastructure.
- As a result of the government's commitment to reform, it is now easier, faster and less expensive to do business in Rwanda. A Doing Business unit has been set up within the Rwanda Development Board (RDB) and is effectively leading the preparation and implementation of the investment climate reform agenda through enhanced public-private dialogue. There is a Private Sector Cluster which is jointly coordinated by the USAID and the Ministry of Commerce, Industry, Investments Promotion, Tourism and Cooperatives.
- Since 1994, farmers' associations and cooperatives have increasingly provided technical assistance to members, extending credit, facilitating access to inputs and organizing collective marketing. Associations of off-farm producers are emerging, and farmers' organizations, organized in commodity chains, are becoming increasingly vocal and representative. The 2006 National Microfinance Policy is progressive and provides a good basis for sector growth, but institutional capacities and the legal framework for appropriate rural financial services still need development. (Source: Rwanda Irrigation Master Plan)
- The Dutch embassy is focusing on key interventions contributing to this economic transformation while at the same time ensuring enhanced food security, access to justice for all, more democratic space and managing water resources in a sustainable way.
- The Government focuses on PPP set-ups, in particular for agribusiness. There is political willingness.
- The newly created water utility company WASAC (first under EWSA) will receive more attention, which might offer opportunities.

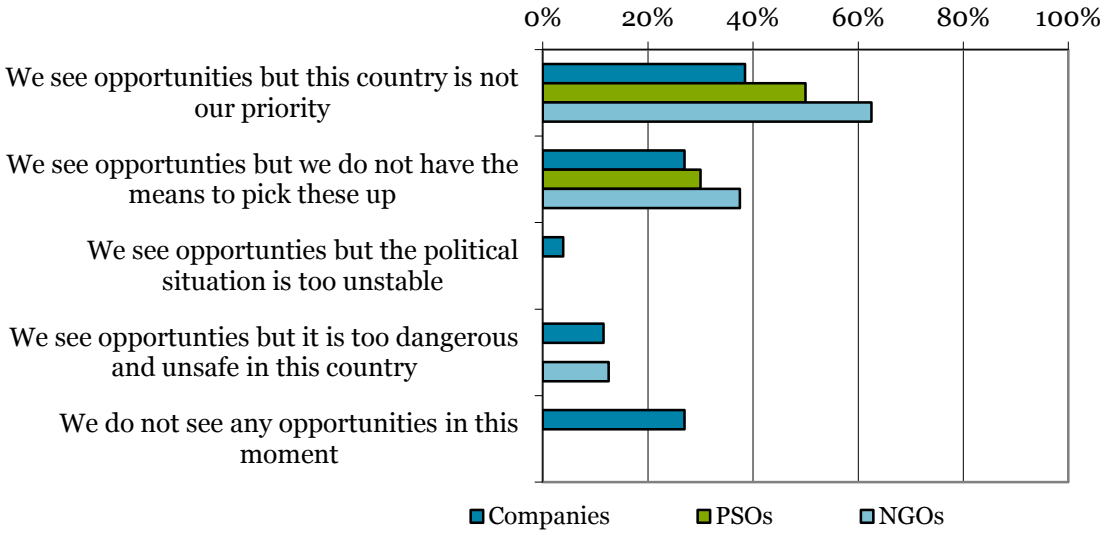
In figure 11 the main challenges for current Dutch organizations active in Rwanda are given. This is resulting from the web-survey. In figure 12 the main drivers and bottlenecks are given.

Figure 11 Challenges for scaling up activities in Rwanda for Dutch companies (N=8), PSOs (N=1), and NGOs (N=5), in % of respondents



Source: Web survey Panteia, 2014/2015

Figure 12 General drivers and bottlenecks for OS-countries. Companies (N=26), PSOs (N=10), and NGOs (N=8)



Source: Web survey Panteia, 2014/2015

3.5 Possible strategies for selection of PMCs

Below a selection has been made of the PMCs as given in chapter 2.4. This selection has been made based on consultation with the Dutch core advisor and embassy, as well as identified trends and opportunities. There are also opportunities in the energy sector (hydropower) and fishery, but these are not mentioned because it is not seen as a clear opportunities yet.

Theme: Water & Food, irrigation, climate change
Product
Reform of the agricultural sector (precision agriculture and rain-fed agriculture) and building technical capacity
Technical Support and products on climate-resilient agriculture, like developing irrigation plans and introducing efficient irrigation technologies. For example, knowledge institutes could support in research on raising yields in rain-fed agriculture and precision agriculture. Products could be early warning systems, precision agriculture and climate insurance products. Technical Support on value chain development in the agricultural sector, focusing on water use, related to fruit processing and horticulture.
Finance
Local tenders, supported by the Dutch Embassy through its connections in the Joint Action Development Forum (JADF), which is recognized by Rwanda as the key platform for business integration, as well as opportunities of joint EU programming. The government of Rwanda has allocated substantial budget for agricultural development, youth employment and natural resources, for example in the EDPRS II. Concrete possibilities, tender procedures, competition etc, could be assessed with the embassy. Opportunities through FDOV and G4AW could be assessed, since there is a growing local private sector. Possibilities of twinning Rwandan universities to their Dutch and regional counterparts through the Nuffic/NICHE program.
Partners
Government, agricultural private sector organizations, knowledge institutes, Dutch organizations already active in Rwanda (like Euroconsult-MottMacDonald, ITC-Twente University, ICCO, Heineken, Spark, etc)
Entry strategy
Through the current contacts of the EKN with governmental and private sector players in the agricultural sector as well as directly linking to activities of the current MASP of the EKN, and focusing on capacity building for project design and implementation.

Theme: IWRM, water governance
Product
Development IWRM sub-sector
Technical Support on water governance, strategic planning and financing and services like hydrological maps and modeling. Next to this, provision of training programs that build capacity on IWRM, and development of water permits and monitoring of water use can be enhanced.
Finance
Assess tender opportunities of the *Rwanda Integrated Water Security Program (RIWSP)*, part of GLOWS (USAID). Dutch funding: FDW or Nuffic/NICHE. Many development and financing partners are supporting water dependent activities in Rwanda, such as irrigation, hydropower and water and sanitation, e.g. World Bank, African Development Bank, International Fund for Agriculture Development and some bilateral donors, including Germany, Japan, Korea, the Netherlands, Sweden and United Kingdom. However, support for the IWRM sector is meager.
Partners

Government staff, knowledge institutes, Dutch actors, like Euroconsult-MottMacDonald, Unesco-IHE, Alterra, VNG
Entry strategy
Assess opportunities for projects and programs through the Dutch embassy and the above mentioned Dutch organizations active in Rwanda.

Theme: IWRM, water management, water quality
Product
Water and soil conservation
Technical support on the integration of water and soil conservation measures, like water harvesting and buffering measures, into water management and land-use plans.
Finance
Local funding opportunities, through the governmental programs focusing on water and soil conservation, should be assessed with the Dutch embassy. NUFFIC. Climate funds (see Finance section)
Partners
Government staff, (I)NGOs, knowledge and research institutes
Entry strategy
Assess opportunities for projects and programs through the Dutch embassy and the above mentioned Dutch organizations active in Rwanda.

Theme: WASH
Product
Sustainable WASH service delivery and capacity strengthening CSO's
Building capacities of CSOs on lobby and advocacy on WASH. Technical Support on sustainable WASH service delivery. Technical Support on integrating rainwater harvesting in WASH programs and projects. Sub-sectors / themes: WASH
Finance
Funding is challenging locally as all main donors are reducing their budgets. Opportunities are in PPP instruments as FDW, as Rwanda has transferred all responsibilities to the water utility company WASRAC. Strategic Partnerships (DGIS) could add value in Rwanda as there is a large need for strengthening lobby and advocacy capacity of CSOs, in the light of decreasing budgets for WASH. Organizations could also make use of water permit systems.
Partners
CSOs, NGOs, government staff. Currently active organizations in WASH, like UNICEF, WASAC, SNV, VEI, Aquanet, Aquavirunga
Entry strategy
Assess opportunities for projects and programs through the Dutch embassy and the above mentioned Dutch organizations active in Rwanda.

Appendix I: Methodology

The Water OS positioning survey is part of the Water OS program: a facility of the Ministry of Foreign Affairs. The Water OS program aims at providing support to the Dutch Embassies in 12 partner countries in the formulation and implementation of their water programs. Central element of the program is the involvement of the Dutch water sector, i.e. companies, NGOs, knowledge institutes and governmental organizations.

In order to generate more evidence for effective continuation of the Water OS Program and to 'trigger' Dutch water sector players, RVO contracted Aidenvironment, in collaboration with Panteia, Chris Engelsman and Jan Oomen, to conduct a "Positioning Survey". This survey identifies opportunities, strategies and approaches for the Dutch water sector, and more specifically seeks high potential Product/Market Combinations (PMCs) in the 12 Water OS countries included in the Survey. The final deliverables of the survey are twelve positioning survey reports (one for each country) and one overarching management summary. Primary target group for the Positioning Survey Reports are the Technical Experts (TDs) at the Netherlands Embassies in the 12 OS countries, with all Dutch water sector players as secondary target group.

The methodology comprises desk research, a web survey and additional strategic interviews:

- The desk research studied the most essential reports and documents per country (market scans, market reports, strategic papers of Embassies and International Financial Institutions). The Key Advisors within the Water OS program played an important role in rendering accessible and prioritizing the data available.
- In the period November 2014 – January 2015, Panteia carried out a web survey. Two different questionnaires have been applied, one for companies, knowledge institutions and water boards, and another questionnaire for NGOs. Despite the length of the survey and thanks to a considerable effort of the project team and NWP, the response rates were not disappointing and for a web survey in general above average: NGOs: 16 out of 48 implying a response rate of 33,3%, and companies (including knowledge institutions and water boards): 87 out of 531 implying a response rate of 16,4%.
- Based on the outcomes of the desk study and web survey, Aidenvironment selected 27 companies, 3 (semi) commercial financiers, 7 NGOs, and 8 knowledge institutes (including Water Boards ('waterschappen') and water service providers) to be interviewed on strategic topics focusing on market opportunities and applicable market entry strategies (and business models). Through these strategic interviews, the research team gained more detailed information on projects of front runners. These projects gave more information on lessons learned, success factors, and opportunities for up scaling.

Regarding the web survey, two important remarks can be made:

Value and limitation of the survey results
The web survey results have provided very useful data for this study. The value of the results especially lies in the provision of relative figures on various aspects enabling comparisons between countries, opportunities, bottlenecks, groups or respondents, etc. and to monitor the developments in these figures over time. The limitation of the study lies in the inability to provide reliable absolute figures on for instance turnover values.

OS-study versus WEX
For the web survey a similar methodology has been applied as is done for the WEX (Water Export Index) – study, which is carried out twice a year. A sample of companies and institutions is asked to provide data on national and export turnover in the water sector and the division of this turnover over regions and over subsectors. The samples do not have the same composition. Also over time the

samples may differ in the WEX, but never provide a bottleneck though to assess the WEX and to make reliable comparisons over time. Like in the WEX, the estimation of the export turnover is based on the sample results of a survey. Starting from this value relative export shares of the various regions and countries have been determined for the sample. Since the sample may not represent the whole water sector in an optimal way, we cannot draw any hard or general conclusions about the export turnover figure and division of this figure over subsectors, regions and countries. The real value will be higher, but this value can only be obtained with sample results once the whole population is known. Getting to know the population is difficult and cannot be realized in the context of this study nor in the WEX-study. Another complicating factor for generalizing study results lies in the fact that large projects (especially those in water construction) may influence total and regional export figures drastically and lead to large fluctuations over time. For the sample of the web survey no such 'disturbing' projects have been found. The sample results of the OS-study regarding relative export shares of regions are in line with the results of the WEX 2014.

The average budget per country positioning report is EUR 7,000. Therefore, the positioning survey cannot be seen as a fully fledged market research. An in-depth assessment of the markets (the OS Water countries) was not part of this research, instead the research relied on secondary information (reports available) and expert opinions (Key Advisors Water OS program, TD staff on Embassies, YEP network, and a network of 'water professionals').

An important disadvantage of the web survey – in contrast with a telephone survey for which a stratified sample has been selected - is that the characteristics of the total population are unknown. By lack of a stratified sample, the outcome of the web survey does not offer the opportunity to level up the sample results to the total population and to calculate absolute figures for turnover and export volumes for each subsector and region. Despite this limitation of the web survey, it does provide very useful information for the positioning studies.

Additionally to the country specific positioning reports, a management summary was drafted. The management summary elaborates on the overall findings and provides overall conclusions.

Appendix II: Finance

The Dutch Government is able to support activities performed by the water sector in developing countries (in this case the 12 Water OS countries) in different ways. On a strategic level, financial support can be labeled as:

Bilateral support (country to country)
Multilateral support (to different countries often funneled through International Financial Institutes or UN related organizations)
Specific instruments (e.g. managed by RVO or commercial organizations like Atradius and FMO)

The financial support from Dutch Government related to the 12 Water OS countries aims to combine trade and aid perspectives. The policy focuses on three key points: 1) improved management of water catchments and safe deltas, 2) efficient use of water, especially in the agriculture sector, and 3) improved access to clean drinking water and sanitation.

This appendix provides an overview of the support provided on different strategic levels: bilateral, multilateral and specific instruments. The content is structured following the most important organizations involved in funneling these funds starting with the Ministry of Foreign Affairs, The Dutch Embassies, RVO, Dutch (Semi) Commercial Players, and the most relevant International Finance Institutes. At the end, the appendix provides a non exhausted list of foundations financing water related projects and activities.

Centralized programs managed by IGG/Water DGIS/Ministry of Foreign Affairs
DGIS (within the Ministry of Foreign Affairs) focuses on the Dutch international cooperation with partnering countries. The cooperation involving the water sector is mandate of the section water within the department of DME (future: IGG (Inclusive Green Growth)). This section manages the water related portfolio of programs providing regional and multilateral support. The funding is often labeled and does not provide direct opportunities for the Dutch water sector.

Decentralized programs managed by Embassies:
The Multi Annual Strategic Plans (MASP) is the nucleus of Dutch bilateral support to a country. Projects, programs or businesses being part of the Embassies' program to implement the MASP fit into the country specific strategy and are aligned with the overall water policy of Dutch government. The funding of Dutch Embassies provides opportunities for the Dutch water sector.

Specific Instruments: RVO
RVO has developed different type of instruments depending on the phase the project/program/business is in, starting at the development of an idea, testing the concept in a pilot, scaling up the pilot to significant size to start building a business or self financing project on. We follow this structure when presenting the different instruments.

To finance the development of an idea, innovation or R&D:

VIA water:

This is a relatively small fund (EUR 10 million over 4 years) to finance out of the box ideas and small-scale innovations using grants. Aqua for all manages the fund, which started operating in 2015. Maximum size of the grant is EUR 200,000 per project.

To finance a pilot:

Partners for Water:
This is a funding program (grants) financed by different Ministries runs from 2010 till 2014. After 2015 the program will continue following the same strategy. In 2015 the facility is not open for new application. The program financed 80 projects of which 50 included a pilot. The average subsidy size was EUR 200,000 financing 20-80% of the budget. The new program will start with a total budget of EUR 10.5 million.

DHK:
This instrument provides grants and aims to finance demonstration pilots, feasibility studies and acquiring of knowledge. The program has a specific EUR 3 million window for DGGF countries of which EUR 1 million is allocated to the least developed countries. This facility is specifically applicable for projects in fragile states.

DRR:
DRR finances the Dutch Risk Reduction Team, a database of Dutch Water Experts that are available for solving water related issues with respect to disasters. DRR is not a facility financing disaster response or aid, though DRR provides knowledge that can be used to e.g. avoid disasters. RVO in close cooperation with NWP manages the facility.

To finance the scale up of activities or pilots:

ORIO / DRIVE:
ORIO was cancelled in 2014. ORIO used to be a grant facility financing investments related to the development, implementation and operation of infrastructure in developing countries. Governments of these countries submit the applications and the private sector is involved in the development and execution of projects.

DRIVE is the successor of the ORIO program and provides concessional loans to governments of developing countries to develop, construct and operate infrastructure. DRIVE will be launched in April 2015 and has an available budget of EUR 100.000.000 annually expecting to finance 10-15 projects. The facility aims to actively involve the Dutch Water sector and contribute to development of the receiving country.

G4AW:
G4AW stands for Geodata for Agriculture and Water and finances projects, programs and businesses aiming to improve food security in developing countries by using satellite data. Netherlands Space Office (NSO) is executing this program, commissioned by the Dutch Ministry of Foreign Affairs. In 2014-2015 the facility has EUR 30.5 million available to provide grants (EUR 0.5-5.0 million) financing up to 70% budgets. Proposals and partnerships should be based on a business plan geared towards satellite data at the start of the information chain.

FDW/FDOV and GWW:

RVO developed three facilities to finance Public Private Partnerships (PPP) in the water (and agriculture) sector. These facilities aim to: 1) increase access to drinking water and sanitation, 2) enhance efficient and sustainable water use (especially in the agriculture sector), 3) improve management of catchment areas and safe deltas, and 4) (specifically for FDOV) improve food security and private sector development. GWW (Ghana Wash Window) is a specific window financing water related PPPs in Ghana.

The three facilities are in place since 2012, in 2014 FDW and FDOV launched and closed its second call, the GWW second call for proposals closes in February 2015. The facilities are planning the third call to be executed in 2016. Because the facilities just started operating, (impact) results have not been reported yet.

The facilities provide grants and have different modalities. The facilities received many applications and resulted into the finance of new initiatives. The application process is being perceived by a significant group of applicants as complex, and requires a clear business case, or theory of change aiming to enhance the enabling environment as part of the proposal, plus a significant contribution by the private sector. The facilities are especially applicable for large applications fitting into investment agenda's or strategic objectives of the private sector players involved.

DGGF:
The Dutch Good Growth Fund started operations in mid 2014 and aims to combine aid and trade goals. DGGF is a revolving fund, providing finance (not grants) to initiatives with a 'healthy risk profile'. DGGF focuses on 66 countries (called the DGGF countries), including the Water OS countries. DGGF is build on three pillars: 1) a fund financing activities of Dutch SMEs in DGGF countries (managed by RVO), 2) a fund financing local SMEs and banks in DGGF countries (managed by PWC and Tripple Jump), and 3) a fund financing export credit insurance and export finance activities (managed by Atradius).

In Pillar 1, RVO works closely together with Dutch banks. The fund is equipped to provide guarantees to banks up till 60% of the credit risk, loans to banks and investment funds (equity). The maximum is EUR 10 million per project or business. A TA facility will be in place to provide assistance on improvement of the business plan or investment proposal.

Pillar 2 is under construction; this pillar will provide fund to fund investments up to EUR 175,000.

Pillar 3 provides export credit insurances covering non-market risks up till a maximum claim amount of EUR 15 million. Besides insurances, this fund provides export finance instruments. Products focus on Dutch SMEs needs, covering small and large transactions.

Besides these above mentioned programs and facilities, the following instruments can be useful and applicable for financing water related activities.

PSI:
PSI was grant program available for non-Dutch and Dutch companies wishing to make an innovative investment, in cooperation with a local partner in one of the PSI countries. This program stopped operating mid 2014.

MMF:
MMF is a match making program, aiming to establish a long term business relationship between a Dutch entrepreneur and an entrepreneur from a developing country.

OS Partner Countries:
This program finances the projects, managed by the local Dutch Embassies. These projects fit into the Multi Annual Strategic Plans of the specific Embassies.

TDs / economic diplomacy:
This program finances the so called thematic experts working at the Dutch Embassies in a limited number of OS Partner Countries.

TMEA:
Managed by DDE / DGIS, this large program focuses on the East African region financing initiatives contributing to the enhancement of trade relations within the region. The facility is applicable for financing initiatives linked to port development.

Water Mondiaal:
Water Mondiaal is a program launched by the Dutch government to cooperate actively with countries in low-lying delta areas, protecting them against floods and ensuring sufficient, clean water. Partners for Water is managing this program, the program aims creating long lasting cooperation agreements between the public and private sector , and civil society and knowledge institutes. Water Mondiaal focuses on five deltas: Egypt, Bangladesh, Indonesia, Mozambique and Vietnam.

(Semi) Commercial Organizations managing funds on behalf of Dutch Government
The following facilities or organizations are in some way closely linked to RVO or the Ministry of Foreign Affairs.

Atradius:
Atradius offers a comprehensive range of credit management solutions that protect businesses of all sizes against the commercial and political risks inherent in domestic and global trade. Atradius provides credit insurance, debt collection services, bonding, reinsurance and a range of special products.

Atradius Dutch State Business performs different facilities on behalf of and for account of the Dutch State. There is no direct link with the RVO organization, though Atradius products can be combined with RVO instruments (e.g. ORIO/DRIVE).

Atradius does not specifically focus on the water sector. However dredging, waste management, port development and the maritime sector are important sectors from a business perspective. Atradius is not actively involved in all Water OS countries; the table below provides an overview of the outstanding volumes of credit insurance products per January 2014.

Table 1: Atradius business in Water OS countries
Credit Insurance outstanding risks

Country	Risk Volume (EUR million)
Mali	1
Yemen	1.2
South Sudan	0

Palestine	0
Ethiopie	0
Mozambique	105
Benin	0
Rwanda	0.1
Ghana	182
Kenya	118
Indonesia	1,373
Bangladesh	0

Source: Atradius January 2015

Atradius manages the third pillar of DGGF. In the first six months Atradius received 7-8 requests, one of these came from the maritime sector. The DGGF facility provides support on smaller transactions; therefore this product is applicable for Dutch small and medium enterprises.

FMO:
FMO manages three funds relevant for the Dutch water sector.

FOM-OS
The first pillar of the DGGF program will replace this fund. The fund offered loans to private sector players investing in non (commercially) bankable projects or businesses in developing countries.

Innovative Finance Fund for Development
This fund aims to catalyze private sector investments.

IDF
IDF stands for Infrastructure Development Fund. The IDF is aimed at creating reliable infrastructure in many sectors, ranging from potable water and mobile telecommunication services to roads and power. By providing risk capital through the IDF, FMO takes on definite risk while acting as a gateway for other financers.

IDF offers finance through equity, mezzanine and debt products that can be used even in early stage of projects. The fund has the following fund limits:
Individual transaction amounts maximized at EUR 25 million
Financing about 25% of total project investment
Shareholding maximum 25%
Maximum tenor of 20 years
Convertible contributions are selectively available for financing during the development phase of projects (up to 49% of total development cost)

About 8% of the portfolio is allocated to water related projects (mainly water related to energy: dams). IDF hardly finances projects in other sub sectors of the water sector, this is due to: 1) the limited willingness to pay (drinking water), 2) the strong involvement of a weak public sector, 3) the limited role of the private sector, 4) the lack of involvement by Dutch water sector as a strategic operator or investor.

Within the FMO organization the department NL Business manages the IDF fund and provides (financial) transaction advisory support to Dutch businesses aiming to become active in developing markets. NL business brings in the financial perspective when Dutch businesses want to develop a consortium. Regarding consortium development within the Dutch water sector, port development, dredging and waste (water) treatment are potential sectors. Thinking along the lines of so called

corridor concepts (infrastructure connection points like transfer utilities) seems to be a promising market entry point.

EP - Nuffic:
EP-Nuffic is the main expertise and service centre for internationalization in Dutch education, from primary and secondary education to higher professional and academic higher education and research. EP – Nuffic runs several programs, the NICHE program is relevant for the water sector.

The Netherlands Initiative for Capacity development in Higher Education (NICHE) is a Netherlands-funded development cooperation program. By sustainably strengthening higher education and technical and vocation education and training (TVET) capacity in partner countries, it contributes to economic development and poverty reduction. The program focuses on four policy priorities: 1) Water, 2) Food security, 3) Sexual and Reproductive Health and Rights (SRHR) and 4) Security and the rule of Law.

Dutch Commercial Banks:
Looking at the global networks of the larger Dutch international operating banks (ABN AMRO, Rabo bank and ING), the Rabobank has the most visible overall presence in the 12 Water OS. In the strategic interviews, this bank was the only commercial bank mentioned a couple of times as being active in the international water sector.

The water sector is not a specific priority sector for Rabobank. From an international perspective Rabobank focuses on the agriculture sector. However Rabobank is involved in financing the Dutch water sector in The Netherlands. From this perspective, Rabobank 'follows its clients abroad' (especially the dredging and water engineering sector plus larger consultancies are being mentioned). Rabobank has branches in Kenya and Indonesia, participations in Rwanda and Mozambique and operates in partnership with e.g. Standard Charter Bank in Mali, Ghana, and Bangladesh.

Export finance, guarantees and currency risk management are the most common services/products offered to international operating clients.

International Financial Institutes (IFIs):
The so-called multilateral aid program of governments is being managed by IFIs like the Worldbank, ADB, AfDB and EU (EU grant program and EIB). The following IFIs play an important role financing water sector related projects, programs and businesses.

World Bank (WB):
In 2014 WB announced reorganization. The new structure has five relevant departments focusing on water: GP14 Water, GP1 Agriculture, GP3 Energy and Extractives, GP 4 Environment & Natural Resources, GP12 Transport and ICT, and GP13 Urban & Rural Social Development.GP14 Water department integrates WASH, irrigation, and Water Resource Management. One global staff pool is in place to partner with outside organizations. More weight is put on knowledge into operations. WB offers loans to developing countries, projects have to fit the multiyear WB strategy, and the fund receiving countries lead the tender procedure. About 20% of the annual budget is allocated to water projects of which 53% WASH, 13% irrigation, 24% water and energy, and 10% flood protection and delta technology.

The Asian Development Bank:

Programs of ADB are complementary to other donors and have the starting point to promote inclusive water policies (including the poor). Focus on mainstreaming water efficiency in supply and use and enhanced cooperation with the private sector. From 2010-2020 the budget is USD 20-25 billion.

The African Development Bank (AfDB):
Looking at the AfDB strategy 2013-2022 paper, the 10 year focus will be on inclusive growth and green growth. The bank identifies five operational priorities: 1) infrastructure development, 2) private sector development, 3) governance and accountability, 4) regional economic integration, and 5) skills and technology. In implementing its ten-year Strategy, the Bank will pay particular attention to fragile states, agriculture and food security, and gender. Supporting the water sector is specifically part of the agenda on infrastructure and agriculture and food security.

In view of its important contribution to the achievement of all the MDG goals and therefore its unique contribution to poverty reduction on the continent, the water sector has received major attention as a strategic priority of the Bank. Since 2000, following the adoption of its Integrated Water Resources Management (IWRM) Policy, the Bank has increased its focus on the water sector, especially on drinking water, sanitation and hygiene, and the promotion of integrated management of water resources.

The African Water Facility is an interesting facility that can be used to finance WASH related activities.

The EU:
These funds are the main source of EU development aid for the African, Caribbean and Pacific (ACP) countries and the overseas territories (3% of the annual EU budget in 2008-13). The funds are connected to the Cotonou Treaty. The European Investment Bank invests significant amounts in the water sector. The grant programs do not have a specific focus on water related projects, the EU Water Facility, one of the grant programs focusing specifically on water will be cancelled.

Foundations:
Especially for development related activities within the water sector, foundations provide interesting opportunities to finances projects and programs. Below an unexhausted list of foundations provides a first entry point to seek for funds. As each foundation has its own finance policy, we refer to the individual websites for more information.

Blood:Water.
Blue Planet Network Foundation
Charity Water
ExxonMobil Foundation
Global Water Challenge
Millennium Water Alliance
Project Concern International
ActionAid International USA
Alcoa Foundation
Boeing Company Charitable Trust
BP Foundation
Global Green USA
Habitat For Humanity International, Inc.
Lemelson Foundation

McKnight Foundation
Prem Rawat Foundation
Water 1st International
Water Environment Research Foundation
Wateraid America, Inc.
World Vision, Inc.

Appendix III: Elaborated outcomes of web survey

The Comext database of Eurostat includes trade statistics for a limited number of water sector related products. Table 1 demonstrated the development of the exports of these products for EU-28 in total and for some EU-countries during the period 2010-2013. The Dutch share in total EU-28 exports is 7% on average, lower than the respective shares of Germany and France.

Table 1: Exports from EU28-countries to Rwanda (in mln. €) in total and for water sector related products and export shares of some EU-countries, 2010-2013

	2010	2011	2012	2013	Total 2010-2013
Total EU-28 exports to Rwanda	154	154	197	184	690
Water sector related products	*1*	*4*	*2*	*5*	*11*
Shares in EU-28 exports of water sector related products					
- Netherlands	27%	4%	2%	8%	7%
- Germany	26%	45%	27%	4%	23%
- France	7%	22%	13%	6%	13%
- Denmark	0%	0%	0%	0%	0%

Water sector related products:

TUBES, PIPES AND HOSES, AND FITTINGS THEREFOR, OF PLASTICS

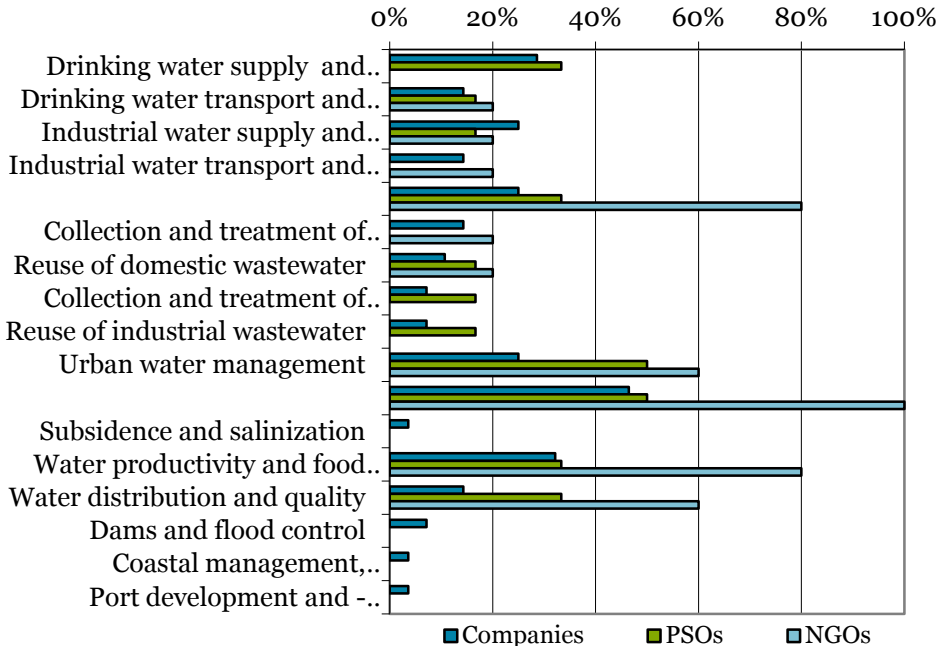
TUBES, PIPES AND HOLLOW PROFILES, AND TUBE OR PIPE FITTINGS, OF IRON OR STEEL

STEAM TURBINES AND OTHER VAPOUR TURBINES AND PARTS THEREOF, N.E.S.

PUMPS FOR LIQUIDS, WHETHER OR NOT FITTED WITH A MEASURING DEVICE; LIQUID ELEVATORS; PARTS FOR SUCH PUMPS AND LIQUID ELEVATORS

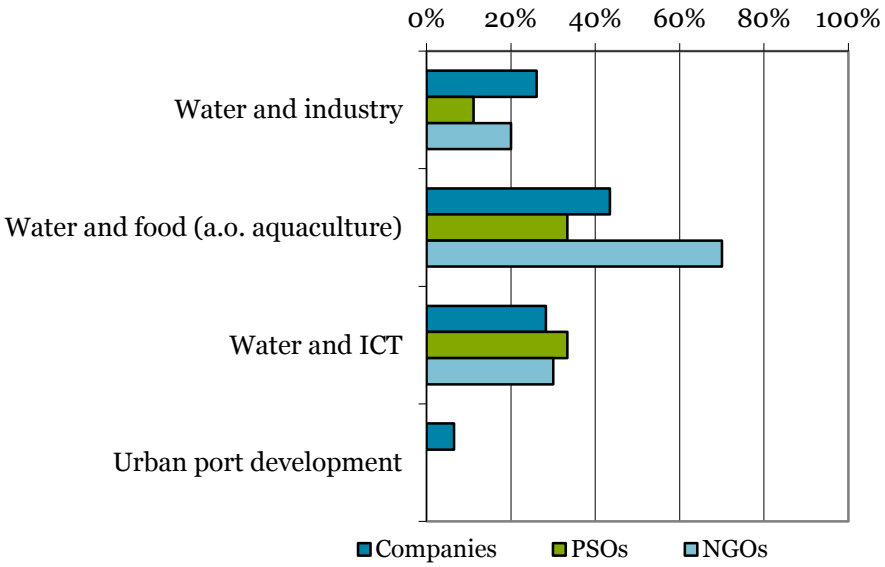
Source: Comext Eurostat

Figure A.1 Promising areas in Rwanda according to companies (N=28), PSOs (N=6) and NGOs (N=5) interested in Rwanda, in % of respondents (multiple answers possible)



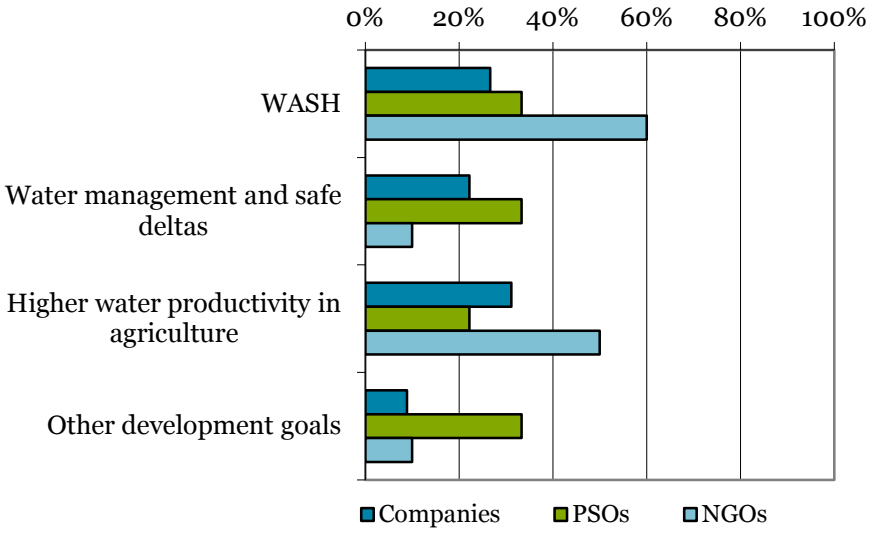
Source: Web survey Panteia, 2014/2015

Figure A.2 Promising cross-overs in Rwanda according to companies (N=46), PSOs (N=9) and NGOs (N=10) <u>interested</u> in Rwanda, in % of respondents (multiple answers possible)



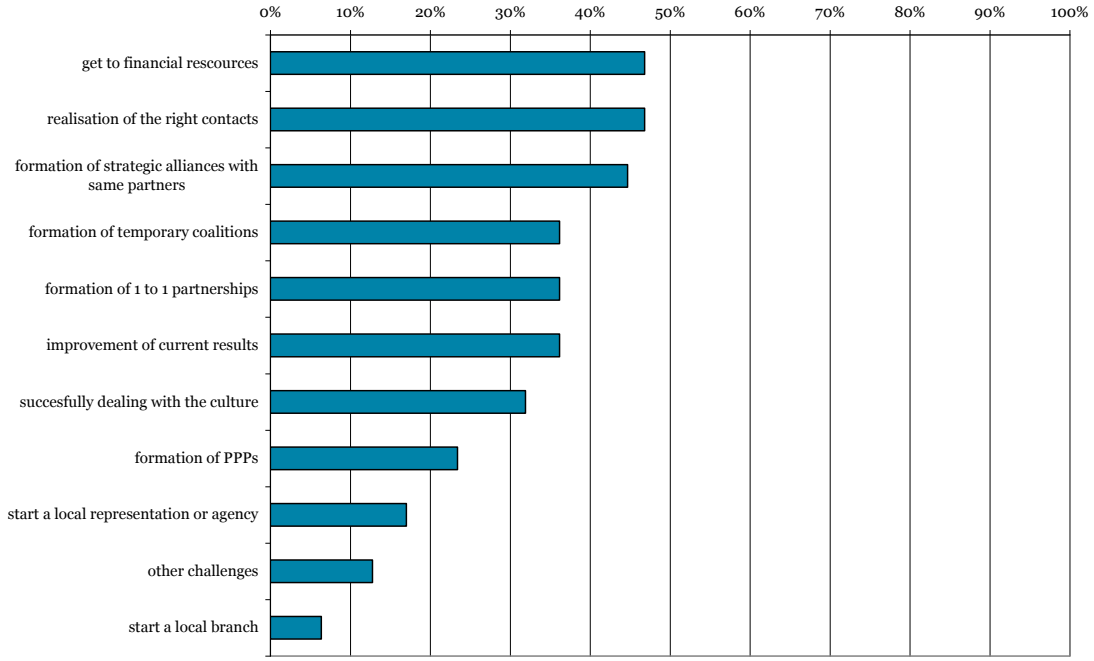
Source: Web survey Panteia, 2014/2015

Figure A.3 Development opportunities in Rwanda according to companies (N=45), PSOs (N=9) and NGOs (N=10) <u>interested</u> in Rwanda, in % of respondents (multiple answers possible)



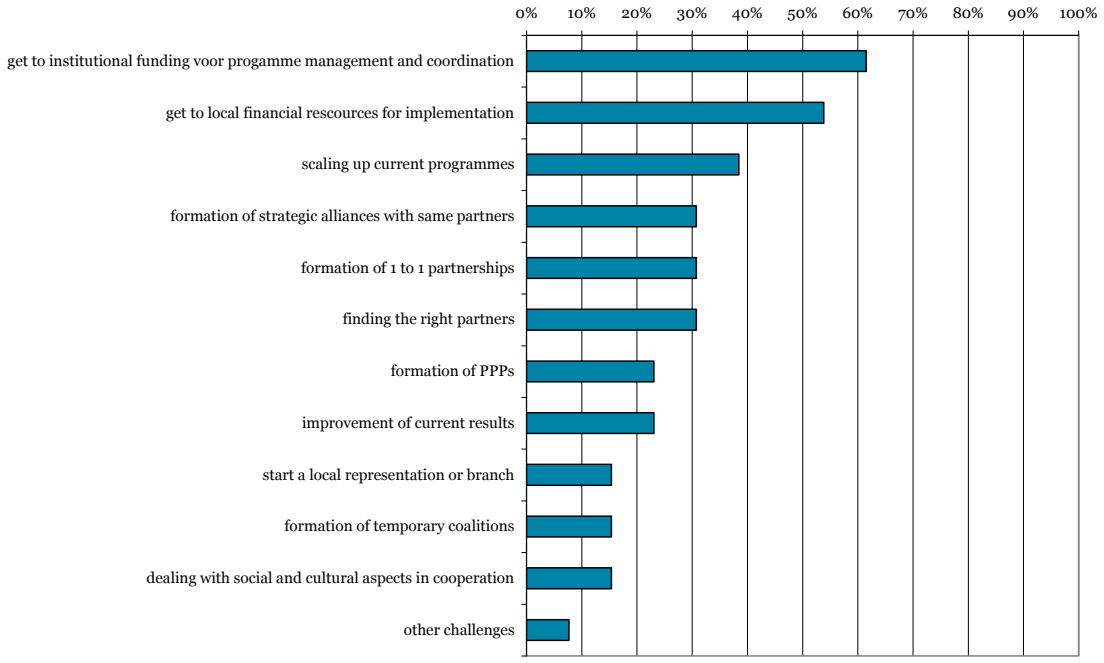
Source: Web survey Panteia, 2014/2015

Figure A.4 Challenges for scaling up activities in Rwanda according to Dutch companies, Water Boards and knowledge institutions, in % of respondents (N=47)



Source: Web survey Panteia, 2014/2015

Figure A.5 Challenges for scaling up activities in Rwanda according to NGOs, in % of respondents (N=13)



Source: Web survey Panteia, 2014/2015

Appendix IV: list of water projects in Rwanda

List of Dutch water related projects per theme.

NL Organization	Theme	Project
Aqua for All	WASH	
Alterra	IWRM	IWRM model
Aquanet (PWN) - Aquavirunga	WASH	
Banque Populaire du Rwanda - Rabobank	Finance	
Braliwar Rwanda - Heineken	Agriculture	
Eleaf/Water Watch	Agriculture	Irrigation, remote sensing
FMO	Energy	Methane (KivuWatt)
FMO	Energy	Hydrower Rusizi 3
Greenport Holland International	Agriculture	SMart Adaptive Sustainable Horticulture - SMASH (FDOV)
Heineken	Agriculture	
ICCO	Agriculture	Agri-Sector Development Facility
IRC Int.Water & Sanitation Center	WASH	
ITC	Education-Research	Strengthening the capacity of Geo Information and Earth observation sciences at Ntl University of Rwanda
Kadaster Internationaal	Land titles	"Land registration under the Investment Climate Project"
Larive International	Business services	
Mott	WASH	Assessment drinking water sector – EWSA to WASAC
SNV	WASH	several projects, o.a. WASH
SparkNL	Agriculture	Agribusiness and Cooperative Programme
Techforce Innovations BV	Agriculture	Improvement of drainage system sugar; with RHDHV (FDOV)
UNESCO-IHE	IWRM	
UNICEF / WASAC / SNV	WASH	
VEI - Aquanet – UNESCO-IHE – WASAC – FEPEAR	WASH	Increased access to sustainable water services in Rwanda (FDW)
VNG	Capacity building	Local Government Capacity Programme
WUR-CDI	Agriculture	Several agro programmes (e.g. potatoes and fisheries)

List of other water related projects and programs per donor.

International Organization	Theme	Project	Country origin
AfDB	Agriculture	Bugesera	Multi

AfDB	Agriculture	fishery - small cages is being introduced in Rwanda through the PAIGELAC project	Multi
AfDB	Agriculture	IWRM-Agri_Projet d'appui au développement agricole Bugesera	Multi
EU	Energy	Feasibility Rusizi 4	EU
EU	IWRM	Support to Rusizi-Kivu Authority (ABAKIR)	EU
EU	WASH	AVSI - Water supply for 20.000 people	EU
EU	WASH	FEA - WASH	EU
IFAD	Agriculture	Gatsibo	Multi
Infrastructure dev progr	Infra	NL contribution	Multi
Jica	WASH	Wash in Eastern province	Japan
Land Husbandry Water Harvesting, and Hillside Irrigation Project	Agriculture		World Bank
Lux Development	Agriculture	Bugesera	Luxemburg
MinAgri	Agriculture	Increased irrigated agric from 17.000ha (2012) to 100.000 ha (2020)	Rwanda
MinAgri	Agriculture	Rural Sector Support Project Phase III	Rwanda
Nile Basin Initiative / NELSAP	IWRM	Navigability studies, IWRM and development studies	Multi
Nyagatare Water Resource Development Project	Infra		Korea
Protos	IWRM	Water basin studies	Belgium
SIDA	IWRM		Sweden
UNDP/EU en WB	IWRM	re flood/drought mapping en early warning systems	Multi
UNICEF	WASH	Water and Sanitation Unit	Multi
USAID	IWRM	Rwanda Integrated Water Security Program (RIWSP).	USA
Water for People	WASH	Rulindo and Kicukiro districts	USA
Welhungerhilfe	IWRM-Agri	Farmer cooperatives (NL Funding).	Germany
World Bank	IWRM	Lake Victoria Environmental management Project phase II (LVEMP II)	Multi

Appendix V: Sources

Embassy of the Kingdom of the Netherlands, Multi-Annual Strategic Plan 2014-2017

Resultaat Fiches Ambassades en Themadirecties, 2012

VIAWater report Rwanda, 2014

Other sources used are mentioned in the text.

Appendix VI: Respondents

NWP/Core Advisors:
Don Offermans

Dutch Embassy:
Jan Vlaar

Local water professionals (peer reviewer):
Harm van Donk

Web survey:
Not disclosed

Strategic interviews:

Name organization	Contact person
Alkyon + ARCADIS	Ferry Vis
Aqua for All	Sjef Ernes
Aqua Industrial Water Treatment	Marik Beerten
AquaAero Water systems	Martijn Nitzsche
Atradius	Oscar Boot
Bam International	Maikel Jagroep
Bam International	Henk van Veen
Basic Water Needs	Martijn Smid
Berson UV	Paul Buijs
Boskalis	Bastiaan Lammers
Bucon Industries	Peter Bulsing
Colubris Environment	Marco Moekardanoe
Deltares	Ron Thiemann
ECORYS Nederland	Viek Verdult
ECORYS Nederland	Ilse van de Velde
Euroconsult Mott Macdonald	Pieter van Stuijvenberg
Euroconsult Mott Macdonald	Hero Heering
FMO	Roel Messie
Genap	Dick van Regteren
Groasis	Pieter Hoff
Grontmij Nederland	Ernst Malipaard
Hatenboer-Water	Peter Willem Hatenboer
ID Consultancy	Dick Konijn
IHC Merwede	Sergio Ooijens
IRC	Stef Smits
ITC	Victor Jetten
ITC	Dinand Alkema
Landustrie Sneek	Arie van Steen
MetaMeta	Simon Chevalking

Nijhuis Water Technology	Christiaan Beuzel
Norit	Jan van den Dikkenberg
Rabobank International	Alexander Hoogendoorn
Redox Water Technology	Maurice Nijrolder
Royal Eijkelkamp	Fons Eijkelkamp
Royal Eijkelkamp	Frank Tillmann
Royal Haskoning DHV Nederland	Harrie Laboyrie
Safisana Holding	Aart van den Beukel
Simavi	Ewout van Galen
SNV	Leendert Bos
TNO	Albert Jansen
UNESCO-IHE	Pieter van der Zaag
Vitens-Evides International	Marco Schouten
WASTE	Jacqueline Barendse
Waterschap Aa en Maas	Paule Dobbelaar
Wavin Overseas	Giles Crofts
Wetlands International	Chris Baker
Witteveen + Bos	Polite Laboyrie
WUR	Ivo Demmers
ZOA	Harm Bouta