

# The South African Wastewater Market

*Business opportunities and export promotion  
for Dutch companies*

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*Business opportunities and export promotion  
for Dutch companies*

Master thesis for the study Business Administration, track International Management  
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# Preface

This report is the result of the research that was executed to obtain a Master of Science degree in Business Administration at the University of Twente, Enschede, The Netherlands. The research was mainly carried out at the Embassy of the Kingdom of the Netherlands in Pretoria, South Africa.

First of all I would like to thank Maarit Ivalo, deputy head of Economic Affairs and my supervisor at the Embassy for the very pleasant collaboration during the time in South Africa. By being involved in my work and supporting me with your experience, I believe it gave the research a more practical approach. I am pleased that you have the intention to put a number of findings and recommendations into practice.

The Economic Affairs department, Baukje Dijkstra, Monique Loest and Deidré Batchelor many thanks for the pleasant co-operation when I was working at the Embassy. Our ambassador, Rob de Vos, thanks for the interest in the research.

Furthermore, I would like to thank both my supervisors at the University of Twente, Stephan Maathuis for his assistance during my period as an intern. I appreciate the quick replies whenever I had a question and giving me confidence about the research approach. Sirp de Boer, who reviewed my work in the final stage of the research process.

Thanks to Vin Morar, from the TSM Business School for recommending me to the Embassy in fulfilling this assignment.

This research would not have been as extensive as it is now without the people whom I interviewed or spoke to in South Africa, from Pretoria to Cape Town. I appreciate their input very much and really admire the efforts of a number of people who try to improve the water situation in the country. People from the Netherlands, Annemarie Kruijt from the NWP and Karen van den Einden from the EVD, I appreciate your interest in the research and inspiring me to produce a report that may be not only useful for the Embassy, but also for organizations in the Dutch water sector.

Hopefully this report, the whole research, the networking and the efforts of the Embassy and other governmental bodies will not only lead to an improvement of Dutch business activity in South Africa, but also stimulate co-operation between the water sectors in the two countries in contribution to solving the water problems in South Africa.

Maik van den Berg  
February 2009

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# Summary

## Introduction

This research reveals the business opportunities for Dutch companies in the South African wastewater sector and contains an export promotion proposal for the Embassy of the Netherlands in order to stimulate business activity in South Africa.

In recent years, many researchers have indicated that South Africa is facing a serious water crisis: not only the quantity, but also the quality of water resources in the country are threatened. These water related issues are regarded as complex, as no single cause has been pointed out and opinions about the seriousness of the problems vary. Proper wastewater management is however seen as a critical factor in the water crisis. Fortunately, there are indications that the attention for wastewater treatment is increasing and that more investments will be made in this sector in the coming years.

Mainly because of the current problems and positive market indications the Netherlands Embassy in Pretoria has selected the South African (waste)water market as one of the promising markets for Dutch companies the coming years. The market could have a lot of opportunities, but where these opportunities exactly are is not yet clear. To find out what the specific market opportunities are and how the Netherlands Embassy can stimulate business activities by supporting Dutch companies with export promotion support, further research was conducted which is presented in this report.

## Research objectives

This research has been conducted with several objectives in mind:

The *first objective* is to identify opportunities for Dutch companies in the South African wastewater market. The most promising market segments and specific opportunities have to be determined. *Secondly*, relevant support needs among Dutch companies should be identified. It has to become clear what current business experiences of the companies are and what could help them to enter the South African market or strengthen their market position. An elaboration on export promotion assistance is the *third objective*. Export promotion can be defined as public policy measures that actually or potentially enhance export activity, which in this case could be initiated by the Netherlands Embassy. The *final objective* is the identification and establishment of relationships with key persons and organizations involved in wastewater in South Africa in order to expand the network of the Embassy. These objectives have led to the formulation of the main research question:

*What are the opportunities for Dutch companies in the South African wastewater market and what type of support from the Embassy of the Netherlands can improve business activities of Dutch companies in South Africa?*

## Research method

This research can be divided into two distinct parts. The first part is the identification of opportunities for Dutch companies in the South African wastewater sector. The second part is the identification of support needs and an elaboration on export promotion support.

To complete the first part of the research, both the market potential of the South African wastewater sector as well as the competences of the Dutch wastewater sector had to be assessed. Information about the South African market was gathered by desk research and a number of face-to-face interviews mainly with people active in the South African wastewater sector. Information about the Dutch wastewater sector was gathered by desk research. The results of the assessments of both the South African market and the Dutch wastewater sector were combined and analysed in order to find the most promising market opportunities and segments. The segments that are

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distinguished throughout the research are: collection and sanitation, domestic wastewater, industrial wastewater and re-use of water.

The second part of the research started after selecting the most promising opportunities within the different segments. Industrial, domestic and re-use of wastewater are considered to be the most promising segments. To identify the support needs among companies, a survey in the form of a questionnaire was developed. Basic questions were asked about the structure and internationalization of the company. Also an export readiness assessment was included to determine the international competences of the companies. Specific questions about the experiences in South Africa were asked and direct questions about export needs were also included. The questionnaire was sent to 120 companies active in the determined market segments. This resulted in a response rate of 22 percent.

After analysing the results of the survey, the support needs among the investigated companies were determined. With that information, an export promotion proposal for the Netherlands Embassy was formulated, keeping in mind the possibilities of the Embassy.

## Conclusions

An investigation of the macro economic data revealed that South Africa has seen stable economic growth in the last decade. A major hampering factor to the economy however, is the lack of investment in infrastructure, in particular power supply and (waste)water infrastructure. Problems with water are twofold: there is a decline in water quantity and quality. Water quality problems are considered more severe. The main elements of the declining water quality are (raw) sewage effluents, eutrophication and acid mine drainage. The most mentioned causes related to these issues are poor enforcement of laws and regulations by the government, limited allocation of funds to wastewater treatment and the shortage of skills within the government in order to procure projects and operate and maintain the infrastructure. The non-compliance of wastewater treatment plants can be seen as the most severe problem, having a number of causes and major effects.

The analysis of the market potential has resulted in a list of market drivers and restraints, as well as an overview of competition in the market, concrete business opportunities and a list of demand characteristics. In general, it can be concluded that the market for wastewater is growing. There is potential in all distinguished sub segments. One of the most important market drivers is the increased enforcement by the government, which stimulates spending in this sector in the coming years. Another important market driver is general increased investment. Other drivers are economic growth, increased feasibility of investments, increased cost of water, technological developments and increased complexity of the wastewater. The main market restraints, although gradually improving, are the lack of implementation of wastewater legislation, challenges to allocate financial resources to wastewater and financial limitations of municipalities.

The wastewater treatment market in South Africa is considered to be a competitive market, with well established international competition. Many international companies are already active in all investigated segments.

The main demand characteristics of the South African wastewater market in the collection and sanitation segment are: the large need for wastewater infrastructure and renovation and replacement of wastewater pipelines. Within the industrial wastewater market, there is a large demand for industrial wastewater treatment equipment and services and a need for skilled people to operate and maintain infrastructure. The domestic wastewater market is the largest market



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segment, with demand for wastewater treatment equipment & services and upgrade of wastewater treatment plants. Also skilled people to operate and maintain, experienced managers to procure are needed. There are opportunities for public private partnerships and franchising contracts for the management of treatment plants. The re-use market is growing, especially the membrane market.

The next step was to assess the supply characteristics of the Dutch wastewater sector. It can be concluded that the Dutch wastewater sector has extensive experience in the development of water and wastewater treatment technologies. The public sector is large as all wastewater infrastructure is managed by governmental bodies. The private sector is active in all wastewater sub segments with an annual revenue of €14,8 billion euro and a growing export market share. The supply characteristics of the Dutch wastewater sector comprehend a number of strong features like innovative technology, international orientation and positive reputation and extensive network. In the collection and sanitation segment, there are innovative sanitation concepts and competitive supply of wastewater pipeline infrastructure. The industrial wastewater sector has a large export market with a wide range of products and services. In the field of domestic wastewater the sector is large, with state-of-the-art wastewater treatment technologies. However, there is a low level of competitiveness for large wastewater treatment projects. The re-use of water sector is competitive within domestic wastewater and industrial process water recycling. In general, there are few large players among the Dutch companies, limited financial power and limited co-operation within the sector.

The result of the combined assessment of the South African market and Dutch sector produced a list of best market opportunities. In the collection and sanitation segment, the best opportunities are the upgrading of wastewater pipeline infrastructure and new sanitation concepts. In the industrial segment, innovative technologies for rehabilitation of industrial wastewater and products with a complete package, which include training and capacity-building are most promising. The domestic wastewater segment provides opportunities for wastewater treatment equipment and treatment plants, private sector involvement and upgrade of existing wastewater treatment plants. In the re-use segment, there is a booming market for membrane technology, but domestic water re-use and industrial process water recycling also have large opportunities.

The second part of the research is an assessment of the relevant support needs of the Dutch wastewater sector with respect to the market opportunities identified. The survey generated a lot of data about the companies: company profile, international and more particular, South African experiences and support needs. Many companies in general lack knowledge about the international market. They mention political instability as one of the major obstacles for doing business, together with rules and regulations and Black Economic Empowerment. Frequently mentioned as an obstacle is the lack of 'quality' of the business partners. There is a limited amount of suitable partners and a large client, the (local) government are often perceived as unreliable because of corruption, payment problems and allocation of resources by the government. Furthermore, companies are financially limited to do business in South Africa and take risks. There is also a lot of competition on the market. The most mentioned support needs companies expect from the Embassy relate to market information and selecting partners and clients.

### **Suggestions for export support interventions**

The Dutch wastewater sector faces several internal problems, market obstacles and has a number of needs to improve certain areas in order to be successful in the South African wastewater market, taking advantage of the full business potential. The Embassy of the Netherlands is a relative small

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organization, but it can contribute to stimulate Dutch companies to do business. Activities the Embassy could be involved have been formulated.

The most important activities are informational and consist of market information in the form of market reviews, market visits and local seminars. Besides receiving information from Dutch governmental organizations companies should be involved in the South African market and become a part of the network in order to minimize the informational barriers. This can be established for example, by becoming a member of the Water Institute of Southern Africa.

The second support activity is assisting companies with the selection of partners and clients, which can help to overcome market obstacles. Firstly, by organizing or assisting with a trade mission to meet with South African (and Dutch) counterparts and obtain knowledge of the market. Secondly, by setting up a water platform for the Dutch and South African wastewater sector.

The third activity for the Embassy is to assist companies in starting up pilot projects. Potential business partners can be selected and a finance facilities can be provided in co-operation with the EVD.

The fourth activity the Embassy of the Netherlands should be involved in, is the assisting of crucial institutions in the wastewater sector in order to indirectly improve the conditions of the South African wastewater market.

The last category of export promotion activity is the provision of financing facilities and also important, information about financing facilities. There has to be a better 'match' between what companies desire and what the Dutch government has to offer.

Besides specific activities and interventions distilled from the different analysis's, it is important to mention that Dutch companies must know that the Embassy can offer these types of assistance, now that wastewater is seen as a focus area for the coming years.

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# List of acronyms

AMD	Acid Mine Drainage
ASGISA	Accelerated and Shared Growth Initiative of South Africa
BEB	Directorate-General for Foreign Economic Relations (NL)
BOOT	Build, Own, Operate, Transfer
CBI	Centre for the Promotion of Imports from developing countries (NL)
CMA	Catchment Management Agency
CSIR	Council for Scientific and Industrial Research (RSA)
DBSA	Development Bank of Southern Africa
DTI	Department of Trade and Industry (RSA)
DWAF	Department of Water Affairs and Forestry (RSA)
ERA	Export Readiness Assessment
ERWAT	East Rand Water Care Company
EVD	Netherlands Foreign Trade Agency (NL)
GDP	Gross Domestic Product
MBR	Membrane Bio Reactor
MDG	Millennium Development Goals
MIG	Municipal Infrastructure Grant
MIIF	Municipal Infrastructure Investment Framework
NGO	Non-Governmental Organization
NWA	National Water Act (RSA)
NWP	Netherlands Water Partnership (NL)
OECD	Organization for Economic Co-operation and Development
PESP	Programme for Economic Co-operation Projects (NL)
PPP	Purchasing Power Parity
PSOM	Programme for Co-operation with emerging markets (NL)
RSA	Republic of South Africa
SAICE	South African Institute for Civil Engineers
SALGA	South African Local Government Association
SANEC	South African Netherlands Chamber of Commerce
VNG	Association for Netherlands Municipalities (NL)
WEX	Water Export Index (NL)
WISA	Water Institute of Southern Africa
WMA	Water Management Authority (RSA)
WRC	Water Research Commission (RSA)
WWTP	Waste Water Treatment Plants

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# 1. Research design

## 1.1. Introduction

South Africa is a country which is rich in many resources, but where fresh water is considered scarce. In recent years, many researchers have indicated that South Africa is facing a serious water crisis: not only the quantity, but also the quality of water resources in the country are threatened.

In many areas in the country, water demand is already exceeding supply. It is expected that this gap is going to increase in the near future if no further action is taken. Also the pollution of the surface and groundwater is considered a major problem which has a large influence on drinking water supplies and agriculture. The water quality related issues are regarded as complex, as no single cause has been pointed out and opinions about the seriousness of the problems vary. Proper wastewater management is however seen as a critical factor to prevent a water 'quality' crisis. Fortunately, there are indications that the attention for wastewater treatment is increasing and that more investments will be made in this sector in the coming years.

Mainly because of the current problems and market indications the Economic Affairs department of the Netherlands Embassy in Pretoria has selected the South African (waste)water market as one of the promising market segments for Dutch companies the coming years. The market could have a lot of opportunities, but to which extent and where these opportunities lie is not yet researched thoroughly.

The Dutch water sector; private as well as public organizations are already active in South Africa. However, it is not very clear what the experiences of those organizations are. The Netherlands Embassy believes that Dutch companies could have a lot of possibilities to conduct business in South Africa, but that this business potential is not fully utilized. To find out what the specific market opportunities are and how the Netherlands Embassy can stimulate business activities by supporting Dutch companies with export promotion support, further research was conducted which is presented in this report.

## 1.2. Background

The Economic Affairs department of the Embassy of the Netherlands in Pretoria, South Africa, functions as the principal of this graduation assignment. This section will briefly describe the background of this department.

All over the world, the Kingdom of the Netherlands has missions: embassies, consulates, and permanent representations to international organizations. Embassies and consulates are bilateral missions that promote Dutch interests and assist Dutch nationals living or travelling abroad. Embassies are also active in development co-operation, press and cultural affairs. Consulates, subordinate to embassies, carry out more practical, routine tasks. The Ministry of Foreign Affairs in The Hague coordinates the worldwide network of missions.

Dutch foreign policy is driven by the conviction that international cooperation brings peace and promotes security, prosperity and justice. And it is bound by the obligation to promote Dutch interests abroad as effectively and efficiently as possible. To do so, the Netherlands needs a worldwide network of embassies, consulates, and permanent representations to international organizations. The activities, composition, and size of each mission depend on its host country and region.

Embassies and consulates concern themselves with relations between the Netherlands and other countries. They work in five areas (Ministerie van Buitenlandse Zaken, 2008) which are listed on the next page.

1. Political affairs
2. Economic affairs
3. Development cooperation
4. Consular affairs
5. Press and cultural affairs

Embassies and consulates promote Dutch economic interests, working with two branches of the Ministry of Economic Affairs: the Directorate-General for Foreign Economic Relations (BEB) and the Netherlands Foreign Trade Agency (EVD).

Dutch economic policy aims to make the Netherlands more competitive. Embassies help by promoting Dutch trade in their host countries. They also report to The Hague about their host country's investment climate, trade and economic policies, and trends in markets of potential interest to Dutch exporters. Embassies promote the interests of individual Dutch companies doing business in their host country. They help solve practical problems encountered by companies lacking local knowledge, and they organise promotional activities like group business trips and networking meetings

Because many companies lack the motivation, resources or knowledge to exploit foreign markets opportunities, national governments and other public organizations have evolved programs of support and assistance; export promotion. These programs tend to improve competitiveness of participating companies, and therefore increase the chance of international market success. This should eventually lead to larger employment and wealth creation. (Seringhaus & Rosson, 1991).

As the South African wastewater market is one of the promising market segments. The Economic Affairs department is therefore focused to stimulate activities in this market by supporting Dutch companies with export promotion.

### **1.3. Problem formulation**

This section will describe the related problem statement and research questions that result from the research introduction and background.

#### **1.3.1. Research objectives**

The objectives of this research are:

1. Identification of the opportunities for Dutch companies in the South African wastewater market.
  - Description of the potential of the South African wastewater market.
  - Description of the competences and experiences of Dutch companies in the wastewater sector.
  - Identification of the opportunities of Dutch companies in the South African wastewater market.
2. Identification of relevant support needs among Dutch companies in exporting to South Africa in the wastewater sector.
3. Elaboration on export promotion assistance in respect to obtained support needs.

Besides the three research objectives, a fourth objective is formulated in the interest of the Netherlands Embassy which can be fulfilled by execution of this research:

4. Identifying and establishing relationships with key persons and organizations involved in wastewater in South Africa.

### 1.3.2. Research questions

Subsequently, the research objectives can be converted into research questions which are formulated below. The main question of this research is:

**What are the opportunities for Dutch companies in the South African wastewater market and what type of support from the Embassy of the Netherlands can improve business activities of Dutch companies in South Africa?**

The main question is split into several sub questions with the goal to construct the questions in such a way that together they provide a satisfying answer.

- 1. What are the opportunities of the Dutch wastewater sector in the South African wastewater market?**
  - a. What is the market potential of the South African wastewater market?
  - b. What are the competences and relevant experiences of the Dutch wastewater sector?
  - c. What are the most promising market segments in South Africa for the Dutch wastewater sector?
- 2. What are the support needs of the Dutch wastewater sector with respect to the market opportunities identified?**
- 3. What specific activities and strategies should be undertaken by the Embassy of the Netherlands to take advantage of these opportunities?**

The basis of the research will be the answer to the first question. In order to answer this question, an assessment of the South African wastewater market potential has to be done jointly with an assessment of the Dutch wastewater sector. This will lead to question 1c, which can be considered as a demand and supply analysis. This analysis results in a list of the most promising market segments and business opportunities. The next step is to discover the relevant support needs and constraints for Dutch companies doing business in South Africa. The last step is to formulate interventions in line with the identified support needs in order to stimulate business activities in South Africa.

## 1.4. Research approach

This section will describe the approach to the research by determining the type of research and formulating a general plan to answer each of research questions.

Research can be distinguished by the goal that is being pursued. According to 't Hart and Boeije (2001) and Verschuren en Doorewaard (2000), there are two main types of research: fundamental and practical oriented scientific research. The goal of fundamental research is the development and testing of theories. The goal of practical oriented scientific research is to do research for the development, execution and evaluation of solutions for practical problems that exist with people or organizations outside the field of science. In this type of research it is about gaining knowledge, and knowledge that is used in order to make practical decisions. This research can be considered as practice-oriented scientific research, which in this case has the goal to contribute to an intervention for an existing situation. To support this research with a scientific basis, literature will be reviewed on the subject of internationalization and export promotion, in order to retrieve theories and models that can be used. This will be addressed in the next chapter. The specific research approach for each question is given in the following paragraphs.

*Research question 1a: What is the market potential of the South African wastewater market?*

In the first research (sub) question, the South African wastewater market has to be explored. This will be done by conducting secondary and primary data research. Key persons and organizations related to the South African wastewater market are consulted to gather the necessary data to assess the potential of the South African wastewater market.

*Research question 1b: What are the competences and relevant experiences of the Dutch wastewater sector?*

By answering this question, it has to become clear what the characteristics of the Dutch wastewater sector are. This part of the research will include secondary data research. A literature study is conducted to obtain a clear overview of the current competences and relevant experiences of the wastewater sector in the Netherlands.

*Research question 1c: What are the most promising market segments in South Africa for the Dutch wastewater sector?*

After answering question 1a and 1b, a comparative analysis of both markets is done in order to find relevant, matching and most promising segments in the market. The findings from the research of the Dutch wastewater sector will be compared with the market potential in South Africa. From here, also market opportunities are formulated.

*Research question 2: What are the relevant support needs of the Dutch wastewater sector with respect to the market opportunities identified?*

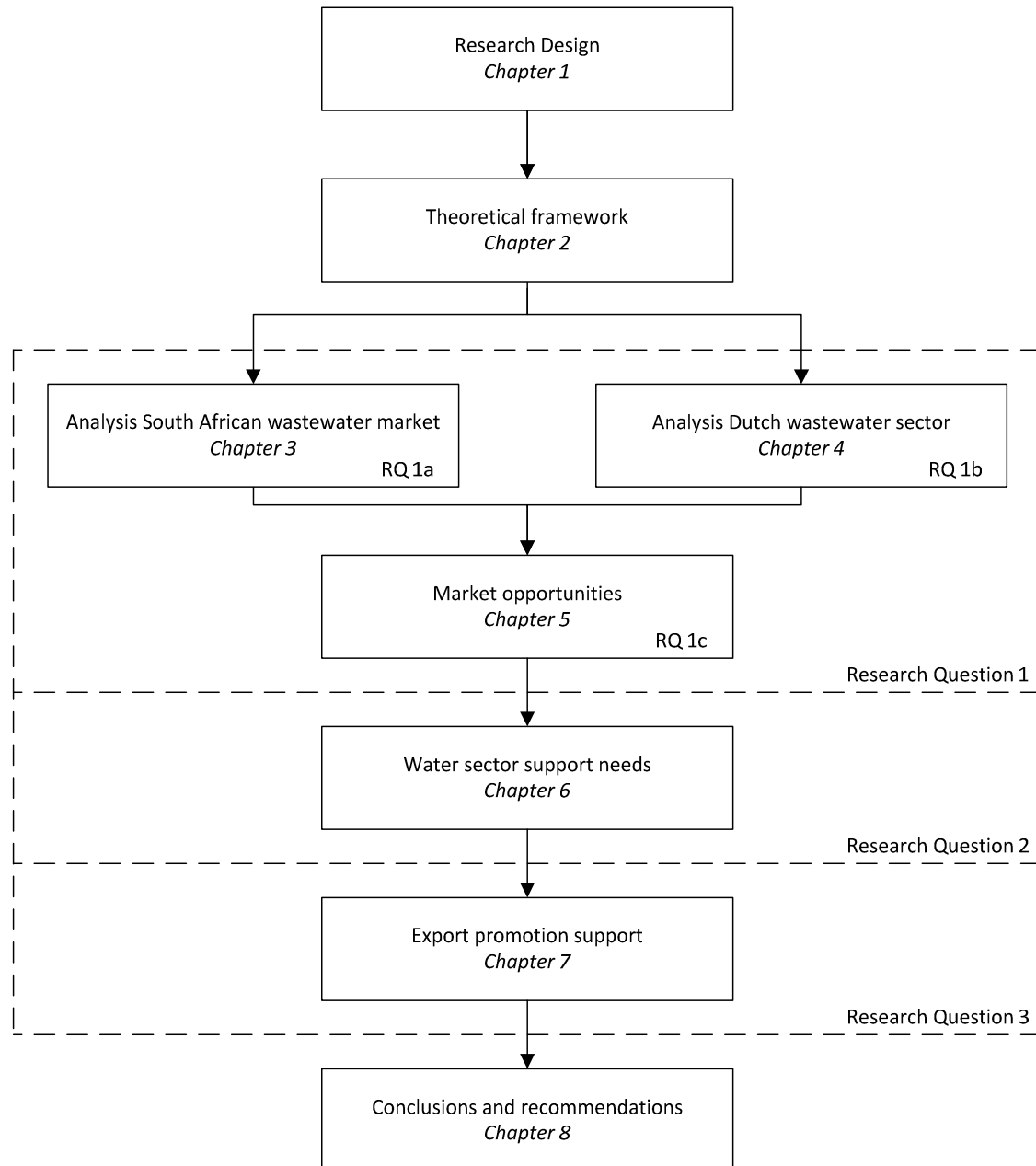
Based on the market opportunities that are formulated, the constraints of companies in the Dutch wastewater sector are determined. This will be done by investigating the relevant segments that are identified in the previous research question. Companies will be approached and asked to participate in an extensive survey. This survey will contain questions that are appropriate for obtaining relevant support needs when engaging business activities in the South African wastewater sector. The answers to the survey questions will provide an answer to the research question.

*Research question 3: What specific activities and strategies should be undertaken by the Netherlands Embassy to take advantage of these opportunities?*

In answering the final research question, activities and strategies are formulated to give the market opportunities that are identified a practical form. Taking into account the results from the research and the market opportunities that are identified in the previous questions possible interventions initiated or stimulated by the Embassy of the Netherlands are formulated to improve business activities of Dutch companies in the South African market. The determination of interventions is based on theory, but proposed interventions should also be within the current possibilities of the Embassy.

## 1.5. Structure of the research

The figure on this page gives an overview of the structure of this research. Each of the elements represents a chapter in the report. The dotted squares surround the chapters that are covered by each of the research questions.



**Figure 1.1** Research model



## 2. Theoretical framework

### 2.1. Introduction

In general, research should be based on objective evidence and supported by theory. The researcher should rely on theory to determine which variables should be investigated. Furthermore, theoretical considerations provide information on how the variables should be made operational and measured, as well as how the research design and sample should be selected. A theory also serves as a foundation on which the researcher can organize and interpret the findings (Malhotra, 2004). It is important to find and use the most appropriate theories to conduct this research. This chapter provides a literature review of several theories, which will function as a framework for this research. Applicable models and theories are outlined per research element.

### 2.2. South African wastewater market

Determining the potential of the South African wastewater market is the key point of the first research question. To start with, the definition of the wastewater market segments is given. The segmentation of the market is relevant for the market assessment and for the selection of the most promising market segments. In the second and third subsection, several theories about analyzing foreign markets will be discussed.

#### 2.2.1. Definition of wastewater market segments

This research focuses on the wastewater market, which is regarded as one part of the total water market. The following six segments within the water market are discerned based on a study of the Netherlands Water Partnership (NWP) (Muizer & van den Berg, 2002):

1. Water supply
2. Water(resources) management
3. Irrigation and drainage
4. Hydropower
5. Water construction
6. Wastewater

Wastewater is defined in the international literature as: *Spent or used water with dissolved or suspended solids, discharged from homes, commercial establishments, farms, and industries* (Pinsent Masons water yearbook 2007-2008). The wastewater market can be segmented in various ways. Within the research of the NWP, there are four sub segments that can be distinguished:

- Collection and sanitation
- Industrial market
- Domestic market
- Re-use of water

Collection and sanitation comprehends the wastewater pipeline infrastructure and sanitation facilities. The industrial market segment is described as all wastewater activities for commercial clients. The domestic market segment is mainly the market for wastewater treatment plants, maintenance and equipment, either publicly or privately owned. The re-use of water market includes technology and infrastructure that transforms wastewater into re-useable water for industrial or domestic purposes.

The description of the sub segments indicate that there is no strict divide, especially between the re-use and the industrial and domestic market. However, if used accurately, this segmentation of the wastewater market can be used to explore and define the market.

### 2.2.2. Market potential

The first research question contains the concept “market potential”. In order to research the market potential, this concept has to be operationalized. Wood and Roberson write about market potential in their article *Evaluating International Markets*. According to Wood and Robertson (2000), the information regarding market potential is most important when analyzing foreign markets. They also state that other environmental dimensions are considered to be important and that the ranking of the dimensions can vary across different countries. Therefore it is necessary to have a look at the other environmental dimensions in this research as well. For the analysis of these environmental dimensions the theory of Root (1994) will be used (see 2.2.3.). However, according to the research of Wood and Robertson (2000), information about the market potential is considered to be paramount in the continent of Africa. Only if there is a demand for a certain product, the legal, political, economical and cultural dimensions become important. Market potential can be divided into three factors: general demand, adaptation costs and competition. For analyzing the whole market however, not all three factors have to be researched. In this stage only the general market demand and competition in the market are of importance. There are eight export dimensions that help to analyze the general demand and the competition. This is illustrated in table 2.1.

Factors	Export dimensions
<i>General demand</i>	Potential foreign buyer’s ability to pay for the product
	Average annual sales of the type of product
	Future trends and growth rate of the foreign market
	Opportunities to offset cyclical swings in the home market by entering a foreign
<i>Competition</i>	Types and number of competitive products on the market in the foreign country
	Competitors’ market share, coverage and growth rate in the foreign market
	Advantages and weaknesses of competitors in the foreign market
	Price levels on competitive products

**Table 2.1.** Export dimensions to analyse general demand and competition.

*Source: Adapted from Wood & Robertson (2000)*

In order to determine the market potential in this research, there will be an investigation of the general demand and competition with their subsidiary export dimensions.

### 2.2.3. Factors in the entry mode decision

Because this research focuses on the opportunities of Dutch companies doing business abroad, theory of Root (1994) about entry modes and factors that influence the choice of the entry mode will be discussed. It is also suggested by Wood and Robertson (2000) to look at environmental factors, which can also be found in the theory of Root (1994).

Root developed a basic framework that describes factors that determine the decision of a company to sell its product in foreign markets. In this theory, a company’s choice of its entry mode for a given product/target country is the net result of several, often conflicting, forces. This framework that analyses both the external and internal factors can be found in Appendix I.

The framework of Root cannot be used directly in this research for investigating the South African market (target market factors) and the Dutch industry (home country, company factors) because the



theory is developed for market entry decision on a company level. However, some of the elements of this framework can be used for the assessment of the South African wastewater market as well as the Dutch wastewater sector.

Looking into the *external factors* helps to gain insights into the South African market. The target country market factors have certain overlap with the theory of Wood and Robertson, as they also mention market demand and competition as important factors for assessing a foreign market. The target country environmental factors contain a number of examples to research like the economic characteristics of the country and government policies.

The *internal factors* and the *external home country factors* suggest a number of examples to research in order to obtain an image of the competences of the wastewater sector in the Netherlands.

On the whole, the examples that Root mentions give direction, and help where to look for in assessing a foreign market and a company. Additional theories are necessary to identify the competences of the industry. This will be discussed in section 2.3.

#### 2.2.4. Analysis South African market

The identification of the export dimensions in the research of Wood and Robertson (2000) which was pointed out in 2.2.2. can contribute to the theory of Root (1994) in analyzing the characteristics, including the market potential of the South African wastewater market. A combination of the two theories gives a better view of the aspects and also points out what is most relevant for this research. The target country market factors are researched by looking into the general demand and competition on the market. Economical and political/legal dimensions represent the environmental factors. This model is displayed in figure 2.1.

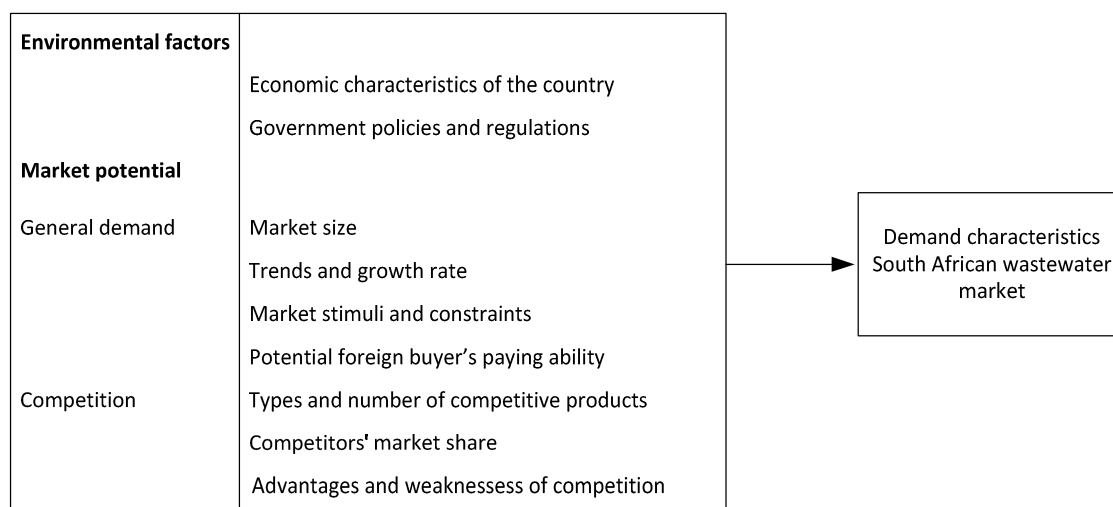


Figure 2.1. Analysis wastewater market South Africa

### 2.3. Competences Dutch wastewater sector

After the South African market is assessed, the Dutch wastewater sector will be investigated. In order to identify the competences for doing business in South Africa it is necessary to analyse the wastewater sector in the Netherlands. It is important to find out what the current position of the Dutch companies on the domestic and world market is and what the competitive advantage or disadvantages are in order to identify the opportunities on the South African market. Several models and theories can assist in researching the competences or strengths of an industry and will be addressed in the next sections.

#### 2.3.1. Factors influencing the choice of entry

As already mentioned in the previous section, the model of Root (1994) can be used to assess the Dutch wastewater industry by looking at the internal factors and the 'external' home market factors. While

the home market factors can consist of general market data, the internal factors are different for every company. The theory of Root gives insights in the relevant internal aspects of a company, but gives less information about international competences. See also Appendix I.

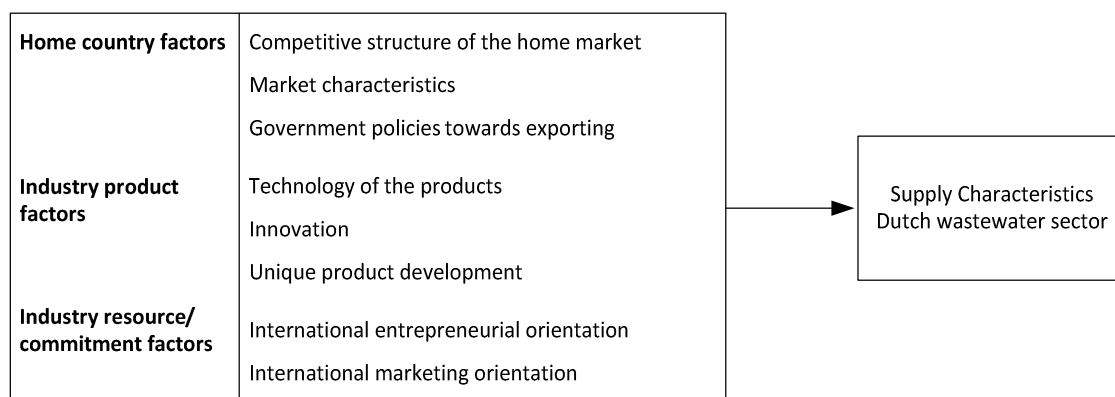
### 2.3.2. Drivers of superior performance overseas

A theory that is more relevant for this research comes from Knight and Cavusgil (2004), who have investigated the succes factors of born-global firms. These findings have important implications for the internationalization of contemporary firms. They state that the ability to internationalize and succeed in foreign markets is a function of the internal capabilities of the firm. The evolutionary economics view implies that the superior ability of certain firms to sustain innovation and, as a result, create new knowledge leads to the development of organizational capabilities, consisting of competences and embedded routines (Knight and Cavusgil, 2004). The firms resources in turn lead to superior performance in highly competitive or challenging environments.

The main findings of this research consist of a list of drivers of superior performance in international environments. At the organizational level, international entrepreneurial orientation reflects an innovation focused managerial mindset. Like *international entrepreneurial orientation*, *international marketing orientation* is also particularly relevant. International marketing orientation facilitates knowledge of customers, product development and adaptation, as well as marketing of tactical elements to target foreign customers. At the strategy level, *global technological competence*, *unique products development*, quality focus and leveraging *foreign distributor competence* appear to be significant drivers of superior performance overseas. Organizational activities related to innovation, R&D, knowledge development and capabilities leveraging play important roles in positioning organizations or international success. The existence of these drivers within the wastewater sector in the Netherlands can therefore be seen as the determinants of competences and should be researched as well.

### 2.3.3. Overview indicators of competences

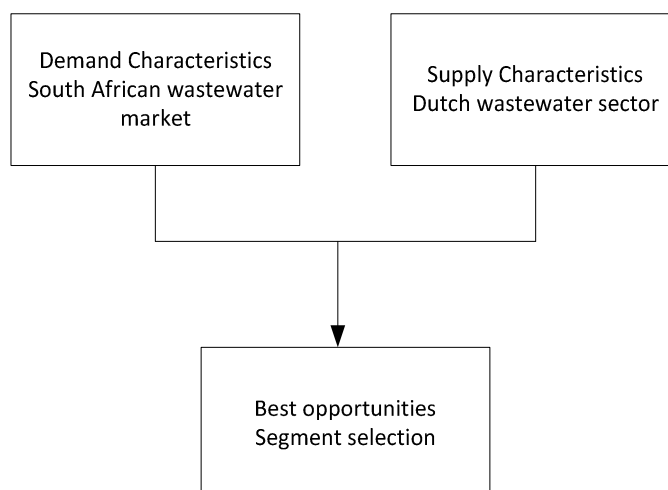
The identification of the drivers mentioned in the research of Knight and Cavusgil (2004) can contribute to the theory of Root (1994) in analyzing the characteristics, including the competences, of the wastewater industry in the Netherlands. The theory of Root can form a basis in which market and industry characteristics can be placed. Specific competences can be found when the research is extended with the identification of the drivers of superior performance. The determinants that should be researched are placed in the figure 2.2.



**Figure 2.2.** Analysis Dutch wastewater sector

## 2.4. Segment selection

In order to formulate export promotion for the Dutch wastewater sector in South Africa, market opportunities and improvement areas for those products have to be determined and formulated. This means comparing the results from both the Dutch supply- and the South African demand analysis to find the best opportunities and matching market segments.



**Figure 2.3.** Model for selecting the most promising market segments and opportunities

By matching the South African demand characteristics with the supply characteristics of the Netherlands water sector, an overview is created that shows where the opportunities are. The market segments with most opportunities are selected for the next phase of the research.

## 2.5. Export support need analysis and promotion

In the previous sections, the theories for assessing the Dutch industry and South African market and selecting the best opportunities were discussed. This section will discuss theories about export support need analysis and export development and promotion.

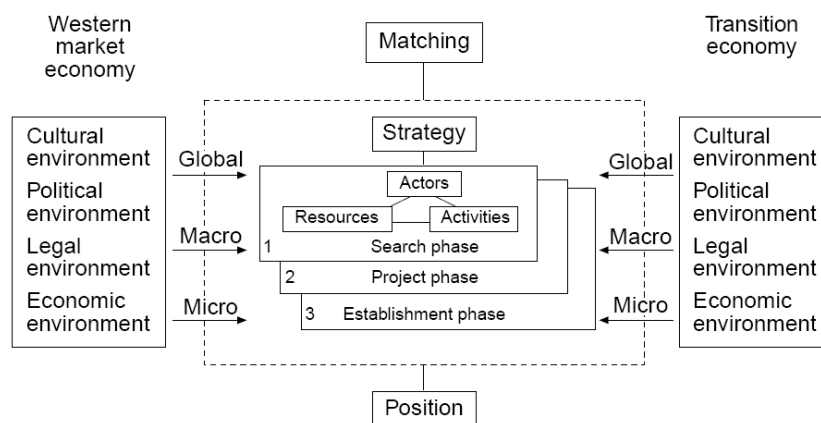
### 2.5.1. Export Readiness Assessment

To understand the company support needs, an Export Readiness Assessment (ERA) is developed. This ERA tool will be part of the survey of the Dutch wastewater industry. Some organizations already develop similar surveys, for example The Centre for the Promotion of Imports from developing countries (CBI) which has an export readiness checker consisting of a number of questions for managers of companies. Theory that can be used for the ERA comes from Knight and Cavusgil (2004), as explained in 2.3.2. The existence of drivers of superior performance in international environments among companies can give an indication about their export readiness. The questions in the ERA will be formulated based on these drivers.

### 2.5.2. Network market matching

When international companies start operations in transition or in developing countries, it can be assumed that the environment is very dissimilar to that of their home country. Dissimilarities in the economic environment, including infrastructure and level of technology and in the political, legal and cultural environments create barriers to utilize the business potential. The higher the physical distance and cultural dissimilarity to a foreign country, the less likely the companies are to start business there. The existence of such distance slows down the flow of knowledge and information, which further

increases the rigidity of firms to expand laterally in that direction. Therefore, it is very important to analyse what kinds of problems companies have met in establishing operations in these countries. Ghauri and Holstius (1996) have developed a model called *network market matching* to analyse and help overcome those establishment problems which is essentially a combination of two theories: *market matching and network model*. Market matching is a concept which allows an understanding of how the development of successful business relationships can be facilitated by initiating and developing relationships at different levels beyond the firm's immediate contacts (Ghauri and Holstius, 1996). Matching can be regarded as processes that facilitate the development of business relationships between firms in dissimilar countries at the global, macro and micro levels. A figure of the network market matching model is depicted below.



**Figure 2.4.** Network market matching model

Source: Ghauri & Holstius, 1996

The establishment process with its three different phases constitutes the core of the foreign market entry model. It shows how companies develop relationships and build up a market position. In each of these phases, the three network variables actors, activities and resources are present. They are mutually dependent, since actors control the resources and perform activities. This network model of actors was developed by Johanson and Mattsson (1988) who defined internationalization in the context of a firm establishing and developing positions in relation to counterparts in different networks. The main *actors* in the internationalization process are the institutions, firms and individuals that interact or facilitate exchange. They include importers and exporters, financiers, global bodies, governments and governmental institutions. *Activities* refer to the various forms of exchange that takes place among the actors within the network. A basic assumption of the network theory is that an individual firm is dependent on *resources* controlled by other firms and in order to get access to these external resources the firm must establish a position within the network

Matching at the *global level* refers to multilateral agreements with other countries and international activities taken in order to facilitate international operation between the two countries. At the *macro level*, matching refers to bilateral measures taken by governments in order to support business operations between the countries at company level. This includes export promotion and cultural and scientific exchanges. *Micro level* matching includes all the steps of preparedness within the firm needed for successful market entry. The specific steps and resources involved will depend on the mode of entry and the company's resources. Each time a foreign company trades with another, some form of micro matching takes place (Foster & Holstius, 2004).

The last part of the model are four forces, which are seen by Ghauri and Holstius as the most inductive dimensions to successful expansion. These four environmental factors are used in this research to gain insights in the type of support companies need and what kind of barriers they face. These factors are:

- Economical, where the focus is on an export market's industrial, consumer, and service evolution and development;
- Political, the extent to which politics that govern the export market generate conditions conducive to international business activities;
- Legal, or the legal environment of an export market and the degree to which it prevents or restrains business activities;
- Cultural, what can be seen as the nature of internal and external shared lifestyles, customs, and social relationships.

The network market matching model serves as a model to study the relationships between actors, activities and resources within the business environments and in this research can help to formulate Dutch-South African business promotion by matching the global, macro and micro environments. The assessment of the micro level matching of Dutch companies can be put next to the theories of Root (1994) and Knight & Cavusgil (2004) to form a picture about the preparedness of the companies to do international business and their perception of doing business in South Africa. This theory is also used as a basis for the export promotion assessment.

### **2.5.3. Export development and promotion**

A common requirement for companies, but especially for small and medium sized companies is that they need to be as fit as possible when taking on foreign competition. Few smaller companies will be able to sustain business in a foreign country than larger companies when the foreign marketing operations are not optimal (Seringhaus and Rosson, 1991). For smaller companies in particular then, the export promotion programs offered by public organizations provide a ready means to acquire or enhance the skills that are needed to become an effective competitor in foreign markets. The definition of 'export promotion programs' are public policy measures which actually or potentially enhance exporting activity at the company, industry or national level (Root, 1994). According to Seringhaus and Rosson (1991) Export promotion involves "the creation of awareness of exporting as a growth and market expansion option; the reduction or removal of barriers to exporting; and the creation of promotion incentives and various forms of assistance to potential and actual exporters". Seringhaus and Rosson (1991) distinguish four factors that help explain why companies seek export promotion support and why this is provided by public organizations:

1. The growing importance of international trade
2. The increasing intensity of international competition
3. The necessity of participating in the global expansion of trade in goods and service
4. The need to strengthen domestic industrial sectors

The export promotion programs will only assist exporters to the extent that they meet real needs, which vary depending on a company's stage of export involvement. Table 2.3. provides a summary of the stages of export involvement corresponding company needs and export program responses.

Type of export involvement	Key questions	Company need	Export promotion focus and typical initiatives		
			Motivational	Informational	Operational/Resource
Non-Exporter	Should we even consider exporting?	To be made aware of opportunities	Advertising, local seminars, export weeks		
New exporter	Should we initiate? Which market should we investigate?	To determine feasibility of exporting	Seminars, export bulletin/newsletter	Market reviews, supplier/buyer newsletter, custom market research	Trade missions, financing/insurance
Expanding exporter	Which new market should we enter and how?	To select the most promising market and the market entry method		Market visits, export seminars/meetings, export newsletter	Trade fairs, trade missions, financing/insurance
Continuing exporter	How can we achieve better performance?	To improve and fine tune existing operations		Export seminars/meetings, export newsletter	Trade fairs, foreign buyer visit, sales office, financing/insurance

**Table 2.2.** Company needs and export promotion programmes

Source: Seringhaus & Rosson (1991)

According to Seringhaus and Rosson (1991) the crucial barriers to increased involvement of companies in an international market are *motivational*, *informational* and *operational/resource based*. Companies that are non-exporters often view exporting as more risky, costly and time-consuming than domestic business and face motivational barriers. Examples of motivational barriers are for example perceptions that doing business overseas has a higher risk and cost. Many of these firms need motivation before they start international business. Advertising and local seminars can then help to stimulate businesses (see table 2.3.). Informational barriers come second after motivational. Many companies do not know where to begin and lack both an appreciation of the information that should be collected, where it might be found and how it should be analyzed (Seringhaus & Rosson, 1991). Public organizations play also a role in this area, providing standardized economic data, more specific data by product or country, and assistance in interpreting data collected.

Having operational or resource barriers means that a company lacks the time and/or money that must be invested to seriously develop export markets. Again, public organizations can help companies to deal with these barriers by organizing trade missions and trade fairs.

In this research, the theory of Seringhaus and Rosson will be used to classify the organizations within the Dutch water sector and to address the problems and needs of companies. It also gives guidelines for possible interventions per specific target company.

## 2.6. Research Methodology

In this section, the methodology of the research is outlined.

The first research element is the analysis of the South African wastewater market. The environmental factors and market potential have to be researched. This will be done by conducting desk research and interviews. In the desk research, scientific articles, market research documents and government reports will be used to obtain necessary data. Interviews with key persons in the South African wastewater sector will be conducted to obtain background information as well as up-to-date information about the market.

The second research element is the analysis of the Dutch wastewater sector. Data about the supply characteristics of the Dutch wastewater sector will be gathered by doing desk research. Sources of

information are scientific articles, market research reports and reports from the Netherlands Water Partnership and other water sector related organizations.

The third research element is the assessment of the water sector support needs. As described in section 2.5. the data will be gathered by sending a questionnaire to relevant companies active in the wastewater sector.

The other research elements that are described in this chapter; the segment selection and export promotion formulation are an analysis of the gathered data and do not need an explanation about the research method and data source. The research elements, method and data sources that are described in this section are summarized in table 2.3.

Research element	Method	Source(s)
Analysis South African wastewater market	Desk research	Scientific articles Market research Government reports
	Interviews	Key persons from (local) government, WRC, WISA, CSIR, NGO's and other related organizations
Analysis Dutch wastewater sector	Desk research	Scientific articles Market research Reports by NWP and other related organizations
Water sector support needs	Survey, questionnaire	Companies active in the wastewater sector

**Table 2.3.** Research method per research element.





### 3. South African market potential

This chapter will assess the opportunities in the South African wastewater. It will address the research question: *What is the market potential of the South African wastewater market?* The question will be answered gradually by first giving an introduction to the South African market. The second paragraph will identify the main challenges and problems regarding water in South Africa. The third paragraph will focus on identifying the market potential for the wastewater industry in South Africa. A conclusion is given in the form of a opportunity and threat overview.

#### 3.1. Introduction to the South African market

The Republic of South Africa, with its 49.3 million inhabitants (2008) is seen as the economic powerhouse of Africa. It is leading the continent in industrial output and mineral production and generating a large proportion of Africa's electricity. The country has abundant natural resources and well-developed financial, legal, communications, energy and transport sectors, a stock exchange ranked among the top 20 in the world (South Africa Yearbook 2007/2008). Not only is South Africa itself an important emerging economy, it is also the gateway to other African markets as it is playing a significant role in supplying energy, relief aid, transport, communications and investment on the continent. The South African economic policy is fiscally conservative, but pragmatic, focusing on targeting inflation and liberalising trade as a means to increase job growth and household income.

The economic performance of South Africa's economy has been impressive, as it has been in an upward phase of the business cycle since September 1999, which is the longest period of economic expansion in the country's recorded history. During this upswing, the economic growth has averaged over 4 per cent. South Africa's real gross domestic product rose by 5.1% in 2007. South Africa's economy has been completely overhauled since the advent of democracy in the country in 1994. Bold macroeconomic reforms have boosted competitiveness, growing the economy, creating jobs and opening South Africa up to world markets. In 2006/07, the country posted its first ever budget surplus, of 0.3% (Statistics South Africa, 2008).

Projections for South Africa's output growth in 2008 and 2009 have recently been revised downward to 3.7% and 3% respectively as a result of the global economic slowdown. Depending on international developments, gross domestic product growth is expected to recover to above 4 percent in 2010 and beyond. The current GDP per capita is \$13.300 with the GDP per sector distributed as follows: Agriculture 2,6%, Industry 30.3% and Services 67.1%. Other macro economic data over the previous years is given in the table below.

	2005	2006	2007	2008
Population (est., million)	47,3	47,8	48,2	48,6
GDP (PPP) billion \$	398,0	433,0	467,3	496,0
Real GDP growth	5,00%	5,39%	5,12%	3,83%
Inflation	3,40%	4,64%	7,10%	11,78%
Gini index (income distribution)	N/A	N/A	N/A	57,8
Unemployment	26,7%	25,5%	22,7%	N/A

**Table 3.1.** Main economic indicators South Africa 2005-2008.

Source: Statistics South Africa

The awarding of the 2010 FIFA World Cup to South Africa is a sign that South Africa is now seen as a stable, modern state, in many ways a model for the rest of the African continent. However, there also have been notable weaknesses in the economic record to date, especially regarding unemployment, inequality and poverty. Social problems such as HIV/AIDS and crime have been prominent as well and have a strong negative economic impact (OECD economic survey South Africa 2008). The biggest immediate threat to South Africa's continued economic growth is a capacity constraint that has arisen precisely because of the country's strong economic performance in recent years (SouthAfrica.info, 2008). Decades of underinvestment in physical infrastructure, from electricity generation to water supply, roads and rail have constrained the economy's ability to grow more rapidly (Statistics South Africa, 2008). While the problem with the energy supply was addressed a while ago, more recently analysts fear of having water crisis in South Africa (Naidoo, 2008, Rostoll, 2008). A detailed outline of challenges and problems in the water sector in South Africa will be addressed in the next paragraph.

### **3.2. Challenges and problems in South Africa's water sector**

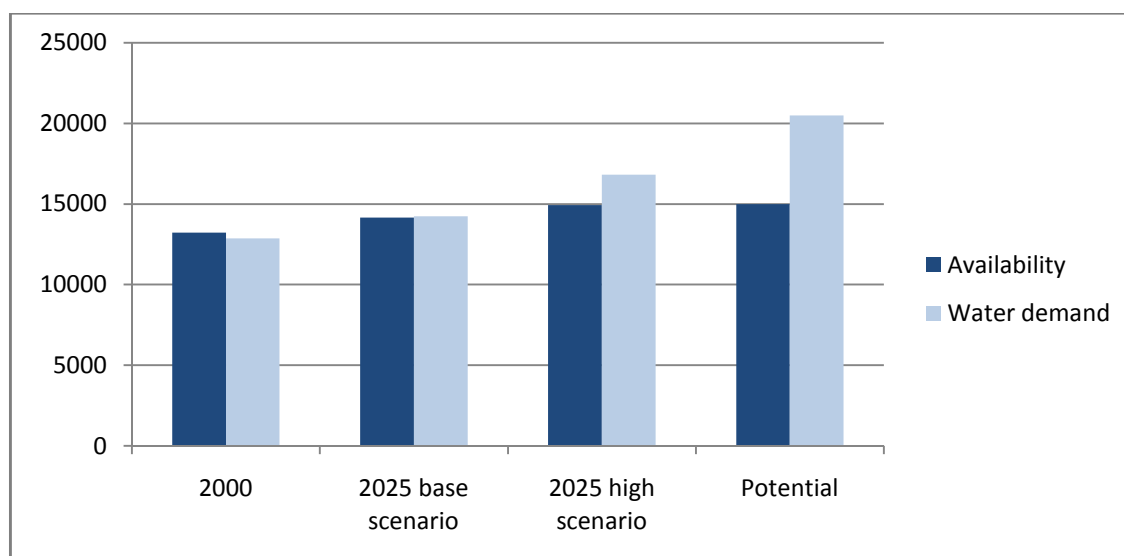
Many researchers indicate that South Africa is facing serious water problems. Some even talk about a crisis (Naidoo, 2008, Rostoll, 2008). Whether or not it is going to be a crisis, the majority opinion is that the quantity and quality of South Africa water resources are expected to decline in the years to come. While water quantity is foreseen as a long term problem, the water quality is already considered to be a severe problem. In this section, these two water resource aspects will be investigated.

#### **3.2.1. Water quantity**

South Africa is presently the 26th most stressed country in terms of water availability per person. The average rainfall is less than 500mm a year, compared with the 860mm world average. The western part of the country is the driest and receives less than 200mm a year. The wettest part receives more than 2500mm. This classifies South Africa as a semi-arid country. Besides having a large variety in rainfall, it is also very unpredictable. South Africa is prone to erratic extremes in the form of droughts and floods. To cope with these circumstances, many dams have been built over the years to store water, to protect areas from flooding and also to transport water from one area to another; an inter-basin water transfer scheme. In recent years, more dams have been built like the Lesotho Highlands programme which is supplying the region of Gauteng (Johannesburg-Pretoria) with water.

Water resources in South Africa are comprised of the following sources: surface water (77%), return flows (14%) and groundwater (9%). Agriculture is the largest user of water in South Africa (62%), followed by domestic use (27%) and industry (4%)

In 2008, already 98,4% of water has been allocated for use in South Africa, and there is not much water available for any future development. Experts, analysts and organizations appear increasingly concerned that South Africa's water resources, if not properly managed, will result in the country suffering from a water shortage in the future. Already water demand exceeds supply in many catchment areas (Kothuis, Mudau, & Karbanee, 2008).



**Figure 3.1.** Water demand and availability projections for 2025 (millions m3 per annum). Source: National Water Resource Strategy, 2004)

In the National Water Resource Strategy of 2004 it is predicted that South Africa's water demand will exceed its supply by 2025 in all scenario's (see figure 3.1.). Some climate models suggest that rises in global temperatures could increase the variability and amount of rainfall in South Africa to an extent that this point will be reached in 2015.

Although many researchers warn for the future situation, the Department of Water Affairs (DWAF) has stated that South Africa is not facing a water supply crisis that threatens economic growth (News24, 2008). Many plans have been made to both manage the supply and demand of the fresh water resources. The department expects surface water to contribute proportionately less with increases of return flows through the treatment of effluents of wastewater and desalination (DWAF,2008).

Water supplies	2008	2025	2040
Surface water	77%	72%	65%
Groundwater	8%	10%	12%
Return flows	15%	19%	25%
Desalination	<1%	5%	7%

**Table 3.2.** Long term view of the potential combination of main water sources. Source: DWAF, 2008

### 3.2.2. Water quality

Regarding the 'water crisis' that is looming in South Africa, DWAF is mainly concerned about the state of the water resources in South Africa. Water quality in this research is defined as the combined physical attributes and chemical constituents of water that contribute to its usefulness for a particular purpose. The water quality of surface and ground water in many areas of the country are already considered bad and are even worsening causing all kinds of problems. Wherever water supplies are scarce, there is a danger that even minimal human interference will affect water quality. In various parts of South Africa, water quality is impaired by industrial or mine effluents, sewage or sewage return flows, runoff of nutrients and pesticides from farmlands and salinization. The current problems and ultimate causes that lead to declining water quality in South Africa can be considered complex. In this section, the causes and effects will be explained.

### ***Socio economic changes***

Because of the economic growth, population growth and the eradication of poverty in South Africa in the last decade, the demand for water has increased. As a result, the amount of wastewater produced has increased. The bucket eradication programme, which is a programme to improve sanitation systems mainly in townships, has created more water-borne sewage and of concern is whether municipalities have the ability to manage resources and money to treat that water properly. Urbanization, particularly in the form of informal ("squatter") settlements, is rapidly becoming a major issue because of its unplanned nature and the lack of infrastructure to deal with its effluents. The major problem concerning socio-economic changes is that the wastewater infrastructure has not been maintained and expanded in pace with the socio-economic development.

### ***Non-compliance of wastewater treatment plants***

According to an extensive research done on all the provinces, many wastewater treatment plants are operating below acceptable standards. In many municipalities, waste water treatment plants are out of order and overflowing, discharging raw sewage into the water system. An assessment of the state of infrastructure done by the South African Institute of Civil Engineers (SAICE) concluded that there are serious problems with the management of wastewater treatment plants. In the urban areas, the water and sanitation infrastructure is fair, but in the rural areas is it very poor (SAICE, 2006).

The reasons for the sub-standard performance include the lack of infrastructure maintenance, funds, skilled personnel, poor management, outdated technology and inadequate capacity relative to accelerated development. Furthermore, the lack of enforcement of laws by the government is contributing to the non-compliance.

The past decade, there has not been sufficient funding available and/or allocated to maintain, operate and improve the wastewater treatment plants. This is mainly the case in rural areas, like indicated in the SAICE report.

A lot of wastewater treatment plants are not functioning correctly because the people who operate and maintain them are not skilled enough. There is a chronic shortage of engineers in South Africa and many municipalities, mainly in rural areas have no engineers among their staff. The shortage of skills in the water sector and the continuing loss of skilled personnel is considered one of the highest risks in relation to the provision of effective water services and water resources management (DWAF, 2008).

Many plants work with outdated technology, which cannot cope with the changing composition of the wastewater. Because of power cuts, so called 'load-shedding' raw sewage is dumped into river systems (BBC News, 2007). Due to the large load on some plants, it is currently very difficult for some municipalities to shut down a plant for even a short period of time in order to effect basic maintenance. The worsening state of municipal wastewater treatment plants leads to drinking water contamination and this continues to result in regular outbreaks of waterborne diseases such as cholera and typhoid fever. Most of these deaths have been attributed to the shortage of skilled personnel to effectively manage the water supply and wastewater treatment plants (Mpofu, 2008). The combination of the sober state of the WWTP's with the decreasing amount of available water, implies that all pollutants and effluent streams will increasingly need to be treated to higher standards before being discharged into surface waters. Effluent return flow out of major industrial and urban areas can be a major threat to future economic development (Turton, 2008).

To prevent the state of WWTP's and water quality from declining further, a large number of plants require immediate interventions in terms of expansion refurbishment or replacement of key components.

### **Eutrophication**

South Africa's climatic conditions, coupled with the discharge of treated and untreated sewage effluent and excessive nutrient loads in return flows from agriculture, as well as modification of river flow regimes and changing land use or land cover patterns, have resulted in large scale changes to aquatic ecosystems that have resulted in the eutrophication of rivers and large storage reservoirs (Oberholster & Ashton, 2008). Eutrophication is currently the order of the day. Many of South Africa's fresh water, which is found mostly in rivers and dams is seriously polluted with a range of substances that effect the water.

At present, about 35 percent of the total storage available in the dams in South Africa is either eutrophic (very nutrient enriched) or hypertrophic (extremely nutrient enriched). If the dams in which the conditions are approaching eutrophic are also considered, then a total of 60% of the stored water is impaired (WRC, 2008). The main cause of this prolific eutrophication is that in the years, the water management in South Africa has evolved to maximise the use of water. This included the treatment and disposal of wastewater effluent back into rivers for further use by downstream users. However, because not all wastewater is treated according to standards, high nutrient loads enter the rivers and reservoirs resulting in eutrophication. In some cases, (un)treated wastewater is the main or only inflow during the low rainfall months. The abundant sunshine and warm water temperatures also create ideal conditions for algae to flourish. Eutrophication has already led to the deterioration of water quality, death of fish and other animal species. The growth in algae also disrupts water treatment, which means the water is more expensive and difficult to treat for drinking water purposes.

A large proportion of the sewage emanating from South African urban areas is not treated properly prior to discharge, because the sewer systems are incomplete, or WWTP's are overloaded (Van Vuuren, 2008). This is particularly true in densely populated areas and in those areas where summer storm runoff enters sewerage systems. Industrial development is another aspect of human activity that has left its mark on South Africa's water resources. Many industrial processes produce waste products that contain hazardous chemicals, and these are sometimes discharged directly into sewers, rivers or wetlands. Even those waste products that are disposed of in landfills may release substances that eventually seep into nearby watercourses.

### **Acid Mine Drainage**

The leakage of polluted water from mines into the groundwater, or Acid mine drainage (AMD) has been described as the largest single environmental problem facing the mining industry, particularly because it is persistent, costly and tends to be a liability for mines long after they cease to operate.

AMD is a worldwide problem, and has been the topic of extensive research in North and South America. In South Africa, the National State of the Environment Report calls AMD a "recognised threat", but reliable data on its extent and the volume entering water courses is not easily available. The report suggests that AMD from the 15 working and 29 closed gold mines on the northern side of the Vaal Barrage catchment (which supplies water for the whole of Gauteng) is already affecting the receiving water sources.

The problem is that the enforcement of water legislation is limited, owing to a lack of capacity in regulatory institutions to manage and control what is taking place at the mines.

Most large mining companies are reverting to self-regulation, while others, often smaller operators see lack of enforcement as a noncompliance gap. Many defunct mines, which have become the responsibility of the government are significant contributors to waste loads flowing into South African river systems. Government resource limitations are playing a major role in its inability to manage defunct mines. The mine sites are often large, and a substantial amount of money is needed to reduce the AMD at these sites.

A large challenge is that a lot of the mining industry is concentrated in particular catchments, which makes the cumulative effects on the water resource substantial. There is significant pressure on the Olifantsrivier catchment and the Vaal river catchment as multiple mines operate in these areas. But even though mines are the largest contributor to AMD, discharges from the water treatment plants also affect the water.

Owing to a skills shortage, which was explained in one of the previous subsections, regulators are currently overstretched and there are facilities and operations being permitted which may have long-term negative impacts on South African groundwater resources (Copans, 2008),

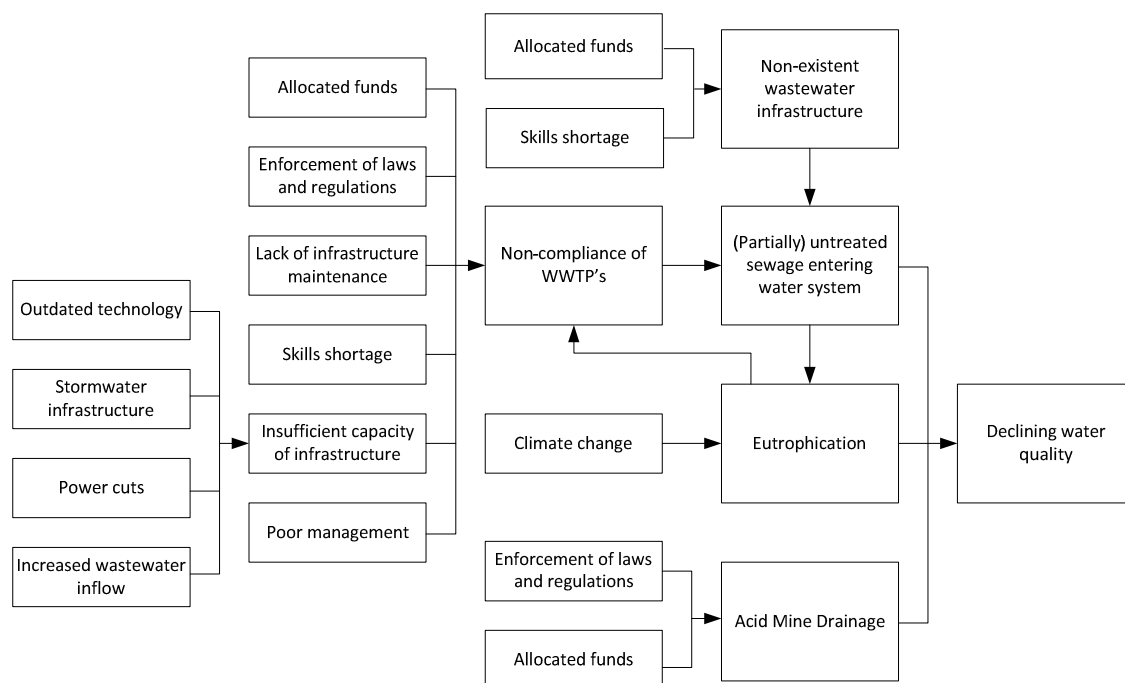
Mining operations have impacted on ground water aquifer volumes and quality and management practices were not legislated as extensive as today. There is a growing awareness of the need to protect water. Most international mining companies operating in developed countries, have to operate under strict environmental laws. These laws are more effectively enforced than in South Africa. (Rostoll, 2008).

### Sanitation backlog

In 2006, 15,3 million people were without adequate basic sanitation facilities. Most of this backlog concentrates in rural and peri-urban settlements. The government remains on track to eradicate backlogs and is on target to exceed the millennium development goals (MDG). Besides having an impact on the hygienic conditions of the people, the non-existence of sanitation systems leads to raw sewage entering rivers and streams, affecting water quality downstream.

### 3.2.3. Conclusions

The problems and causes that lead to the decline of the water quality in South Africa have been addressed in the last subsection and are displayed in a cause and effect diagram displayed as figure 3.2. below.



**Figure 3.2** Diagram of causes and effects leading to the declining water quality in South Africa.

Source: prepared by the author

Many of the current problems related to water management are about water quality. There are many causes that lead to the problems indicated, but from the analysis it can be concluded that skills and capacity shortage in the government, allocation and availability of financial resources and enforcement of laws are the main causes.

### 3.3. Market potential

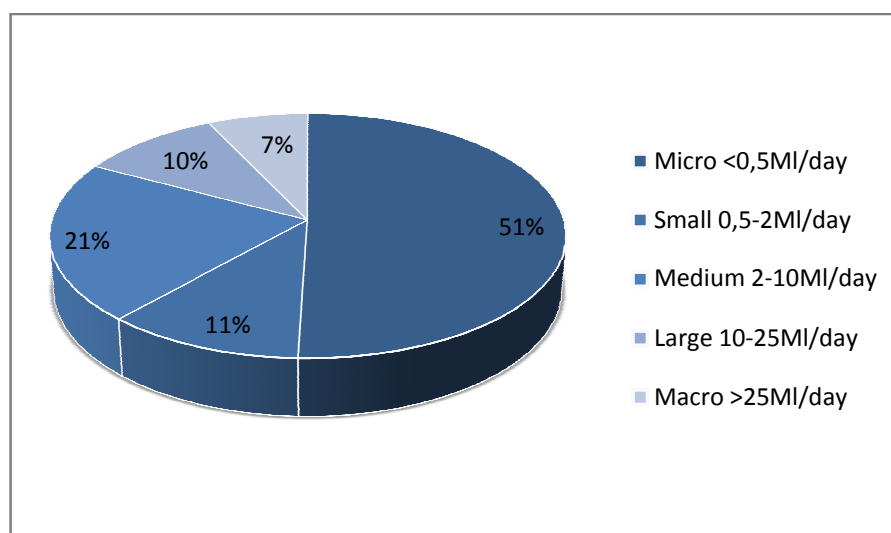
This section outlines the market potential for wastewater technology and services in South Africa. According to the theory discussed in chapter two, market potential consists of two elements: general demand and competition on the market.

#### 3.3.1. General demand

In order to obtain an image of the general demand of the South African wastewater market, the scale of the market and development will be investigated.

##### *Market scale*

South Africa has a substantial wastewater management industry, comprising of approximately 970 wastewater treatment plants and supporting infrastructure. On average, about 7,5 million cubic metres of wastewater is treated every day. The larger part of the wastewater treatment plants are small scale (see figure 3.4). These plants use various technologies ranging from extended aeration, activated sludge trickling, bio filters and oxidation ponds.



**Figure 3.3.** Size distribution of wastewater treatment plants in South Africa

The wastewater treatment sector is considered to be economically significant. The estimated current capital replacement value of all sewage treatment plants is 23 billion Rand<sup>1</sup> and the estimated operating and maintenance costs of those plants are calculated to be around 3,5 billion Rand per year. The budget of the total water sector is estimated to be around 21,4 billion Rand per year, which is slightly more than 1 percent of the GDP (DWAF, 2008).

<sup>1</sup> Exchange rate average 2008: €1=\$1,25=10 ZAR

Several sources claim a rapidly growing South African water and wastewater market. In 2007, the South African water treatment equipment market was around 1,2 billion Rand and it is estimated that this will reach \$265,5 (2,1 billion Rand) million in 2014.

In addition to the wastewater equipment market, the projected annual expenditures of municipalities on both capital and recurrent expenses show a growth of the overall water market for the coming years. (table 3.3.) They are shown in 2007 prices and demonstrate the increase expenditure to meet government targets. The capital expenditure estimates include a significant amount for asset refurbishment or replacement. The figures for recurrent costs are intended to reflect the operation, maintenance, refurbishment and eventual replacement of infrastructure which will increase steadily up till 2016. The growth rate of the sanitation budget expenses, which include wastewater treatment is around 8 percent per year until 2016.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<i>Projections of municipal capital expenditure (R million in real terms)</i>										
Municipal water	5637	6174	6831	7283	7470	7158	6773	6466	4365	4425
Sanitation	4735	5650	6732	7344	7479	7136	6323	5981	3659	3742
<b>Total</b>	<b>10372</b>	<b>11824</b>	<b>13563</b>	<b>14627</b>	<b>14949</b>	<b>14293</b>	<b>13096</b>	<b>12147</b>	<b>8024</b>	<b>8166</b>
<i>Projections of municipal recurrent costs (R million in real terms)</i>										
Water supply	16241	17449	18761	20092	21465	22797	24098	25376	26001	26651
Sanitation	6098	6841	7692	8589	9479	10318	11061	11730	12007	12294
<b>Total</b>	<b>22339</b>	<b>24290</b>	<b>26435</b>	<b>28861</b>	<b>30945</b>	<b>33115</b>	<b>35159</b>	<b>37106</b>	<b>38008</b>	<b>38945</b>

**Table 3.3.** Projections of municipal expenditure for water services. *Source: MIIF Review, 2008*

### Market drivers

The South African domestic and industrial market for wastewater treatment equipment and services is growing due to a number of market drivers. There are also a number of market constraints that put pressure on the potential growth. These drivers and constraints are outlined in the next paragraphs.

#### Increased investment

South Africa has known a steady increase in the gross domestic product in the last years, however the country has been under investing in capital stock. This has resulted in several problems outlined in section 3.2. The GDP growth has outpaced growth in capital stock formation and is found unrealistic to expect an economy growing without investing in infrastructure. The projections of expenditure show an increased investment in the (waste)water sector the coming years.

To implement the Accelerated and Shared Growth Initiative of South Africa (ASGISA) which is mentioned in Appendix II, the country is set to spend R372 billion on infrastructure between 2007 and 2010. This investment will include the provision of sanitation and wastewater infrastructure. The DWAF recently set a goal to increase the finance to the water sector from around 1 percent to 3 percent of the country's GDP. Municipalities are allocating more resources to water services as shown in table 3.3. The economic growth is also partly contributing to this increased investment.

Besides the proposed government budgets, the water boards who in some cases are active in wastewater have also influence on the market. More information about the regulatory framework can be found in Appendix II. The financial position of the water boards has a positive outlook. Two of the largest water boards in South Africa, Rand Water and Umgeni Water reported higher revenues over the last year. The credit rating has gone up to AA+ and the increased revenue enables them to invest more in ageing infrastructure (Enslin-Payne, 2008). The long term plans of the water boards to maximise available water resources could include the recycling of water and desalination of sea water. The



recycling of waste water is been considered as a huge opportunity in South Africa. The desalination of sea water, is at current price levels too expensive but could be feasible in the next 15 to 20 years. Umgeni water is investing 1.7 billion rand in the next 5 years. There are 43 projects to be implemented by the year 2012.

Moreover, the majority of South Africa's industrial water users have embarked on substantial investments in upgrading and/or expanding their existing water and wastewater treatment equipment, as well as installing new water treatment plants. This opens new market opportunities for servicing existing equipment, as well as outsourcing the water and wastewater treatment functions.

#### *Increased enforcement*

A second factor driving market growth is the increased level of legislative enforcement on local government and industries. South Africa's water laws are considered comprehensive and of world class quality, but the implementation of those laws is not very well. Water-related offences are not yet fully acknowledged as serious crimes by South Africans. Municipalities, who are responsible for wastewater treatment were often not prosecuted for non-compliance. This inhibited municipalities for actually doing the task they should do. In September of 2008, South Africa's DWAF minister implemented a certification scheme for water and sanitation services across the country's municipalities. Certificates can be awarded to municipalities that comply with 95% of the criteria set for effective drinking water management and for municipalities that comply with 90% of the criteria set for wastewater management. For complying with the criteria, a cash benefit is awarded and for non-compliance, a red drop. DWAF also established the Blue Scorpions, a special task force for prosecution of offenders of illegal water use and pollution (Zhuwakinyu, 2008).

In the industry there is also increasing enforcement of laws by the government, and forthcoming more investments. Industries with in-house effluent treatment consist not only of mining industries. Recently, the first winery effluent treatment plant was opened in the Western Cape (Faurie, 2008).

#### *Increased cost and demand of water*

Due to the declining availability and increasing demand of fresh water in combination with a higher cost to treat the water, it is expected that the prices of water will increase in the near future. As a result, the government is looking for new options for water treatment, like the re-use of industrial and domestic wastewater for both industrial and domestic purposes. Many industries, including the food and beverage industries, have increasing demands for water use, as well as the need for increasingly higher standards within the industry.

#### *Investments in wastewater treatment more viable*

As a result of the increasing costs of raw water, but also because of the development of technology, investments in wastewater treatment are becoming both legally and economically more viable. The market for membranes is specifically mentioned as the demand for membranes in South Africa is set to increase as effluent discharge policies are enforced more and water supply pressures become more apparent. The South African membrane market was 300 million Rand in 2007 but is expected to grow to 1,2 billion in 2014 (Marketwatch, 2008). The MBR technology is considered to have a lot of potential on the South African market.

#### **Market constraints**

The wastewater market is also constrained by a number of factors. These constraints will be outlined in the following paragraphs.

#### *Poor implementation and enforcement of wastewater legislation*

Mentioned before as a cause of current problems regarding water quality is the implementation and lack of enforcement of wastewater legislation. Although the enforcement is increasing and is considered to be a market driver, many experts comment that current measures are not enough to cope with serious water quality issues. More enforcement is needed to stop illegal or non-complying effluent discharge from industries, households and also to stimulate municipalities to take affirmative action.

#### *Prioritization/allocation challenges*

A second constraint, which is partly the result of the previous constraint is the funding and allocation of resources to wastewater infrastructure. A global phenomenon is that wastewater infrastructure tends to have a smaller priority than water supply. This is also the case in South Africa, but with an extra dimension. Because of the change of political climate in South Africa in the last decades, more resources have been allocated to 'visible' projects like housing, healthcare and creating jobs instead of necessary underground and invisible infrastructure like water and electricity. The government budgets that were available for water infrastructure have increased in recent years, but the government struggles with under spending because of the lack of experienced managers and engineers that can supervise and oversee the procurement and implementation of water infrastructure projects. Although there is a large need for adequate wastewater infrastructure, the decision lies within the local municipalities to allocate their funds to these sectors.

#### *Financial limitations and skills shortage in small municipalities*

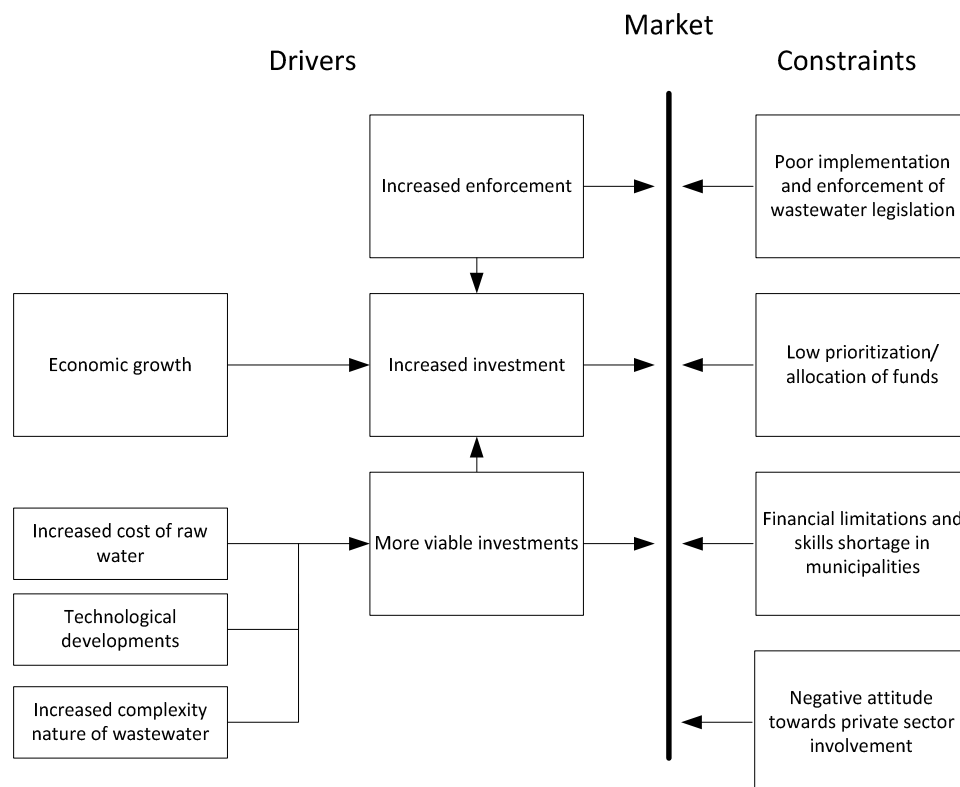
A reason for the current (non-compliant) state of wastewater treatment plants in smaller/rural municipalities compared to a better score for urban areas is lack of finance and the skills shortage. In the previous section it was already mentioned that there is a lack of engineers and other skilled workers. For wastewater treatment, this skills shortage is hitting the small municipalities the hardest. The skills shortage in South Africa is tending to increase even more in the coming years and can be seen as a major threat to economic development and more particular, the expansion of infrastructure. There is also an unwillingness by the decision-makers to adopt new technology. The reluctance for new technology is coming from the feeling that the equipment is overpriced and too complex to operate. Furthermore, small municipalities tend to have less financial abilities as large urban municipalities which hampers the development of infrastructure.

#### *Negative attitude towards private sector involvement*

A number of people involved with wastewater consider private sector involvement to be a key solution for the domestic wastewater problems. The local government in many cases lacks the capacity to procure, maintain and operate projects by itself. In those cases, the private sector could take over those tasks to ensure proper management of infrastructure. Private sector involvement in water services is a debate which has been going on for some time in South Africa. Since 1994 some municipalities have involved the private sector in water and sanitation service provision through short-term management contracts, long-term concessions and contracts for specific services such as wastewater treatment. Most municipalities however continue to provide water and sanitation services through public utilities or directly themselves. Privatisation is a very sensitive issue within the South African labour market. Labour unions have a fundamental ideological opposition to Public Private Partnerships (PPPs), viewing them as a threat to job creation, which remains one of South Africa's biggest challenges (Marketwatch, 2008).

### Overview drivers and constraints

The market constraints and drivers which were stated in the previous section are summarized in this figure below:



**Figure 3.4.** South African wastewater market drivers and constraints

Source: prepared by the author

### 3.3.2. Competition and market structure

The wastewater treatment market in South Africa is considered to be competitive, with well established international competition. A trade agreement with the European Union enables many European products to enter South Africa with lower duty rates than other countries (Ritfeld, 2007).

There are several companies active in South Africa who provide chemicals, equipment, consulting services and building of infrastructure to municipalities and third party wastewater service providers.

Three players are dominating the South African market for water treatment chemicals: NCP Chlorochem, Süd-chemie and Zetachem. Other international wastewater industry companies can be found in Appendix III.

Besides a large number of suppliers of wastewater treatment equipment, there are currently a number of private companies concerned with operation and maintenance of wastewater treatment plants. Four large international players are jointly holding a large share of this market. These companies are Bateman's, Biwater (Cascal), VWS Envig and Aquazur.

Bateman's is a South African company that is well positioned to compete strongly in the water treatment markets in South Africa and abroad. It provides multi-disciplinary services to the water and wastewater industries. This comprises the design, supply, installation and commissioning of domestic and industrial water and wastewater plants, the provision of up-to-date technologies, the operation, maintenance and management of water and wastewater treatment plants and the on-site training of personnel, from small to large plants.

Cascal operates two water and wastewater concessions in South Africa which provide services to a population of over 400,000 people. In May 2007, Cascal acquired a majority of the equity in Siza Water, a company providing water and wastewater services to approximately 50,000 people in the Dolphin Coast region of South Africa for \$2.6m. Cascal's other concession, Silulumanzi, is located in Nelspruit, Mpumalanga.

VWS Envig has several projects, one of them being the Durban Water Recycling Project. This BOOT (Build, Own, Operate, Transfer) project sees the company recycling domestic and industrial sewage from surrounding areas and selling the resulting process water to Mondi and SAPREF (Shell and BP Refinery) in the Durban area.

Aquazur's current market share is thought to be around 33%, making it the largest player in the market.

There is a trend that equipment suppliers are increasingly forming partnerships with municipal and industrial end-users in an attempt to operate efficient wastewater treatment plants. Such alliances are stimulating increased investments in these sectors. Equipment sales can be increased by developing solutions that comply with legal guidelines and increasing efficiency through water recycling and effective use of grey water. A competitive edge can be created by contributing to skills development.

### **3.4. Market opportunities**

In this section specific market opportunities per segment will be outlined. The strong and weak aspects that determine the market potential are described as well as the geographical location of the opportunities.

#### **3.4.1. Collection and sanitation**

The sanitation backlog eradication and economic growth stimulates the need for wastewater infrastructure. Because of the lack of maintenance and infrastructure expansion in the past, many sewage pipelines do not have sufficient capacity or are leaking and therefore need replacement. There is a large demand for new pipeline infrastructure. In densely populated areas, pipeline infrastructure needs to be replaced or expanded. At outskirts of cities and in rural areas, new infrastructure needs to be built. There is also a demand for monitoring equipment for detecting leakages in pipe systems.

#### **3.4.2. Industrial wastewater**

There is a growing demand for industrial wastewater treatment equipment and services. More and more companies are treating wastewater because of increased enforcement. The mining sector is a large customer in this market segment, but also other heavy industries and agriculture are using wastewater treatment plants. As the South African industrial output is growing, the need for wastewater treatment is growing. More than in the domestic wastewater market, private companies are willing to use innovative, high-tech and cost-saving technologies.

Industrial customers are more willing to deal with suppliers who provide a comprehensive package of customer service, training and education of staff. This is partly because of the capacity and skills problem in South Africa. Training will help the companies to operate the new acquired technology.

There is demand for technology that can efficiently remove toxic substances or precious metals from the wastewater. Also the re-use of domestic wastewater for industrial use is becoming more viable. This will be further described under "re-use of wastewater"

The location of most of the demand will be evidently in the industrial areas of the country, which are Gauteng province, Western Cape, mining sites and around Durban, East London and Port Elizabeth.

#### **3.4.3. Domestic wastewater**

In the domestic wastewater market there is a large and increasing demand for wastewater treatment plants, equipment and services. Many existing treatment plants need maintenance and/or upgrading

but this is not enough. Many new treatment plants that will increase the overall capacity are needed, as well as new technologies to treat the changed wastewater composition. Training and capacity building for operation and maintenance of treatment plants is one of the key objectives of the government. Even though there is a negative attitude towards private sector involvement, there are opportunities for companies who build, operate and maintain treatment plants in co-operation with local governments. Some people see opportunities for a franchising construction for wastewater treatment. Commercial local companies can manage and operate wastewater treatment plants on behalf of the local government, which often lacks skilled people.

Because of new housing developments throughout the country where a water born sewage system is a requirement, there is a great demand for small scale wastewater treatment.

Where the demand for domestic wastewater treatment equipment and services is located will depend on the characteristics of municipalities or water service authorities which are explained in section 3.2. However it is difficult to generalize, some kind of distinction can be made; general, large and urban municipalities have more financial resources and need more technological advanced equipment. Small, rural municipalities have the largest immediate need for wastewater treatment equipment and services, but have fewer resources.

#### **3.4.4. Re-use of wastewater**

There is an increasing demand for re-use technologies due to several reasons; water is getting more expensive and return flows are becoming an increasingly important source of water. There are opportunities for the re-use of domestic wastewater for industrial purposes. The market for membrane technologies is considered as booming. End users are however more likely to adopt membrane technologies when they can see an absolute cost saving and added value. Obviously, the demand for water recycling will be the highest in areas where demand is exceeding supply of water.

### **3.5. Conclusions**

In order to determine the potential of the South African wastewater market, several elements of the market have been investigated. This chapter begun with an introduction to South Africa and the general market conditions. South Africa has become a relatively stable economy with a significant growth in the last decade. A major hampering factor to that economy however, is the lack of investment in infrastructure, especially power supply and water infrastructure. The problems with water in South Africa are twofold: declining water quality and quantity. The water supply is under threat because of pollution caused by wastewater effluents and the demand which will exceed supply in the coming decades. The declining water quality is a rather complex problem with several elements and many causes leading to this actual outcome. Main elements of the declining water quality are sewage effluents, eutrophication and acid mine drainage. The most mentioned causes related to these issues are enforcement of laws and regulations, allocation of funds and skills shortage. The non-compliance of wastewater treatment plants can be seen as the most severe problem, having a number of causes and major effects.

The analysis of the market potential has resulted in a list of market drivers and constraints, as well as an overview of competition in the market. The demand characteristics of the South African wastewater market that are formulated are put in a table, divided by market segment.

Sub sector	Demand characteristics
Collection and sanitation	<ul style="list-style-type: none"> <li>Sanitation backlog eradication and economic growth stimulate the need for wastewater infrastructure.</li> <li>Renovation and replacement of wastewater pipelines is needed.</li> </ul>
Industrial wastewater	<ul style="list-style-type: none"> <li>Large demand for industrial wastewater treatment equipment and services.</li> <li>Increased viability for industrial wastewater re-use and re-use of wastewater for the industry.</li> <li>Need for skilled people to operate and maintain infrastructure.</li> </ul>
Domestic wastewater	<ul style="list-style-type: none"> <li>Increased demand for domestic wastewater treatment equipment and services.</li> <li>Upgrading of existing wastewater infrastructure needed.</li> <li>Need for skilled people to operate and maintain WWTP's, professional training needed.</li> <li>Need for experienced managers and engineers that can supervise and oversee the procurement and implementation of water infrastructure projects.</li> <li>Opportunities for companies who build, operate and maintain WWTP's in co-operation with local government.</li> <li>Opportunities for franchising construction for WWTP management.</li> <li>Stimulate the public opinion about private sector involvement in the water sector.</li> </ul>
Re-use of water	<ul style="list-style-type: none"> <li>Re-use technology is (becoming more) feasible.</li> <li>Membrane market booming.</li> </ul>

**Table 3.4.** Demand characteristics of the South African wastewater market per sub sector.

These demand characteristics together with the Dutch supply characteristics will be analyzed in chapter five. The Dutch wastewater sector analysis is presented in the next chapter.

## 4. Dutch wastewater sector

This chapter aims to answer the following research question: *What are the competences and relevant experiences of the Dutch wastewater sector?* An answer will be given reviewing the Dutch wastewater sector and assess the supply characteristics of the companies who represent this sector. In the first subsection, the home country factors will be investigated. The following subsections will analyse the industry product factors and resource/commitment factors as explained in section 2.3. The result of the analysis is an overview of strengths and weaknesses of the Dutch wastewater sector.

### 4.1. Home country factors

The first part of the analysis of the Dutch wastewater sector is the analysis of the market and policy of the Dutch government towards internationalization of the sector.

#### 4.1.1. Market information

##### *Dutch water sector*

The water sector of the Netherlands consists of a large public sector, knowledge institutes, non-governmental organizations and a private sector. In this section, the public and private sectors will be described.

Regarding water management in the Netherlands, the public sector is an important player. Government ministries, regional and local administrations, district water boards and drinking water supply companies are all actively involved. Derived from European regulation directives, the national government regulates the water industry to ensure safe drinking water. Regional inspectors from the Ministry of Housing, Spatial Planning and the Environment control health aspects and hygiene. Provincial governments turn the national government policies into plans, while co-operating closely with water companies. Provinces also give permits for groundwater withdrawals. Local municipalities are responsible for the collection and transportation the wastewater and the water boards for treating wastewater. Water supply companies are also public entities (Waterland, 2008).

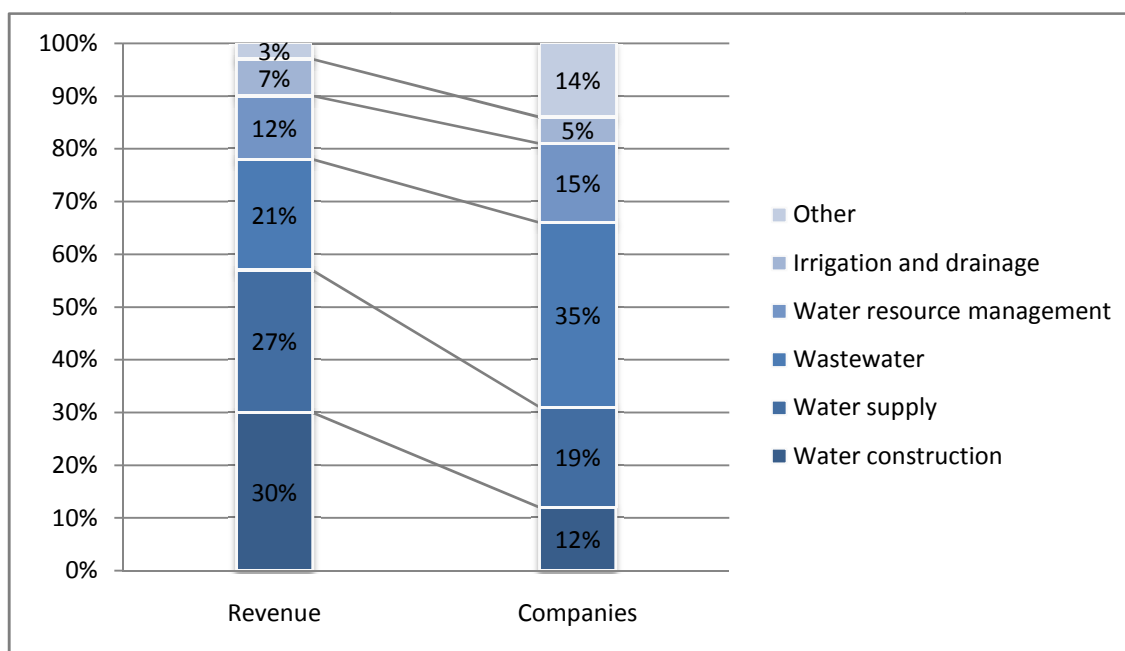
The private Dutch water sector has a broad orientation and is active in all subsectors of the market (see next paragraph) and in the whole project cycle; from R&D to operations. Dutch expertise in land reclamation and port construction, water works, storm surge barriers and innovative flexible dikes and coastal protection is well-known around the world. Many of the companies active in the water sector have an international focus, particularly those involved in technology development and implementation in the areas of hydraulic engineering, water supply and purification. Within the wastewater sector there are distributors of drinking and industrial water production, wastewater purification technology, engineering and consulting companies, distributors of pipelines, pumps, clutches, valves and building contractors.

##### *Key data*

The Dutch water sector consists of several hundreds of companies with an annual revenue of €14,8 billion (Gibcus & Verhoeven, 2008). Of the total revenue, €5,7 billion is income out of export. The export share of the Dutch water sector has grown significantly the last years, from 30% in 2000, to 38,7% in 2007. The international market becomes more and more important for Dutch companies. This trend also means that still about two thirds of total revenue is accounted for by national demand. On a global scale the Dutch water sector is still very small. The world market for water supply and sanitation

is worth €300 billion (2005) of which only 2% is provided by Dutch organizations (Diepeveen et al., 2005).

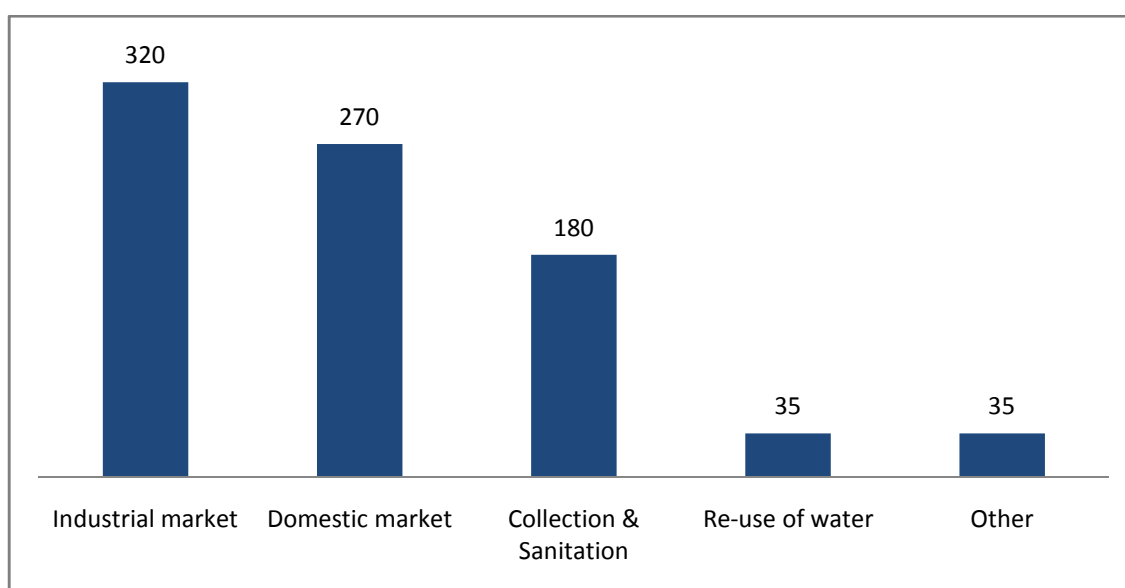
Comprising the Dutch wastewater sector with the other sub sectors, it can be considered the third largest, where 21% of the total revenue is generated (see figure 4.1.).



**Figure 4.1.** Companies in the water sector broken down by their most important market segment and a breakdown of their revenue over the various market segments of the water sector.

Source: (Muizer & van den Berg, 2002)

The figure above gives an indication about the relative size of the Dutch players in different segments. It shows that the largest players operate in water construction where 12% of the companies generate 30% of the revenue. The companies in the wastewater sector are on average much smaller, where 21% of the revenue is generated by 35% of the companies.



**Figure 4.2.** Export revenue by wastewater sub segment (in millions €)

Source: (Muizer & van den Berg, 2002)



The wastewater sector can be broken down into sub segments. Looking at the export activities of the different sub segments, the industrial market has the largest share of export (see figure 4.2.). The municipal (or domestic, communal wastewater) comes second. The collection and sanitation sector is also quite large, while the re-use of water can be considered a small export segment.

#### **Private sector**

Because of the large public involvement in the wastewater sector, the private sector consists mainly of suppliers, consultants and contractors of wastewater treatment technology. These companies are mainly small and specialised parties. On the Dutch market there is competition from players abroad (e.g. France's Veolia) who took advantage of their large home market to expand. Those home markets have a great share of private sector participation. A comparison of revenues of the large international companies shows that the turnover of France's Veolia is larger than the revenue generated by the entire Dutch water sector (Hollandtrade, 2006).

Looking at the forecast for private sector participation in some countries, it is expected that in many countries the private sector involvement in wastewater services will steadily increase, while the home market of the Netherlands continues to be dominated by public parties as can be seen in table 4.1.

	Private sector market share in 2008		Private sector market share in 2025	
	Water supply	Wastewater	Water supply	Wastewater
Netherlands	0%	10%	0%	11%
U.K.	88%	90%	94%	97%
France	74%	55%	84%	76%
U.S.A	16%	5%	23%	11%
South Africa	3%	1%	10%	4%

**Table 4.1** Current and forecast extent of private sector participation.

Source: Pinsent Masons Water Yearbook 2008-2009

The U.K. and France have a very large private sector involvement and this is still expected to grow. The South African sector is also expected to privatize more, which is in line with the expectations mentioned in chapter three.

#### **4.1.2. Policy of home government**

The Dutch government is considered to have a stimulating policy towards exporting and foreign investment by domestic firms and the domain 'water' has become an important factor in Dutch international policy. It is the Netherlands' ambition to expand the water sector and make it one of the spearheads of the Dutch economy (SenterNovem, 2007). The fundamental basis for a competitive international position of companies however, is lacking. The Dutch political climate adheres to public ownership of water infrastructure. Therefore there are very few large private players who are willing and are capable to export and win large international projects (Muizer & van den Berg, 2002). In the year 2000, the programme Partners for Water was initiated which aims to strengthen the international position of the Dutch water sector by uniting forces (private sector, public sector, non-profit sector and knowledge institutes). The report 'Strategic water cards' from 2002 concluded that the international position of the Dutch water sector can be increased by co-operation.

In the field of development co-operation, there is a large focus on water. The Netherlands is currently assisting in giving sustainable access to safe drinking water and sanitation facilities to 50 million people worldwide before 2015. This goal is meant to make a significant contribution to the Millennium Development Goals (MDG's). To achieve this goal, it has conducted special contracts with organizations and companies and is financing water-related projects (Dutch sanitation solutions, 2008). The core of

Dutch water development policy is the concept of Integrated Water Resources Management (IWRM) and bilateral co-operation is focused on Bangladesh, Benin, Egypt, Indonesia, Mozambique, Vietnam and Yemen (NWP, 2008).

To promote the development of water technology, Dutch private and public sector partners have initiated a Technological Top Institute for Water Technology named WETSUS. The research institute focuses the combined strengths of industry and renowned universities on the search for practical answers to global water problems. In the field of sanitation, there are several research institutes working on solutions for developing countries, like the International Water and Sanitation Centre (IRC). To make the expertise and knowledge of the water sector available to the rest of the world, the Dutch public and private sectors have also established the Netherlands Water Partnership (NWP). The principal aims of the NWP are to harmonise the activities and initiatives of the Dutch water sector abroad and to promote Dutch expertise in the water field world-wide. The NWP is an important organization to contact for information on Dutch expertise, knowledge and products. Two agencies of the Ministry of Economic affairs; SenterNovem and the Agency for International Business, Cooperation and Investments (EVD) are also involved in stimulating international co-operation in the water sector.

## 4.2. Industry product factors

To investigate the product factors of the wastewater industry, there will be a look at the historical and current Dutch experience with wastewater treatment technologies.

### 4.2.1. Water treatment technologies

The Dutch have extensive experience in the development and use of water and wastewater treatment technologies. During the 1970s, new techniques had to be developed to comply with Dutch legislation designed to protect surface waters (Water chain, 2007). The boom in innovation that was triggered by this legislation resulted in the Netherlands becoming one of the first countries to treat municipal and industrial wastewater on a large scale. The quality of the water supply is very high: everyone in the Netherlands is connected to the supply network and sewerage system, and all urban wastewater is treated (Dutch Water Sector, 2007).

From an international perspective, the Dutch water sector can be seen as a frontrunner in the development of water purification, pre-treatment and treatment technologies, including membrane technology, anaerobic water purification (UASB) and Anammox technology. Membrane technology can be used simultaneously to soften water and to remove colour and pesticides. Water treatment using ozone, hydrogen peroxide and ultraviolet (UV) light is also practised, mainly as a primary disinfection method. Capacity building and the use of environmental impact assessments are also well-known abroad. The Netherlands is a minor player in the field of physical/chemical treatment (Documents on Water: Competitiveness, 2006).

*Some of the technologies developed in the Netherlands:*

- MBR Technology: very compact wastewater treatment with membranes. This technology is fast becoming both a standard option for wastewater treatment in the Netherlands and a major export product.
- ANAMMOX technology: bacterium, which removes nitrogen from wastewater without using oxygen.
- BABE technology: boosting the nitrifying bacteria in a side stream in a wastewater plant in such a way that the activated sludge in the main process is augmented.
- Nereda technology; bacterium, which removes nitrogen and phosphates from wastewater and forms compact grains

A research by the Netherlands Water Partnership (NWP) assessed the areas of specialization and current strengths of the Dutch water sector and how attractive they are in the international market (see table 4.1). Several Dutch niche players are active in the *carbon/nitrogen cycle*, *re-use of municipal wastewater* and *process water recycling*, which is mainly industrial. These technological clusters were pointed out as most promising niche markets.

	International market attractiveness	Strength of Dutch products and services	International competition
Carbon/nitrogen cycle	High	Average	Average
Separation at the source	High	Average	Strong
Process water recycling	High	Low	Weak
Recycling municipal wastewater	High	Low	Very weak
Sensoring, monitoring and control	Average	Low	Weak

**Table 4.2.** Attractiveness in the international market, current strength of Dutch products and services and international competition by area of specialization. *Source: NWP, 2005.*

The market ‘carbon/nitrogen cycle’ is a potential very large market for the purification of wastewater, because it is not yet widespread. There are developments in this field to produce energy (methane) from the carbon in the wastewater. The market for the re-use of municipal wastewater and industrial process water recycling are also considered to be promising for the Dutch wastewater sector. Although the strength of the Dutch products and services are average to low, the lack of international competition makes these markets still promising. However, there is still more development and innovation needed to exploit the full potential.

#### 4.2.2. Innovation

In the water sector there has always been a large focus on innovation. To enable the niche markets mentioned in the previous section to grow, the Dutch government has designated the water sector as an innovation area by setting up research programmes for water treatment. An example of a technology that has been developed for particularly developing nations is decentralised sanitation and reuse (DESAR) There is experience with the development of sanitation containers for Cape Town.

### 4.3. Resource/commitment factors

Throughout all market segments the strength of the Dutch players is based on technology and expertise, an extensive local network and reputation or proven experience. It is known that the Dutch water sector builds on quality and strong relations. This position is based on the high-quality standards prevalent in the Dutch home market. The Dutch industry is willing to share its knowledge, not only on a commercial basis; it is keenly aware of world-wide water issues (NWP, 2008). Many water boards and water supply companies are operating on a non-profit basis in international, mostly developing markets. They are engaging contacts and setting up programs to improve drinking water facilities, sanitation and also build capacity.

The Dutch water sector as a whole can be considered strong. It has access to the latest technology and an effective organizational structure. The following major strengths are mentioned by those companies active in wastewater (Muizer & van den Bergh, 2002):

- Product characteristics (technology, expertise, wide product range)
- Service characteristics (reliability, customer orientation)
- Local network

A major weakness that was mentioned in this research is financing. Because of the relative small size of the companies it is difficult to take risks and be involved in large projects.

#### **4.4. Supply per market segment**

In the previous sections the Dutch wastewater sector has been described. In this section specific supply characteristics per market segment will be outlined in order to match them with the market opportunities defined in the previous chapter.

##### **4.4.1. Collection and sanitation**

The Dutch water sector has developed innovative sanitation concepts for developing countries. There are some innovative wastewater pipeline technologies, which are effective in densely populated areas. In the Netherlands, there are several research institutions that develop sanitation technology. The Dutch government is assisting less developed countries in reaching their MDG's on sanitation.

##### **4.4.2. Industrial wastewater**

Industrial wastewater equipment and services is a large export market for the Dutch wastewater sector. There are several companies who offer innovative technologies and have a broad spectrum of products and services.

##### **4.4.3. Domestic wastewater**

In the field of domestic wastewater, there are many companies and organizations active. These companies have acquired state-of-the-art wastewater treatment technologies. The large public sector is also active abroad, mainly on a development aid basis and therefore contributes to the international position of the Dutch wastewater sector. A weak aspect is the limited domestic market, in which there are few large players. Partly because of that, few companies are involved in large build, own and operate (BOOT) projects and collaboration with other partners is considered necessary to procure for large wastewater projects.

##### **4.4.4. Re-use of wastewater**

In the re-use segment, there is a supply of innovative and cost saving water re-use technologies. Although the current market position of the Dutch wastewater sector on re-use is not considered to be strong, the lack of international competition makes this market segment competitive. The market for the re-use of municipal wastewater and industrial process water recycling are considered to be promising for the Dutch wastewater sector.

##### **4.4.5. General**

Because the relative size of the wastewater sector can be considered small, the different market segments share some similar characteristics. Positive aspects of the wastewater sector in general are that it is very internationally oriented, with a focus on technological innovation. The Dutch have a positive international reputation, which is a competitive advantage. Also, knowledge sharing in developing countries is well known. This is mainly done by the public sector on a non-commercial basis. An unfavourable supply characteristic is the small number of large players on the market. The financial power of individual companies is also limited, compared to some other international companies. This makes it difficult to procure for large international projects. Many people also mention the lack of co-operation within the sector to be a weakness of the Dutch water sector.

## 4.5. Conclusions

This chapter analyses the Dutch water and wastewater sector in particular. In order to compare and match the South African market potential with the Dutch supply characteristics the results of the analysis are put in the table below according to the different sub segments that were identified.

Sub sector	Supply characteristics
Collection and sanitation	<ul style="list-style-type: none"> <li>▪ Innovative sanitation concepts for developing countries</li> <li>▪ (waste)water pipeline infrastructure</li> </ul>
Industrial wastewater	<ul style="list-style-type: none"> <li>▪ Large export market with wide range of products and services</li> <li>▪ Innovative, competitive technologies</li> </ul>
Domestic wastewater	<ul style="list-style-type: none"> <li>▪ Large sector with state-of-the art wastewater treatment technologies</li> <li>▪ Active public sector</li> <li>▪ Low level of competitiveness for large WWTP projects</li> <li>▪ Under representation in the market for large BOOT projects</li> </ul>
Re-use of water	<ul style="list-style-type: none"> <li>▪ Innovative and cost-saving water re-use technologies</li> <li>▪ Competitive within re-use of domestic wastewater</li> <li>▪ Competitive within industrial process water recycling</li> </ul>
General	<ul style="list-style-type: none"> <li>▪ Internationally oriented</li> <li>▪ Positive international reputation</li> <li>▪ Focus on innovation</li> <li>▪ Frontrunner in treatment technologies</li> <li>▪ Strength of several Dutch products and services considered average to low</li> <li>▪ Knowledge sharing not only on a commercial basis</li> <li>▪ Limited domestic market</li> <li>▪ Few large players</li> <li>▪ Financial power of individual companies is weak</li> <li>▪ Co-operation within the sector is limited</li> </ul>

**Table 4.3.** Supply characteristics of the Dutch wastewater sector per sub sector and in general.



## 5. Market opportunities

### 5.1. Introduction

In this chapter, the results of the assessments of both the South African market and the Dutch wastewater sector will be combined and analysed in order to find the best market opportunities for Dutch companies. In the following sections, the market opportunity and supply matches for each sub segment of the wastewater market are formulated by combining the two analyses into a table.

### 5.2. Collection and sanitation

The market opportunities and supply characteristics of the collection and sanitation market segment can be found in the table below.

Market opportunity	Supply
<ul style="list-style-type: none"> <li>Sanitation backlog eradication and economic growth stimulates the need for wastewater infrastructure</li> <li>Renovation and replacement of wastewater pipelines is needed</li> </ul>	<ul style="list-style-type: none"> <li>Innovative sanitation concepts for developing countries</li> <li>(waste)water pipeline infrastructure</li> </ul>

**Table 5.1.** Demand and supply characteristics, collection and sanitation market.

By confronting both sides of the table, several opportunities can be identified.

#### 5.2.1. Upgrading of existing wastewater infrastructure

There is an excellent opportunity for Dutch companies to upgrade the existing wastewater infrastructure. Cost and time saving technology for the replacement of sewage pipelines in urban areas can be competitive against more traditional construction methods. In other areas besides densely populated areas the instalment of pipelines is a basic task that can be done by local contractors. There are chances for monitoring equipment for detecting leakages in pipe systems.

#### 5.2.2. Sanitation concepts

Because the South African government is still working on the sanitation backlog eradication in rural and peri-urban areas, opportunities exist to provide sanitation concepts that are more efficient and cost-effective than current technologies. This size of the market is however shrinking, as the targets will be met in the near future. This market segment is therefore considered as not very attractive.

### 5.3. Industrial wastewater

Market opportunity	Supply
<ul style="list-style-type: none"> <li>Large demand for industrial wastewater treatment</li> <li>Increased viability for industrial wastewater re-use and re-use of wastewater for the industry</li> <li>Need for skilled people to operate and maintain infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Large export market with wide range of products and services</li> <li>Innovative, competitive technologies</li> </ul>

**Table 5.2.** Demand and supply characteristics, industrial wastewater market

### 5.3.1. Innovative technologies for rehabilitation of industrial wastewater

An opportunity for Dutch companies in the South African industrial wastewater market is selling innovative, cost saving and ease to use technologies for the treatment of effluent as more companies become increasingly aware of their responsibilities to take care of their wastewater. This industry comprises the following types of businesses: automotive, energy, food, agriculture, mining and steel industries. Focusing on niche markets can be a way to use the strengths the Dutch companies have in order to be competitive against other players on the market. In the mining industry for example, there are opportunities for technologies that can efficiently remove toxic substances or precious metals from the wastewater. Also technologies that can help to limit the acid mine drainage problem have great opportunities in South Africa.

### 5.3.2. Products with a complete package

Industrial customers are more willing to deal with suppliers who provide a comprehensive package of customer service, training and education of staff, which will help them better operate new technology. Dutch companies should take note of that demand South African customers have to gain competitive advantage.

## 5.4. Domestic wastewater

Market opportunity	Supply
<ul style="list-style-type: none"> <li>▪ Increased demand for domestic wastewater treatment equipment and services</li> <li>▪ Upgrading of existing wastewater infrastructure needed</li> <li>▪ Need for professional training on management of WWTP's</li> <li>▪ Need for experienced managers and engineers that can supervise and oversee the procurement and implementation of water infrastructure projects</li> <li>▪ Opportunities for companies who build, own, operate and maintain treatment plants in co-operation with local government (Concession contracts)</li> <li>▪ Opportunities for franchising construction for WWTP management.</li> <li>▪ Stimulate the public opinion about private sector involvement in the water sector</li> </ul>	<ul style="list-style-type: none"> <li>▪ Large sector with state-of-the art wastewater treatment technologies</li> <li>▪ Active public sector</li> <li>▪ Low level of competitiveness for large WWTP projects</li> <li>▪ Under representation in the market for large BOOT projects</li> </ul>

**Table 5.3.** Demand and supply characteristics, domestic wastewater market.

### 5.4.1. Domestic wastewater treatment equipment and treatment plants

There is a huge potential for new wastewater treatment equipment and treatment plants in South Africa. As South Africa is also in need for skilled people in this sector. Therefore, training and capacity building is a must. Companies who can provide both at the same time have a great competitive advantage. Many decision-makers seem to be hesitating to accept and buy new and/or expensive technology. This can be challenging within the domestic market. Pilot projects are mentioned frequently as being a possible solution to gain market entry in South Africa to convince decision-makers in South Africa of the benefits.



#### 5.4.2. Private sector involvement (BOOT treatment plants & franchising)

Although it has its threats, private sector involvement is seen as *the* solution for many of the water problems in South Africa. There are opportunities for companies who build, operate and maintain treatment plants in co-operation with the local government, but this is not directly a strength of the Dutch sector. In order to transform this to an opportunity, collaboration with other parties is necessary. Investing in pilot projects can be a way to gain market entry and open up the market by reducing the negative public opinion about private sector involvement.

Franchising of wastewater services is a new concept in South Africa, but has been researched extensively and is considered to be promising. With all the knowledge available in the Netherlands, both from public and private parties franchising constructions can be set up that manage wastewater treatment plants on behalf of local governments.

#### 5.4.3. Upgrade of existing wastewater treatment plants

There is a huge potential for wastewater treatment equipment to upgrade and maintain current wastewater treatment plants. As only a few plants fully meet the effluent standards, there is a lot that can be done in this field. With the wide array of products and services, there are opportunities for many Dutch companies.

### 5.5. Re-use of water

Market opportunity	Supply
<ul style="list-style-type: none"> <li>Re-use technology is (becoming more) feasible</li> <li>Membrane market booming</li> </ul>	<ul style="list-style-type: none"> <li>Innovative and cost-saving water re-use technologies</li> <li>Competitive within re-use of domestic wastewater</li> <li>Competitive within industrial process water recycling</li> </ul>

**Table 5.4.** Demand and supply characteristics, re-use wastewater market.

#### 5.5.1. Membrane technologies

The market for membrane technologies is booming. End users however are more likely to adopt membrane technologies when they can see an absolute cost saving in their business operations. Cost saving and value add are important selling points that membrane suppliers need to emphasise to potential customers. This is a strength of Dutch companies.

#### 5.5.2. Domestic wastewater re-use

As the technology for water re-use is getting more and more feasible, the market opens up for the re-use of domestic wastewater. There are opportunities for Dutch companies that can provide in technology and equipment that can re-use domestic wastewater for domestic (high quality) and industrial (lower quality) purposes.

#### 5.5.3. Industrial process water recycling

In certain parts of the country, industries use a lot of the available water. For those companies, water is getting more expensive and ways to recycle this water; whether it is for their own use or to sell it to other parties is becoming attractive. In industries like the mining industry, technologies to retrieve minerals from the wastewater have become more attractive as the overall commodity prices have increased in the last years. As industrial process water recycling and other wastewater treatment technologies from the Netherlands is considered to be competitive, there are many opportunities lying ahead in this segment.

## 5.6. Conclusions

In the following table, the most promising market opportunities for the Dutch wastewater sector in South Africa are displayed.

Segment	Opportunities
Collection & sanitation	<ul style="list-style-type: none"><li>▪ Upgrading of wastewater pipeline infrastructure</li><li>▪ New sanitation concepts</li></ul>
Industrial wastewater	<ul style="list-style-type: none"><li>▪ Innovative technologies for rehabilitation of industrial wastewater</li><li>▪ Products with a complete package</li></ul>
Domestic wastewater	<ul style="list-style-type: none"><li>▪ Domestic wastewater treatment equipment and treatment plants</li><li>▪ Private sector involvement</li><li>▪ Upgrade of existing wastewater treatment plants</li></ul>
Re-use of water	<ul style="list-style-type: none"><li>▪ Membrane technologies</li><li>▪ Domestic water re-use</li><li>▪ Industrial process water recycling</li></ul>

**Table 5.5.** Opportunities per sub segment

It can be concluded that in all of the sub segments in the wastewater market there are several opportunities for Dutch companies. However, it is difficult to select and rank the most promising market segments. The exact market size of the different opportunities is hard to estimate. From the analysis in the previous sections three segments can be considered as most promising: industrial, domestic and re-use of wastewater. Collection and sanitation will have opportunities, but compared to the other segments, the size of the market that can be taken by Dutch companies will be much smaller. In the next chapter, companies in these three segments will be further analysed. Companies will be questioned individually on their support needs when exporting to South Africa as an in-depth investigation.

## 6. Water sector support needs

### 6.1. Introduction

This chapter will address the following research question:

*What are the relevant support needs of the Dutch wastewater sector with respect to the market opportunities identified?*

In order to answer the research question, a survey in the form of a questionnaire was conducted among companies and other organizations within the water industry of the Netherlands. To select the target companies, information from the NWP (Netherlands Water Partnership), Aquatech, Aqua Nederland and VLM (Association of Suppliers of Environmental Equipment and Technology) was used. In total 120 companies have been approached by e-mail to fill out a questionnaire. They were asked for their co-operation in a research about the (waste)water market in South Africa. In total, 26 questionnaires were used for the assessment. This resulted in a response rate of 22%.

The questionnaire is developed and based on theories and models proposed by Knight and Cavusgil (2004), Wood and Robertson (2000), Ghauri and Holstius (1996) and Seringhaus and Rosson (1991) and consists of four parts (see 2.3 and Appendix II). Basic questions were asked about the structure and internationalization of the company. The survey also included an export readiness assessment (ERA), which was based on the CBI export readiness instrument. Specific questions about the experiences in South Africa were asked and the last part of the survey included questions about export promotion.

The results of the questionnaire are used to obtain an image of the problems wastewater companies encounter in doing business in South Africa and to support interventions to stimulate business activities.

### 6.2. Analysis and results

#### 6.2.1. Company information

In order to have an idea about the size of the companies, the number of employees and revenue was measured. This is shown in figure 6.1. and 6.2. The company sizes vary significantly, with representation in every category. The majority of the respondents however, are small-sized companies (less than 50 employees). Almost half of the companies have a revenue of more than 5 million euro per year.

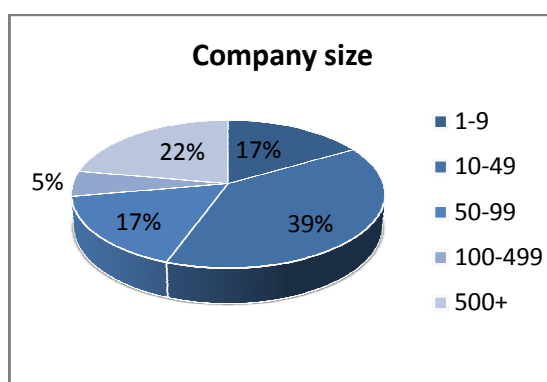


Figure 6.1. Company size (number of employees)

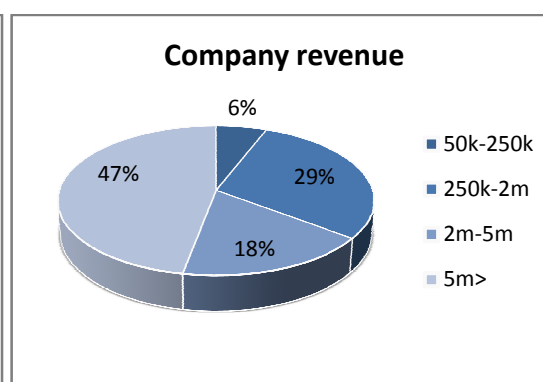


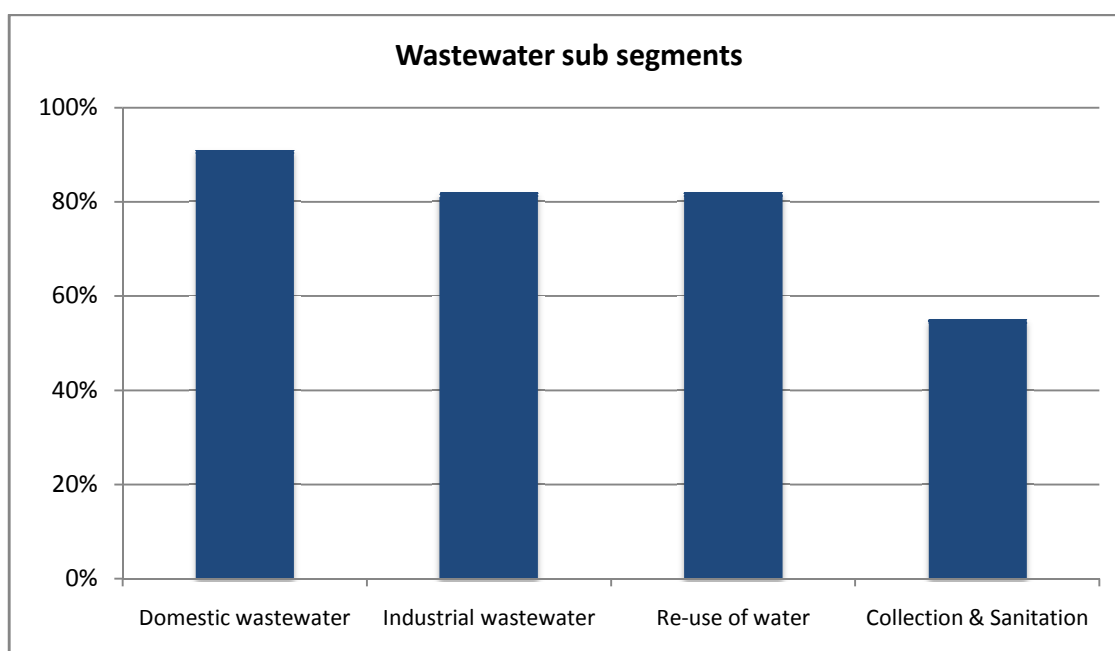
Figure 6.2. Company revenue (euro/year)

### 6.2.2. Market segment information

The water industry can be divided into a several segments. The survey was sent to companies who were assumed to be active in the wastewater segment. However, 'only' 80% of the respondents stated to be active in this sector, amongst other sectors in the water industry. Companies who were not directly associated with wastewater were nonetheless included in this research. For example, some companies active in the water management sector can supply for certain wastewater demands.

Companies had the option to give multiple answers and as a result, it could be noticed that most of the companies are active in more than one segment. There are few companies who are completely specialized in wastewater. In figure I in appendix V, the categorization of the respondents into the different market segments is displayed.

The companies who are active in the wastewater industry were asked to point out in which sub segments of wastewater they were active. More answers were possible, because of overlap and the fact that companies can be active in more than one category.

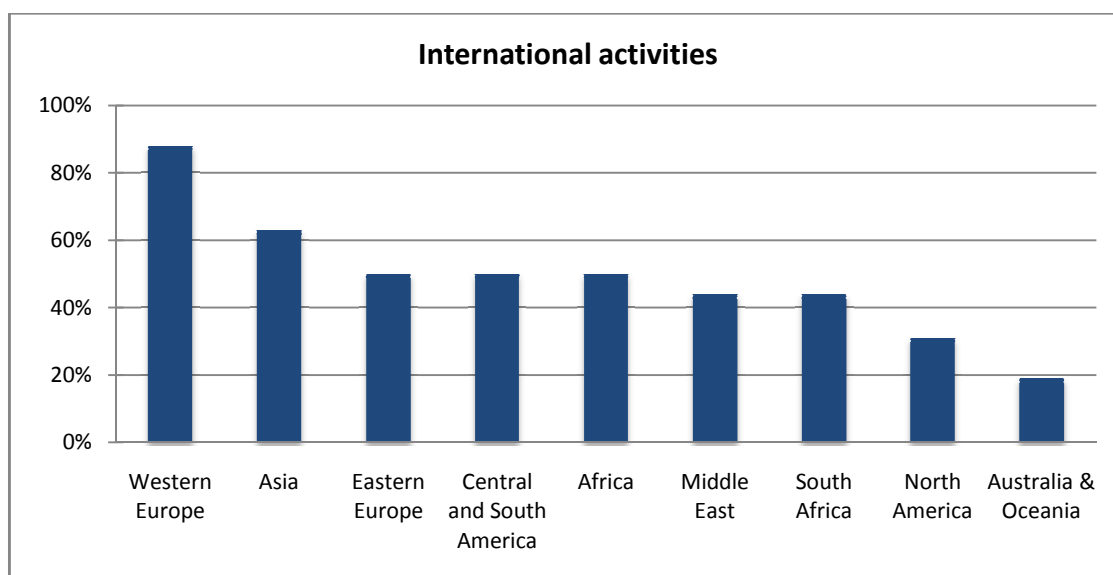


**Figure 6.3.** Percentage of companies active per waste market sub-segment

Of the companies who are active in wastewater, most of the companies responded to be active in domestic wastewater (91%). Because most of the companies are active in more than one market segment, the rest of the analysis will not be segmented. The wastewater sector will be analysed as a whole.

### 6.2.3. Export involvement

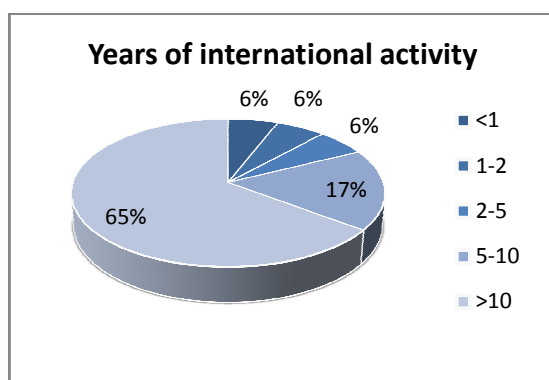
The first question about export involvement was about the revenue from export or other international trade activities. Except for one company, all respondents have international business activities. Where these activities are located can be found in figure 6.4.



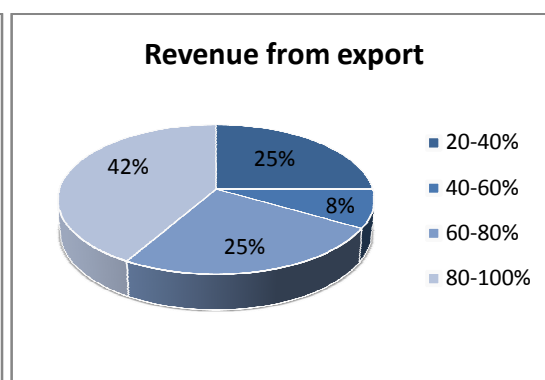
**Figure 6.4.** International Activities

Most of the international activities are located in Western Europe, which also includes the Netherlands. The second most important market is Asia, where 63% of the companies are active. Companies seem to be fairly active in South Africa (44%) and the rest of the African continent.

The next questions were asked concerned the length of activity in international markets and the revenue share that is gained with export. This data is given in the two diagrams below.



**Figure 6.5.** Years of international activity

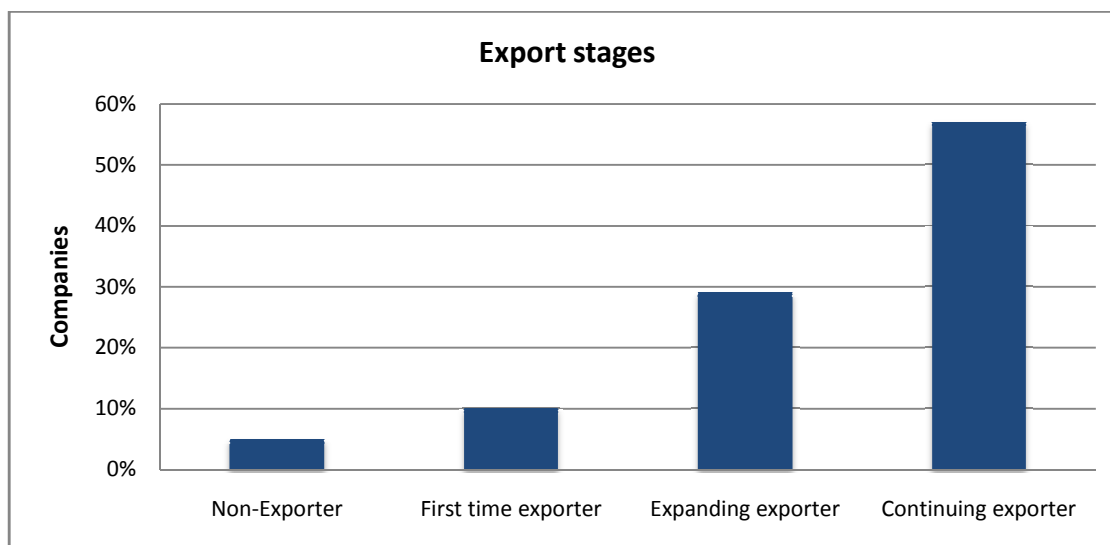


**Figure 6.6.** Share of revenue from export as a percentage of total revenue

Figure 6.5. shows that almost two-thirds of all companies are experienced exporters with more than 10 years of international activity. A majority of the companies generate more than 60% of their revenue from international activities. A quarter of the companies is mainly doing their business in the Netherlands. Although not displayed in a graph, a positive relation between the years of international activity and revenue from export can be observed. All the companies with 80-100% export revenue are more than 10 years active on the international market.

The length of international activity and export revenue share alone do not give sufficient information about the actual development of the company on the international market. To determine specific export needs of companies, also information about the stage of exporting can be helpful. Export stages present the degree of international development the company has reached. Each stage of exporting has

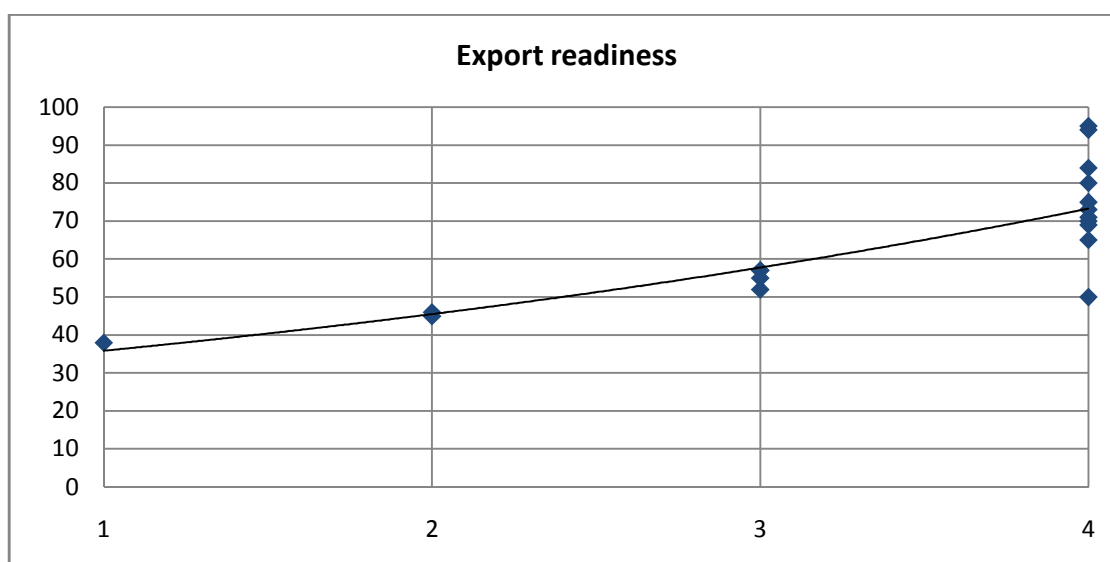
different motivational, informational and operational barriers that can be linked to specific needs of companies.



**Figure 6.7.** Export stages; degree of international development of the companies

As can be seen in figure 6.7. most companies are continuing exporters, which means that they already expanded to several international markets and are currently trying to strengthen their market position in those markets. Expanding exporters are already internationally active but are currently seeking new markets abroad.

In the next figure the export stages are related to the export readiness of the companies. The Export Readiness Assessment, which was explained in section 2.5, consists of a number of questions that give an image of the competences of the company in the international environment. The answers to these questions resulted in a score from 0 to 100, of which 100 is considered as the optimum readiness. These scores, related to the current export stage of the companies are plotted in figure 7.6.



**Figure 6.8.** Export readiness score related to stages of export

The results indicate a positive and a linear or slightly exponential relationship between the export readiness and the stages of exporting. This implies that the further a company is terms of export stages,

the more competences (e.g. marketing orientation, technological competence) it possesses to be successful in a foreign environment. However, within the continuing exporters (stage 4) there is a large variation of the export readiness scores, thus not every company has the same level of competences. Examining the results, the following competences were found to be missing in the companies of the following export stages.

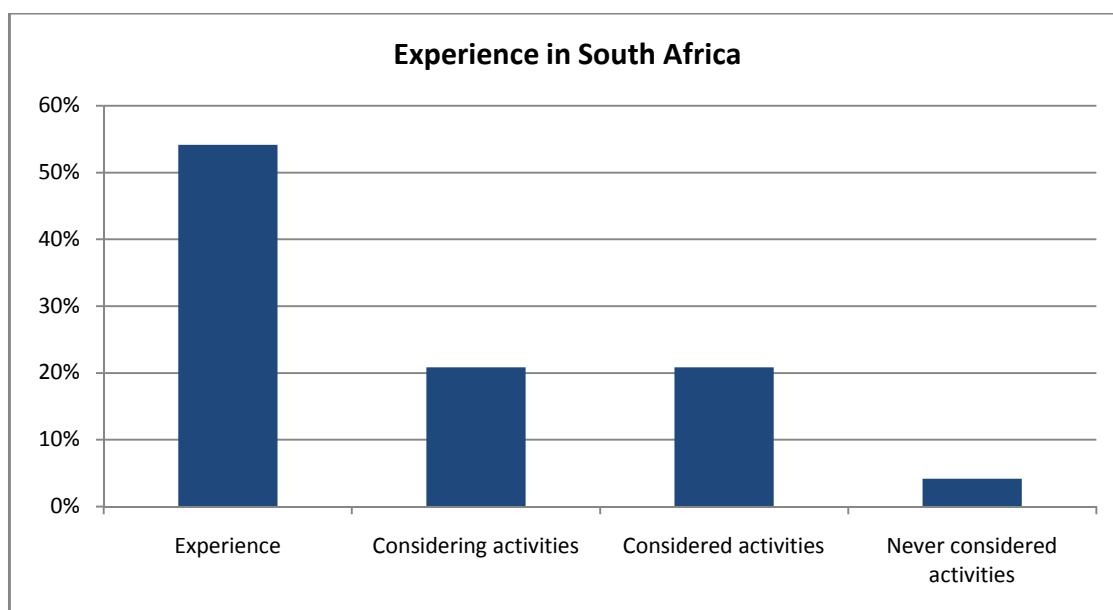
Export stage	Lacking competences
1	Knowledge about the international market
2	Knowledge about export barriers International marketing orientation
3	Knowledge about export barriers Financial ability to expand to new markets
4	Knowledge about the international market

**Table 6.1.** Lacking competences among respondents

These lacking competences are mainly on a informational level like explained in section 2.5. Most companies responded to possess most of the strategic competences: global technological competence, unique products development and quality focus. This information will be used to formulate export promotion assistance in the next chapter.

#### 6.2.4. Experience in South Africa

In the third part of the survey several questions were asked about company experiences and expectations in South Africa.



**Figure 6.9.** Experience in South Africa

A majority of the companies has experience in South Africa. There were also a number of companies that considered activities but never had activities in South Africa. The main reasons for this hesitation were the lack of market information and operational and financial capacity. Currently, about 20% of the companies are considering activities in South Africa.

Companies that are considering activities and companies that are experienced in South Africa were also asked about obstacles in doing business. The results indicate which environmental factors stimulate or hamper business activities in South Africa as a foreign company. Overall, the picture is quite positive with a larger share of stimulating factors than obstacles. The strongest stimuli and obstacles are described below.

Environmental factor	Obstacle	Percentage
<b>Political</b>	Political instability	38%
<b>Legal</b>	Rules and regulations concerning contracts and relations with South African counterparts	31%
<b>Political</b>	Black Economic Empowerment	25%

**Table 6.2.** Main obstacles in doing business on the wastewater market of South Africa.

Environmental factor	Stimuli	Percentage
<b>Market potential</b>	Demand of products and/or services in South Africa	63%
<b>Economic</b>	Economic growth	57%
<b>Economic</b>	Gross Domestic Product	44%

**Table 6.3.** Main stimuli in doing business on the wastewater market of South Africa.

The political instability is mentioned the most as a constraint to operate in the South African market, followed by rules and regulations and Black Economic Empowerment.

The most evident stimuli is the demand of products and/or services in South Africa. Many companies believe that the market potential of their products is large. Two economical factors were also mentioned as stimulating factors, the economic growth and the current GDP of South Africa is favourable for doing business.

Other stimulating factors and obstacles that were mentioned as an open question are listed in the table below.

Stimuli	Obstacles
Portal to the rest of Africa	Project control
Western influences	Transport costs
Language	Limited amount of suitable partners
Time zone	Uncertain political climate
Open market	Knowledge of the market
Knowledge of industrial standards	Financial limitation
Need for quality products	Strong competition
Increasing importance wastewater products	Payments by local government
Entering South African market relatively easy	Allocation of resources by the government
	Corruption

**Table 6.4.** Other obstacles and stimuli

Respondents are mainly positive about the market potential and market characteristics. Project control and transport control are perceived as obstacles because of the distance between South Africa and the Netherlands. Frequently mentioned is the lack of 'quality' of the business partners. There is a limited



amount of suitable partners and a large client, the (local) government are often perceived as unreliable because of corruption, payment problems and allocation of resources. Furthermore, companies are financially limited to do business in South Africa and take risks. There is also a lot of competition on the market.

### 6.2.5. Export promotion

The last part of the questionnaire was about export promotion. Companies were asked if they were familiar with organizations, programmes and South African government initiatives that could be of assistance in doing business in South Africa. The Agency for International Business and Cooperation (EVD) is identified the most compared to other organizations. The Southern African Netherlands Chamber of Commerce (SANEC) is the most identified organization with a specific focus in South Africa.

This list, together with the results of the question can be found in Appendix V. A detailed description of some of the organizations and programs can be found in Appendix VI.

The final question of the questionnaire was about what companies need and expect from the Embassy. The following activities were frequently mentioned:

Expected support activities
Selecting partners and clients
Matchmaking
Entrance for local contacts
Networking
Representative support
Market information
Support with financing facilities
Consistency in support policy
Legal support

**Table 6.5.** Expected support activities from the Netherlands Embassy

## 6.3. Conclusions

This chapter reviews the answers to the questions asked in the survey which was filled out by 26 companies in the wastewater sector. No distinction could be made between the different sub-segments because most of the companies are active in more than one segment. Besides several questions about the company profile and export experience, they were also assessed on their export readiness and classified according to the export stages. Where chapter four gave a general impression of competences in the wastewater industry, the survey extended this investigation by focusing on companies in selected market segments, gathering primary data. A positive relationship was found between export stage and export readiness. The competences that companies are lacking are mainly knowledge based.

Furthermore, information was gathered about the experiences in South Africa and export support needs. Most companies are already active in South Africa, and are also a continuing exporter. A list of main obstacles and stimuli was made and companies explained what kind of export support they need and expect from the embassy of the Netherlands.

In order to formulate export assistance programs there will be an emphasis on these support activities. This will be further discussed in the next chapter.



## 7. Export promotion support

In this chapter the following research question will be answered:

*What specific activities and strategies should be undertaken by the Embassy of the Netherlands to take advantage of these opportunities?*

The first section will introduce the definition of export promotion. The second section will analyze what kind of support is needed by the companies.

### 7.1. Export promotion

Export promotion is defined as public policy measures that actually or potentially enhance export activity at company, industry or national level. The Dutch Embassy stimulates and enhances Dutch companies through a variety of export development activities. The South African market offers opportunities for companies to engage export involvement. At the same time companies struggle because of the complex market where they face many barriers.

Exporting is an activity of growing importance for companies and countries worldwide. More and more companies realize that foreign markets provide either avenues for growth or means for survival in an increasingly competitive and international business environment. Because many companies lack the motivation, resources or knowledge to exploit foreign markets opportunities, national governments and other public organizations have evolved programs of support and assistance. These programs tend to improve competitiveness of participating companies, and therefore increase the chance of international market success. This should eventually lead to larger employment and wealth creation (Seringhaus & Rosson, 1991).

In the previous chapters, the South African market was assessed as well as the Dutch wastewater industry. From there, business opportunities were formulated. The previous chapter assessed the export support needs. This chapter will put things into practice.

### 7.2. Export promotion assistance

First of all, an analysis is made of the kind of support needed by the companies. For this analysis a table with all relevant elements that give information about what companies actually do need and what they ask for is built up from information in the last chapter. This table is presented on the next page.

Type of export involvement	Non-exporter	New exporter	Expanding exporter	Continuing exporter
Segments	Domestic	All segments	All segments	All segments
Lacking competences	Knowledge	Knowledge Marketing-orientation	Knowledge	Knowledge
Market obstacles	<ul style="list-style-type: none"> <li>Rules and regulations concerning contracts and relations with South African counterparts</li> <li>Political instability</li> <li>Black Economic Empowerment</li> <li>Transport costs and project control</li> <li>Reliability business partners</li> <li>Financial capability of own company</li> </ul>			
Company support needs	<ul style="list-style-type: none"> <li>Selecting partners and clients</li> <li>Networking</li> <li>Market information</li> <li>Support with financing facilities</li> <li>Matchmaking</li> <li>Entrance for local contacts</li> <li>Consistency in support policy</li> <li>Representative support</li> <li>Legal support</li> </ul>			

**Table 7.1.** Lacking competences, obstacles and relevant company support.

There is not a lot of difference between companies of different export stages. Most companies lack knowledge of the market in order to do successful business, even those who are already active in South Africa. Companies also answered similarly to the questions about market obstacles and support needs.

### 7.3. Current trade promotion and possibilities

In order to formulate support activities, the current trade promotion and possibilities for the Dutch Embassy have to be investigated. The Embassy is not the only organization that provides companies with support, it works together with different support organizations to facilitate in company support needs. One of the main organizations is its counterpart, the EVD. This section discusses the main support interventions the Embassy and EVD.

The current trade promotion of the Embassy and EVD with respect to the wastewater sector in South Africa is depicted in table 7.2.

Embassy	<ul style="list-style-type: none"> <li>▪ Market information</li> <li>▪ Practical advice about doing business</li> <li>▪ Answering trade questions</li> <li>▪ Support with trade missions</li> <li>▪ Networking</li> <li>▪ Partner reliability check</li> <li>▪ Support in searching agents</li> </ul>
EVD	<ul style="list-style-type: none"> <li>▪ Market information</li> <li>▪ Financing facilities <ul style="list-style-type: none"> <li>▪ Partners for Water</li> <li>▪ PSI</li> <li>▪ ORIO</li> <li>▪ 2g@there</li> <li>▪ CPA</li> </ul> </li> </ul>

**Table 7.2.** Trade promotion Embassy and EVD.

The activities of the Embassy in table 7.2. can be seen as export promotion according to Seringhaus & Rosson (1991). Also CPA, which stands for ‘Collective Promotional Activities’ can be seen as export promotion (see Appendix VI). Besides this export promotion, the Embassy and the EVD have more to offer that could be of use for stimulation of trade. There are several types of financing facilities: financial incentives for collaboration with other companies and financial support for projects in developing countries. For a list of trade promotion programs, see appendix VI.

#### 7.4. Proposed support activities

The proposal of support activities is based on four types of constraints or needs of the companies: lacking competences, market obstacles, support needs and opportunities. These constraints have been found throughout the research.

The first constraint is lacking competence(s), which was determined by the Export Readiness Assessment in the questionnaire. A lacking competence indicates a need for a company. The most frequently lacking competence is (market) knowledge. According to the theory of Seringhaus and Rosson, this can be seen as an informational barrier.

The second type of constraint is market obstacles. This was the result of a direct question about the market obstacles that are perceived when engaging business in South Africa. Most mentioned market obstacles are:

- Political instability
- Rules and regulations concerning contracts and relations with South African counterparts
- Black economic empowerment
- Reliable business partners
- Corruption
- Allocation of finance

The third type of constraint is support needs. Companies expect these needs to be supported by the Embassy or other organizations of the Dutch government. Most frequently mentioned support needs are:

- Selecting partners and clients
- Support with financing facilities
- Market information

The last type of constraint is opportunities. The opportunities were found by combining the analysis of the South African market potential with the competences of the Dutch wastewater sector. Several market opportunities were formulated that can only be an opportunity if some efforts are being made. These efforts are: Collaboration within the Dutch industry and Pilot projects.

The descriptions of the constraints can be found in the table below:

Type of constraint	Constraints
Competence/ Support need	Market Knowledge/Informational barrier
Market obstacle	Political instability
	Rules and regulations
	Black Economic Empowerment
	Reliable business partners and clients
	Corruption
	Allocation of finance
	Financial capability of company
Support need	Selecting partners and clients
	Support with financing facilities
Opportunities	Collaboration within the Dutch Industry
	Pilot projects

**Table 7.3.** Constraints for Dutch companies.

The next step is to formulate activities to overcome these constraints. These activities can be converted into specific interventions for the Embassy. These activities and interventions are displayed in the table below.

Type of constraint	Constraints	Activities	Interventions
Competence/ Support need	Market Knowledge/Informational barrier	Improve knowledge of companies about the market	Market reviews Supplier/buyer newsletter Market research Market visits Local seminars
Market obstacle	Political instability	Improve market conditions	Assist crucial institutions in water sector
	Rules and regulations	Improve knowledge of companies about the market	Providing information
	Black Economic Empowerment	Improve knowledge of companies about the market	Providing information
	Reliable business partners and clients	Selecting partners and clients	Trade mission Water platform
	Corruption	Improve market conditions	Assist crucial institutions in water sector
	Allocation of finance	Improve market conditions	Assist crucial institutions in water sector
	Financial capability of company	Financing facilities	Provide financing facility
Support need	Selection of partners and clients	Selecting partners and clients	Trade mission Water platform
	Support with financing facilities	Support with financing facilities	Provide information about financing facilities
Opportunities	Collaboration within the Dutch Industry	Selecting partners	Trade mission Provide financing facility
	Pilot projects	Assisting in starting up pilot projects	Preparations Selecting business partners Provide financing facility

**Table 7.4.** Constraints, support activities and interventions for the Netherlands Embassy.

From the market obstacles and improvement areas, activities the embassy could be involved in are mentioned and specific interventions are formulated. These activities and interventions will be discussed in the next sections.

#### **7.4.1. Informational export support activities**

The lack of market knowledge is explicitly mentioned in the first row of table 7.4. According to Seringhaus & Rosson, there are several measures that can be taken to improve the company's knowledge of the market. These are: market reviews, supplier/buyer newsletter, market research, market visits and local seminars. Many other interventions derived from the market obstacles, support needs and opportunities can be considered as export promotion measures whenever companies face informational barriers. Informational activities can therefore be considered as most important for the Embassy.

In line with the informational activities, an extensive market research has already been conducted by BECO (Kothuis, Mudau & Karbanee) in the beginning of 2008. Besides the BECO report, this research report can also be considered as a market research. Looking at the next activities mentioned in the table, specific information about rules and regulations and black economic empowerment is needed. Furthermore, information about potential suppliers is necessary. This will be explained in the next section. Besides receiving information from Dutch governmental organizations companies should be involved in the South African market and become a part of the network in order to minimize the informational barriers. This can be established for example, by becoming a member of WISA which is a network organization of the Southern African water sector. These informational export support activities can be classified as market matching on a macro level according to Ghauri and Holstius (1996) and are applicable for companies in all segments of the market and export stages.

#### **7.4.2. Selecting partners and clients**

Assisting companies with the selection of partners and clients is an important activity that can help to overcome some of the mentioned market obstacles. Companies are seeking reliable business partners and clients. The Embassy can support the companies with this matter in several ways.

Firstly, by organizing or assisting with a trade mission to meet with South African (and Dutch) counterparts and obtain knowledge of the market. This can be considered as a short-term support programme.

Secondly, by setting up a water platform for the Dutch and South African wastewater sector. There has already been experience with a platform in Egypt, with satisfying long-term results. Creating a similar organization can be recommended in order to expand and intensify the network between South Africa and the Netherlands in the field of wastewater.

Both of these programs can also contribute to the collaboration of the Dutch water sector, when partners are found that are willing to do business in South Africa together.

The trade mission is more applicable to companies who wish to enter the South African market, while the water platform is applicable for companies and other organizations who are already active in South Africa.

#### **7.4.3. Assisting in starting up pilot projects**

Investing in pilot projects is in some cases necessary within the market entry strategy. As concluded in this research, Dutch companies often have limited resources to enter the South African market. The task for the Embassy is to assist with the start up of these pilot projects. Potential business partners can be selected and a finance facilities can be provided in co-operation with the EVD. The trade missions and/or water platform mentioned in the previous section can also be stimulating for setting up pilot projects as it brings together the Dutch and South African wastewater sector who could be willing to share risks or finance a part of the project together. Pilot projects are applicable in all market sub segments.



#### 7.4.4. Assisting crucial institutions in the wastewater sector

The market obstacles political instability, corruption and poor allocation of finance are complex problems that are difficult to overcome and not only have an effect on the wastewater sector. It can be considered a problem in the whole South African economy.

Improving these market conditions can be considered paramount to stimulate business in South Africa, but is a task of the South African government. Affirmative action lies beyond the scope of an embassy or foreign government, although it was concluded in this research that the market constraints have a serious effect on the opportunities for Dutch companies.

One activity the Embassy of the Netherlands could be involved in, is the assisting of crucial institutions in the wastewater sector. This is not a new idea as there are already other organizations involved in this activity. An example is capacity-building, which was mentioned several times throughout this research as a great need for the wastewater sector. Another example is Masibambane (see appendix VI) which is a program that has the goal to stimulate collaboration between the players in the South African water sector; making the sector more efficient, improving investment and contribute to solving the water problems. There could also be a focus on increasing the acceptance of private sector involvement in the South African wastewater sector. Small scale projects, within the controllable and financial scope of the Embassy could ultimately lead to improved market conditions and more opportunities for Dutch companies. Slight contribution to the improvement of the market conditions, can be considered as a important activity in order to stimulate the business potential of the Dutch wastewater sector.

According to the theory of Ghauri and Holstius, this can be defined as matching on a macro level, where a government is supporting another government.

Several institutions that could be assisted are:

- eWISA, capacity-building branch of WISA (see Appendix II).
- Universities
- Local governments

#### 7.4.5. Provide financing facilities

The last category of export promotion activity is the provision of financing facilities and also important, information about financing facilities. This is said because there are already a number of financing facilities available for Dutch companies who have an ambition to do business in the South African wastewater sector. In table 7.4. it is explicitly stated that companies need support. Many companies responded that there is not enough consistency of the support policies, which makes it more difficult to be up-to-date about certain projects and make long-term plans. It is not only about information of financing facilities, but also about the availability of financing facilities. It can be stated that there has to be a better 'match' between what companies desire and what the Dutch government has to offer.

### 7.5. Conclusions

In this chapter, a proposal of export support activities was drafted. The proposal was based on several types of constraints or needs of the companies. By combining the needs with the theory of Seringhaus & Rosson, several activities and interventions were formulated. However, the export promotion activities mentioned by Seringhaus & Rosson alone are not sufficient to overcome the issues the Dutch companies face. Therefore, additional interventions were formulated within the scope of the Embassy and EVD. The Embassy and the EVD are already engaged in a number of export promotion activities. Besides the general support activities of the Embassy, there are financing

facilities available for companies who are willing to enter the South African wastewater market. The proposal in this chapter can therefore be seen as an extension or improvement of current export promotion support.

## 8. Conclusions and recommendations

In this chapter the conclusions, recommendations of the research are presented, as well as a reflection about the research. The first section discusses the conclusions, which are the answers to the research questions. The section thereafter points out recommendations for the Embassy with regards to export promotion support. To complete this chapter, a reflection about the research approach and results is given.

### 8.1. Conclusions

This research was conducted with several objectives in mind. The first objective was to identify opportunities for Dutch companies in the South African wastewater market. Secondly, relevant support needs among Dutch companies should be identified. An elaboration on export promotion assistance is the third goal. Through this research, the identification and establishing of relationships with key persons and organizations involved in wastewater in South Africa is the final objective. These objectives resulted to the formulation of the main research question:

**What are the opportunities for Dutch companies in the South African wastewater market and what type of support from the Embassy of the Netherlands can improve business activities of Dutch companies in South Africa?**

To answer the first research sub question: *What is the market potential of the South African wastewater market?* the South African market was assessed. Although researching the market potential was the most important aspect of this assessment, several other subjects were examined as well. An investigation of the macro economic data revealed that South Africa has seen significant economic growth in the last decade. A major hampering factor to the economy however, is the lack of investment in infrastructure, in particular power supply and water and wastewater infrastructure. Problems with water are twofold: there is a decline in water quantity and quality. Water quality problems are considered more severe and have a rather complex nature. Main elements of the declining water quality are (raw) sewage effluents, eutrophication and acid mine drainage. The most mentioned causes related to these issues are enforcement of laws and regulations, allocation of funds and the shortage of skills. The non-compliance of wastewater treatment plants can be seen as the most severe problem, having a number of causes and major effects.

The analysis of the market potential has resulted in a list of market drivers and restraints, as well as concrete business opportunities and overview of competition in the market. In general, it can be concluded that the market for wastewater is growing. There is potential in all distinguished sub segments. One of the most important market drivers is the increased enforcement by the government, which stimulates spending in this sector in the coming years. Another important market driver is general increased investment. Other drivers are economic growth, increased feasibility of investments, increased cost of water, technological developments and increased complexity of the wastewater. The main market restraints, although gradually improving, are the lack of implementation of wastewater legislation, challenges to allocate financial resources to wastewater and financial limitations of municipalities.

The wastewater treatment market in South Africa is considered to be a competitive market, with well established international competition. Many international companies are already active in all investigated segments.

The main demand characteristics of the South African wastewater market in the collection and sanitation segment are: the large need for wastewater infrastructure and renovation and replacement of wastewater pipelines. Within the industrial wastewater market, there is a large demand for industrial wastewater treatment equipment and services and a need for skilled people to operate and maintain infrastructure. The domestic wastewater market is the largest market segment, with demand for wastewater treatment equipment and services, upgrade of wastewater treatment plants. Also skilled people to operate and maintain, experienced managers to procure are needed. There are opportunities for public private partnerships and franchising contracts for the management of treatment plants. The re-use market is growing, especially the membrane market.

The next step was to assess the supply characteristics of the Dutch wastewater sector and answer the following question: What are the competences and relevant experiences of the Dutch wastewater sector? From analysis it can be concluded that the Dutch wastewater sector has extensive experience in the development of water and wastewater treatment technologies. The public sector is large as all wastewater infrastructure is managed by governmental bodies. The private sector is active in all wastewater sub segments with an annual revenue of €14,8 billion euro and a growing export market share. The supply characteristics of the Dutch wastewater sector comprehend a number of strong features like innovative technology, international orientation and positive reputation and extensive network. In the collection and sanitation segment, there are innovative sanitation concepts and competitive supply of wastewater pipeline infrastructure. The industrial wastewater sector has a large export market with a wide range of products and services. In the field of domestic wastewater the sector is large, with state-of-the-art wastewater treatment technologies. However, there is a low level of competitiveness for large wastewater treatment projects. The re-use of water sector is competitive within domestic wastewater and industrial process water recycling. In general, there are few large players among the Dutch companies, limited financial power and limited co-operation within the sector.

The result of the combined assessment of the South African market and Dutch sector produced a list of market opportunities. In the collection and sanitation segment, the best opportunities are the upgrading of wastewater pipeline infrastructure and new sanitation concepts. In the industrial segment, Innovative technologies for rehabilitation of industrial wastewater and products with a complete package are most promising. The domestic wastewater segment provides opportunities for wastewater treatment equipment and treatment plants, private sector involvement and upgrade of existing wastewater treatment plants. In the re-use segment, there is a booming market for membrane technology, but domestic water re-use and industrial process water recycling also have large opportunities. This answered the question: *What are the most promising market segments in South Africa for the Dutch wastewater sector?*

The second part of the research is an assessment of the relevant support needs of the Dutch wastewater sector with respect to the market opportunities identified as formulated in question number two. A survey among 26 Dutch wastewater companies generated a lot of data about the company profile, international and more particular, South African experiences and support needs. Many companies in general lack knowledge about the international market. They mention political instability as one of the major obstacles for doing business, together with rules and regulations and

Black Economic Empowerment. Frequently mentioned as an obstacle is the lack of 'quality' of the business partners. There is a limited amount of suitable partners and a large client, the (local) government are often perceived as unreliable because of corruption, payment problems and allocation of resources by the government. Furthermore, companies are financially limited to do business in South Africa and take risks. There is also a lot of competition on the market.

The most mentioned support needs companies expect from the Embassy relate to market information and selecting partners and clients.

With all the information gathered the final research question can be answered:

*What specific activities and strategies should be undertaken by the Embassy of the Netherlands to take advantage of these opportunities?*

These answers can be considered as recommendations. The details are already presented in section 7.5. and the headlines will be outlined in the next section.

## **8.2. Recommendations**

In this section the recommendations for the embassy, as well as recommendations for further research are given.

### **8.2.1. Recommendations for the Embassy**

The Dutch wastewater sector faces several internal problems, market obstacles and has a number of needs to improve certain areas in order to be successful in the South African wastewater market, taking advantage of the full business potential. The Embassy of the Netherlands is a relative small organization, but it can contribute to stimulate Dutch companies to do business.

Activities the Embassy could be and should involved in are mentioned and specific interventions have been formulated.

The most important activities are informational and consist of market information in the form of market reviews, market visits and local seminars. Besides receiving information from Dutch governmental organizations companies should be involved in the South African market and become a part of the network in order to minimize the informational barriers. This can be established for example, by becoming a member of WISA.

The second support activity is assisting companies with the selection of partners and clients, which can help to overcome some of the mentioned market obstacles. Firstly, by organizing or assisting with a trade mission to meet with South African (and Dutch) counterparts and obtain knowledge of the market. Secondly, by setting up a water platform for the Dutch and South African wastewater sector.

The third activity for the Embassy is to assist companies in starting up pilot projects. Potential business partners can be selected and financing facilities can be provided in co-operation with the EVD.

The fourth activity the Embassy of the Netherlands should be involved in, is the assisting of crucial institutions in the wastewater sector in order to indirectly improve the conditions of the South African wastewater market.

The last category of export promotion activity is the provision of financing facilities and also important, information about financing facilities. There has to be a better 'match' between what companies desire and what the Dutch government has to offer.

For Dutch companies it is necessary to know that the Embassy can offer several types of assistance, now wastewater is seen as a focus area for the coming years.

### **8.2.2. Recommendations for further research**

This research focuses specifically on the wastewater market of South Africa. During the research it was found that also other segments of the water market are growing rapidly and could have many

opportunities for Dutch companies. These areas are: water construction and water supply. Because of the scope of this research, these segments were not included. A research focused on the other water market segments will most likely have a large overlap with this research and the previous market scan conducted by BECO. It is perhaps more useful to research other promising market segments of South Africa that were identified by the Embassy: transport (infrastructure), logistics management and horticulture. The energy sector is also seen as a promising sector, but has already been investigated by the Embassy in a previous report.

To assist the Dutch industry as a whole, it could be interesting to investigate market entry barriers to South Africa. Although every sector, company and every specific product faces specific barriers while trying to gain access to South Africa, many could be similar. A comprehensive research about doing business in South Africa is useful for every Dutch company which is interested in this country.

### **8.3. Reflection**

This section provides a reflection of the research process, results and the contribution to science.

#### **8.3.1. Process**

The overall research ran smoothly and within the planned schedule. It was relatively easy to obtain data; contact with South African organizations was quickly established and people were very willing to participate.

In the research, a balance had to be found between theory and practice. The theories that were used in order to provide a framework for investigation of the South African market did not always match perfectly with the information that was obtainable. Therefore, some slight practical adjustments had to be made to the theoretical approach in order it not to be limiting to the outcome of the research. This however, does not mean that the incorrect theories were used.

A critical point in the research process was the selection of most promising market segments and opportunities. On the basis of the South African market and Dutch sector analysis, the selection was made and afterwards the questionnaires were sent to the companies. Because of the chronological order of research activities, the information gathered by the questionnaires could not be included in the Dutch sector analysis, and had to be based for the largest part on secondary data.

#### **8.3.2. Results vs. Objectives**

By establishing contacts and interviewing many people from different organizations in South Africa, a clear image of the South African market was obtained. Saturation in the obtained data took place after some interviews, justifying the results.

The results from the second part of the research, the support need analysis and formulation of support promotion are mostly dependent from data gathered by the questionnaires. These were sent to a number of companies. The average response rate of the survey was 22% of total selected companies; the number of respondents was 26. The data that was gathered gave an excellent impression of the Dutch wastewater sector. Regarding the segmentation however, the amount of data was a constraint for the analysis. Because most of the companies are active in more than one wastewater sub segment it prevented the distinction of specific companies within the support need analysis. Therefore, the support need analysis did not divide the companies into the distinguished market segments. This is a limitation for the research.

Furthermore, it might be very well possible that companies which are active or interested in South Africa are overrepresented among the respondents, because they are more likely to fill in such a questionnaire. Although this does not have an effect on the actual outcome of the support need analysis, the conclusion that many companies are already active in South Africa could be incorrect.

In the questionnaire, most of the questions are closed, to make it easier to compare results. Also some open questions were asked to obtain data that could not be encompassed by the closed questions

alone. However, few respondents answered the open questions properly, thus limiting the amount of data gathered.

#### **8.3.3. Contribution to science**

Although this research can be considered as practice-oriented, it contributes to science in several ways. First of all, most market research reports are only focused on a target market, looking at the demand for a certain product or service. This research is different in a way that it also pays attention to the supply side of the market, looking into the characteristics of the Dutch wastewater sector and by comparison tries to find specific opportunities. The result is a possible 'fit' of supply and demand. Obviously, this method can also be used in other market researches.

Secondly, several theories about internationalization were used in this research. A combination of specific elements from different theories formed the basis of investigation. Elements from the model of Root were used, because the whole model did not fit into the scope of this research. The export readiness assessment which was used in the survey put the theory of Knight and Cavusgil about drivers of superior performance in a foreign country into practice. The questions in the assessment were based on a list of internal drivers that are relevant for companies in an international environment. The combination of different theories created a unique approach for this type of research.





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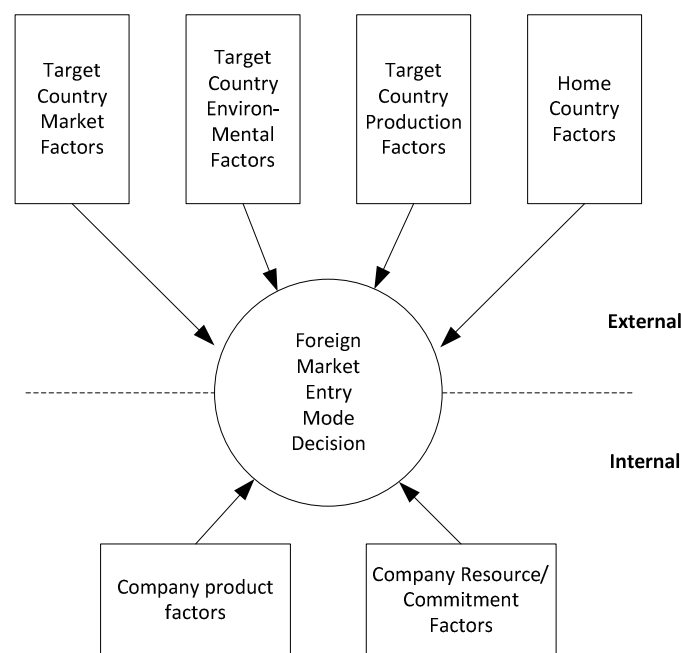
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# Appendix I – Factors in the entry mode decision

Root (2000) developed a basic framework that describes factors that determine the decision of a company to sell its product in foreign markets. In this theory, a company's choice of its entry mode for a given product/target country is the net result of several, often conflicting, forces. This framework that analyses both the external and internal factors is depicted in the figure below.



**Figure I.I.** Factors in the entry mode decision

*Source: Adapted from (Root, 1994)*

According to this framework, the target country factors (market, production and environment) as well as other external and internal factors influence the company's choices to penetrate a target country. The environmental factors that are mentioned by Wood and Robertson (2000) have a certain overlap with the framework of Root (1994), which was explained in section 2.2. on page x.

## External factors

The external factors consist of market, production and environmental factors in the target country and the home country.

### Target country market factors

The present and projected size of the target country market is an important influence on the entry mode. Small markets favour entry modes that have low breakeven sales volumes. Markets with high sales potentials can justify entry modes with high breakeven sales volumes. Root (1994) also argues that the competitive structure is also a dimension of the target market. Markets can range from atomistic to oligopolistic to monopolistic. An atomistic market is usually more favourable to export

entry than an oligopolistic or monopolistic market, which often requires equity investment to compete against the power of dominant firms.

#### **Target country production factors**

Root (1994) also states that the quality, quantity and cost of raw materials, labour, energy and other productive agents in the target country, as well as the quality and cost of economic infrastructure have influence on the mode of entry. Low production costs in the target country encourage some for local production as against exporting and high costs would be against local manufacturing. In the context of this research, the target country production factors are less relevant. This will be explained in the next section.

#### **Target country environmental factors**

The factors include the size of the market and the competitive structure of the industry. The home country factor of production costs relative to the foreign market country is another determinant of an entry mode decision. The policy of the home government toward exporting and foreign investment by domestic firms is an important factor as well.

#### **Home country factors**

Market, production and environmental factors in the home country also influence a company's choice of entry mode to penetrate a target country. A big domestic market allows a company to grow to a large size before it turns to foreign markets. The competitive structure of the home market also affects the entry mode. Firms in oligopolistic industries tend to imitate the actions of rival domestic firms that threaten to upset competitive equilibrium. Finally, there are two other home country factors that deserve to be mentioned. High production costs in the home country relative to the foreign target country encourage entry modes involving local production, such as licensing, contract manufacture and investment. The second factor is the policy of the home government toward exporting and foreign investment by domestic firms.

### **Internal factors**

How a company responds to external factors in choosing to expand to foreign countries depends on the internal factors, which are the company product and company resource/commitment factors.

#### **Company product factors**

Root (1994) states that highly differentiated products with distinct advantages over competitive products give sellers a significant degree of pricing discretion. These products can absorb high unit transportation costs and high import duties and still remain competitive in a foreign country. In contrast, weakly differentiated products have to compete on a price basis in a target market, which may be possible only through some form of local production. Hence high product differentiation favours export entry, while low differentiation pushes a company toward local production and choosing an entry mode such as contract manufacture or equity investment. Furthermore, if a company's product is a service, such as engineering or consulting then the company must find a way to perform the service in the foreign target country. Local service production can be arranged by training local organizations to provide the service (as in franchising), by setting up branches and subsidiaries or by directly selling the service under contract with the foreign customer. Technologically intensive products give companies an option to license technology in the foreign country rather than use alternative entry modes.



### Company resource factors

The more abundant a company's resources in management, capital, technology, production skills and marketing skills, the more numerous are their entry mode options. Conversely, a company with limited resources is constrained to use entry modes that call for only a small resource commitment. Hence company size is frequently a critical factor in the choice of an entry mode.

An overview of the factors and example dimensions in the model of Root is given in the table below.

Factor	Example
<i>External factors</i>	
Target country market factors	Present and projected size of the target country market Competitive structure of the target market Availability and quality of the local marketing infrastructure
Target country production factors	Quality, quantity and cost of raw materials, labour and energy in the country Quality and cost of the economic infrastructure
Target country environmental factors	Government policies and regulations with regard to international business Geographical distance Economical characteristics Socio-cultural factors
Home country factors	The competitive structure of the home market High production costs relative to the foreign target country Policy of the home government towards exporting and foreign investment by domestic firms
<i>Internal factors</i>	
Company product factors	Differentiation of the products Pre- and post purchase services Technology of the products
Company resource/commitment factors	A company's resources in management, capital, technology, production skills, and marketing skills

**Table I.I.** Internal and external factors with examples of research dimensions

Source: Adapted from (Root, 1994)



## Appendix II – Institutional framework and related policies

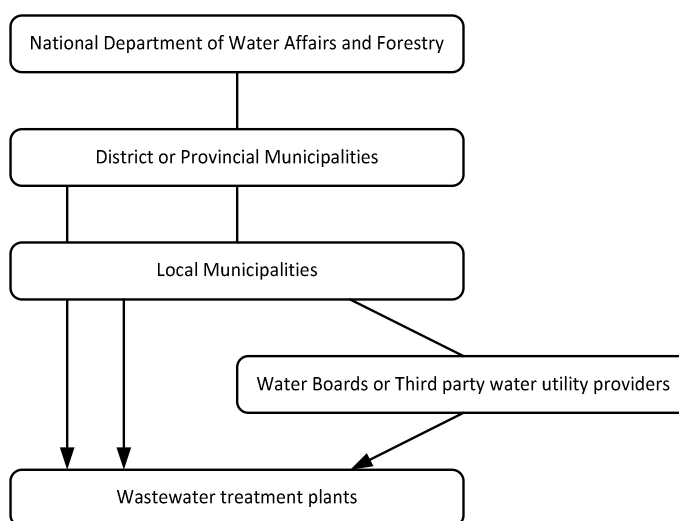
In this appendix the institutional framework, regulatory framework and related policies of the wastewater sector in South Africa are presented as an addition to the market information in chapter three. An overview and description of the most important stakeholders is also given.

### Institutional framework

The institutional framework of the South African water sector incorporates a three-tiered structure comprising central government (Department of Water Affairs and Forestry, DWAF), water boards and local authorities (also known as Regional Service Councils, Municipalities or Community Councils).

The DWAF acts as the central controlling body, monitoring the use of South Africa's water resources and sanitation services. It is primarily responsible for the formulation and implementation of policy governing these two sectors. The emphasis is on empowerment of the local authorities.

The government transferred its water supply and sanitation activities to municipalities in 2006. This involved local governments taking over operating and capital costs. The budget of DWAF fell from R2,3Bn in 2003/2004 to R400 million in 2007/2008 (Pinsent Masons, 2008).



**Figure II.I.** Management structure of Wastewater treatment plants

District and local municipalities are the primary end-users on the domestic wastewater treatment market. The trend for these municipalities is to have their own wastewater management divisions, but if the local municipality is unable to provide wastewater services they could have their district municipality handle wastewater services on their behalf.

There are also several municipalities that have outsourced their wastewater and water utilities on a BMO (Build, Manage, Operate) level to third party service providers or water boards.

ERWAT (East Rand Water Care Company) is such a third-party wastewater utility, managing wastewater plants in Ekurhuleni on behalf of the district municipality and in turn, also the local municipalities. Other

third party water and wastewater service providers include Rand water and Umgeni water, the country's two largest.

Under the terms of the National Water Act (see next section), Catchment Management Agencies (C.M.A.) are scheduled to be established in all of the country's 19 catchment-based water management areas. C.M.A.'s will be responsible for planning, implementing and managing water resources. C.M.A.'s will also coordinate the water-related activities of other water management institutions and water users. C.M.A.'s will be also responsible for the licensing of water use and discharges where delegated by DWAF; monitoring abstractions and discharges, collecting abstraction and discharge fees, monitoring water quality and overseeing land-use activities. In 2008, there were already three CMA's active.

## **Regulatory framework**

The National Water Act and National Water Resources Strategy can be seen as the most important documents that determine the regulatory framework of the water sector.

### **National Water Act**

The most important water laws are described in the National Water Act of 1998 (NWA), which provides economic incentives to encourage water conservation and the reduction of wastewater.

The fundamental principle that guides the NWA is that water is a national resource, owned by the people of South Africa and held in custodian of the state. This principle allows the state to have total control over the utilisation of the source. The act prescribes the development of a National Water Resource Strategy for the country as a whole.

### **National Water Resources Strategy**

The National Water Resources Strategy which was enacted in 2004, provides the framework in which water resources will be managed throughout the country. It is a comprehensive document, which sets out DWAF's strategies, objectives, plans, guidelines and procedures, and institutional arrangements for the overall management of water resources. Details that are contained in this strategy include: identification of water management areas; the total quantity of water available within each water management area; principles relating to water conservation and demand management; and objectives relating to water quality. The strategy must also determine the inter-relationship between institutions involved in water resource management and must promote the management of catchments within a water management area.

## **Government policy**

The development of the wastewater infrastructure is formulated in several governmental policies as summarized below.

- ASGISA
- MIG
- Millenium Development Goals (MDG) supported by Masibambane

### **ASGISA**

In 2006, the South African government announced the Accelerated and Shared Growth Initiative of South Africa (ASGISA), that has the goal to improve economic growth and lower unemployment. To implement the ASGISA, the country is set to spend R372 billion on infrastructure between 2007 and 2010. This investment will include the provision of sanitation and wastewater infrastructure. These

investments will see many municipalities put under pressure to both upgrade old wastewater treatment plants.

### **MIG**

The Municipal Infrastructure Grant (MIG) is an important instrument in the acceleration of the delivery of basic services. The grant assists in ensuring investment in infrastructure for basic services thereby accelerating access to these services. Other grants are the capacity building grant and the restructuring grant. The goal of the M.I.G. is to provide all South Africans with at least a basic level of service by 2013, through the provision of grant finance aimed at covering the capital cost associated with the establishment of basic infrastructure. In the fiscal year 2007/2008, 54 percent of the total MIG funds in the year 2007/2008 were spent on water and sanitation.

The M.I.G. is a conditional grant and therefore if municipalities do not perform to certain standards, then M.I.G. funding to the municipality can be decreased the following financial year. The government sees this as an essential way of preventing mismanagement of funding.

### **Millennium development goals**

The millennium development goals (MDG's) for South Africa in the area of water supply and sanitation are as follows:

- Eradicate bucket system by December 2007.
- Water; All people in South Africa to have access to safe drinking water in 2008.
- Sanitation: All people in South Africa to have access to basic sanitation by 2010.

The South African government is supported in reaching these goals by the Masibambane programme (meaning *let's work together*). Masimbambane is a partnership between several departments, the European Union and its member states; the Swiss Government and Ireland Aid. The Masibambane Sector Wide Support Approach works from the premise of coordinated strategies and joint implementation involving all players in water sector: national and provincial government, municipalities, civil society, donors, water utilities and the private sector.

## **Stakeholders**

Besides the DWAF, district and local municipalities and CMA's, other organizations are involved with wastewater management in South Africa. These stakeholders will be described in this section.

### **Development Bank of Southern Africa**

The Development Bank of Southern Africa (DBSA) is an important player in the water and sanitation sector, both as a financier and as an advisor and project promoter. In 2005-2006 about 29% of its approved projects were for water supply (1,881 million Rand) and sanitation (165 million Rand). Other financing institutions in the sector include the Infrastructure Finance Corporation Limited, which claims to be the only 100% privately owned infrastructure debt fund in the world.

### **Mvula Trust**

The Mvula trust is a well-known water supply and sanitation non-governmental organization (NGO) in South Africa, which has disbursed over R300 million to water services programmes and projects and has provided services to over a million South Africans who previously did not have access to either water or sanitation services. It is specialized in implementing and supporting the delivery of water services in rural and peri-urban areas through community management, the establishment of community based water services providers and supporting local authorities to create an enabling environment for sustainability. There are many other smaller NGOs that together play an important role in the sector.

### **Water Institute of Southern Africa (WISA)**

The Water Institute of Southern Africa provides a forum for exchange of information and views to improve water resource management in Southern Africa. This institute keeps its members up to date about the latest developments in water technology and research through its national and international liaison, links and affiliations. Also Dutch organizations are welcome to join WISA.

### **Water Research Commission (WRC)**

The Water Research Commission operates in terms of the Water Research Act and its mandate is to support research and development as well as the building of a sustainable water research capacity in South Africa. The WRC serves as the country's water centred knowledge hub leading the creation, dissemination and application of water centred knowledge. The focus area's are water resource management, water-linked eco systems, water use and waste management and water utilisation in agriculture. The WRC possesses a large number of patents on water technology that can be exploited by private companies.

## Appendix III – Companies active on the South African wastewater market

This appendix contains a list of companies that were identified to be active on the South African wastewater market. These companies are categorized as Non-Dutch and Dutch.

### Non-Dutch companies

- Adel Wiggins Group (U.S)
- Africon (R.S.A.)
- Bigen Africa (R.S.A.)
- Cemo-Pumps (R.S.A.)
- General des Eaux (France)
- Gilkes Water Turbines (U.K.)
- Golder Associates (Canada)
- Gormann Rupp (Germany)
- Hach Corporation (U.S.)
- Harvard Corporation (U.S)
- Hatz (Germany)
- Kent instruments (U.K.)
- Lister (Germany)
- Lyonnais des Eaux (France)
- Nalco-Chemserve (U.S./R.S.A.)
- Ninham Shand Consulting (R.S.A)
- Worthington (U.K.)
- Zenon (Canada)

### Dutch companies

- Pieralisi Benelux B.V.
- AQUA Industrial Watertreatment B.V
- Van Essen Instruments B.V.
- Applikon Analytical B.V.
- Bergschenhoek Water Technology B.V.
- INVESTeau B.V.
- Wavin Overseas B.V.
- DHV/ Stewart Scott International B.V.
- Royal Haskoning B.V.
- Landustrie Sneek B.V.
- Norit B.V.





# Appendix IV – Survey

**Bedrijfsnaam:**

**Contactpersoon:**

**E-mail adres:**

## Deel 1 – Algemene informatie

De volgende 6 vragen zijn bedoeld om inzicht te krijgen in de marktsegmenten waarin uw bedrijf actief is, de grootte van het bedrijf en de omvang en aard van de handelsactiviteiten in het buitenland.

### 1. Hoeveel werknemers heeft uw bedrijf?

☐ 1-9

☐ 10-49

☐ 50-99

☐ 100-249

☐ 250-499

☐ 500 of meer

### 2a. In welk(e) marktsegment(en) is uw bedrijf actief?

(Meerdere antwoorden mogelijk)

☐ Watervoorziening

☐ Afvalwater

☐ Waterbeheer

☐ Irrigatie en drainage

☐ Waterkracht

☐ Waterbouw

### 2b. Indien uw bedrijf actief is in het segment afvalwater, in welk(e) subsegment(en) is uw bedrijf actief?

(Meerdere antwoorden mogelijk)

☐ Collectie en/of sanitatie

☐ Industrieel afvalwater

☐ Huishoudelijk afvalwater

☐ Hergebruik van afvalwater

☐ Anders, namelijk ...

### 2c. Indien uw bedrijf actief is in het segment afvalwater, in welk(e) product/dienst subsegment(en) is uw bedrijf actief?

(Meerdere antwoorden mogelijk)

☐ Afvalwaterzuiveringsinstallaties

☐ Zuiveringstechnologieën

☐ Design & Consultancy

☐ Knowledge development and transfer

☐ Anders, namelijk ...

**3. Wat is de totale jaaromzet van uw bedrijf?**

- |   |   |
|---|---|
| <input type="checkbox"/> minder dan 50.000 euro   | <input type="checkbox"/> 500.000 tot 2.000.000 euro   |
| <input type="checkbox"/> 50.000 tot 200.000 euro  | <input type="checkbox"/> 2.000.000 tot 5.000.000 euro |
| <input type="checkbox"/> 200.000 tot 500.000 euro | <input type="checkbox"/> meer dan 5.000.000 euro      |

**4. Behaalt uw bedrijf omzet uit export of andere internationale handelsactiviteiten?**

- ☐ Ja *ga naar de volgende vraag*
- ☐ Nee *ga naar vraag 8 (in het tweede deel van deze enquête)*

**5. In welke werelddelen of landen heeft u de afgelopen twee jaar omzet behaald?**

(Meerdere antwoorden mogelijk)

- |  |   |
|--|---|
| <input type="checkbox"/> West-Europa             | <input type="checkbox"/> Azië                       |
| <input type="checkbox"/> Oost-Europa             | <input type="checkbox"/> Oceanië                    |
| <input type="checkbox"/> Noord-Amerika           | <input type="checkbox"/> Afrika (excl. Zuid-Afrika) |
| <input type="checkbox"/> Midden- en Zuid-Amerika | <input type="checkbox"/> Zuid-Afrika                |
| <input type="checkbox"/> Midden-Oosten           |   |

**6. Welk deel van de omzet komt voort uit activiteiten in het buitenland (export)?**

- |   |                                  |
|---|----------------------------------|
| <input type="checkbox"/> Minder dan 20% | <input type="checkbox"/> 60-80%  |
| <input type="checkbox"/> 20%-40%        | <input type="checkbox"/> 80-100% |
| <input type="checkbox"/> 40-60%         |                                  |

**7. Hoe lang is uw bedrijf al actief in het buitenland?**

(vanaf het begin dat uw bedrijf is gaan exporteren of een vestiging geopend heeft in het buitenland)

- |  |   |
|--|---|
| <input type="checkbox"/> Minder dan 1 jaar | <input type="checkbox"/> 5-10 jaar          |
| <input type="checkbox"/> 1-2 jaar          | <input type="checkbox"/> langer dan 10 jaar |
| <input type="checkbox"/> 2-5 jaar          |   |

**Deel 2 – Internationalisering**

De volgende 2 vragen zijn bedoeld om inzicht te krijgen in de internationale ambities en exportgereedheid van uw bedrijf.

**8. Wat zijn de (internationale) ambities van uw bedrijf?**

(één optie mogelijk)

- ☐ We willen graag uitbreiden naar een nieuwe markt
- ☐ We willen onze huidige internationale marktpositie versterken
- ☐ We exporteren nu nog niet, maar willen graag gaan exporteren
- ☐ We exporteren niet en willen ook niet gaan exporteren
- ☐ We hebben in het verleden geëxporteerd, maar nu niet meer

### 9. Geef aan welk antwoord het beste past bij uw bedrijf

Deze vraag betreft een "Export Readiness Assessment" waarbij wordt gekeken in hoeverre uw bedrijf voorbereid is op internationale handel.

Keuzemogelijkheden: **1:** Zeer mee oneens- **2:** mee oneens – **3:** neutraal/geen idee – **4:** mee eens – **5:** zeer mee eens (er is telkens één antwoord mogelijk)

Zeet mee oneens ←→ Zeet mee eens

	1	2	3	4	5
Op de Nederlandse markt zijn wij succesvol met onze producten/diensten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exporteren past binnen onze bedrijfsstrategie, met steun van het hoger management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ons bedrijf heeft voldoende productiecapaciteit om te voldoen aan de vraag van de exportmarkt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ons bedrijf heeft voldoende financiële middelen om een exportmarkt te ontwikkelen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Onze producten kunnen de concurrentie met andere bedrijven in de exportmarkt aan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ons bedrijf investeert in innovatie om de wereldwijde concurrentie voor te blijven	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ons bedrijf is vertegenwoordigd in handelsmissies en handelsbeurzen in het land waar we willen exporteren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ons bedrijf ontwikkelt een internationaal marketing plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ons bedrijf heeft adequate kennis over de internationale markt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wij zijn ons bewust van het bestaan van exportbarrières (bijv. importrestricties) voor onze producten/diensten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Deel 3 – Zuid-Afrika

De volgende vragen zijn gericht op de (toekomstige) handelsactiviteiten van uw bedrijf in Zuid-Afrika en de rol van de Nederlandse overheid, in het bijzonder de Nederlandse ambassade in Pretoria bij het ondersteunen van uw bedrijf.

#### 10. Wat is uw relatie met betrekking tot handelsactiviteiten in Zuid-Afrika?

- ☐ We hebben handelsactiviteiten in Zuid-Afrika nooit overwogen, en zijn ook niet geïnteresseerd.
- ☐ We hebben ervaring met handelsactiviteiten in Zuid-Afrika. *Ga naar vraag 12*
- ☐ We hebben handelsactiviteiten in Zuid-Afrika overwogen, maar nooit begonnen *Ga naar vraag 14*
- ☐ We zijn handelsactiviteiten in Zuid-Afrika aan het overwegen. *Ga naar vraag 14*

#### 11. Waarom is uw bedrijf niet geïnteresseerd in activiteiten in Zuid-Afrika?

*Ga na het beantwoorden van vraag 11 door naar vraag 16*

#### 12. Hoe lang is uw bedrijf al actief in Zuid-Afrika?

- ☐ Minder dan 1 jaar
- ☐ 1-2 jaar
- ☐ 2-5 jaar
- ☐ 5-10 jaar
- ☐ langer dan 10 jaar

#### 13. In welke vorm is uw bedrijf actief in Zuid-Afrika?

(Meerdere antwoorden mogelijk)

- ☐ Directe export naar de cliënt(en)
- ☐ Export via een agent/distributeur
- ☐ Productlicentie
- ☐ Acquisitie van een lokaal bedrijf
- ☐ Joint Venture
- ☐ Anders, namelijk ...

**14. Geef hier aan of de volgende factoren beperkend of stimulerend zijn voor handelsactiviteiten in Zuid-Afrika**

Keuzemogelijkheden **1**: Zeer beperkend- **2**: beperkend- **3**:neutraal/geen idee – **4**:stimulerend – **5**:zeer stimulerend (er is telkens één antwoord mogelijk)

Zeet beperkend ←→ Zeet stimulerend

	1	2	3	4	5
<b>Marktpotentieel</b>					
Vraag naar uw product(en)/dienst(en) in Zuid-Afrika	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Concurrentie op de Zuid-Afrikaanse markt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Politiek</b>					
Politieke stabiliteit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BEE (Black Economic Empowerment)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Economisch</b>					
Bruto Nationaal Product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Economische groei	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Wettelijk</b>					
Importheffingen en belastingen op te exporteren producten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benodigde documenten, import procedures en quota's opgelegd door ZA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wetgeving met betrekking tot contracten en relaties met Zuid-Afrikaanse partijen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Cultureel</b>					
Zuid-Afrikaanse bedrijfscultuur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culturele eenheid van Zuid-Afrika	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Beperkend*

*Stimulerend*

Er bestaan vanuit de Nederlandse overheid, maar ook vanuit de Zuid-Afrikaanse overheid en internationale gemeenschap verschillende programma's en fondsen om internationale samenwerking te stimuleren.

	JA	NEE
EVD	<input type="checkbox"/>	<input type="checkbox"/>
Partners for water	<input type="checkbox"/>	<input type="checkbox"/>
PESP/PSOM/CPA	<input type="checkbox"/>	<input type="checkbox"/>
Presidency's programme	<input type="checkbox"/>	<input type="checkbox"/>
2g@there	<input type="checkbox"/>	<input type="checkbox"/>
Senternovem	<input type="checkbox"/>	<input type="checkbox"/>
Development Bank of Southern Africa (DBSA)	<input type="checkbox"/>	<input type="checkbox"/>
Mvula Trust	<input type="checkbox"/>	<input type="checkbox"/>
Municipal Infrastructure Grant	<input type="checkbox"/>	<input type="checkbox"/>
Netherlands Water Partnership (NWP)	<input type="checkbox"/>	<input type="checkbox"/>
Independent Development Trust	<input type="checkbox"/>	<input type="checkbox"/>
South African Netherlands Chamber of Commerce (SANEC)	<input type="checkbox"/>	<input type="checkbox"/>
Wereldbank	<input type="checkbox"/>	<input type="checkbox"/>

☐ Ja *ga naaer vraag 18*

☐ Nee *ga naaer vraag 19*

**18. Bij welke organisaties heeft u welke aanvragen gedaan en wat zijn uw ervaringen met de verschillende stimuleringsfondsen/organisaties?**

**19. Welke ondersteunende activiteiten verwacht u van de Nederlandse overheid en in het bijzonder, de Nederlandse ambassade ten behoeve van internationale handelsactiviteiten van uw bedrijf?**

**20. Hebt u ooit contact gehad met de Nederlandse ambassade in Pretoria/Consulaat-generaal te Kaapstad?**

- ☐ Ja, over ...  
☐ Nee

**21. Mogen wij na aanleiding van deze enquête contact met u opnemen voor eventueel overige vragen?**

- ☐ Ja  
☐ Nee

**Mocht u nog opmerkingen/vragen hebben kunt u deze hieronder invullen.**

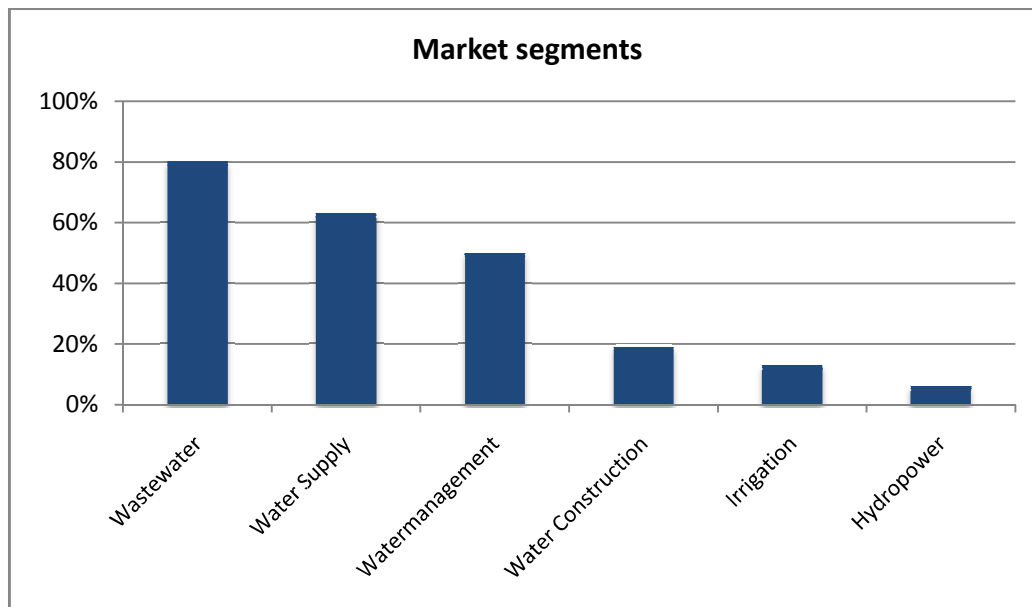
**Hartelijk dank voor het invullen van deze enquête.**



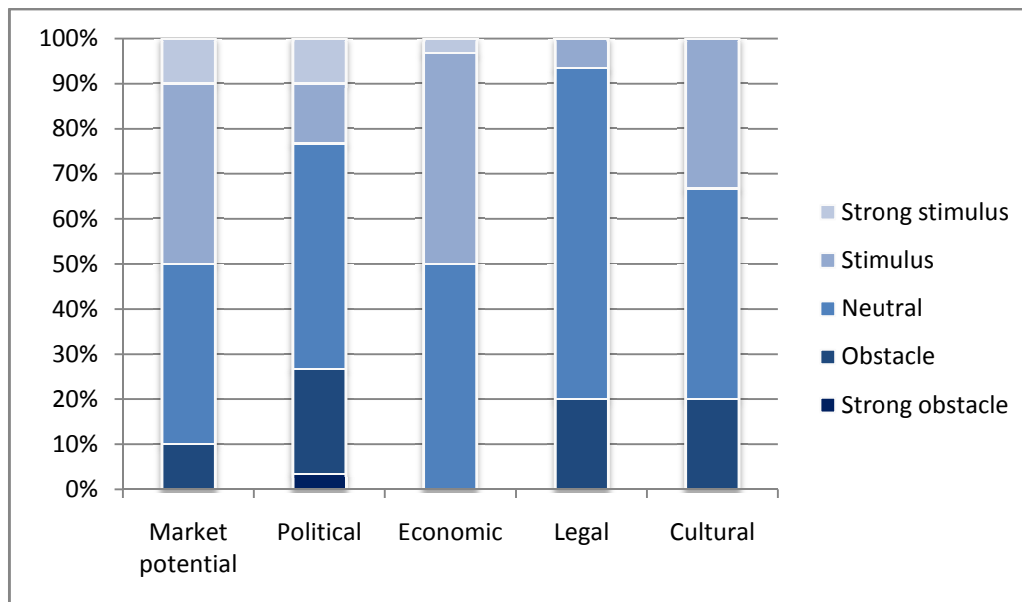


## Appendix V – Survey Results

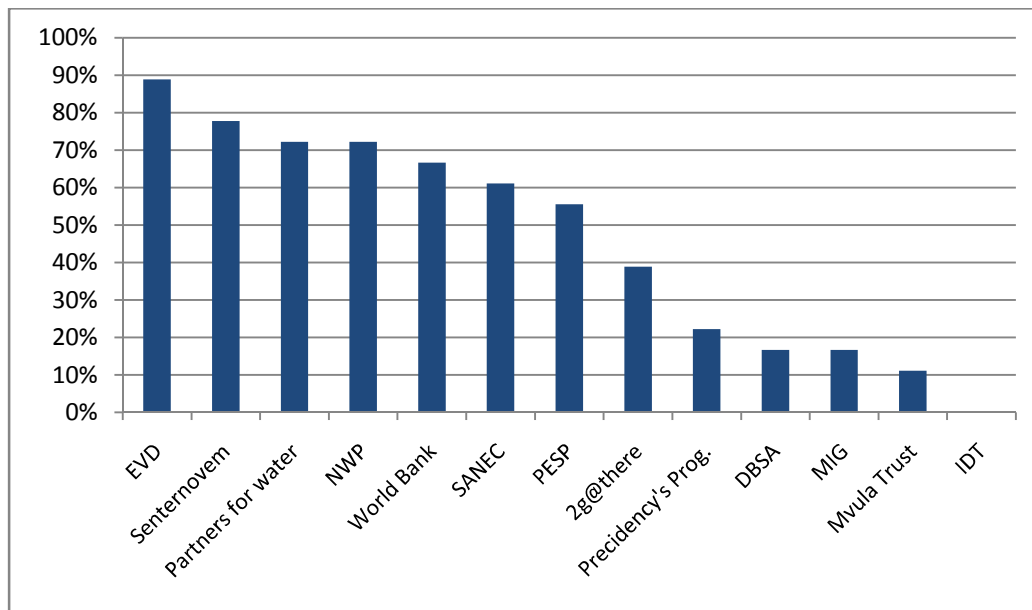
This appendix provides additional figures from the survey results.



**Figure V.1.** Percentage of companies active per water market segment



**Figure V.2.** Obstacles and stimuli for doing business in the South African (waste) water market



**Figure V.3.** Identified support organizations and programs

## Appendix VI - Support programs

In this appendix, the mentioned available support programs that can be used in South Africa and that are initiated and supported by Dutch governmental bodies (EVD, EZ and the Embassy) are pointed out.

### Partners for water

The programme 'Partners for Water' aims at contributing to solutions for international water problems by supporting the Dutch water sector developing (economic) cooperation with partners in the Republic of South Africa. The projects are aimed at supporting the water sector in South Africa by transferring mainly expertise and experience available in the Dutch water sector, in order to strengthen the performance of the particular parties in water issues. The projects have to lead to economic and social benefits in South Africa as well as to economic spin-off for the Dutch water sector.

The programme runs from 2005 to 2009 and consists of the following components:

- Policy alignment between departments of the Dutch government;
- Cooperation between government, companies, knowledge institutes and NGOs through network meetings and information exchange;
- Fund for proposals aimed at water cooperation projects abroad.

*Budget: €5.000.000 per annum (directed to 43 countries with a maximum of €750.000 per project)*

### PSI

The Programme for Cooperation with Emerging Markets, financed by Ministry of Foreign Affairs, supports:

- Joint investments of Dutch and African private companies
- Financial contribution of 50% or 60% of the investment costs
- Maximum budget per project is EUR 1,500,000

Project Characteristics are:

- Pilot project: innovative, risky, pilot scale
- Follow-up investments foreseen
- Investment in hardware and technical assistance
- Commercially viable business, but not bankable
- Contributing to the local economy: jobs, training, new technology, income, position of women and environment
- 2 calls for proposals per year

### Collective Promotional Activities (CPA)

Collective Promotional Activities consist of trade missions, collective exhibitions (stand at a fair show) and other collective promotional activities organised for Dutch companies to stimulate business activity in South Africa.

### Presidency's Programme

The President's Programme is financed by the Dutch Ministry of Economic Affairs and has as its objective to further develop trade relations between the Netherlands and South Africa through training of young South African managers and traineeships in Dutch companies. The Programme is a cooperation between JIPSA and the Dutch Ministry of Economic Affairs. The (young) South African

managers will have a three month internship active in the following sectors: design, tourism, agriculture, financial services, construction, transportation and logistics and water.

## **2g@there**

Through the 2g@there programme, the Ministry of Economic Affairs supports Dutch companies that intend to join forces in their international business dealings. Groups of companies that want to focus on opportunities abroad can obtain long-range support. This support can be trade missions, matchmaking etc.) The program is carried out by the EVD in commission of the Ministry of Economic Affairs.

2g@there focuses on the areas in which Dutch businesses can compete internationally, that is, in a promising sector. The Ministry has identified several sectors in which Dutch businesses are powerful innovators. Water is one of those sectors.

## **Programme for Companies Entering Foreign Markets (PSB)**

This programme supports small and medium enterprises with no or little export experience to enter a (practically) new market:

- Advice on internationalisation strategy
- Financial contribution of 50% of marketing costs (max. EUR 11,500, as grant)
- To be spent on: market exploration, partner selection, presentation materials, product presentation, legal advice etc.
- SME companies with < 100 employees (established in The Netherlands)
- Open to most sectors (except primary agriculture)
- Market should be (almost) new to company
- Turnover from export max 30% in last 12 months
- Applications through Dutch Chambers of Commerce, Syntens and Federations