

Benin

Positioning Survey for the Dutch water sector

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Glossary

ABE	Beninese Environmental Agency
AEP	Drinking water provision
AfDB	African Development Bank
AFD	French Development Agency
CARDER	Regional Action Center for Rural Development
CBI	Center for Promotion of Imports from Development Countries
DAT	Directorate of Development Planning
DE	Directorate of Environment
DFRN	Directorate of Forestry and National Resources
DG	Directorate General
DGR	Directorate of Rural Engineering
DNSP	National Directorate of Public Health
EKN	Embassy of the Kingdom of the Netherlands
EU	European Union
FDW	Sustainable Water Fund
GIRE	IWRM
GLAAS	Global Analysis and Assessment of Sanitation and Drinking Water (WHO)
IFI	International Finance Instruments
INE	National Water Institute
IWRM	Integrated Water Resource Management
MAEP	Ministry of Agriculture, Livestock and Fisheries
MASP	Multi-Annual Strategic Plan
MDG	Millennium Development Goal
MEHU	Ministry of Housing, Environment and Urban Planning
MERPMEDER	Ministry of Energy, Mining and Water
NABC	Netherlands African Business Council
NICHE	Netherlands Initiative for Capacity building in Higher Education
ODA	Official Development Assistance
ORIO	Facility for Infrastructure Development
PANGIRE	National Action Plan for IWRM
PCT	Technical Advisory Platform Water Benin-Netherlands
PNE	National Water Partnership
PPEA	Multi-Annual Program for Water and Sanitation
PSI	Private Sector Investments
PSO	Public Service Organization (Water Boards, drinking water supply companies, knowledge institutes)
PSRSA	Strategic Plan to Revitalize the Agricultural Sector
PUM	Programma Uitgezonden Managers
SCRP	National Growth and Poverty Reduction Plan
SDAGE	River Basin Management Plan
SONEB	Beninese National Water Society
WASH	Water, Sanitation and Hygiene
WB	World Bank

Executive Summary

The aim of the water positioning survey is to identify opportunities, product market combinations (PMCs), strategies, and approaches for the Dutch water sector in Benin. 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.

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.

The need in Benin focuses on three main sectors: WASH, IWRM (including flooding), and institutional strengthening of (governmental) agencies. In the WASH sector there is a need for fairer distribution and access to clean water and sanitation, especially in semi-urban areas. Operating faecal sludge treatment plants are not present which results in environmental pollution. There is an increasing need for improved water management, erosion prevention and water storage. The last need is related to functioning of governmental organizations or other executing agencies. Tasks of the central government have been decentralized to local governments, however the tasks and responsibilities of these governments for management and implementation is not clear.

There are not many companies, NGOs and public service organizations (PSOs) active in Benin. The sectors in which the organizations are involved are water supply and sanitation, IWRM and the cross over with ICT. Most promising areas as indicated by the Dutch water sector players are drinking water supply & treatment, IWRM, urban water management and irrigation. Companies and PSOs are mainly active in advice and support of products, while NGOs are involved in capacity building. Client of the Dutch water sector players are mainly the public sector, local knowledge institutions and international NGOs.

Based on the situation and the needs (demand) of Benin and the supply of the Netherlands a number of Product-Market Combinations (PMCs) have been defined in the areas of WASH, IWRM and maritime. The following are a small selection of the PMCs:

- Delta planning: airport relocation, flood dikes, real estate development, port development, and wetlands restoration.
- Faecal sludge management: training, capacity building, stakeholder collaboration and development of technologies. This could be done by knowledge institutes, NGOs and companies.
- Institutional support of INE. Dutch Water Boards, water companies, consultancy companies, and knowledge institutes can support INE in the introduction of ICT and provide management and business support for adaptation to the labor market.
- Port and logistics in Cotonou, including services and advice to support logistics and quay development by large companies or consultancies. Dredging of the port can be done by dredging companies.
- Solid waste treatment

To enter the country, Dutch organizations can make use of PPEAII of the Dutch government. IFIs can be a means for entering the country through specific projects (WB for faecal sludge management or

support of INE) and PPEAI of the Dutch government. The Water Partnership Benin or the Netherlands-Benin Platform could offer insights in the market and opportunities.

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 Facts¹

Government type	Democratic republic
Political situation	Benin is a relatively stable country, in which President Yayi has relatively much power. In 2011 the president was elected for a second 5-year Presidential term. His attempts to change the constitution for creating a third presidential term caused unrest in the country. The political class and civil society criticize the authoritarian tendencies of the president. In general, democratic institutions perform their functions well at the national level. Productivity at the local and regional level is still lagging behind (although progress has been made) due to frictions between traditional actors and appointed or elected actors. Benin knows many social and political associations that act without interventions from authorities. Most civil society leaders are associated with political parties, but this has no negative effects on freedom of assembly and association (Via Water 2014; BTI 2014).
Stability	Benin is one of Africa's most stable democracies, in which church and state have been separated already since 1990. The country is susceptible for (political) situations in surrounding countries, such as the unstable situation in Northern Nigeria, Mali (current) and Togo (2005). The government does not

¹The facts concern the year 2013, unless indicated otherwise

Currency exchange rate: € 1 = USD 1.18, € 1 = 561 West African CFA Franc

	discriminate on ethnic, religious, or cultural grounds. There is no dominant group that identifies itself as the core group of Benin's heterogeneous society (BTI, 2014).
Language	French is the national language of the country. Other languages are Fon and Yoruba in the south, and some tribal languages in the north (CIA, 2104).
Population	10,160,556, which ranks 88 on the world list (CIA, 2014 est.)
Population growth	2.81% (CIA, 2014)
Economic growth (GDP)	5%, world comparison ranking: 59
Expected growth (GDP)	2015: 4.4%, 2016: 4.3%
GDP (PPP)	€ 7,084 billion
GDP (PPP) per capita	€ 1,356 world comparison ranking: 202
Unemployment rate	1%
Inflation rate	2.4% 2015: -1.70%, 2020: 0.6%
Foreign direct investments	3.9% of GDP
ODA in % of GNI	6.8% (2012)
Imports	€ 1,555 billion
Import partners	China (37%), USA (9%), France (6%), Malaysia (5%)
BTI index on banking system	7. The economic and market processes in the country have been strengthened over the past decades. The government does not intervene in economic processes. The general framework continues to be weak, despite the privatization of banks and other sectors, and the informal sector dominates the economy. The financial sector in Benin has also developed considerably, and is aligned with international standards. Benin is member of the West African CFA currency community, which provides a direct link to the euro via the French Treasury. The sector is characterized by short and medium term loans, which reflects the predominance of trade and transit activities and the lack of an efficient loan recovery mechanism for long-term investment projects. Private banks dominate the financial sector, while micro finance institutes take a greater role in financing SMEs. Supervision of the ordinary banking sector is relatively efficient due to regional integration, whereas the fast growth of micro finance has resulted in little regulation (BTI, 2014)
Doing business index	2014: 167 (out of 189)
WEF Global competitive index	130 out of 148

1.2 The water situation

This section describes the physical water situation (including flooding of river systems, coastal zones and maritime areas), the influence of climate change, the effect of irrigation and the water pressure.

1.2.1 Physical description of the water situation

The dryer north of Benin is part of the Niger River water basin for a length of 120 km. The floodplain of the Niger River in Benin covers 275 km² at peak floods. A second important river is the Pendjari River, a tributary (branch) of the Volta. The Penjari River floats through Benin over a distance of 400 km before it enters Togo. South flowing rivers are the Mono, Couffo and Ouémé, which has a floodplain of more than 2,000 km² at peak floods. The Ouémé River does not cross borders with

other countries and has therefore no geo-political relationships with neighboring countries. The Ouémé is one of the most important sources of water supply to the country. During the rainy season the rivers flow abundantly, while many rivers fall dry in the dry seasons. For that reason, the inland rivers are not much used for transport. In the more humid south of the country, the water basin provides water for agriculture and water supply for some larger cities. Wetlands are mainly concentrated in the south of the country and consist of lakes, floodplains, and lowlands. A large number of micro dams can be found in the area. The wetlands are rich in biodiversity but are threatened and overexploited by human activities such as infrastructure development and the development of fresh water hyacinths. The latter is a main issue in a large number of African and Asian countries that have to deal with the vast development of the plant. This invasive species threatens biodiversity, reduces the water quality and blocks the waterways for fisheries, transport, or hydropower.² Groundwater is a major source of water in Benin, although only an estimated 2% of the available groundwater was used in 2007. In the northern areas of the countries, the groundwater availability and recharge strongly relate to space and time, which means that the availability is related to the amount of precipitation in the wet season. Restrained groundwater availability is caused by shallow and segmented aquifers that do not have the capacity to store water over the seasons (Via Water, 2014). The water sources of Benin are mainly used for crop irrigation, livestock and drinking water supply in both rural and urban areas.

1.2.2 Climate and climate change

Climate change is expected to result in extended dry periods, more intense rainy seasons, floods, delaying rains, and stronger winds. It can have influence on existing rainfall and drought, and can have influence on agricultural activities. The country is relatively vulnerable to climate change both biophysically and socio-economically, because of limited adaptive capacity in terms of natural resource infrastructure and finite livelihood diversification, which may threaten food security. The northern parts of the country will most probably have to deal with the desertification, which threatens the agricultural production of the area. Also in southern parts of the country climate change can affect the agricultural productivity due to increasingly intense rains and flooding. Decline of precipitation could result into 40-60% reduction in the availability of water resources further influencing food production. Droughts and floods can reduce food production by 6% by 2025 when no adaptive measures are taken (Climate Profile Benin, 2014; Climate Change Screening Workshop Report Benin, 2014).

1.2.3 Pressures on water sources

The total renewable water resources in Benin are 26.39 cu km (CIA, 2011). Taking into account the increasing population of Benin, the availability per person per year may decline from 6200 m³ in 1955, to 2835 m³ in 1990 and 1400 m³ in 2011 (Via Water, 2014). Fresh water withdrawal is 0.13 cu km/yr (CIA 2014), this water is mainly used for agriculture (45%), domestic purposes (32%) and industry (23%). Pressures on water sources are the sharing of the Niger River with Niger and the Mono River with Togo. The Niger River basin is mainly used for irrigation and the Mono River basin is used for hydropower. Hydropower is an important issue with a number of planned projects in the Mono Basin (Adjarala Dam) and the Ouémé Basin (Dogo-Bis and other dams). Climate change has effects on the discharges of the Ouémé River (the main source of water in Benin). A water resources master plan for Ouémé has been developed, which is the main policy document for the development of the Ouémé basin.

1.2.4 Irrigation

The total irrigated land in 2008 was 230 km² (CIA, 2008) of the total land surface of 112,622 km². While irrigation is not widely used in Benin, the most used irrigation techniques are surface irrigation

² http://www.unep.org/pdf/UNEP_GEAS_APRIL_2013.pdf

(46%) and sprinkler irrigation (42%). The main irrigated crops are rice, onions, tomato and leaf vegetables (Aquastat, 2014). These crops, except from rice, are traditionally irrigated by smallholders. However, the low level of development of irrigation systems still leads to low yields. Therefore, those farmers do not produce for the national market and the effect of irrigation on the national economy is hardly visible. In order to keep a good competitive advantage for agriculture the need for public investments for irrigation and water management is high. A new program on water and food security is under way, which aims to contribute to better development of water resources for agriculture and to stimulate the involvement of the private sector in this. Cotton production will remain to be one of the main drivers of Benin's economic growth. This is mainly rain-fed, not irrigated.

1.2.5 Flooding of river systems

The riverine areas in both the north and the south of Benin are vulnerable to flooding, which became evident during major flooding of the Mono River and the Ouémé River in 2008 and 2010. This flooding affected at least 150,000 people, drowning of tens of thousands of animals and an equal number of hectares were flooded. The flooding of the Niger River in 2013 destroyed over 3000 houses, 13,000 ha of farmland and 40,000 displaced and threatened people (Via Water, 2014).

1.2.6 Coastal zones and maritime areas

Benin has a coastline of 121 km, with coastal areas that are relatively vulnerable to rising sea levels and to oceanic storms causing floods and damaged infrastructure. Benin has 200 nautical square miles of territorial sea (CIA, 2014; Via Water, 2014). The largest port of Benin (Cotonou), does offer a good entrance to the hinterland of Benin and a valuable alternative to the Lagos harbor in Nigeria that is less preferred for international trade due to corruptive practices. However, the status of the port is rather weak due to governance problems and unclear management responsibilities (the port authority is officially responsible for development of the port). This results in underperformance of the port, with high transaction costs and revenue leakage. In addition to the weak situation of the port, bad roads and the lack of inland terminals lead to much congestion of goods, which limits the export capacity to other countries.

1.3 The water sector

This section describes the public sector, the legislation, the spending and investment planning and the role of the private sector, NGOs and knowledge institutes. This section ends by identifying the pressing needs and explaining the Dutch Government engagement strategy.

1.3.1 Public sector

Benin has chosen for integrated management of water resources, which makes three ministries responsible for integration of management in order to realize synergy for sustainable development. The Ministry of Energy, Mining and Water (MERPMEDER) sets the general water sector policies and supervises their application. It is responsible for monitoring the quantitative changes of water resources for drinking water supply and energy production. This is done via the Water Department, the Energy Department and the Beninese National Water Society (SONEB), the national drinking water supply company, which is responsible for drinking water supply and wastewater treatment in urban areas. This latter task of SONEB is executed to a very limited extent. The Ministry of Agriculture, Livestock and Fisheries (MAEP) is responsible for water use for agriculture and livestock, the conservation of soil and water, forest management and reforestation. The implementing bodies are the Directorate of Rural Engineering (DGR), The Directorate of Livestock, the Fisheries Department, the Directorate of Forestry and National Resources (DFRN) and regional Action Centres for Rural Development (CARDERS). The Ministry of Housing, Environment and Urban Planning (MEHU) works together with the Environmental Directorate (DE), the Development

Planning Directorate (DAT), the Beninese Environmental Agency (ABE), and the National Commission for Sustainable Development (Aquastat, 2014).

The Directorate General Water implements national policies and coordinates water use for different purposes. The Authority is represented by eleven Water Service Divisions and uses six Department Divisions of the Ministry of Energy and Water. The decentralization policy of the Beninese government makes the 77 municipalities responsible for water supply and sanitation, according to the new law on water. The municipalities can request for technical assistance at national level or at the private sector. The national government is responsible for the transfer of the necessary resources for the execution of the tasks of the municipalities. Water provision in urban areas is provided by SONEB. Under the new law, the communities, with assistance of DG EAU, are responsible for drinking water provision in the rural areas. There are no clear policies for water provision for peri-urban areas and small water supply companies (some with legal NGO status) ensure water supply in these areas (Via Water, 2014).

The public sector is responsible for the promotion of irrigation and drainage in the country. The Ministry of Agriculture, Livestock and Fisheries provides funding for the implementation of short- and medium-term existing and planned development projects. Currently, no official document exists on policies and strategic approaches for irrigation schemes, these are only defined. The policies aim at creating necessary conditions for modern agriculture which is more intensive and competitive, in order to ensure food security in the country. A Master Plan for Agriculture and Rural Development has been created which focuses on increased food security, agricultural diversification, increased agricultural productivity for sustainable water resource management (Aquastat, 2014).

The Ministry of Agriculture is responsible for policies for food production and food quality. However, the ministry has a strong bias towards the cotton production in the country, which has led to unsuccessful policy implementation for food production and food quality (MASP, 2014). This is strengthened by many donor-funded initiatives in the food sector and a low level of coordination between the development partners. The Ministry of Agriculture has strategic plans for stimulating the agricultural sector for sustainable development of hydro-agriculture. This type of agriculture focuses on modernization of the agricultural sector through e.g. improved water management according to IWRM principles and norms (G4AW, 2014).

Overview of most important governmental water plans of Benin:

- National Action Plan for IWRM (PANGIRE) that should support the implementation of IWRM.
- River basin management plan (SDAGE) Ouémé
- National Growth and Poverty Reduction Plan (SCRIP) 2011-2015
- Strategic Plan to Revitalize the Agricultural Sector (PSRSA) 2008-2015 has the objectives to foster efficient and sustainable agricultural production and improving agricultural diversification and competitiveness to facilitate access to markets, boost agriculture exports and reduce imports.
- Benin has a National Action Plan for Adaptation to Climate Change (PANA) which has five priorities:
 - o Establishing a model for forecasting climate risk and early warning systems for food security in four vulnerable agro-ecological zones
 - o Promotion of renewable energy
 - o Collection of surface water in municipalities and vulnerable departments in the centre and the northern parts of the country
 - o Protection of children under five and pregnant women against malaria in areas most vulnerable to climate change

- o Protection of coastal areas against a rising sea level

Some governmental organizations or bodies on water issues in Benin are:

- National water council (CNE)
- National water institute (INE)

1.3.1.1 Legislation

Benin has a water law (2008).

1.3.1.2 Public sector current spending and investment plans

- The figures of Table 1 show that the Ministry of Health has the largest budget compared to the other ministries. WASH activities are partly the responsibility of this ministry, together with the Ministry of Urbanization, Habitat and Sanitation, whose annual budget is significantly smaller for both 2014 and 2015. The budget of the Ministry of Agriculture and Fisheries is the second largest, while the budget of the Ministry of Maritime Economy and Ports only covers € 3 million. The budget for DG Eau, responsible for drinking water supply in rural areas, is stable over the period 2011-2014 (

Table 2). Every year the realized amounts available are 50-65% of the required budget. The lower external funding is the main cause of this gap. The internal realized amounts are more or less similar to the annual budgets. According to GLAAS (2014), Benin has a WASH planning and budget for sanitation, drinking water, and hygiene on rural, urban and national levels. It is reported that these plans and budget are consistently followed. The national budget spent on WASH was € 50 million (2012). The funding sources were € 7.6 million from the national government, and € 41.5 million from external funders. As mentioned before, WASH activities are covered under the Ministry of Health and the Ministry of Water.

Table 1 Overview of available budgets for water related ministries for 2014 and 2015³ (million euro)

Ministry	2014	2015
Ministry of Industry, Trade and Small and Medium Enterprises	23.4	19.6
Ministry of Health	136	155
Ministry of Energy, Mining, Water and Development of Renewable Energy	7	86.2
Ministry of Agriculture, Livestock and Fisheries	106.6	130
Ministry of Environment, Climate Change Management, Reforestation, and Protection of Natural Resources and Forests	22	25.4
Ministry of Urbanization, Habitat and Sanitation	44.5	76.7
Ministry of Maritime Economy and Ports Infrastructure	3.3	3.3

³ Available via <http://finances.bj/spip.php?article515>

Table 2 Budget of DG-Water (Ministry of Mining, Energy and Water) for drinking water supply (AEP)⁴ (million euro)

Year	Funding source	Budget	Realization
2011	Internal sources	4.5	3.3
	External sources	29.9	19.4
	Total	34.3	22.8
2012	Internal sources	6.9	5.8
	External sources	25.9	11.9
	Total	32.9	17.8
2013	Internal sources	3.6	6.8
	External sources	26.2	16.7
	Total	29.8	20
2014	Internal sources	2.7	Not available
	External sources	27.4	Not available
	Total	30.1	Not available

Table 3 National Direction of Public Health (DNSP) for hygiene and sanitation (2010-2013)⁵ (million euro)

Year	Type	Investment ⁶	Operation	Total
2010	Budget	2	0.26	2.3
	Realization	1.6	0.2	1,8
2011	Budget	3.2	0.69	3.9
	Realization	2.8	0.65	3.5
2012	Budget	6.7		
	Realization	4.7		
2013	Budget	6.6		
	Realization	46		

1.3.2 Private sector

The role of the private sector is limited in the field of irrigation as a result of a lack of incentives. However, the private sector benefits to some extent from the financial support that is given to projects that promote agriculture and self-employment. The national government has recently adopted a national program for the promotion of private irrigation. Through a gradual change the government will withdraw slowly to give the private sector space (Aquastat, 2014).

1.3.3 NGOs and knowledge institutes

NGOs are active in the field of agriculture; for instance, SNV and PROTOS assist local organizations in the development of agriculture and the WASH sector in Benin. In the past, (French IRD) water research was done which still contributes to water basin management. The agricultural sector does not benefit enough from the knowledge on aquifers. NGOs do have extensive contact with local farmers in Benin (G4AW, 2014). The Netherlands Environmental Impact Assessment Commission

⁴ Source: YEP

⁵ Source: YEP

⁶ Investments cover the building of latrines, operation focuses on exploitation, maintenance and training.

(Commissie MER) has been involved in the evaluation of a planned hydropower dam (Ajarala dam) in the trans-boundary Mono river basin.

1.3.4 Dutch cooperation and priorities

The Dutch government supports Beninese institutes IWRM, water supply, sanitation, wastewater treatment and governance. The Embassy has contributed to convince the government of Benin to the added value of Dutch knowledge and experience to improve the functioning of the port of Cotonou and delta planning. The port especially needs replacements of the quays and restructuring of the handling area of the quays. Dutch cooperation for food security is translated into two programs: 'approche communal' and the establishment of an agri-business service centre that supports agro-business entrepreneurs. The embassy also co-finances Agri-hub, in which Dutch related organizations participate, and it has contracted Netherlands Africa Business Council (NABC) to identify Dutch enterprises that show serious interest in starting business in Benin. The multiannual program for water and sanitation (PPEA II or Programme Pluriannuel d'appui au secteur de l'Eau et de l'Assainissement) is the continuation of the PPEA I that ended in 2012. PPEA II covers IWRM, food security, drinking water supply, hygiene and sanitation (both urban and rural), and wastewater management. The focus is on improving sustainable water supply and basic sanitation and hygiene in both rural and urban areas. It also focuses on improving water resource management and securing the availability of water for agriculture, all in relation to the increasing pressures on water resources. The IWRM and water & food security parts of the program are fully linked to climate change adaptation as cross cutting issue. The current program runs from 2013 to 2015 and extension of the PPEA II program is foreseen until 2020. The budget for the period 2013-2015 is € 66,629,390, of which € 14,789,590 is funded by the European Union. The budget for the extension period to 2020 will remain on approximately the same level.

Dutch support in the water and sanitation sector of Benin started in 2004 with the Water I, II, and III programs, PPEA I (2007-2012) and several other programs. The cooperative program focuses on:

- Water availability for social, economic and environmental use in the framework of IWRM
- Food security through better use of water resources through IWRM
- Improved sustainable and equitable access of drinking water in rural areas
- Strengthening promotion of hygiene and increase equitable and sustainable access of sanitation
- Improve access to drinking water and sanitation in urban areas.

From the IWRM section of the PPEA II the Delta Plan for the Lower Ouémé River Basin has emerged. The Delta Plan is currently being developed and an outline of this plan will be ready by mid 2015. This integrated water management and spatial development plan should aim for combined improved water management and economic development under conditions of improved climate resilience of the Ouémé basin, while integrating other issues such as flood resilience and natural productivity. The involvement of the National Water Commission (CNE), river basin organizations and local communities is essential. The lead of the development of the delta plan has been authorized to INE under an agreement with DG Eau. The river basin management plan (SDAGE) that was prepared for the Ouémé with Dutch support is also serving as a basis for the Delta Plan (MASP, 2014).

2. Opportunities relevant to the Dutch water sector

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 I 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

The section starts by describing the current situation, how the Dutch water sector is involved, the type of activities performed, client groups and performance on specific development indicators.

2.1.1 Progress on MDGs

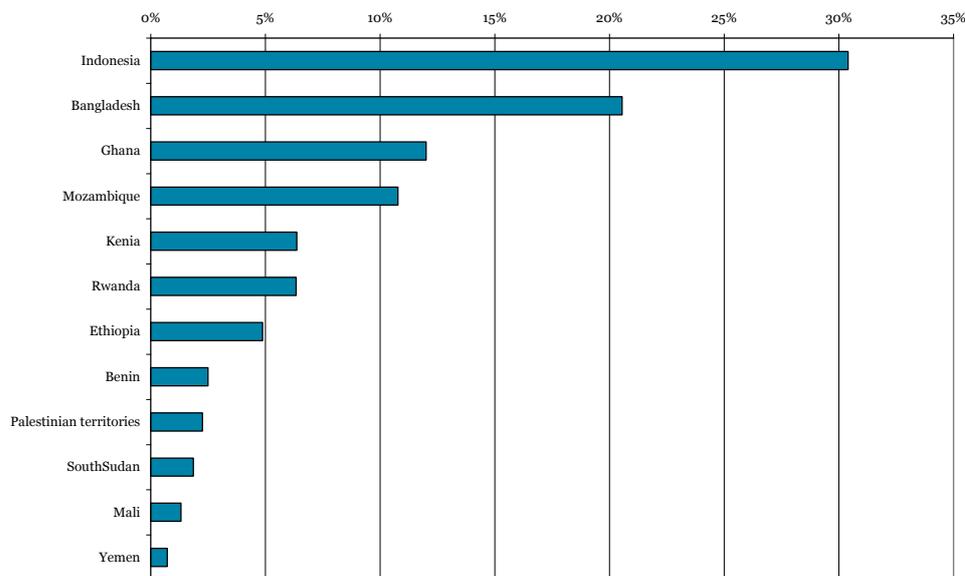
Benin is not fully on track on reaching the millennium goals on water, sanitation and hygiene. The target on access to drinking water is on track, while the sanitation component is lagging behind both in rural areas and urban areas. A main constraint, apart from the low degree of development and awareness, here is the large population growth that hinders the development. Urban drinking water, which is under responsibility of SONEB, is estimated at 63.4% (2012), which is close to the MDG target of 64%. Urban sanitation is still underdeveloped in large cities such as Parakou, Porto Novo and Cotonou. This MDG will not be met in 2015. With regard to rural drinking water, which falls under the responsibility of the municipalities, the country is on track for achieving the MDG of 63%. In 2012, 63.7% of the rural population has access to clean drinking water. Rural sanitation is the largest concern, with only 16% of the population having access to sanitation in 2010 (MASP, 2014; CIA, 2010).

2.1.2 Dutch water 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 million⁷, of which the share of Benin is about 2.5% (web survey Panteia, 2014/2015). Figure 1 shows the breakdown of these exports over the various OS-countries. The share of Benin is about 2.5% of this total. Outputs of the web survey show that 15% of the Dutch companies are active in Benin and over 20% is not active yet, but interested in doing business in the water sector of this country. For NGOs the respective percentages are 44% and 6% (web survey Panteia, 2014/2015).

⁷ 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

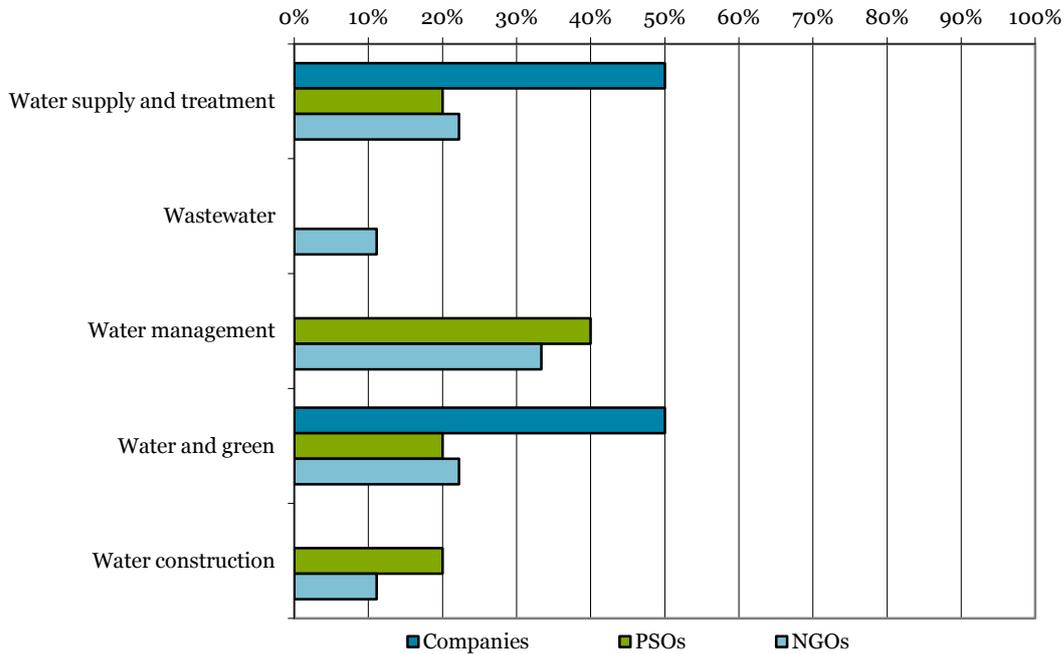
NGOs active in Benin are WASTE (WASH), Practica (Research/WASH), IICD (ICT – food security), Aqua for All (WASH), Akvo (ICT – WASH) and the EIA Commission⁸. Dutch companies in the water sector are represented by MetaMeta, Brabant Water (water supply), Royal Eijkelpkamp, Royal HaskoningDHV (consultancy), Boskalis (dredging), Antea Group (water supply), EARS Earth Environment Monitoring (ICT – remote sensing), VNG (Governance) and Deltares. Wageningen University (WUR) and UNESCO-IHE are Dutch knowledge institutes currently active in Benin in mainly IWRM in the NICHE program with UAC University.

Current activities in various subsectors in Benin

Most companies are active in the subsector water supply & water treatment (50%) and water and green (50%). Public Service Organizations (PSOs), which refers to Water Boards, water supply companies and knowledge institutes, are mainly active in the subsector water management (40%) and to a lesser extent in the subsectors water supply & water treatment, water and green, and water construction. According to respondents of the web survey, activities of NGOs in Benin are more or less similarly divided over the five subsectors (see Figure 2) with slightly more emphasis on IWRM. The projects and involvement of companies in Benin also show an involvement in port development and water supply. Current projects of NGOs have a strong focus on WASH, which is different from the results of the web survey. Knowledge institutes are involved in the water sector of Benin through the NICHE program. Respondents of the web survey that are currently active in Benin have indicated to see most potential in the areas drinking water supply & treatment, IWRM and urban water management. Organizations that have interest in Benin see potential in the same sub sectors, complemented with irrigation.

⁸ Commissie MER

Figure 2 Current activities of Dutch companies (N=2), PSOs (N=5) and NGOs (N=9) in the various subsectors of Benin, in % of total observations

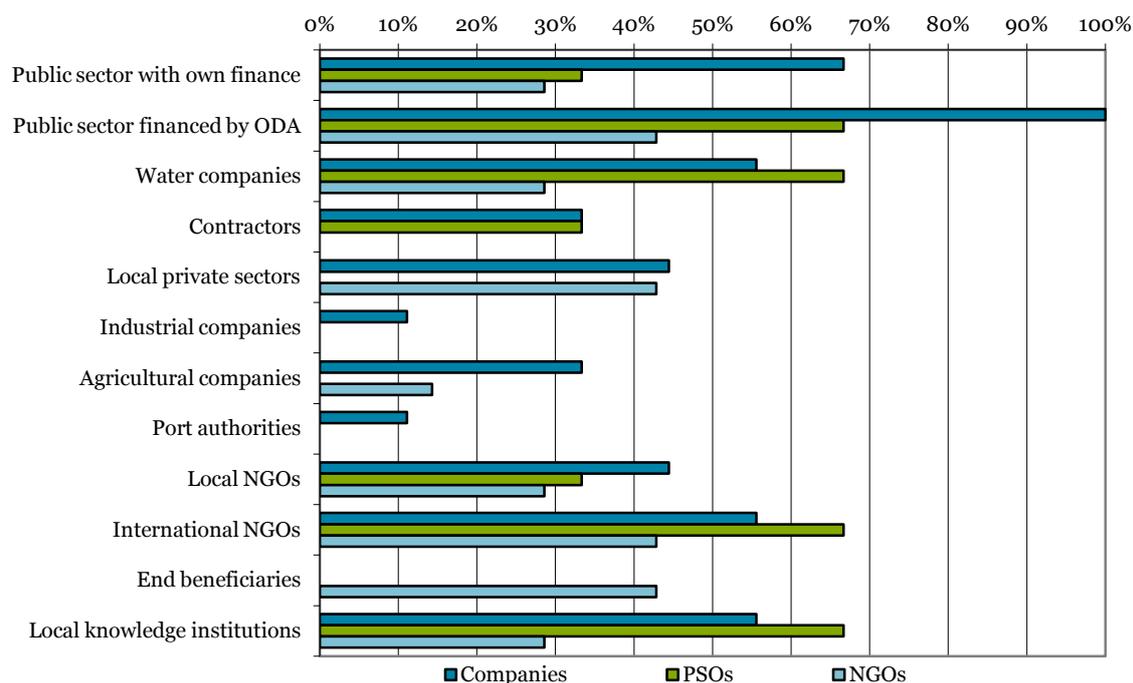


Source: Web survey Panteia, 2014/2015

The web survey showed that the main activity area of companies in Benin is advice (78%). Activities of PSOs focus on providing technical advice and support in projects (50%). 86% of the NGOs active in Benin indicated to be mostly active in capacity building and knowledge transfer (see Figure A.3, Appendix III).

The main client for companies in Benin is the public sector either ODA financed (100%) or with own finance (67%). To a lesser extent companies work for water companies, international NGOs and local knowledge institutes (all 56%). Clients of PSOs are similar to the clients of companies, but there is no strong preference for either one. NGOs have local private sector, end beneficiaries, international NGOs and public sector financed by ODA as their clients (see Figure 3).

Figure 3 Current client groups of Dutch companies (N=9), PSOs (N=3) and NGOs (N=7) in Benin, in % of respondents (more answers possible)



Source: Web survey Panteia, 2014/2015

2.1.3 Dutch public support programs

The water program supported by the Netherlands bilateral program aims to improve sustainable urban and rural water supply, increase basic sanitation and hygiene in urban and rural areas, and improve the management of water resources in perspective of increasing pressures and stress on the sources as a result of climate change, agriculture development, and increased demands for water as a source of hydro-electricity. The PPEA II program also seeks to secure the availability of water for agriculture and thus for food security. It is based on a contract with the Beninese government, aiming to prepare for an independent and sustainable management of the sector by the authorities involved. This PPEA program overall focuses on:

- Rural water supply
- Urban water supply
- Urban sanitation
- Integrated water resources management (IWRM) including water and food security
- Cross-cutting issues: governance, climate change, gender, transition

Dutch financial support to Benin for the years 2014-2017 amounts to € 73.5 million (€ 18.5 million per year) for improving water management (including water and food security), drinking water and sanitation; and € 3 million for strengthening the private sector and improving the investment climate.

In 2013, Dutch support programs through the Embassy (EKN) focused on water management (€ 2.9 million) and on WASH (€ 12.8 million) as can be seen in Figure 4. Projects are funded through the PPEA or PPEA II programs and are implemented by the government, NGOs, research institutes and companies.⁹ Table 4 gives a more detailed overview of the EKN programs for the sectors of Figure 4.

⁹ Resultaat fiche water 2013 EKN

Figure 4 Sectors of Dutch support programs - Coordinated from EKN 2013

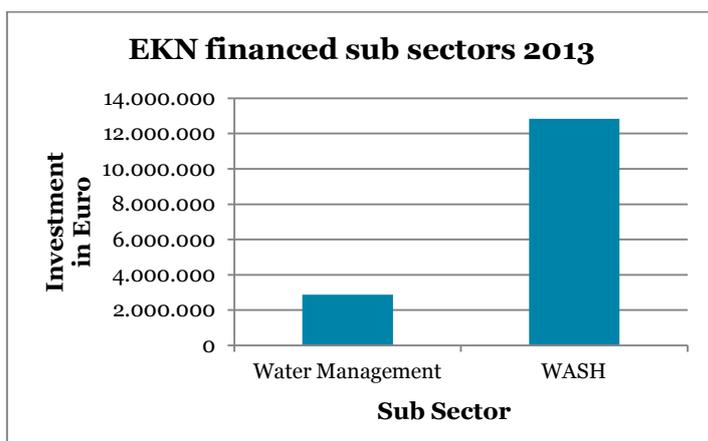


Table 4 Overview of Dutch support programs – Coordinated from EKN in 2013 (million euro)

Program	Budget 2013	Budget 2014	Implementation channels	Sector
Cotonou PPEA II WASH government	10.3		Government	WASH
Cotonou PPEA II IWRM government	1.2	0.7	Government	IWRM
Cotonou PPEA II WASH technical assistance	1.7		Research Institute & Companies	WASH
Cotonou PPEA II IWRM technical assistance	1.3		Research Institute & Companies	IWRM
Cotonou PPEA II Missions	0		Research Institute & Companies	IWRM
PPEA/Rural	0	0.25	Government	WASH
PPEA/Urban	0.76	0.25	Government	WASH
PPEA/SNV	0		NGO	WASH
PPEA/CREPA	0.020		NGO	WASH
PPEA/CePEPE	0.020		NGO	WASH
PPEA/Missions	0.087		Research Institute & Companies	IWRM
PPEA/Audits	0.2		Research Institute & Companies	IWRM
PPEA/PNE 2007-2011	0.1		NGO	IWRM
PPEA/IWRM 2007-2011	0		Government	IWRM
Total	15.7	15.7		

Explanation to the table: The budget of 2014 was not available at the moment of publication of this report. The EKN program funding remained roughly the same in 2014 as in 2013. The only shift in budget is 40% of the Cotonou PPEA II IWRM government budget going to the budgets PPEA Rural and Urban. Other amounts remain the same, so is the total annual budget.¹⁰ The PPEA II program supports the development of IWRM in the country by supporting the creation of institutions, such as

¹⁰ Source: Key advisor Benin J. de Schutter

the National Water Council, Basin Management Organizations and the National Water Institute (INE). The WASH budget is spent on support of key ministries in fulfilling their tasks, providing technical assistance for implementation, and on participation in planning activities.

In addition to programs funded through the Embassy, the Netherlands has a number of support programs in Benin (Figure 5 and Table 5). Dutch support programs in Benin that are used in the period 2010-2020 are Nuffic (NICHE) funds, PSI (Private Sector Investments) and CBI (Centre for the Promotion of Imports from Developing Countries). Two PSI financed investments (cashew nuts and aquaculture) were implemented recently. These programs are not much used and often the local Beninese partners fail to meet minimum requirements. PUM (Programma Uitgezonden Managers) has been widely used in the agriculture sector, not in the water sector. Table 5 shows a detailed overview of the Dutch funded support programs.

Figure 5 Dutch support programs - coordinated from the Netherlands in Benin 2010-2020¹¹

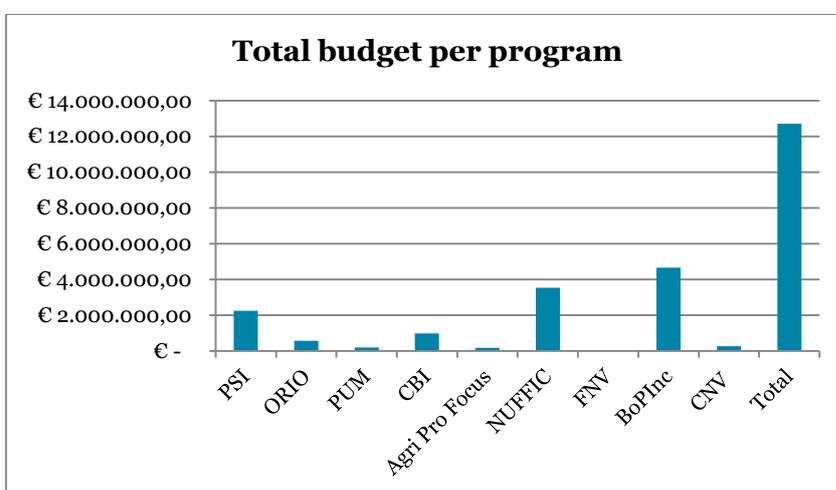


Table 5 Overview of Dutch support programs – coordinated from the Netherlands (euro)

Program	# of current projects	Total budget per program	Program execution date	Most relevant sectors
PSI	3	2,249,090	Jan 2010-Aug 2016	Agro
ORIO	1	570,000	Oct 2013-Dec 2020	Water
PUM	40	200,000	Jan 2014-Dec 2014	Agro
CBI	8	993,693	Jan 2008-Dec2017	Agro
Agri Pro Focus	?	178,364	Jan 2014-Dec 2014	Agro
NUFFIC	4	3,537,858	Mar 2013-Aug 2017	Agro / Water
FNV	5	31,807	Jan 2013-Dec 2014	cross sectoral
BoPInc	1	4,666,666	Jan 2011-Mar 2017	Food
CNV	?	279,706	Jan 2013-Dec 2014	Education, services, transport, healthcare
Total	62	12,707,184		

¹¹ Source: Projects DDE

The NUFFIC / NICHE (Netherlands Initiative for Capacity building in Higher Education) supports Benin in addressing its water related challenges. The aim is to support the development of the National Water Institute (INE) that will enable Benin to manage future water challenges. The NICHE program runs from 2013 to 2016 and has a value of € 2.8 million. The involved partners are Van Hall Larenstein University for Applied Sciences, Deltares, UNESCO-IHE, Wageningen University, and TU Delft.

2.2 Trends

This section describes the trends starting by summarizing the most important pressing needs followed by an overview of government plans and the agenda of donors and funders.

2.2.1 Pressing needs

The needs in the country focus on three main issues, namely WASH, IWRM and flooding, and institutional strengthening.

WASH

There is need for fairer distribution of access to clean water and sanitation. This concerns the number of water sources, the beneficiaries and location of the water points, and the price of clean water. The need is especially high in semi-urban areas. SONEB, which operates from a commercial perspective, is responsible for water provision. However, the company is not able yet to reach all people, including the poor. Cities in Benin have to deal with large problems in relation to sanitation. There are no properly functioning (faecal) sludge treatments in the country (the very few units available are overloaded), which results in dumping sludge outside urban areas, in lakes and even in the sea. Also rural areas do not have well arranged sanitation and hygiene facilities. In both urban and rural areas this results in high child mortality, diseases and health risks due to reinfection of clean drinking water, water borne and fecal-oral lack of hygiene diseases. People are still unaware that this is caused by open defecation. In large cities the solid waste and wastewater management processes are not well developed at all.

IWRM and flooding

In general, Benin has sufficient water available, however due to seasonal and geographical variations as well as rapid population growth and urban development there is an increasing need for improved water management. This mainly concerns flood protection, but also erosion prevention and storage of water. Flooding occurs on a frequent basis, which threatens people's lives and has severe negative effects on social services and economic activities. A second important need in Benin is the depletion of groundwater sources in both quantity (north) and quality (south). This results in an increased need for surface water exploitation. A last, less urgent need is the problem of invasive aquatic plants in the surface waters of Benin. Until now no real solution has been found for solving the problem, but a method of harvesting and transformation to biogas or other applications could have potential.

Institutional strengthening

More tasks in the water sector have been decentralized to local government. Good governance between the national government and local governments is needed because the local governments do not have well developed skills for water management. In general, the institutions in Benin are weak and the level of management and knowledge on water related issues is low. Also for planning and implementation of water related projects, the authority and capacities of local communities and municipalities needs to be strengthened. Finally, there is a rising need for good governance between state and non-state actors in the water sector, in order to include civil society in the coordination and monitoring of water services.

2.2.2 Government plans and development agenda

The most important change in the institutional setting of Benin is the decentralization process from the central government to local governments. This gives more responsibility to the ‘communes’, especially on issues related to water and health. This concerns water, sanitation and hygiene as well as faecal sludge management and solid waste management. This covers both smaller cities and rural areas. It must also be mentioned that in 2015 a new National Assembly will be chosen and in 2016 the presidential elections will be held. This will most probably have influence on the current cooperation between Benin and the Netherlands.

The government of Benin recognizes the added value of the Netherlands in improving the functioning of the Port of Cotonou, which is part of the development of the proposed Delta Plan for the Lower Ouémé and Lake Nokoué region. The Dutch government will support Benin in the development of the Delta Plan, which should include improving the connection of the port with the rest of the country and the corridor to the north. The Plan also looks into the opportunities for urban development in combination with flood defense works and improved productivity of the Lake Nokoué.

Water and agriculture issues are important for cotton growing in the north and in support of implementation of food security policies elsewhere. The PPEA II program (through water and food security), assisted by the recently established INE, is contributing to this effort through improving the productivity of lower situated areas. IWRM (GIRE) is the key strategy and policy for development of the water sector and of water management in Benin, together with a policy of decentralized water management with the communities (communes) of Benin with a central role and main responsibilities. This is especially important for rural and semi rural water supply and sanitation. Delta technology and water infrastructure development are relatively new to Benin. The current PPEA II program is contributing to the National IWRM Plan (PANGIRE) and a Delta Plan for the Lower Ouémé and Lake Nokoué in the strongly urbanized region around this lake. The National Water Institute together with the DG Eau are in the lead for implementation of these initiatives.

2.2.3 Plans and agenda of donors and funders

General strategies of large international funders are:¹²

Netherlands

The coming decade(s) Benin remains a country that will need aid because of the low development state of the country and the high need for water, schools, hospitals and other infrastructures as a result of the high population growth. Therefore the agenda of the embassy of the Netherlands in Benin will have a ‘transition approach’ that should stimulate a.o. trade and joint business ventures in the Beninese water sector between Beninese and Dutch entrepreneurs and knowledge institutes. Within the water sector, EKN will focus on a sector-wide approach in the water and sanitation sector which includes rural and urban water and sanitation (incl. faecal sludge management), IWRM, port development and logistics, and strengthening the relationship between water and food security (MASP, 2014).

European Union

EU member states that are active to date in Benin are Netherlands, Germany, Belgium and France. In 2014 Denmark withdrew from Benin. The EU delegation in Benin will start with a joint programming to mainstream the coordination and cooperation in the country.

World Bank

¹² Sources: Country Strategy Papers of World Bank, AfDB,

The World Bank support for Benin focuses on two pillars:

- Increasing sustainable growth, competitiveness and employment
 - Increasing access to and quality of infrastructure services for energy, transport, telecommunications
 - Improved agricultural productivity and diversification and sustainable management of natural resources
 - Develop high potential value chains and improve business climate/ PPPs
- Improving service delivery and social inclusion
 - Improved education, health and nutrition services (including wash)
 - Improved financing and operations systems for rural and peri-urban water supply
 - Poverty and gender analysis

African Development Bank

AfDB has two development support pillars for the period 2012-2016. The bank aims to mainstream these issues into the development strategies of Benin.

- Production and competitiveness support infrastructure
 - Development of agricultural production infrastructure: agricultural diversification, development of infrastructure that supports irrigation farming, rice cultivation, adaptation to climate change
 - Infrastructure consolidation to boost competitiveness and greater integration into national and regional markets: focus mainly on roads to neighboring countries
- Enhancement of good governance
 - Consolidation of the macro-economic management framework: support to modernize public finance management and public administration.

2.2.4 Macro-economic developments in agriculture, industry and other sectors

What most probably will be very important the coming years for the agricultural development in Benin is what is called 'adapted valorization' of production. This means that agricultural production is adapted to the availability of suitable land and water, which is a different way of acting that can change the current ways of production and processing. It might offer opportunities related to food security through the Environmental and Food Security Plan up to 2020, however, exact opportunities for the Dutch water sector are not yet clear. In 2014, Shell has started research for oil and gas exploitation in Benin, focusing on the continental platform. This is not directly related to water, but it might offer opportunities for Dutch companies in the off shore industry, research institutes and consultants (Fugro) and oilrig companies (Allseas Engineering). Opportunities might become visible in 2-8 years from now. An important agricultural development sector is cotton. This is one of the main cash crops for the country and has high priority for the national government. Cotton usually comes with high water consumption, even in cases when fields are only rain-fed and no additional irrigation provisions are applied. More priority for the Dutch-Beninese cooperation is the development of water and food production in general.

2.3 Opportunities

This section provides insight in concrete programs and projects that offer opportunities for the Dutch water sector. Identifying examples of past and present opportunities and the way these opportunities have been financed provide insight in product market combinations that offer potential to enter and explore or to expand and consolidate.

2.3.1 Past and current opportunities

Table 6 and Table 7 give an overview of which companies and NGOs are currently active in Benin. This can be either within a project or program or by independent activities in the country.¹³ It shows which companies and organizations have already taken the advantage of an opportunity.

Table 6 Private sector involvement

Private sector	Activities or project description
Boskalis	Port development Cotonou (extension) and solving coastal erosion problems in the coastal area east of Cotonou. The first project was awarded by the Ministry of Housing, Environment and Coastal Protection of Benin for the period 2009-2012 and had a value of € 35 million. A continuation of the coastal protection works took place between June 2012 and July 2014 and was funded by the Ministry of Urban Development, Housing and Sanitation. Services contained the supply of materials and construction works.
Royal HaskoningDHV	Consultancy services for port development Cotonou (extension) and inland terminal development. Other projects focus on solving coastal erosion problems in the coastal area East of Cotonou.
APM Terminals	Container shipping and infrastructure management in the port of Cotonou.
Eijkelpomp Foundation / Royal Eijkelpomp	Support of women in the development of a small water company for providing access to safe water to rural populations. FDW funded with private investments. Involved partners are Foundation le Pont and INE. Total budget needed: € 1,75 million
Brabant Water	Brabant Water supports SONEB in project management and internal business management for water supply through trainings and knowledge transfer. Brabant Water is assisted by Royal HaskoningDHV for the technical assessment. For this support no Dutch funding was received. Brabant Water has supported SONEB and the Beninese government in the request for ORIO funding for water supply of Parakou.
Antea Group	Project with focus on water supply and sanitation in rural areas of Benin. The project is funded by AFD. It focuses on institutional capacity building, technical assistance, and contributing to financial and technical programming.
UNESCO-IHE	Involvement through NICHE program
MetaMeta	Support of development of a course on IWRM at the Faculty of Agronomical Sciences in collaboration with Wageningen University, Arcadis, Euroconsult MottMacDonald and Hogeschool Leeuwarden. MetaMeta also provided support to the Program for Effective Water Governance in multiple countries, among which Benin. This is for the Global Water Partnership and funded by the European Union.
EARS Earth Environment Monitoring BV	Drought and excessive precipitation insurance system FESA Micro-Insurance. Projects in a number of countries, including Benin.
Deltares	Involvement through NICHE program

¹³ Project information via www.dutchwatersector.com and interviews with experts

The following Dutch companies do not have a direct link with water, but it shows the opportunities for Dutch involvement in the Beninese market

Visco	Garment industry
Stirling Cryogenics	Cooling systems
Bredenoord	Electricity for Cotonou and Parakou. Supported by the Beninese government.

Table 7 NGO involvement

NGO	Activities or project description
SNV	Active in the sectors agriculture, renewable energy and water, and WASH. Provision of advice, knowledge, advocacy and value chain development.
VNG International	Support local governments and municipalities in increasing their capacities for improving the economic situation. The project focuses on agriculture and food security. The project runs from 2012 to 2016.
Akvo Foundation	Akvo has several projects running in Benin on water supply and sanitation. For more information see http://akvo.org/seeithappen/
Practica Foundation	Practica Foundation collaborates with the WASH Alliance. Practica focuses on strengthening private water operators and manual drilling enterprises for water provision of small villages.
UNICEF	In partnership with Akvo, UNICEF creates a platform for data-management collected by the National Direction of Public Health for Water and Hygiene
Commissie MER	Receives full Dutch finance for strategic environmental assessment of national country strategies. It also has given suggestions for the integration of gender equality in the MASP 2014-2017.
WASH Alliance	The WASH Alliance (Simavi, WASTE, RAIN Foundation, Amref Flying Doctors, ICCO and AKVO Foundation, Wetlands International) promotes access to sanitation, hygiene and safe drinking water for marginalized groups in north Benin.
Foundation Le Pont	Several drinking water supply and sanitation projects in villages. Projects are implemented together with Join the Pipe, and some funding is received from “Stichting SR te B”. Other partners are Aqua for All, Akvo, Eureko Achmea Foundation, and Wandelen voor Water.
Waste Both Ends	Sanitation of peri-urban area of Parakou IWRM and ecosystem services in the Mono River Basin (Togo and Benin)
IUCN NL	Ecosystem services

2.3.2 Future opportunities

Dutch support opportunities

Over the period 2014-2017 Dutch support to Benin will focus mainly on water management and drinking water and sanitation. Also the Delta Plan that is currently being developed offers opportunities for port development and urban development. This latter also includes flood defense and improvement of productivity of Lake Nokoué that deals with strong urbanization. The scheduled continuation of PPEA II (in the format of a new phase) could also offer more opportunities in for Dutch organizations.

Views by the Dutch water sector

- With regard to promising areas, companies active in Benin see IWRM as one of the most promising areas. Drinking water supply & treatment, drinking water transport & distribution, and water productivity & food production follow on a distance. PSOs see potential in areas of drinking water, wastewater and water management. NGOs see promising areas in drinking water supply & treatment, ground and surface water for drinking water, urban water management and IWRM (see Figure A.3 Appendix III).
- Water and food is the most promising cross-over according to companies, PSOs, and NGOs. PSOs also consider water & industry and water & ICT as promising cross-overs. Companies mention urban port development, but this is rather limited (see Figure 6).
- All Dutch water sector players consider the WASH sector a very promising development opportunity. Here, NGOs consider it more promising than companies. Companies see opportunities in water management and safe deltas. Higher water productivity for agriculture is seen as the least promising development opportunity for the Dutch water sector (see Figure 7).

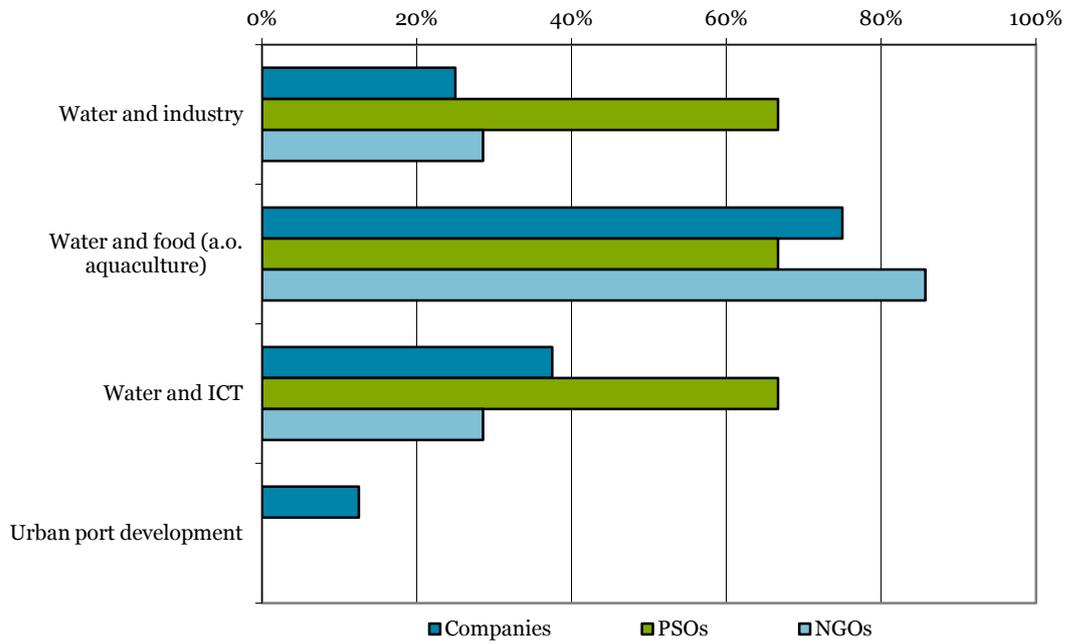
International support opportunities

Table A.2 (Appendix IV) offers a list of project and program opportunities in the water sector of the World Bank and the African Development Bank. World Bank tenders are focused on urban development and urban water management as well as on water supply and sanitation. The World Bank tender opportunities can be approached directly through the World Bank, e.g. through tender alerts under dgMarket.

The African Development Bank has a slightly broader sector scope. Projects cover wastewater and water supply, water engineering (flood protection and port development), IWRM and water and energy. (See appendix IV)

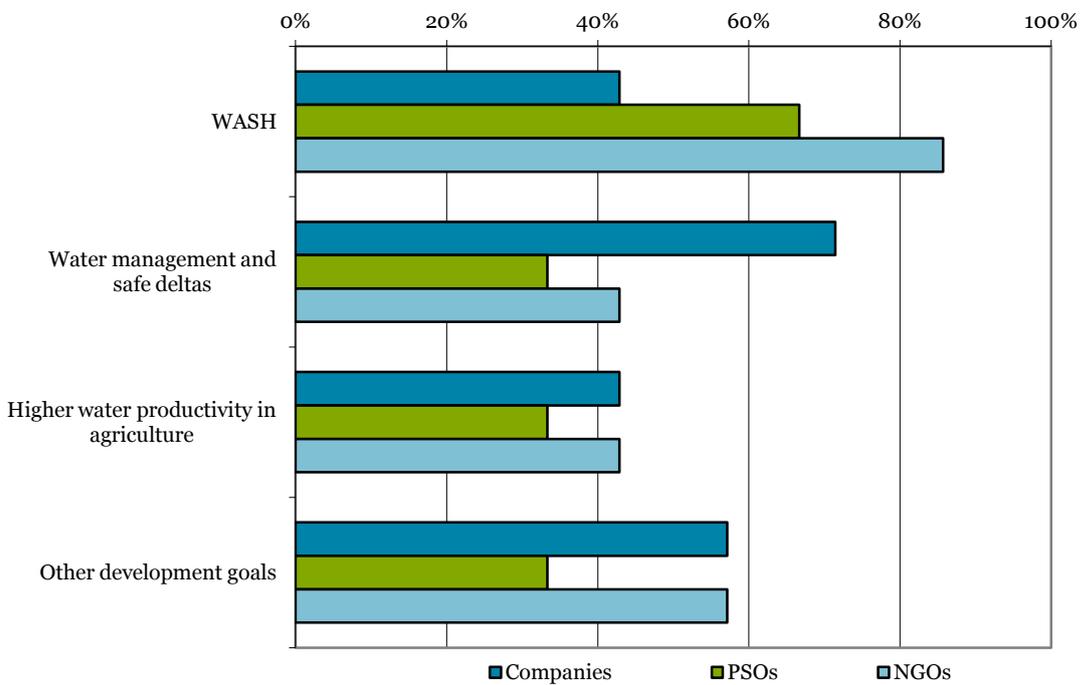
The opportunities in this list are interesting for consortia consisting of local Beninese organizations and Dutch or international organizations. Especially consultancy services offer high opportunities for the Dutch water sector. As described above, the opportunities can be screened by the interested party itself. The National Water Partnership (PNE) of Benin (through the Platform Netherlands Benin) could also play a more important role here, but this should be developed.

Figure 6 Promising cross-overs in Benin according to companies (N=8), PSOs (N=3) and NGOs (N=7) active in this country, in % respondents (more answers possible)



Source: Web survey Panteia, 2014/2015

Figure 7 Development opportunities in Benin according to companies (N=7), PSOs (N=3) and NGOs (N=7) active in this country, in % respondents



Source: Web survey Panteia, 2014/2015

2.4 Potential Product-Market Combinations

Table 8 presents a list of Product-Market Combinations (PMCs) that result from the supply and demand in both the Netherlands and Benin. It is a descriptive overview of the specific products (what can the Dutch water sector deliver) and the market (who benefits and who is the client). Paragraph 3.5 goes deeper into a selection of these PMCs, including the partners that should be found, ways of financing and the strategy toward the market. A number of these PMCs are an integrated part of the Delta Plan, which offer many opportunities for the Dutch water sector in Benin.

Table 8 Product-Market Combinations

Theme	Product	Market
WASH		
1.1	Creation of a solid waste treatment center	Cooperation with the Social and Environmental Engineering Company (CISE or SARL)
1.2	Faecal sludge management	'Communes' (local governments)
1.3	Strengthening capacities of small drinking water companies	Small drinking water companies
1.4	Support of water networks	COGEFI or the Federal Association of Private Managers of the Water Network in Benin (AFEB)
IWRM		
2.1	Monitoring and Supporting progress of implementation of the Delta Plan	Netherlands and Beninese government
2.2	Controlling of water hyacinths for improvement of human activities such as fisheries and transport.	BOA Benin
2.3	Support of National Water Institute	National Water Institute (INE)
2.4	Management and Forecasting & deltas flood warning	Ministry of housing and environment, Ministry of home affairs, or the Environmental Directorate
2.5	Cleaning and dredging of Lake Nokoué Ouéme River Basin and Lake Nokoué (resulting from the Delta Plan), including solid waste treatment of dumpsites near the lake.	Municipality of Cotonou
Maritime		
3.1	Port and terminal development in terms of logistics, quay development, and dredging (and related developments of airport reconstruction, flood defense dikes and housing and industrial areas development). The Delta Plan also include a plan for the development of a satellite port near Semé Kpodji east of Cotonou.	Municipality of Cotonou and Parakou via government of Benin

3. Market 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. How Dutch organizations operate on the market is part of section two. Section three describes lessons learnt, while section four 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

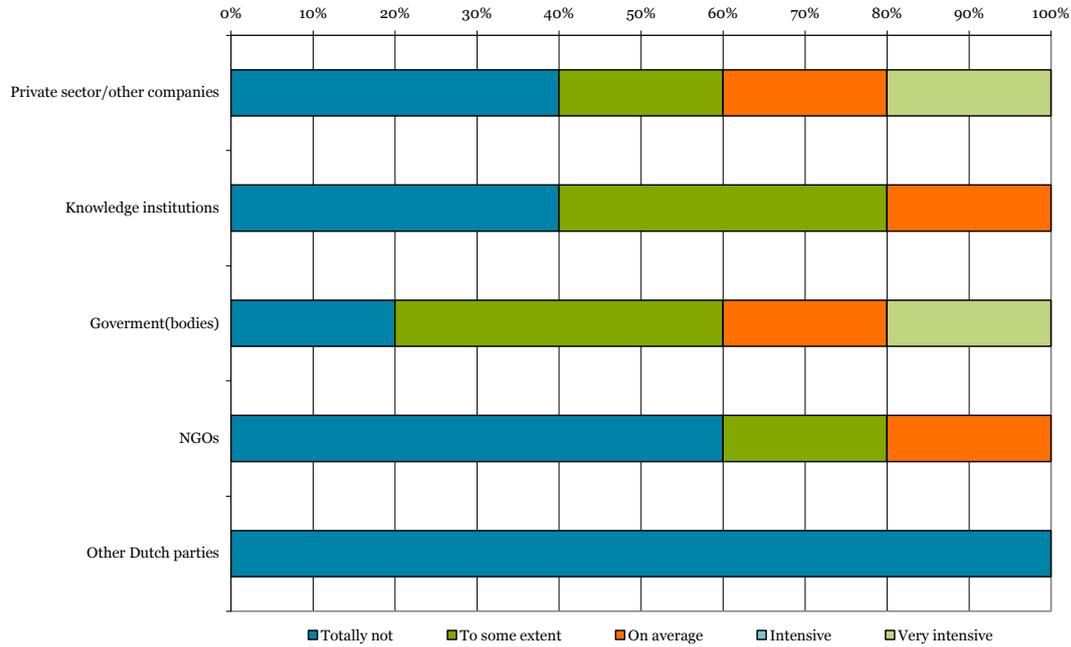
After a thorough assessment of the market and the feasibility of the business case / project, organizations have different ways to enter the country. Finding the right local partner and building up a relationship by working together is a first good step when entering the country.

Dutch organizations currently active in Benin work close together with governmental bodies and private sector organizations. This was indicated by respondents of the survey (see Figure 8) and can be seen in the cooperation between Brabant Water and SONEB or Royal Eijkelkamp and INE. Large companies such as APM Terminals and Boskalis have entered Benin on an individual basis. The port development and coastal management project has been awarded to Boskalis through a governmental tender procedure. Figure 8 gives an indication of the status and intensity of the cooperation of Dutch companies with other parties in Benin.

There are a number of platforms and partnerships that have the bridging function between the Dutch and Beninese water sector or will have that function in the future. The Technical Advisory Platform Water Benin-Netherlands (PCT) is established in 2012 in cooperation between NWP and its Beninese counterpart, the Beninese Water Partnership (PNE). The aim of the platform is to intensify and sustain the cooperation between the Netherlands and Benin in the water and sanitation sector. The National Water Partnership Benin (PNE) has been established in 2002 to promote the effective use of IWRM in the country. Members of PNE come from the public sector, the private sector or from other non-governmental organizations. These partnerships could serve as entrance for Dutch organizations. PCT, and its participating partners NWP and PNE, could also keep track of tender opportunities. Other options to find a way in Benin are via the Netherlands Africa Business Council or via the Embassy.¹⁴

¹⁴ <http://nwp.nl/activiteiten/internationale-activiteiten/benin/Plateforme-Consultative-Technique.php>; <http://www.gwppnebenin.org/>

Figure 8 Intensity of cooperation of Dutch companies with various parties in projects and programs in Benin, in % of respondents (N=5)

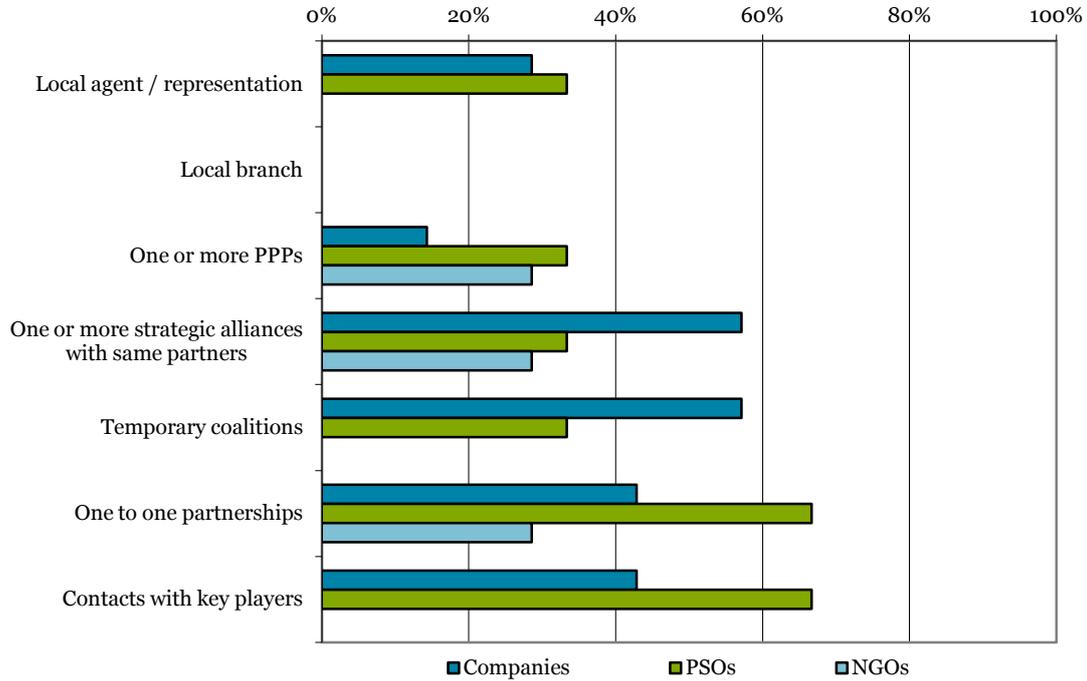


Source: Web survey Panteia, 2014/2015

3.2 Cooperation and business development alternatives

After finding the right local partner(s) and the appropriate financial means, Dutch organizations follow different strategies to represent themselves in the country. Figure 9 shows the representation characteristics of Dutch companies, PSOs and NGOs in Benin. Companies are mainly represented through strategic alliances with partners or through temporary coalitions (both 57%). PSOs mainly work through one to one partnerships and direct contact with key players (both 67%). Representation of NGOs takes place through PPPs, strategic alliances with partners, and one to one partnerships (all 29%) (see Figure 10).

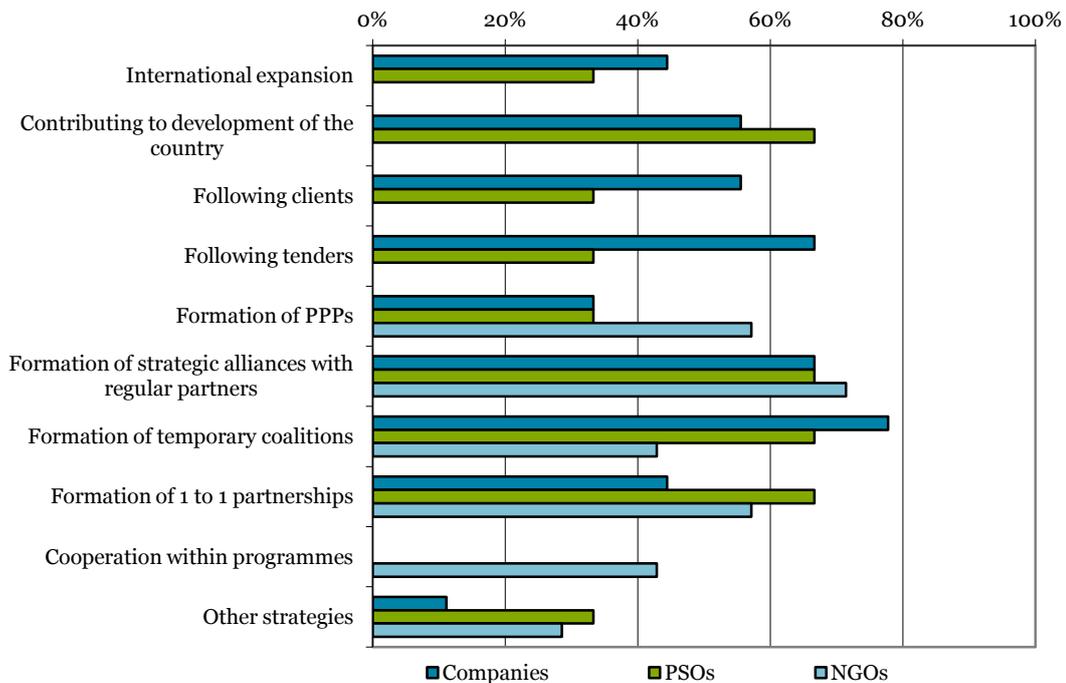
Figure 9 Current representation characteristics of Dutch companies (N=7), PSOs (N=3), and NGOs (N=7) in Benin, in % of respondents (more answers possible)



Source: Web survey Panteia, 2014/2015

Companies, PSOs and NGOs use the same strategies to enter a country. The most used strategy is formation of strategic alliances with regular partners (> 67%). The formation of temporary coalitions is more common among companies (78%) and PSOs (67%) and less among NGOs (43%).

Figure 10 Current strategies Dutch companies (N=9), PSOs (N=3) and NGOs (N=7) in Benin, in % of respondents (more answers possible)



Source: Web survey Panteia, 2014/2015

3.3 Successes and lessons learned

Based on expert's opinions, three organizations and their activities in Benin are highlighted because of their experience in the country. Boskalis has over thirty years of experience through their involvement in port development and coastal erosion protection. The company has worked closely together with the government and has a good understanding of the situation and way of working in Benin. Royal Eijkelpark Foundation has just entered Benin through its cooperation with the INE with financial support of FDW and funding from sponsors. Because of the ANBI status, the foundation has some tax advantages.¹⁵ This cooperation is a good example of how the country can be explored for possibilities to enter the Beninese market for groundwater monitoring equipment. Brabant Water has worked closely with local companies such as SONEB for water provision of Parakou. Brabant Water has much practical experience in working with those types of private companies. Other successes mentioned by the survey respondents are PPEA II, the involvement of UNICEF in the country and the NICHE program.

One organization active in Benin indicated that the services provided focus on large and complex projects that require high-end technologies, in order to create and enter a niche market. The organization continuously broadens its services to remain leader in the sector and to be able to grow, even when the market stagnates. The office in the Netherlands is responsible for tendering and also for project execution. The organization works with regional and local representatives for business development and support for acquisition and project execution.¹⁶

3.4 Drivers and bottlenecks

Doing business in Benin is stimulated by the Dutch Embassy through contributions to a better business environment. The Embassy participates actively in the private sector working group, stimulates the government of Benin in streamlining the dialogue between the private sector and the government in order to create confidence between the two parties and the EKN stimulates donors (WB, EU, MCC) in their support to improve the business climate in Benin. These are signs that the market is opening further for Dutch companies, PSOs, and NGOs. Other reasons for doing business in Benin are because the country borders with Nigeria which presents the largest market in Africa. The Port of Cotonou offers the nearest access to the sea for several hinterland countries (Mali, Burkina Faso, Niger) and the country is rich of fertile soils and water sources (WB CPS, 2013).

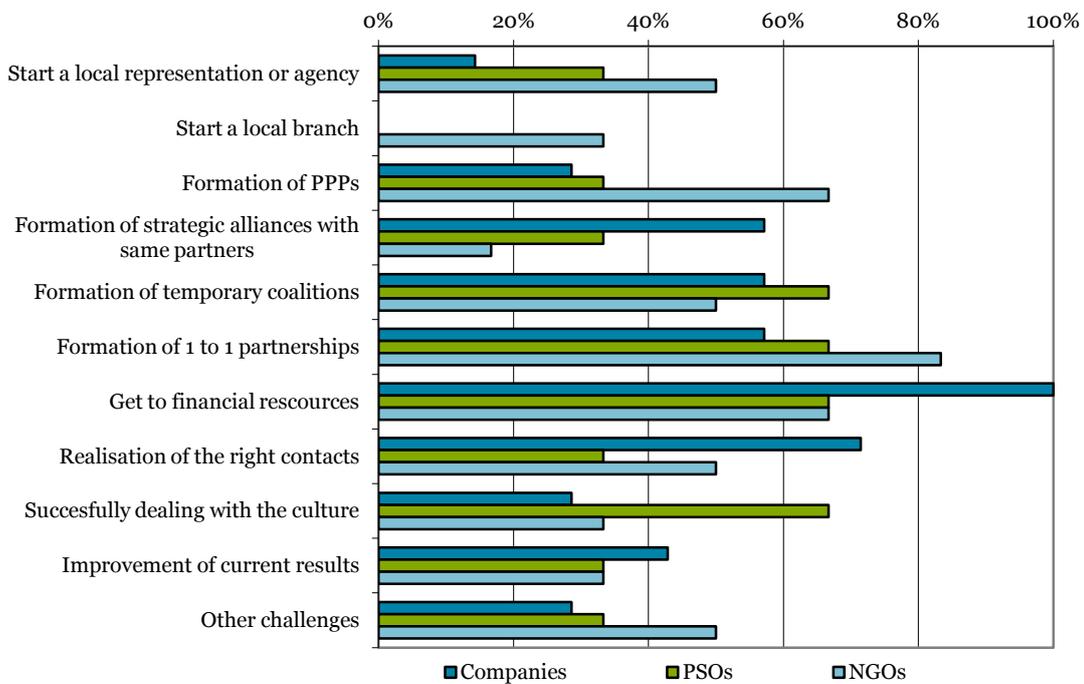
There are also a number of barriers that can be a bottleneck for operating in the country. This is related to a poor business climate (Doing Business Index: 167 out of 189, 2014), corruption and weak management of natural resources. Furthermore, barriers might be bad infrastructure for transport, energy, internet and water, insufficient access to financial services in combination with gender inequality. These issues are also a large barrier for economic growth of the country. Also, the country faces lack of transparency and accountability, ineffective civil service recruitment and promotion procedures, limited implementation capacity, ineffective and lengthy procurement procedures, a weak investment climate and a weak judicial system (WB CPS, 2013). The Ministries that are involved in the water sector are very weakly organized and have very low capacity staff both in terms of quantity and quality. This should offer opportunities for capacity development programs.

¹⁵ <http://eijkelparkfoundation.com/nl/projecten/de-water-ondernemer.htm>

¹⁶ Interview No. 9

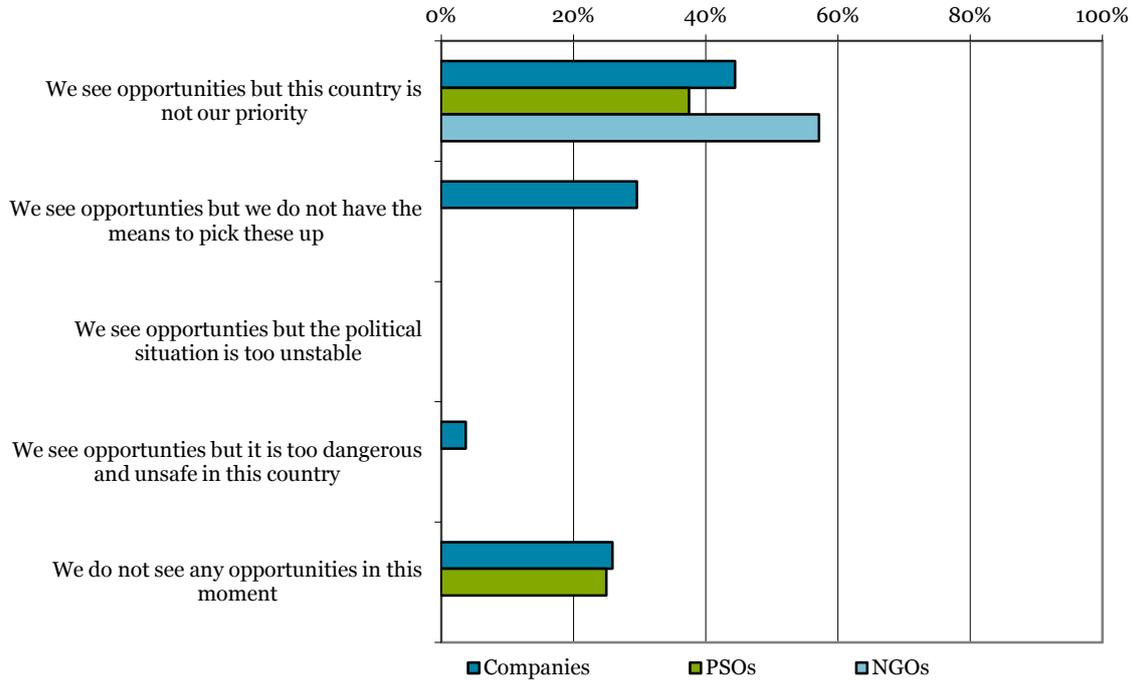
From the survey became clear that in general the bottleneck for OS countries is finding good and reliable partners, followed by finding financial support (See Appendix III, figure A.8). In Benin this is slightly different, here for both companies and NGOs the main challenges are finding resources in the first place, and finding the right partners on the second place (Figure 11). Respondents of the survey see the past and current presence of donor projects as a bottleneck. Also the continuation of PPEA II that is not clear yet has been mentioned as uncertain factor. Drivers mentioned by respondents of the survey are knowledge and good French speaking Dutch experts. Two respondents of companies have indicated not to be willing to invest in Benin, they prefer to wait for good tender opportunities. Two other companies are willing to invest in Benin together with a good local party and network. Almost half of the companies indicated to see opportunities in the country, but Benin is not their priority country. For over half of the NGOs, Benin is not their priority country. Some companies do see opportunities in Benin, but do not have the means to pick this up. Possible political instability is not a reason for the Dutch water sector to not be active in Benin (Figure 12). A small number of respondents show willingness to invest in Benin, only through finding partners and possibly building networks, or only by waiting for a specific assignment (Figure 13).

Figure 11 Top 5 challenges for scaling up activities in Benin for companies (N=7), PSOs (N=3) and NGOs (P=6), in % of respondents



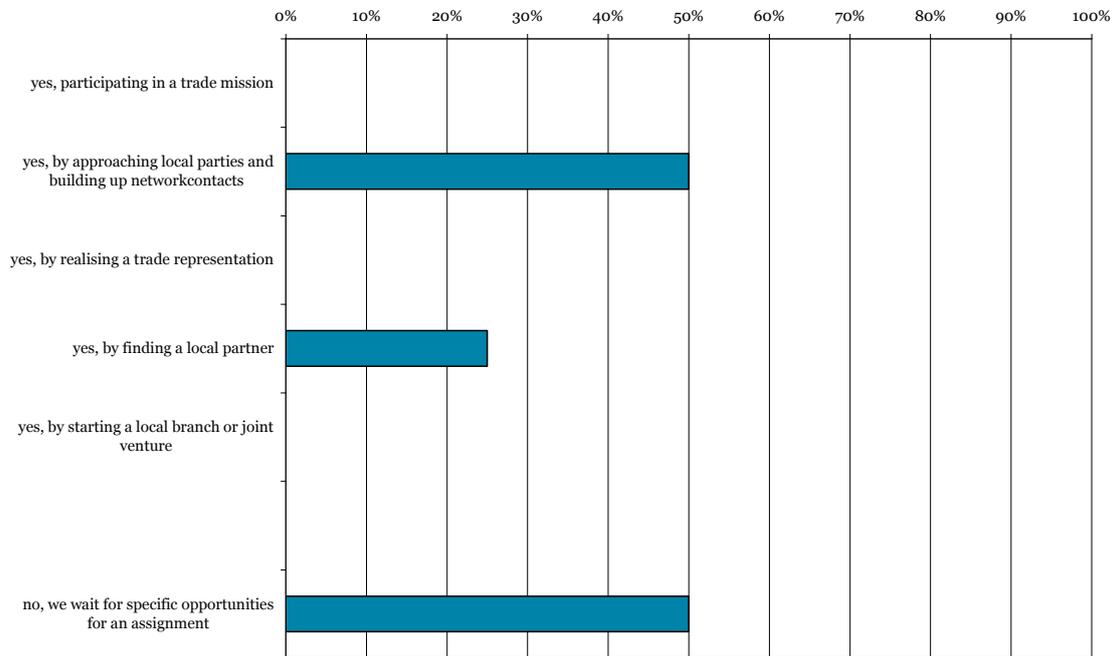
Source: Web survey Panteia, 2014/2015

Figure 12 Reasons why companies (N=27), PSOs (N=8) and NGOs (N=7) are not active in Benin, in % of respondents



Source: Web survey Panteia, 2014/2015

Figure 13 Willingness to invest in doing business in Benin, in % of respondents (N=4)



Source: Web survey Panteia, 2014/2015

3.5 Possible strategies for selection of PMCs

Based on secondary market research and the outcome of the web survey, demand and potential supply have been matched, and the following Product Market Combinations were identified as being 'potential'. In general, there seems to be an increasing demand for an analysis of the business climate in the private water sector and of the investment climate in Benin. The Dutch government, the Beninese government, and the private sector can benefit from such analysis. The following PMCs are a selection of the PMCs defined in chapter 2.4. The activities of the Dutch organizations and the current involvement of the organizations in the different sectors give a direct connection to the needs in the country.

Theme: WASH
Need
Faecal sludge management is a large problem in Benin, especially in large cities in coastal areas, such as Cotonou, Parakou and Porto Novo. There are only several treatments in the countries, which are not always in operation and the number of treatment plants is not sufficient to serve the needs of the entire country. This results in disposal of faecal sludge in lakes, rivers, the sea and other natural areas. Communes are officially responsible for management of the environment, hygiene, sanitation and safety. However, because of lack of knowledge and expertise, the concrete responsibility and execution of tasks are delegated to SONEB. Some communes have delegated tasks to the private sector.
Product
Faecal sludge management: training, capacity building, stakeholder collaboration and development of technologies. This could be done by knowledge institutes, NGOs and companies.
Market
Communes, SONEB, DG EAU
Strategy
To be well informed about the status of the development of master plans as well as opportunities, Dutch interested parties can enter the market through NWP, the Netherlands-Benin Platform or the Water Partnership Benin. Participation in partnerships with local partners would be a good strategy. Also the current presence of Brabant Water could offer entry points for other organizations, or they could develop similar strategies to enter the market.
Finance
Project funding can most likely be found at IFIs with a minor national component from the government of Benin. The World Bank is preparing a number of master plans for faecal sludge management which are expected to be finished mid-2015. Early 2016 the first opportunities rise for the Dutch water sector. Also the continuation of PPEAII from 2016 to 2020 can be a financial source.
Partners
Private sector partners with wastewater treatment and faecal sludge management knowledge and expertise

Theme: IWRM

Need

The National Water Institute (INE) is currently being established with support from the Dutch government, knowledge institutes and other water sector players. The aim of INE is to provide water expertise to the society by supporting the government and cooperation with the public and private sector. It aims to become the national water institute through 1) research and capacity building and 2) provision of applied research and services. It serves both an academic and commercial function. This focuses on education, research programs for IWRM, adoption of climate change and WASH in national policies, and technical support to public and private organizations.

Product

Institutional support of INE. Knowledge institutes, consultancy companies, Dutch Water Boards, and water companies can support INE in the introduction of ICT and provide management and business support for adaptation to the labor market.

Market

National Water Institute (INE)

Finance

PPEA II (2016-2020)

Strategy

The involvement of the Dutch water sector in the establishment of INE is already significant. This could provide opportunities to expand the services for the involved parties. Through these parties, new Dutch parties could be involved.

Partners

Network organizations, private organizations with knowledge on IWRM or WASH.

Theme: Maritime

Need

The Delta Plan for the Lower Ouémé River Basin has emerged from the IWRM part of PPEA II. The outline of the planning process will be ready mid 2015. The Delta Plan covers lower parts of the river basin and the Lake Nokoué, including the urban areas of Cotonou, Porto Novo and Calavi. The Delta Plan will also have a focus on the development of the port and coastal cities, especially in relation to increased river discharge that cause flooding.

Product

Port and terminal development Cotonou, including services and advice to support logistics and quay development by large companies or consultancies. Dredging of water ways can be done by dredging companies. Opportunities that are indirectly related to water are the provision of (technical) advice and support in the development of the airport, building dikes and building houses.

Market

Municipality of Cotonou or other municipalities

Finance

Important funding sources are IFIs and the Beninese government for the implementation, the current development phase is funded through PPEA II

Strategy

The Technical Cooperation Platform (PCT) of NWP and PNE can play an important supporting role here.

Partners

Contractors

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
Ethiopia	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 financiers.

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 finance 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 2010-2013 period. The Dutch share in total EU-28 exports is 16% on average, much lower than the high share of France.

Table A.1 Exports from EU28-countries to Benin (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 Benin	1.305	2.575	991	946	5.816
Water sector related products	5	6	2	5	18
<i>Shares in EU-28 exports of water sector related products</i>					
- Netherlands	3%	2%	0%	50%	16%
- Germany	5%	17%	12%	5%	10%
- France	69%	66%	49%	22%	52%
- Denmark	0%	0%	0%	4%	1%

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 Current activity areas of Dutch companies (N=9), PSOs (N=4) and NGOs (N=7) in Benin, in % of respondents (more answers possible)

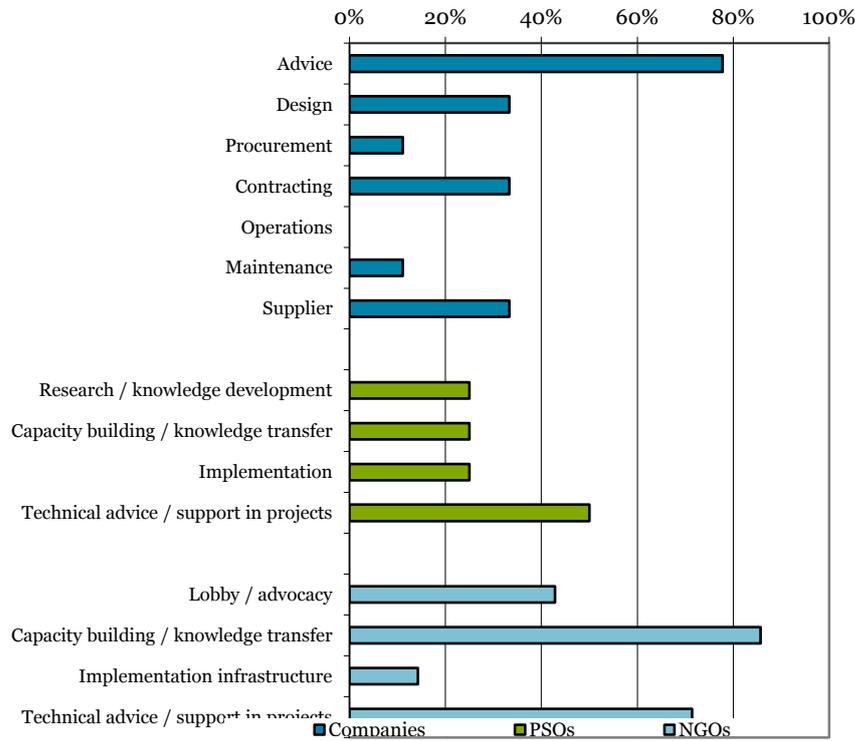


Figure A.2 Promising areas in Benin according to companies (N=7), PSOs (N=3), and NGOs (N=5) active in Benin, in % of respondents (more answers possible)

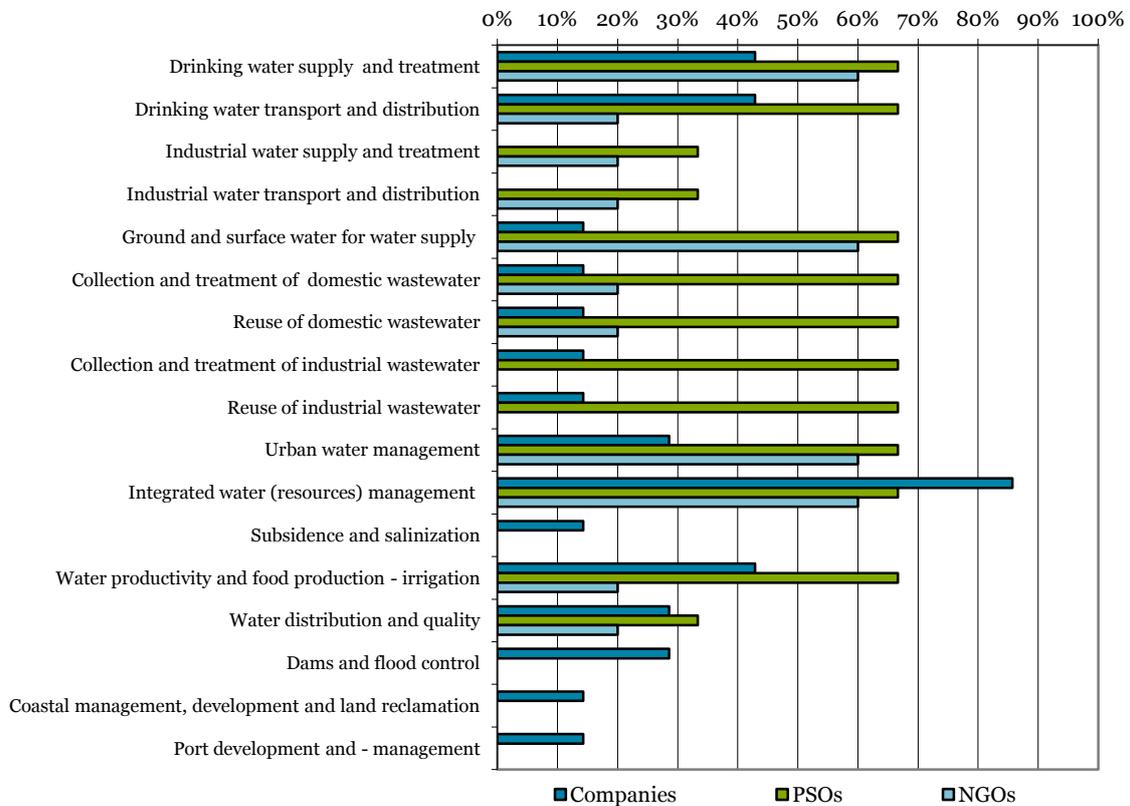
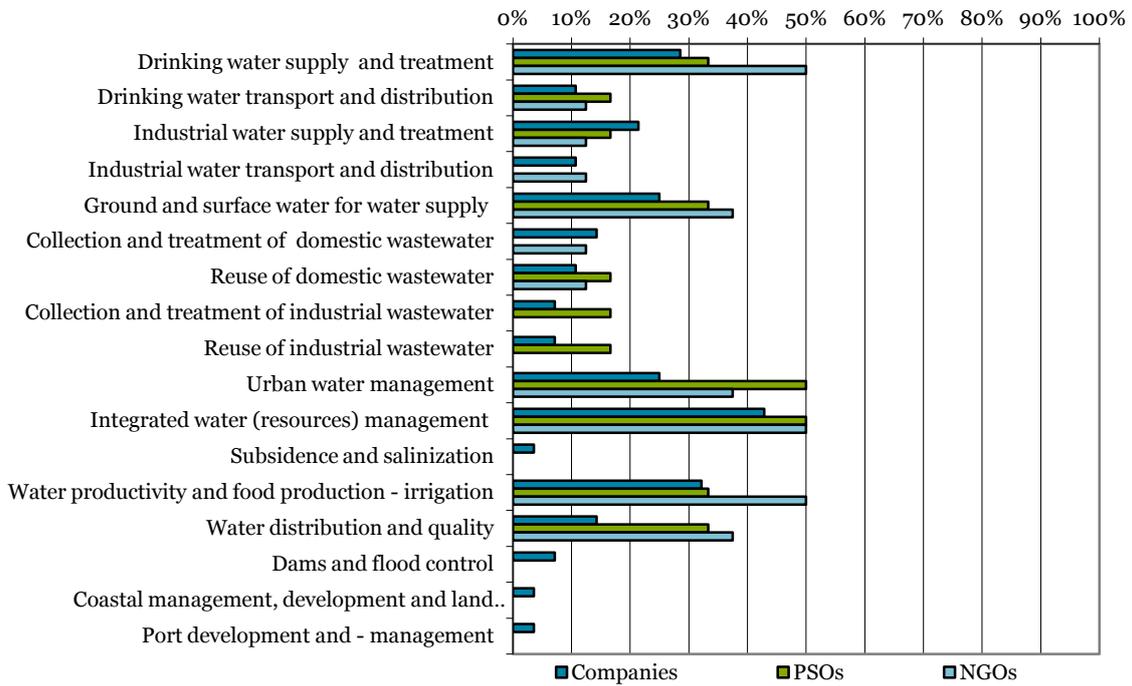
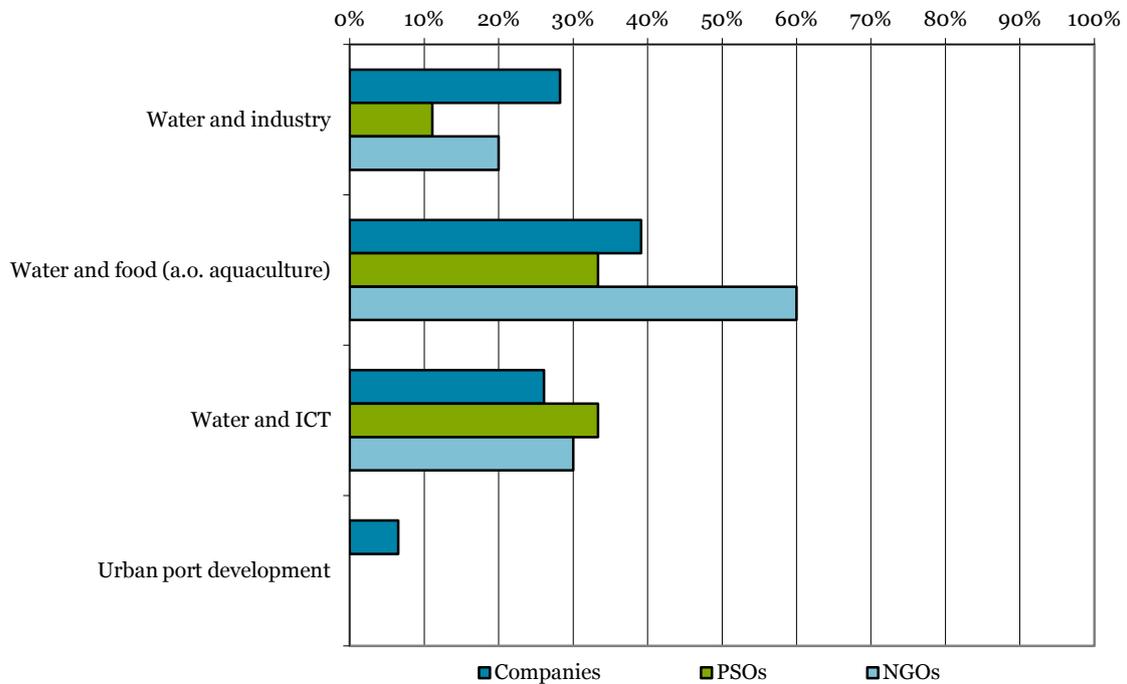


Figure A.3 Promising areas in Benin according to companies (N=28), PSOs (N=6) and NGOs (N=8) interested in Benin, in % of respondents (more answers possible)



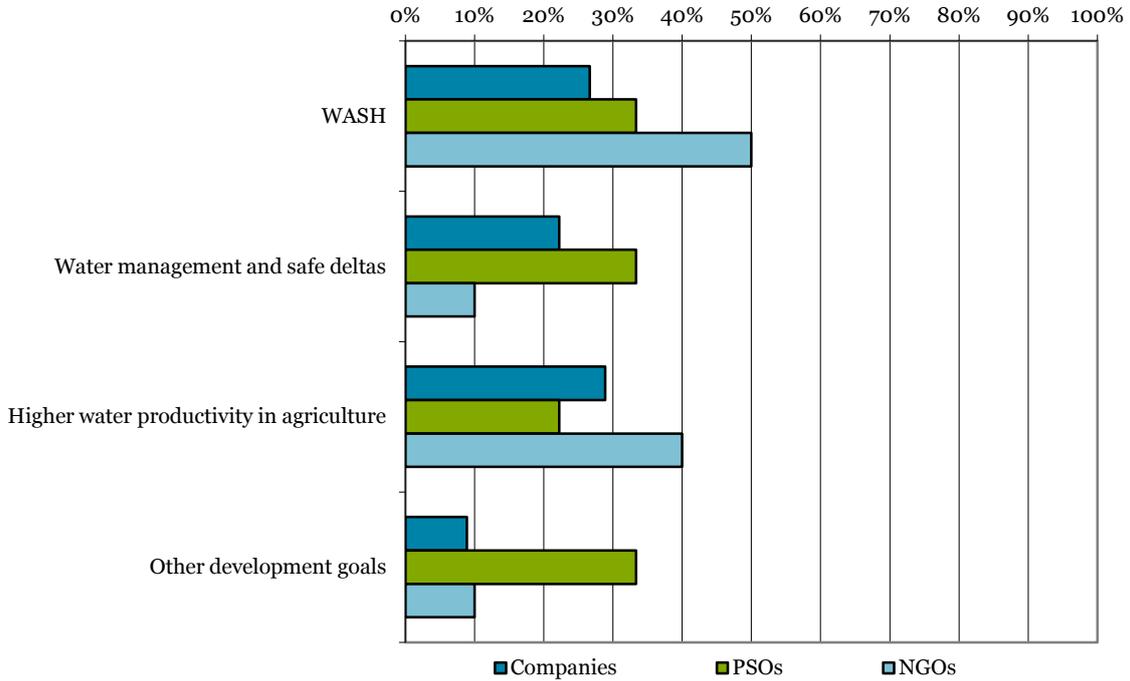
Source: Web survey Panteia, 2014/2015

Figure A.4 Promising cross-overs in Benin according to companies (N=46), PSOs (N=9) and NGOs (N=10) interested in Benin, in % of respondents (more answers possible)



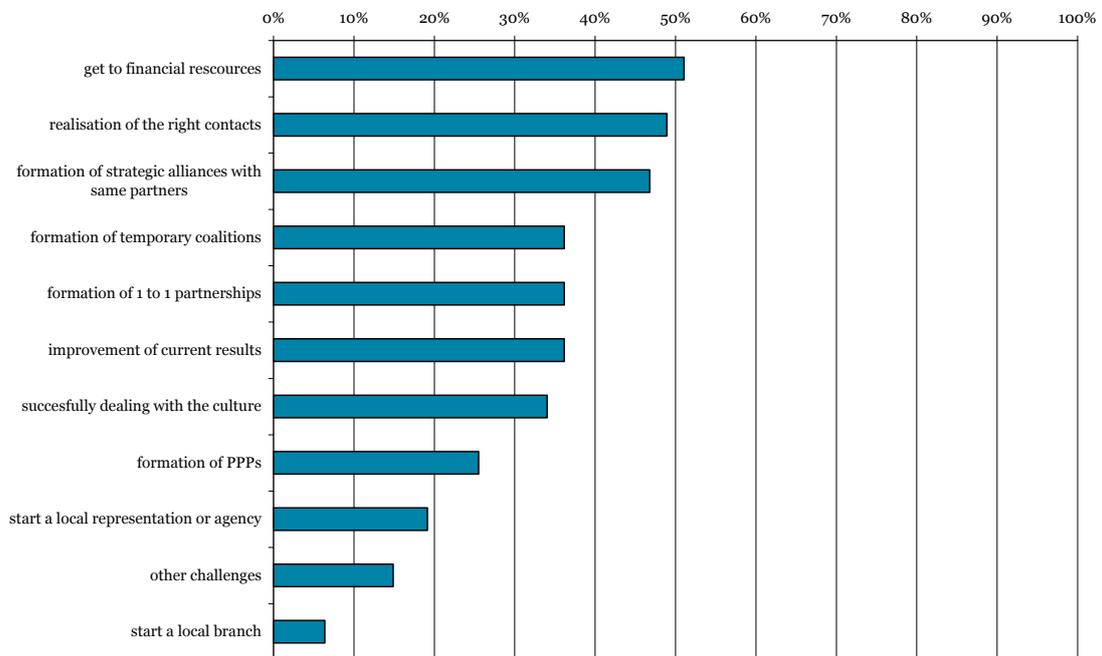
Source: Web survey Panteia, 2014/2015

Figure A.5 Development opportunities in Benin according to companies and NGOs interested in Benin, in % of respondents (more answers possible)



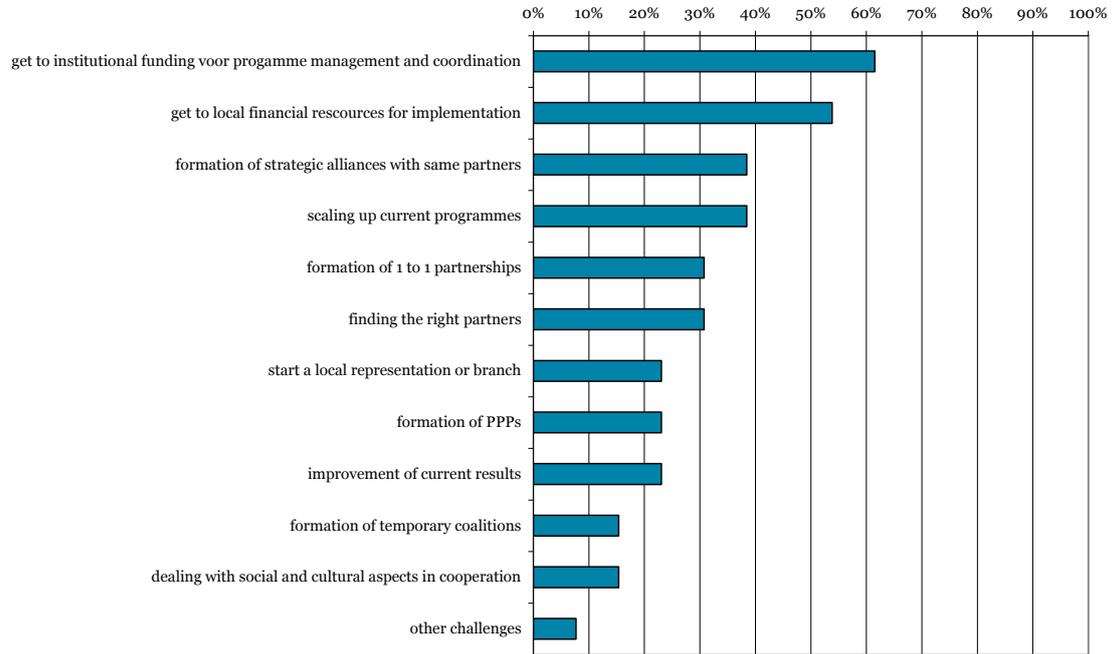
Source: Web survey Panteia, 2014/2015

Figure A.6 Challenges for scaling up activities in Benin according to Dutch companies, Water Boards and knowledge institutions, in % of respondents (N=47)



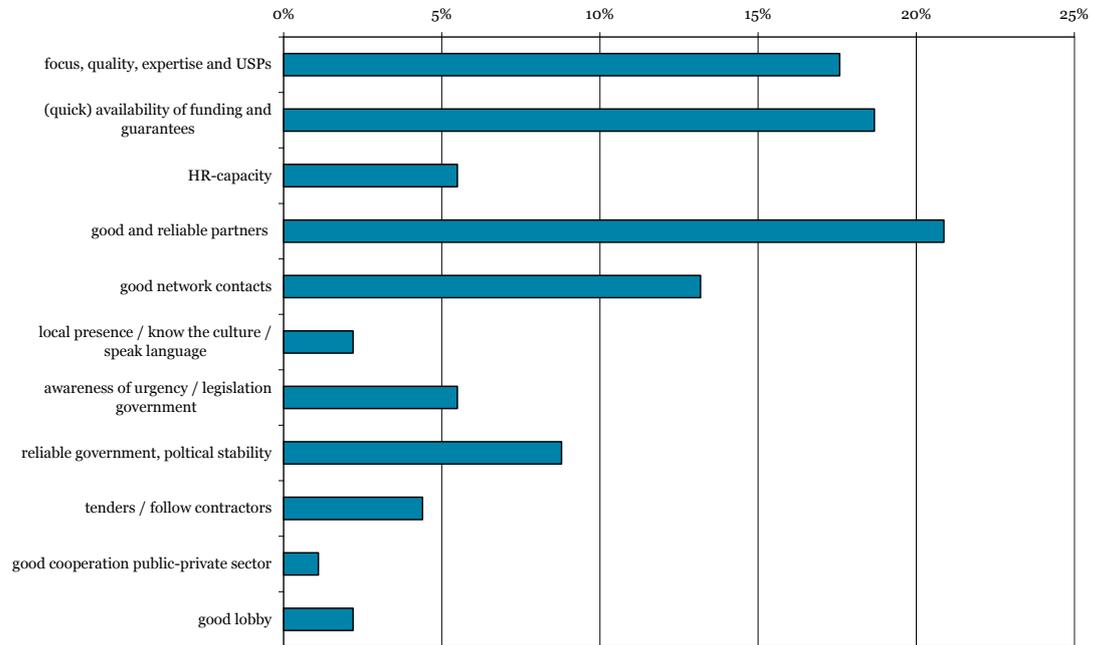
Source: Web survey Panteia, 2014/2015

Figure A.7 Challenges for scaling up activities in Benin according to NGOs, in % of respondents (N=13)



Source: Web survey Panteia, 2014/2015

Figure A.8 General drivers and bottlenecks for OS-countries (N=91)



Source: Web survey Panteia, 2014/2015

Appendix IV: Additional information

Table A.2 Overview of planned projects for Benin^{17,18,19}

Project name	Funding source	Approval date	Budget (euro)	Implementing channel
Benin Emergency Urban Environment Project (EUEP), additional financing	WB	Approved May, 2014	5.4 million	
Benin Decentralized Community Driven Services Project (additional financing)	WB	Approved February, 2014	25.4 million	
Benin Cities Support Project	WB	Approved June 2013, closing date June 2020	50.8 million	
Water Sanitation Platform	WB			
Faecal sludge management Grand Nokoué and Sèmè Podji	AfDB + Bill and Melinda Gates Foundation	January 2012, appraisal August 2012	UAC 4,366,368	AGETUR SA and SIBEAU. Opportunities focus on provision of knowledge, through e.g. a partnership
Support decentralization water & sanitation sectors	AfDB	October 2012	UAC 1,481,501	Protos Benin
Emergency Program for Malanville and Karimama villages affected by floods	AfDB	March 2014	UAC 523,104	Ministry of Agriculture, livestock and fisheries
Project for support of rural infrastructure in the Ouéme Valley	AfDB	October 2013	UAC 49,930,000	Ministry of Agriculture, livestock and fisheries
Multinational Benin-Togo Hydroelectric power project in Adjarala	AfDB	March 2014		Communauté Electrique du Benin (CEB)

¹⁷ Via <http://www.worldbank.org/en/country/benin/projects>

¹⁸ <http://www.afdb.org/en/projects-and-operations/project-portfolio/#c10693>

¹⁹ AfDB Country Strategy Paper

Appendix V: Sources

African Development Bank, Country Partnership Strategy 2012-2015

Bertelsmann Stiftung's Transformation Index (BTI). Benin Country report 2014. Available via http://www.bti-project.de/uploads/tx_itao_download/BTI_2014_Benin.pdf

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

G4AW (2014) Quick scan Benin

GLAAS report 2014

National Water Policy Benin (2008)

Programme Pluriannuel d'appui au secteur de l'eau et de l'assainissement Phase II 2013-2016 (Document de Programme 2012)

Resultaat fiches Ambassades en Themadirecties: Cotonou Water and Food Security (2013)

Via Water (2014) Benin

World Bank Country Partnership Strategy 2013-2017

Websites:

African Development Bank Projects and Operations via <http://www.afdb.org/en/projects-and-operations/project-portfolio/#c10693>

Aquastat Benin via http://www.fao.org/nr/water/aquastat/countries_regions/BEN/index.stm

Central Intelligence Agency (CIA) via <https://www.cia.gov/library/publications/the-world-factbook/geos/bn.html>

Doing Business Index via www.doingbusiness.org

Dutch Water Sector via www.dutchwatersector.com

Global Competitiveness Index via <http://www.weforum.org/issues/global-competitiveness>

Stichting Le Pont via <http://www.lepont.nl/projecten/lopende-projecten/>

World Bank Projects and Operations via <http://www.worldbank.org/projects/country?lang=en&page=>

Appendix VI: Respondents

NWP/Key Advisors:

Joop de Schutter (NWP)

Local water professionals:

Wouter Huisman (YEP Benin)

Other:

Machteld Galema

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 Moekardanoë
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 Hatendoer
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
Rabobank International
Redox Water Technology
Royal Eijkelkamp
Royal Eijkelkamp
Royal Haskoning DHV Nederland
Safisana Holding
Simavi
SNV
TNO
UNESCO-IHE
Vitens-Evides International
WASTE
Waterschap Aa en Maas
Wavin Overseas
Wetlands International
Witteveen + Bos
WUR
ZOA

Jan van den Dikkenberg
Alexander Hoogendoorn
Maurice Nijrolder
Fons Eijkelkamp
Frank Tillmann
Harrie Laboyrie
Aart van den Beukel
Ewout van Galen
Leendert Bos
Albert Jansen
Pieter van der Zaag
Marco Schouten
Jacqueline Barendse
Paule Dobbelaar
Giles Crofts
Chris Baker
Polite Laboyrie
Ivo Demmers
Harm Bouta