

# **Opportunities to broaden bilateral relations between Egypt and the Netherlands in the areas of water management and agriculture**

A Scoping Exercise

## **Final Report**

March 2011

Wageningen UR Centre for Development Innovation



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between Egypt and the Netherlands  
in the areas of  
water management and agriculture

## Final Report

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Wageningen UR Centre for Development Innovation

The Centre for Development Innovation (CDI) works on processes of innovation and change in the areas of secure and healthy food, adaptive agriculture, sustainable markets and ecosystem governance. It is an interdisciplinary and internationally focused unit of Wageningen University and Research Centre within the Social Sciences Group.

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## Preface

The following report provides information based on which the Royal Netherlands Embassy in Cairo can detail its strategy for broadening the cooperation between Egypt and the Netherlands in the area of water management and agriculture. The mounting problems in the field of water resources management combined with the ambitious plans of the Egyptian government to develop the agricultural sector offer a wide variety of opportunities for the Dutch private sector and research institutes. However, seizing the opportunities will require strategic and careful planning of using the programmes and facilities available to promote Dutch –Egyptian cooperation. Strategic decisions on where to focus on and how to make optimal use of the programmes and facilities available have are still to be made by the embassy. The good part is however that the cooperation between the two countries has grown swiftly over the past years and that the Netherlands has a good name and is well appreciated for its knowledge and experiences in the two sectors.

This report could not have been written without the valuable support of the staff of the embassy in Cairo notably Dr. Tarek Morad, Deputy Head Economic and Development Cooperation and Dr. Hans van der Beek, Agricultural Counsellor.



Dr. A.J. Woodhill  
Director Wageningen Centre for Development Innovation



# Table of Content

<b>Preface</b> .....	<b>iii</b>
<b>1. Introduction</b> .....	<b>1</b>
<b>2. Summary of the scoping analyses of the water sector</b> .....	<b>3</b>
2.1 Introduction .....	3
2.2 National Water Resources Plan for Egypt .....	4
<b>3. Opportunities for the Dutch water sector</b> .....	<b>7</b>
<b>4. Summary of scoping analyses agricultural sector</b> .....	<b>15</b>
4.1 Introduction .....	15
4.2 Vision for agricultural development .....	16
<b>5. Opportunities for the Dutch agriculture sector</b> .....	<b>19</b>
<b>6. Programmes available</b> .....	<b>25</b>
6.1 Introduction .....	25
6.2 PSI Private Sector Investment Programme .....	26
6.3 2xplore Feasibility studies (formerly PESP) .....	27
6.4 Development Cooperation Matchmaking Facility (MMF) .....	27
6.5 Netherlands Senior Experts (PUM) .....	27
6.6 Facility for Infrastructure Development (ORIO) .....	28
6.7 NICHE .....	28
6.8 The Netherlands Fellowship Programme .....	29
6.9 Dutch Policy Document “Water Mondiaal” .....	29
6.10 Partners for Water Program .....	30
6.11 Netherlands Water Partnership .....	31
6.12 EU Funds.....	32
<b>Annex 1: Overview of documents analysed</b> .....	<b>33</b>
<b>Annex 2: Project Proposal for Mapping Survey</b> .....	<b>35</b>
<b>Annex 3: Reports of interviews; views, opinions and policies</b> .....	<b>43</b>
Ministry of Foreign Affairs .....	43
Egyptian-Dutch Advisory Panel Project on Water management.....	43
UNESCO-IHE .....	47
Netherlands Water Partnership .....	49
World Waternet .....	49
Royal Haskoning: .....	51
Deltares .....	51
The view of the RABO Bank .....	51
<b>Annex 4: Overview of PSI funded Projects</b> .....	<b>53</b>
<b>Annex 5: Meeting report representatives agricultural sector in Egypt</b> .....	<b>55</b>
<b>Annex 6: Participants of round table discussion on agriculture in Egypt</b> .....	<b>58</b>
<b>Annex 7: Meeting report representatives water sector in Egypt</b> .....	<b>59</b>
<b>Annex 8: Participants meeting water sector</b> .....	<b>62</b>
<b>Annex 9: Dutch involvement in the agri-food sector</b> .....	<b>63</b>





# 1. Introduction

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The following report is the result of an assignment of the Embassy of the Kingdom of the Netherlands to the Centre for Development Innovation of Wageningen UR. The report presents the findings of a scoping exercise and will provide input to the design of a strategy for broadening the cooperation in the field of water management and agriculture including clarification of the role of the embassy in view of the phasing out of the budget available for development cooperation. See annex 2 for the Terms of Reference.

The report is based on an analysis of relevant Dutch and Egyptian policy documents, research documents, web sites and on interviews with representatives of institutions and organisations of both sectors in the Netherlands and Egypt active or interested in cooperation with Egypt. An overview of documents analysed is presented in Annex 1 and an overview of the persons interviewed is presented in Annex 2 together with an overview of organisations from which information has been analysed either by contacting them or through their website.

The background for developing a strategy for broadening the cooperation between the Netherlands and Egypt is in the fact that the Government of the Netherlands considers Egypt an important and well-respected player in the region. Egypt has the largest population in the Arabic region, has a big economic potential and holds a prominent position in the Middle East Peace Process, in the Arab and Islamic World, in the African Union as well as in the international UN debate. Egypt also is acting as a spokesperson for the Arab countries in the dialogue with the EU on reforms. With Islam being a prominent theme in the political debate in the Netherlands nowadays, it is important to develop a mutual relation that is more diverse and resilient.

Bilateral trade has grown significantly in the past years and reached € 1,26 billion in 2008 making the Netherlands the ninth international trading partner. Among EU member states the Netherlands is the fifth exporter to Egypt after Italy, Germany, France and the UK. Dutch exports to Egypt concentrates on machines and transport equipment, chemical products, food products and live animals, metal ore and waste, office equipment and automation. The Netherlands is the fifth export destination with mineral fuels and agricultural products as the main products. The Netherlands ranks seventh as foreign investor in Egypt concentrating on agriculture, horticulture, water, logistics and transport and oil and gas.

Egypt nowadays belongs to the category of lower middle income countries and the time is considered right to phase out the development cooperation by 2012 and to start moving into the direction of a more equal partnership.

It is the assessment of the Embassy that in various sectors good possibilities for developing partnerships occur. Based on a long standing history of cooperation and gained expertise the Embassy has indicated the water and agriculture sectors as the most promising to broaden the partnerships and cooperation.

In Egypt the link between these two sectors is undeniable as 85% of the available water is used in agriculture. Apart from specific expertise the Netherlands has to offer in the development of sustainable agriculture and in water management the Netherlands has also valuable expertise in harmonising the development of sustainable agriculture with balanced water resources management. This holds especially true in a situation of changing precipitation and discharge patterns caused by climate change and the required adaptation of agriculture to the changing availability of water.

Both countries can learn from each other by exchanging information, developing and carrying out joint research programmes and developing joint response strategies. The added value of Dutch involvement is in transferring experiences and knowledge gained in the Netherlands and elsewhere in order to help exploring options for sustainable solutions in the Egyptian situation.

Based on the scoping analyses opportunities for broadening the relationship are identified taking due account of recent policy developments of the Dutch government and in particular of the policy document “Mondiaal Water” in which the Nile Delta is selected as one of the 5 focal delta areas. This implies that extra funding opportunities might emerge as the Dutch government aims to enhance bilateral cooperation between the selected delta areas and the Dutch water sector through targeted projects and programmes. Focal topics in “Water Mondiaal” include enhancing the sustainable use of water resources for food and ecosystems and the application of Dutch knowledge in delta management.

## 2. Summary of the scoping analyses of the water sector

### 2.1 Introduction

Egypt's population is growing at a fast rate. Projections of future population growth differ; based on different scenario assumptions and the uncertainty in the future size of the population is large. The maximum prediction of the population indicates a growth from 80 million in 2010 to 150 million in 2050.

One of the prime challenges for Egypt will be to continue to provide drinking water of good quality and to maintain basic health conditions for its growing population. Water needed for drinking, cooking, bathing and flushing can be estimated between 100 and 300 l/c/d. When also taking into account the water needs to produce food and industrial water needs the total water need will be somewhere between 1500 and 3000 litre/capita/day. Sufficient water of good quality is a key factor for a continued growth of the economy. The main question is; who will bear the costs of the investments needed in the sanitation of waste water and to increase the efficiency of water use. This is not only a matter of financial resources but requires organizational and institutional changes including a change of mindset to treat water as a scarce and highly valuable natural resource.

There are complex relations between the factors that have an impact on the water use and addressing the challenge of sustainable use requires an integrated approach in which a wide variety of actors is involved. Water management issues affect a considerable area of government policy making including economic, social, environmental, health and agricultural sectors. Water management has become more and more a matter of governance and has shifted from a pure technical science into a social science dealing with issues like stakeholder involvement and conflict management.

One of the pressing issues strongly related to water management is that of physical planning. Urban encroachment on the old fertile agriculture lands in the Nile delta is devastating and cannot be easily compensated by desert lands to maintain or even increase its agriculture productivity without large investments. Besides the negative effect on the availability of agricultural lands urban encroachment also affects the available cross sections for water flows increasing the risk for floods and impacting the quality of water due to increased pollution by waste disposal and insufficient waste water treatment. There is a need for a comprehensive national physical planning for which the Supreme council of Urban Planning and Development headed by the Prime Minister is established by the Building law 119 for 2008. The main challenges of this body include:

- Achieve a balanced urban development by focusing on the development of small and medium-sized cities, especially on upper Egypt to eradicate poverty and improve the socio-economic status within those deprived areas.
- Redefining the roles of existing poles such as Cairo, Alexandria, Port Said and others in an overall policy framework that focuses on building on the regional competitiveness potentials of each pole and how it can be integrated within the overall new urban development policy
- Increase the inhabited area from 5.5% to 15% of the total area during the next four decades through establishing new urban centres well connected with efficient road network and national public transportation systems. Each centre would work as a catalyst for the development of its surrounding and attracting a defined number of the increasing population with a clear economic basis and activities.
- Support the decentralization of management, planning and implementation.

For its future development Egypt is largely dependent on the success of the Nile Basin Initiative which is by far the most significant water initiative for Egypt. The level of development, the knowledge and organizational capacity available in Egypt creates opportunities for Egypt to play a lead role in the initiative. The NBI can however only be successful if all countries involved can benefit from the cooperation.

## 2.2 National Water Resources Plan for Egypt

The three main themes of the NWRP:

- Optimal use of available water resources
- Water quality protection and pollution abatement
- Development of new water resources ( in cooperation with Nile riparian countries)

To underline its government-wide and country-wide nature, the national water agenda is set by the National Water Council under the leadership of the Prime Minister. The Minister of MWRI is the secretary to the Council and coordinates the input of others.

The NWRP includes a strategy called 'Facing the Challenge' (chapter 5 of the NWRP) and an Implementation Plan (chapter 6 of the NWRP) that together set the scene for improving the performance of the water resources system in Egypt.

The measures included in "Facing the Challenge" are a combination of the most promising measures as described in the NWRP. These measures have been categorized according to the three basic pillars of the water resources policy of Egypt:

- Developing additional resources (Section 5.1)
- Making better use of the existing resources (Section 5.2)
- Protecting health and environment (Section 5.3)

The planning is aimed at having more water available for the various uses and improving the water quality significantly. The agricultural area is planned to increase by 35% as a result of horizontal expansion and two mega projects in Toshka and the Sinai. As a result of these projects additional living space will be created for more than 20% of the population in the desert.

The plan for meeting annual water needs in 2017 was set to develop the different conventional and non-conventional water resources in the amounts as follows: (Cairo Agenda for Action on Aid Effectiveness)

- 57.5 BCM from the Nile Water (If Phase 1 of Jongli Canal in Sudan is jointly implemented)
- 1.5 BCM Rainwater & flash floods (If flash flood Dams are constructed)
- 8 BCM Renewable Groundwater
- 8.5 BCM Agriculture Drainage Water Reuse
- 2 BCM Treated Wastewater Reuse (If corresponding wastewater treatment plants are constructed)
- 3 BCM (if adjustment to cropping pattern and reduction of high water consumption crops is implemented)
- 4 BCM Savings from Irrigation Improvement Projects

Apart from the looming water shortage pressing problems to be tackled are the salination of large areas especially in the downstream areas of the delta, and deteriorating water quality especially in rural areas posing a threat to the health situation. Other issues high on the agenda are the improvement of municipal and industrial waste water treatment and increasing the drinking water supply. The access of the population to safe sanitation facilities is planned to double from the present 30% to 60%.

The bad status of the water purification process poses a threat to the quality of the drinking water particularly in rural areas because waste water might get in contact with drinking water among others because the bad state of pipes through which drinking water is transported. This potential link between waste water and drinking water is by some considered to be a time bomb. In addition the water intake for drinking water is very susceptible for the pollution of surface waters.

From an ecological point of view three areas in Egypt deserve special attention. The first one is the area of Lake Nasser. As the main storage area for water in the country its protection is essential for a sustainable development of Egypt. The area is still unspoiled and it is assumed that the present plans and policies will preserve this status.

The second site is the Bardawil area which is an official Ramsar wetland site and a biodiversity hotspot because of its significance for breeding and migrating birds. The area will be affected by nutrient inflow that results from the El Salam development scheme in North Sinai.

The third area includes the lakes along the North Coast including Lake Brullus. In the present situation the lake is already polluted but if business as usual continues the situation will further deteriorate since pollution loads are expected to increase.

It should be realized that by implementing the planned measures presented in the NWRP, in particular the planned horizontal expansion projects, the water resources system has reached its limits of what it can support. Water availability per feddan and average cropping intensity are already decreasing. Moreover, farmers should expect that the year-by-year availability of water will be more variable than has been the case so far. To cope with this increasing variability and pressure on the water resources the water distribution network needs to be adapted and upgraded.

The challenges for integrated water resources management in Egypt are the following:

- ***Securing water for people***  
Water is essential for life and access to safe drinking water is the first requirement that has to be met.
- ***Securing water for food production***  
Agriculture is a major economic activity in Egypt. The contribution of the agriculture sector in Egypt exceeds 13% of the Gross Domestic Product (GDP) and over 30% of employment opportunities. To cope with the looming water shortage Egypt pursues an active policy to replace water consuming crops like rice with less water consuming crops.
- ***Securing water for industry, services and employment***  
To improve the welfare of the people and given the limitations in the water supply for agriculture, Egypt will have to give priority to the development of other livelihood opportunities than agriculture, in particular in the industrial and services sectors.
- ***Developing a strong institutional framework***  
Water resources management in Egypt, like in many other countries in the world, has historically been very centralized, fragmented and sector oriented. The concept of IWRM stimulates cooperation between stakeholders, decentralisation and privatisation.
- ***Creating popular awareness and understanding***  
The limitations on the supply of water and the urgent need for water quality improvement require public awareness of these issues. This awareness is needed to mobilize effective support for sustainable water management and induce the actions required to achieve changes in behaviour.
- ***Protection and restoration of vital ecosystems***  
The aquatic ecosystems in Egypt are seriously threatened by the deteriorating quality of the water. The remaining systems are limited and fragile and in dire need to be protected.

- ***Co-operation with Nile Basin countries***  
Egypt, being the most downstream country of the Nile river, will be influenced by developments upstream, in particular in Sudan and Ethiopia.
- ***Stimulating the political will to act***  
Finally, it is necessary to have political attention and commitment to ensure good decision making and the necessary investments in the development of the water resources in Egypt.

The ***National Implementation Plan*** describes how the (approximately 90) water resources management measures of the strategy *Facing the Challenge* will be implemented.

First of all a proper ***enabling environment*** is needed. This enabling environment basically consists of the national, regional and local policies and legislation that enable all stakeholders to play their respective roles in the development and management of water resources and provides for information and capacity building to facilitate and exercise effective stakeholder participation.

Secondly, the ***institutional roles*** are to be reconsidered. In a changing institutional environment the roles and functions of the organisations at different levels should be clearly described. Especially the coordination between the Ministry of Agriculture and Land Reclamation and the Ministry of Water Resources and Irrigation is crucial to match demand and supply.

Looking at the institutional aspects the experience accumulated with ***Water User Boards*** at branch canal level will be used to further develop the concept and move towards Water User Boards at district level. Water Boards at district level will assume an integrated water management responsibility. Water Boards can take over the operation and maintenance of many components (pumps, structures, canals, etc.) from MWRI. The transfer of management responsibility from the MWRI to Water Boards needs to be enshrined in a revision of Law 12 on Water Resources.

Finally, the ***actual interventions (measures)*** in the system need to be developed, planned and budgeted further.

### 3. Opportunities for the Dutch water sector

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The multitude of problems related to its future water management offer a wide variety of opportunities for the Dutch water sector. Expertise is required to improve both the quantitative as well as the qualitative aspects of water management including expertise in the production and distribution of drinking water, in water sanitation, in rural water management, in increasing water efficiency in agriculture and food production, in ecological restoration and in adaptation measures to climate change impacts. Opportunities are also emerging in improving the skills and knowledge in the water sector through training and capacity building and in advisory services in organizational and institutional reform processes.

The water projects formulated by the Egyptian authorities and supported by the embassy remain to be important topics. These are:

- Coordination of the implementation of the National Water Resources Plan;
- the Egyptian-Netherlands Advisory Panel on Water Management (APP);
- Integrated Irrigation Improvement and Management Multi donor project where the Dutch support is focusing on establishing user organisations and capacity building of government agencies;
- Setting up Water Users Organisations in Fayoum;
- The West Delta Public Private Partnership project.(together with the World Bank);
- Support to the Institutional reform Unit of the Ministry MWRI.

An overview of potential funding sources to address the recommendation presented below is presented in chapter 6 “Programmes available” and in particular in the paragraph 6.10 that is devoted to the Partners for Water Programme and where a list of selected topics proposed to be funded through the programme is presented.

#### *Organisational aspects of the future cooperation*

It is highly recommendable that the future cooperation between the Netherlands and Egypt will build upon the strong and unique relation with the Egyptian Ministry of Water Resources and Irrigation shaped through the “Egyptian-Dutch Advisory Panel on Land Drainage” (APP) particularly in the fields of policy making and strategy development. The work of the Panel however goes beyond the advisory services provided to the Egyptian Ministry of Water Resources and Irrigation; according to an own assessment the panel has generated over 150 M€ business over the last more than 30 years

#### *Recommendations*

To increase the knowledge and appreciation for its successes and achievements it is strongly recommended to improve the dissemination and promotion of the results of the work of the APP. The possibility to use the APP to broaden the cooperation by using the APP as a platform for business opportunities without jeopardizing the work of the proposed Egyptian Dutch Water Platform should be given consideration. The Panel members made clear however that, when companies (commercial interests) had been dominant on the table during Panel Meetings, many of the subjects dealt with at present would not have been discussed.

Strengthening the cooperation between the Netherlands National Water Partnership and the Egyptian Water Partnership is considered also an important prerequisite for strengthening the cooperation between the two countries.

For a number of countries, including Turkey and US, the Netherlands Water Partnership has established a “Water Platform” aiming to coordinate the promotion of the Dutch water sector in that specific country. It is recommended to assess the possibility of establishing an Egyptian Water Platform to actively promote Dutch water expertise in Egypt through missions, events and information exchange activities. Such a Dutch Egyptian Water Platform could also play an active role in enhancing cooperation between Dutch and Egyptian companies and in establishing Egyptian- Dutch joint ventures to jointly work not only in Egypt but across the African continent. Concrete activities include the distribution of a news letter to the Egyptian

water sector through which the Dutch water sector can promote itself. Establishing a data base of Egyptian companies working in the water sector can help to facilitate direct contacts between Dutch and Egyptian water companies. See also chapter 9 for programmes available to support the cooperation between the Dutch and Egyptian water sector.

### *Securing water for people*

This is a top priority of the NWRP and is a prerequisite for sustained economic growth and well-being of the population.

Egypt has a great track record in water management. It has always succeeded in meeting the needs of its growing population and this is a great achievement in itself especially when taking into account that the population in the Nile Delta has grown from 35 to 73 million in thirty years. This growth would not have been possible without a well-developed water management system and efficient government agencies. With the continued growth of the population business as usual is however not an option; difficult decisions need to be taken including tackling the problem of water allocation, water pricing, exploring alternative sources for water, increasing the efficiency of water distribution and limiting the losses in the distribution network and assessing the possibilities of introducing water pricing.

### *Recommendations*

The cooperation between the Dutch drinking water sector and the Egyptian drinking water sector is not intense. At the European scale Dutch drinking water companies are relatively small and have a narrow international focus. Opportunities for the Dutch drinking water sector lay in working together with water boards and government institutions focusing on supporting the elaboration of policies, the design of awareness raising strategies to increase the awareness of the Egyptian population about the increasing scarcity of water and in improving the organizational aspects of drinking water supply and water treatment.

In view of this the recently established cooperation between the NL and Egypt in improving the organisational aspects of drinking water supply and treatment is an important step. Facilitated by the Panel, World Waternet together with "Brabant Water" and the Waterboard "Maas and Aa" started cooperation to establish a so called "water cycle" organisation in two pilot areas in Egypt. To this effect the three organisations signed a MOU in March 2010 with the Ministry of Water Resources and Irrigation and the Holding Company for Water and Waste Water.

Policy development and awareness raising programmes to reduce the use of drinking water is a topic in which the Netherlands can provide knowledge and support specially because water is currently available free of charge to a number of groups which makes awareness raising about the value of water the more urgent.. It is recommended that this topic be developed into a government-wide policy in which Dutch water organisations can provide knowledge and transfer experiences.

The question about the allocation of water is becoming increasingly important. Allocation is now still reasonably manageable, but many complex issues are looming on the horizon. Should allocation be based on opportunity costs? Should cost recovery and water pricing be allowed to play a role? A long-term vision on this theme is urgently required to affect a gradual move towards a different method of water distribution. Here also the Dutch drinking water sector can provide valuable knowledge.

Loss of drinking water in the supply network is an important problem and repairing the leaks in the distribution network contributes significantly to reducing the water shortage. Next to leakage detection equipment also pumps and water meters are needed to improve the efficiency of the distribution of drinking water and companies that can provide this equipment could actively be contacted and promoted.

It is recommended that the Netherlands Embassy in Egypt together with the NWP organizes a seminar where representatives of the Egyptian drinking water sector and the Netherlands drinking water sector discuss the possibilities in strengthening and broadening the cooperation on the topics mentioned above.



### ***Securing water for food production***

Agriculture is a major economic activity in Egypt not only to produce food for the domestic market but also for the export market.

#### *Recommendations*

Egypt will soon embark on the elaboration of a National Program for rehabilitation of the irrigation and drainage networks which will result in a Master plan. This offers opportunities for Dutch science and consultancy organizations to get involved and provide knowledge.

Support can also be provided to the design of strategies that link water distribution/availability to water pricing for the newly developed agricultural areas based on the experiences of the MABA Farm. The strategy should include the exploration of further possibilities for public-private investments in the development of new agricultural areas.

The Netherlands can provide knowledge and research capacity as is indicated in the related paragraph in chapter 5 on agriculture.

### ***Developing a strong institutional framework***

According to the NWRP water resources management in Egypt has historically been very centralized, fragmented and sector oriented. The concept of IWRM stimulates cooperation between stakeholders, decentralization and privatization.

Addressing the fragmentation of water resources management is surely one of the bigger challenges in securing sustainable water resources management for the future. This counts especially for securing a strong and lasting cooperation between the agricultural and water management sector but should also include cooperation with the environmental and public health sectors.

#### *Recommendations*

The Netherlands possesses valuable knowledge to offer to integrate water management into the development of the agricultural sector focusing on securing water quality and improving the efficiency of water use.

Although responsibilities in water management in the Netherlands are also scattered across various actors the Netherlands has a good tradition in planning integrated water resources management through effective cooperation between the various actors, including several Ministries, provincial authorities and water boards. The planning process is supported by active stakeholder involvement processes that help to increase society wide support for the implementation.

In this respect it is important to note that according to information obtained during the interviews Egypt will soon embark on the elaboration of a new strategy on water use. This offers opportunities for the Dutch water sector in continuation of the support provided to the elaboration and implementation of the National Water Resources Plan.

Government to Government Programmes offer good opportunities to transfer Dutch experiences to Egypt. Continued support to the to the Institutional reform Unit of the Ministry MWRI is recommended.

In line with the need for integrated land and water management planning a strong physical planning system plays a crucial role in the Dutch planning system. Also Egypt is aware of the relevance of sound physical plans as a bases for integration of land and water use. In 2008 the Supreme council of Urban Planning and Development headed by the Prime Minister was established to secure the required integration.

Although it is clear that the Dutch system cannot simply be transferred to Egypt as it would require a significant reshuffling of responsibilities, it is worthwhile to investigate into the strengths and weaknesses of the Egyptian planning system as a base for recommendations for a stronger mandate of the physical

planning sector. Support to increasing the capacities of the physical planning in Egypt can be provided through the NICHE programme or through government to government programmes.

During the meetings with the Egyptian water sector it was noted that in addition to the on-going project on the establishment of water user boards in Fayoum water user organisations are also needed in the oases. On the long term the effectiveness and success of the water user boards is however strongly related to the attitude and policies of the Ministry towards participatory decision making and in this respect there is space for improvements through capacity building and institutional change processes. Dutch experiences with the organisational aspects of water boards are very useful in strengthening the position of the water user boards in Egypt. The Dutch Union of Water Boards has shown interest to continue its involvement in the establishment of water user boards.

### ***Research, training and capacity building***

Continued and strengthened cooperation between research and training institutes in the two countries will help to bring the Dutch water sector in a competitive angle. The private sector indirectly benefits from the exchange of knowledge as is shown for instance by spin off of the huge network of alumni from the UNESCO-IHE and courses from other Dutch knowledge institutes.

The cooperation that various institutes in Egypt and the Netherlands have established in the past provides a base for future intensification.

The Training Centre of the Ministry of Water Resources and Irrigation is the UNESCO Regional Centre for Training and Water Studies and cooperates with the IHE UNESCO. The Centre has an experienced and committed staff and offers excellent training facilities.

Deltares has an MOU with the National Water Research Centre of Egypt in the field of research and capacity building. The cooperation is not intense due to the lack of funds.

Recently the NWRC confirmed it's over 30 years working relationship with the Environmental Sciences Group of Wageningen UR in a MoU, and in the past the NWRC cooperated with RIZA, for mostly drainage-related activities through the Panel.

### ***Recommendations***

Transfer of knowledge should not just be a matter of providing trainings but should be an integral part of any project carried out to secure that project results are more sustainable and useful. During the meeting with the representatives of the water sector in Egypt some noted the lack of sustainability of project results because transfer of knowledge and training throughout the project implementation process was not given due attention.

According to the information obtained during the interviews in Egypt there is a need to increase the capacities and knowledge in project development and project implementation to strengthen the implementation of the National Water Resources Plan. This issue could also be included as a topic in the NICHE programme and offers opportunities for the involvement of education institutes in project management.

The NICHE programme of the Dutch government offers opportunities for increased capacity building activities and for strengthening the cooperation between knowledge centres in the Netherlands and Egypt. The Netherlands Embassy in Egypt has indicated "training of trainers" in integrated water resources management, and waste water treatment as possible topics for the NICHE programme but a final decision on the topics to be supported through the NICHE programme has to be taken yet. Given the problems Egypt is facing and the priorities of the NWRP increasing the capacities in balancing the need for water for food and ecosystems is important given the state of the natural environment in the delta.

Another possible topic for capacity building would be in enhancing the capacities and knowledge in integrated river basin management planning. While the Nile is the "life line" for Egypt a comprehensive and

integrated planning for the management of the Nile is lacking. Dutch knowledge in integrated river basin management acquired during decades of integrated basin management planning could be extremely valuable for the design of a long term management vision for the Nile River and for the integration of land and water management.

Next to the NICHE programme, that focuses on capacity building and strengthening the cooperation between knowledge institutes, the cooperation between government bodies in both countries can be strengthened through government to government programmes and EU programmes.

Topics mentioned by Egyptian partners to build capacity in include:

- Human resources management
- Strategic planning methodologies
- Improvement of coordination between sectors.
- Capacity building in monitoring and evaluation techniques

It is recommended to continue and increase the cooperation in research activities particularly in the field of enhanced water efficiency (water harvesting) and ecological restoration based on the MOU between the National Water Research Centre and the Environmental Sciences Group of Wageningen UR. Other priority research topics to be pursued through this MOU include; how to limit the pollution of drainage water by improving purification and supporting re-use of drainage water. Proposed research activities also include the use of surface purification in artificial wetlands with helophytes and the introduction of controlled drainage systems. Inviting PHD students from Egypt to Wageningen UR is a viable option to increase the cooperation.

### ***Water quality management***

It is clear that improving water quality management will be an important challenge as it impacts directly the quality of life and the possibilities to produce good quality food. Formally the Ministry of Water Resources and Irrigation is responsible but it is unclear how the process of monitoring, inspection and sanctioning is working in practice and who is responsible for what. ("Who is pulling the strings?"). Institutional reform might be needed to strengthen the efforts to protect the water resources and improve quality management. Much of the needed legislation is present, but implementation lags behind for several reasons among which the conflicting interests between (water) polluters (water) consumers and the enforcement powers.

### ***Recommendations***

In the NWRP, priority has been assigned to the need for large scale water treatment plants. A white spot in the planning for which the Netherlands could play a role is the development and introduction of small scale water sanitation technologies which will be crucial to improve the water situation in rural areas.

The design of a sanitation strategy for rural areas has a high priority for the Holding Company. Rural areas are only to a limited part connected to a sewage system. Also options for the re-use of treated waste water for various purposes (Aqua culture? Agriculture/floriculture?) need to be assessed.

Exploration of the possibilities for financial support for the design and building of small scale sewage water treatment for rural areas in cooperation with Ministry of Water Resources and Irrigation and the Holding Company is recommended. The investment plan of the Ministry of Housing might offer opportunities to fund these activities.

### ***Protection and restoration of vital ecosystems***

Linked to the aspect of water quality management is the issue of safeguarding and restoring vital ecosystems. Environmental problems have been increasing at an accelerating pace largely as a result of the country stretching its limited resource-base to accommodate the economic needs of its rapidly

growing population. As for the sustainable management of natural resources, Egypt is obliged to declare 15% of its land as protected area by 2017. (Cairo Agenda for Action on Aid Effectiveness)

### *Recommendations*

The environmental dimension should play an important role in the future cooperation not only in view of the local environmental and health conditions in Egypt but also in the light of the ecological footprint of the Netherlands. Sustainable water use in the production of vegetables, fruits and other food products to be exported is an essential requirement for reducing the ecological (water) footprint of the Netherlands.

Little is known about the ecological aspects of the flood plains and wetlands of both the Nile valley and the Nile delta and not much emphasis is given to this subject in the National Water Management Plan. The European approach to River Basin Management as laid down in the EU Water Framework Directive considers the protection and restoration of the ecological quality of water systems as fundamental to securing sustainable water resources management. Since the majority of the rivers in the Netherlands are heavily modified by human interference the Netherlands has developed significant knowledge on how to design and implement plans to restore the ecological and hydrological functioning of its rivers to support water quality improvement, to restore key biodiversity and to enhance flood safety.

The Netherlands can help to develop a strategy aimed at improving the ecological and environmental conditions of the Nile and its floodplains as part of the introduction of integrated water resources management linked with climate change adaptation measures. This includes also investigations in enhancing the role of the Nile as an ecological corridor (South-North). (See Egypt State of the Environment Report)

Lake Brullus is an example of a heavily polluted lake where the ecological values are under severe stress. The Netherlands can help to design an integrated approach to tackle the environmental problems of the lake.

A potential source for funding activities under this topic is the new Partners for water Programme.

### ***Co-operation with Nile Basin countries***

Egypt, being the most downstream country of the Nile river, will be influenced by developments upstream, in particular in Sudan and Ethiopia. The success of the Nile Basin Initiative is critical for securing Egypt's future water needs and the Netherlands can offer its experiences from the Rhine and Meuse to support Egypt in achieving its objectives in the Nile Basin Initiative.

### *Recommendations*

Given the fact that both the Netherlands and Egypt are down stream countries of big rivers we share the experience of establishing cooperation mechanisms with upstream countries and in mediating water management agreements with those upstream countries. A good example is the establishment and effective work of the Rhine Commission and the role the Netherlands has played to close various agreements on water quality management and flood prevention strategies with upstream countries through the Rhine Commission. Also from the less successful example of the Meuse lessons can be learned for the Nile case.

### ***Climate change***

The NWRP gives little attention to the problems caused by climate change. That climate change will have an impact on water management in Egypt is inevitable and tackling this problem offers opportunities for cooperation between the Dutch and Egyptian water sector in research and designing adaptation and mitigation measures. Besides the fact that sea level rise will impact the flood security of coastal areas the sea level rise will also increase the problem of salt intrusion. Both problems are also eminent in the Netherlands and the Netherlands has gathered valuable knowledge through research and the design of adaptation strategies to deal with the problems of sea level rise.

Respected knowledge is available in DELTARES and the water boards in the Western part of the Netherlands as well in various government agencies and research institutes like Wageningen UR and Delft University.

#### *Recommendations*

It is recommended to organize seminar/conference to exchange views and strategies on how to address this issue both in the Netherlands and in Egypt. A possible topic for cooperation is to work jointly on the elaboration of an action plan to address the impact of the climate change on the rising sea level for the Nile delta. The new Partners for Water Programme offers funding opportunities.



## 4. Summary of scoping analyses agricultural sector

### 4.1 Introduction

The contribution of the agriculture sector in Egypt exceeds 13% of the Gross Domestic Product (GDP) and offers over 30% of employment opportunities. Meanwhile, about 15% of the total population in Egypt live in rural areas, where poverty prevails. About 70% of the poor and very poor live in rural areas and of the 25% of the population living in upper Egypt, about 66% are extreme poor, 51% poor and 31% near poor . (CAA Situation Analyses)

The last two decades have witnessed increased fragmentation and scattering of agricultural holdings which is not favourable for the development of the agricultural sector in Egypt. The average area of the holding decreased from 6.3 feddans in 1950 to 2.1 feddans. The percentage of dwarfish holdings (less than one feddan) increased to 43% of total agricultural holdings in 2000, from 21.4% in 1950. Because of this fragmentation, an estimated area of 12% of the most fertile agricultural lands is lost as boundaries and partitions between holdings, a situation that weakens the ability to modernize agricultural activities and increase productivity. (CCA Situation Analyses)

The present agricultural strategy is not based on self-sufficiency but on food security, using Egypt's competitive advantages (APRP, 1998). Food self-sufficiency is the ratio between the production and consumption. Maximizing food self-sufficiency in 2017 through measures would result in the production of large quantities of basic staple grains, which are relatively low-value in the international market. Thus, food policy focuses on making the best use of all productive resources, which for agriculture include: land, water, labour, climate and the proximity to vast export markets by growing crops for which it has a comparative advantage (NWRP, 1999a).

This policy has brought Egypt in a position to produce higher value food crops (mainly fruits and vegetables) and non-food crops (e.g. flax and cotton) and trade them to purchase staples and have additional revenue and employment as well. It is estimated that the production value for vegetables and fruits each amounts to 2 billion euro, and of flowers, plants and herbs to 60 million euro. Besides for the large domestic market, the export is significant with the EU as most important trade partner. Largest export crops are orange (850,000 ton), potato (455,000 ton) and onion (244,000 ton). Grapes and strawberries are among the upcoming exporting commodities.

Agriculture in Egypt is largely dependent on the Nile water supply, using 85% of the available water. In order to provide the growing Egyptian population a future perspective, Egypt is expanding its agricultural area. Large (mega) projects are being developed in the Egyptian desert. As a consequence the existing (subsistence) agriculture in the Nile valley and Delta has to cope with less water in the future. Combined with building activities, the use and availability of precious agricultural land in the Delta is very much under threat.

To compensate for the loss of agricultural lands and to keep pace with the needs of the growing population Egypt embarked on expansion of irrigated agriculture with about 40% in new areas (Toshka, Salam, etc). New and modern large and medium scale agriculture is being developed in these new areas with participation of the private sector for investments. Its water supply is partly foreseen by new water resources, but water will also be extracted from the Nile causing increased pressure on the water availability for the existing agricultural areas. How the farming community will accommodate such water scarcity situation is still uncertain and the issue is "urgent, but not acute". As a result of these projects additional living space will be created in the desert for more than 20% of the population.

The development of these new agricultural lands will however not be sufficient. Agriculture in the Nile Delta is still very traditional, however with very high crop yields. Nevertheless, action needs to be taken to improve productivity and water use efficiency in the Nile delta as well including more efficient irrigation, more re-circulation of drainage water and/or development of new, less water consuming agricultural crops.

Fish is an important source of animal protein and relatively widely available in Egypt despite the fact that production has decreased over the past years due to among others over fishing and pollution of coastal lakes. The Nile Delta coastal area is habitat-rich and provides 65% of Egypt's total fish production. This area will be subjected to a number of impacts due to climate change, with temperature rise and saline water penetration caused by sea level rise converting current brackish lakes into shallow saline lagoons and bays.

### ***The need for innovations***

Agriculture is the first sector affected by drought and increased scarcity. The agricultural private sector therefore needs to be challenged to develop innovative new agricultural production systems that require less water. Experience in Spain indicates that high water costs stimulate farmers to develop innovative high production farming systems (provided that the water supply security is high). The question for Egypt is: will its return on water develop in the direction of other Mediterranean countries, such as Lebanon, Jordan and Algeria with reduced availability of irrigation water? Or will innovations in the sector move the returns on water in the direction of experiences in Spain and The Netherlands.

## **4.2 Vision for agricultural development**

The Strategy of Sustainable Agricultural development 2030 of the Ministry of Agriculture and land Reclamation of Egypt includes an evaluation of former strategic plans and a few lessons learned and relevant for this report are presented here:

- In spite of the great limitations on water resources, all the plans that were based on proper water use in previous strategies did not lead to the establishment of an agricultural environment heading clearly toward the rational utilization of irrigation water, a precious agricultural resource;
- Although a clear policy of protecting agricultural lands has been applied throughout and for a long time, agricultural land abuses for urban sprawl and other uses still continue;
- Precipitous economic liberalization was characterized by the defective management and organization of markets, and resulted in market deformities, bottlenecks and logjams that were aggravated by monopolies and middlemen who maximized their profits, but proved detrimental and injurious to producers and consumers alike, highlighting unfair distribution of development benefits;
- Coordination between ministries and institutions involved in agricultural activities must be considered a highly important matter that needs to be optimized in order to attain the goals of development;
- Contradictions in the development policies of fish authorities led to the creation of many restrictions that limited any expansions in fishery investments.

The Strategic Goals for the development of agriculture are the following:

- Sustainable utilization of natural agricultural resources;
- Improvement of the agricultural productivity of both land and water;
- Realization of a higher degree of food security with regard to the strategic commodities;
- Strengthening the competitive ability of agricultural products at national and international markets;
- Improving the agricultural investment climate;
- Improving the standard of living of the rural population and reducing the rates of rural poverty.

With respect to the investment climate the strategic plan states the following: Although the agricultural investment climate had improved due to the recently promulgated rules and regulations, there are still many restrictions and problems that are weakening their positive effect.

The possibilities for farmers to take loans and invest in innovative production techniques are still limited. In order to further improve the climate for agricultural investment, this strategy for agricultural development until the year 2030 emphasized the need for Reforming and Strengthening the Institutional Structures of



the Agricultural Sector. The institutional structure of the agricultural sector is characterized by a high degree of complexity and redundancy, as well as the overlapping of some of its aspects in some areas while in other areas they are totally deficient and wanting.

Further strategic goals include:

- **Land**  
Full property rights on lands should be established as this will mean the possibility for buying, selling, leasing, etc., which is essential for maximizing the use of the land;
- **Institutions**  
Liberalisation and privatisation of agricultural institutions would lead to overall employment increase after an initial transition. Private associations and rural organisations remain crucial to public/private policy dialogue and to information;
- **Pest management**  
Pesticides are an integral part of the input package for all crops. The full liberalisation of pest management services to all crops, including and especially cotton, will eliminate the more than LE 125 million in subsidies that the GOE currently provides for cotton pest control. Paying the full costs of pest control will move farmers towards using pesticides more judiciously;
- **Horticulture**  
Agriculture exports account for almost 25% of total exports, yet only 5% of horticulture production is now exported;
- **Rice**  
Rice production is critical for the environment of the Northern Delta. The NWRI estimates that 700,000 feddan of rice cultivation are required annually in order to prevent salt-water intrusion and to maintain soil quality. Rice is the third largest crop in terms of cultivated area and total production after wheat and maize;
- **Sugar**  
Sugarcane and sugar beets are grown on a contract basis, so the area planted to these crops depends on the processing capacity, and the yield. The area with sugarcane is planned to remain at the present level of 300,000 feddan (25,000 in Sohag, 170,000 in Qena, 80,000 in Aswan and 25,000 in Menya). Cane yields are the highest in the world.



## 5. Opportunities for the Dutch agriculture sector

Egypt's plan to expand the export of various agricultural products including flowers, herbs, vegetables, fish and fruit offers opportunities for the Dutch food, agriculture and logistical sectors. A prerequisite for the planned increase of the agricultural production and for enhancing the sustainability of agriculture are institutional and organisational improvements of the agricultural sector including:

1. Setting up producer organisations to improve production, handling and marketing of agricultural products and to enable knowledge exchange;
2. Encouraging the adoption of public-private financing models for small projects especially in rural areas;
3. Introducing market incentives that change producers' behaviour.

In view of the development of the agricultural sector there are generally spoken three problems; water scarcity, the availability of nutrients (too expensive) and the use of pesticides (negative environmental impacts).

### *Agricultural water management*

The decreasing availability of water for all sectors including for the production of food requires a paradigm shift from superfluous water availability with drainage of excess water to a situation where every drop of water counts. The Dutch and Egyptian agriculture face similar challenges; where the focus of Dutch agriculture is on increasing the return per hectare, Egyptian agriculture needs to focus on increasing the return per drop of water. The exchange of experiences and research outcomes can support the development of sustainable agriculture in both countries.

### *Recommendations*

Dutch research institutes can provide support to the much needed innovation process of the Egyptian agriculture to succeed in using less water to produce more income. Through various research programmes at among others Wageningen UR strategies to improve drainage and irrigation techniques and to improve water efficiency have been developed and can further be developed in close cooperation with Egyptian research institutes. This would build upon the long standing cooperation that exists between Wageningen UR and relevant Egyptian institutes confirmed in the recent MOU between the Environmental Science Group of Wageningen UR and the Egyptian National Water Research Institute. .

The increased problem of salination aggravated by the intrusion of salt water in the delta as a result of sea level rise adds to the looming water crises. The Netherlands is facing similar problems in the western part of the country and cooperation with relevant Egyptian research institutes offer opportunities for the development of joint response strategies.

The need to improve water use efficiency offers also opportunities for Dutch technology providers. (The present return on water in agriculture in Egypt is about 0.25 \$/ m<sup>3</sup>, compared to 1.27 \$/ m<sup>3</sup> in the Netherlands). From 2007 to 2009 the Dutch based company DACOM implemented the "On Farm Irrigation Management Improvement Egypt" which resulted in an increase of potato yields of 8% and a reduction of fertilizer and water use in strawberries of 48%.

In addition to what is mentioned above, research in maximizing efficiency of water use is needed. Options include: introduction of NL greenhouse systems and research into new crops and varieties. The possible design and introduction of incentive models for efficient water use should be investigated. A possibility is to support setting up model farms where efficient water use and on farm waste water treatment systems are tested.

Last but not least it is recommended to link the development of farm lands in the desert ("garden for EU") with the introduction of an incentive system that stimulates investments in water savings techniques. (e.g. water pricing)

### ***Improving environmental production techniques***

Water quality (and solid waste) is becoming an increasingly hampering factor for the development of the agricultural sector. Key for further growth of the Egyptian agricultural sector is therefore to invest in sound environmental production systems and to improve the situation of the workers in the sector. When it comes to environmentally sound production efficient water use is one of the dominant factors but next to that also the use of pesticides and other chemicals in the production process. Egypt could focus on these aspects and create a competitive edge compared to other upcoming export nations for these products. Improving the environmental performance of the agricultural sector needs to be part of the Triple P concept and standards of Corporate Social Responsibility.

#### ***Recommendations***

The Netherlands can help Egypt to work more in accordance with the triple P concept and introducing the standards of CSR. Triple P refers to a comprehensive approach in marketing embracing the social, ecological and economic aspects of the company, product or service. The Netherlands has the possibility to support Egypt to introduce the triple P concept across the agricultural sector through capacity building, training, the introduction of codes of conduct and the provision of institutional advisory services.

As part of the Triple P approach companies have a responsibility to support improving the water quality and to support the introduction of quality management of drainage water at farm or village level. This is not only important from an environmental and health perspective but it is also important in view of increasing the options for the reuse of water. The introduction of small scale purification plants is a crucial step towards improving water quality in rural areas. In addition natural water purification is an option through the creation of artificial wetlands and it is recommended testing this option in a possible pilot research project with IHE and Alterra.

Further opportunities in improving the water quality lay in the promotion of integrated pest management and support to the introduction of ecological production certification schemes. The course that is offered by Wageningen UR on IPM could be introduced in Egypt while the Ministry of Agriculture could be supported in setting up an incentive scheme for farmers that want to adopt ecological production methods.

Another element in improving the environmental performance of the agricultural sector in Egypt is improving agricultural waste management and the introduction of the use of bio-fuels and other beneficials. Currently 3 million tons of rice straw is burned in the field, creating both an economic waste and an environmental problem (air pollution; smog formation). There is no coherent and tuned strategy on what to do with agricultural waste and by products and the Netherlands can provide support based on experiences gained in ongoing BOCI projects.

### ***Rural development***

The increasing fragmentation and marginalization of farms in the Nile Delta, the need to increase food production linked to the expected decrease of water availability, the accelerating environmental problems and the limited availability of fertile agricultural lands requires innovations in agricultural systems. The problems are complex and multi layered and call for multi level response strategies including the introduction of integrated land and water management experiences from the Netherlands.

A comprehensive strategy for rural development that integrates the development of agriculture together with the protection of the environment and alleviation of the position of the rural poor is urgently needed. Based on the good and frequent contacts with the Egyptian Minister of Agriculture and Land Reclamation and his appreciation for the proposed Incentive Based Planning of Rural Development LEI and partners believe to have a competitive advance in the tendering procedure. The current joint venture that will tender for this project includes DLG (Dutch Service for Land Use), RABO Bank and various institutes within WUR including LEI, PRI, Alterra and CDI.

Because of increasing land fragmentation and decreasing availability of agricultural land agriculture in the Nile delta is under severe stress. With the current pace of population growth a big share of the Delta grounds will be used for housing. A possible way to counteract this trend is to design a Masterplan for the delta that formulates a coherent and comprehensive answer to the multitude of problems including: poverty, housing and physical planning, water use and water management, restructuring agricultural organisation, salination and water quality issues and infra-structure. This Masterplan should include:

- Design of an incentive programme to stimulate people to move to the new agricultural areas.
- Changing the inheriting system is non-negotiable. Instead introduction of lease instead of ownership could be a solution. An option could be in selling shares instead of land.
- Proposals for increased employment for the growing population in for instance the agri-food sector.
- Proposals for increasing farmers' income.
- Introduction of integrated water resources management including addressing the impacts of climate change ( see under cross cutting issues)
- Proposals for ecological and environmental restoration

It is recommended to embark on a pilot project in a selected area that will produce a Masterplan for rural development and an action plan with key projects for rural development. A good example is the 1100 village plan. The Masterplan should link rural development with the establishment of cooperatives; start with the good working ones. It is recommended to source interest of Egyptian ministries to embark on this pilot.

### ***Metropolitan agriculture***

The development of agro-logistical parks and metropolitan agriculture is generally considered a good option to increase the food production in Egypt. The Netherlands can provide valuable support to the development of metropolitan agriculture and agro-logistical parks through research and public-private partnership initiatives.

#### *Recommendations*

Wageningen UR has gathered valuable knowledge on the possibilities of the development of metropolitan agriculture which are of use for the development of metropolitan agriculture in Egypt.

### ***Development of the dairy sector***

Egypt's dairy industry is underdeveloped, with small-scale producers dominating the sector. Many dairy farmers produce mainly for their own consumption, with any surplus production sold to extended family members and the local community. However, a number of larger-scale farms are slowly starting to appear and it is expected that investment in the dairy sector and improving production will pick up in coming years, driven by strong demand on the back of rising incomes. An increase in fluid milk production of 9.3% to 2014 is expected.(Egypt agri-business report 2010)

Unpasteurised milk still dominates the largely traditional dairy sector, with most consumers receiving milk delivered straight to the home in glass bottles. It is estimated that around 75% of Egyptians consume milk that has not been packaged or pasteurised. However, this figure is dropping rapidly as health and hygiene concerns, as well as rising incomes see more consumers convert to higher-value packaged milk products.

#### *Recommendations*

The development of the dairy sector offers opportunities for the Dutch dairy sector. Establish links with relevant businesses (Koninklijke Friesland Campina, dairy products) and institutes ( Wageningen UR) to promote cooperation and investments in Egypt.

### ***Institutional and organisational aspects***

The performance of agriculture in the Nile delta is under stress and support is needed to increase the outputs and economic viability of medium sized farms ( 10-50 feddan). Relevant questions to be answered include; what are the critical success factors for increasing the economic viability? And what would be the best model for success. Success factors include; reduction of post-harvest losses, packaging and establishment of service centres for groups of farms. Improved cooperation in storage, processing, distribution and marketing are also critical. Other important elements for improving the economic viability of the small and medium sized farms include to:

- Improve functioning of local markets.
- Develop the SME farms to contribute to export.
- Introduce small scale technology to reduce labour costs

#### ***Recommendations***

Currently there are 6000 cooperatives in Egypt but the engagement of the members is very limited. A thorough analysis of existing co operations is needed as bases for improvements. Institutional hurdles and blockades towards the establishment and functioning of co operations need to be identified. Possible actions include starting a pilot project in establishing producer cooperations with support of a Dutch partner (e.g. ZON or Greenery?) Also a program aimed to increase entrepreneurship of farmers is needed as well as value chain projects and projects to introduce food safety standards. The elaboration of a strategy to increase the ownership and effectiveness of the cooperatives and to increase the entrepreneurship of medium sized farms is urgently needed and needs to be discussed with the Minister of Agriculture. Transfer of knowledge and experiences from Dutch cooperatives should be part of strengthening Egyptian cooperatives.

The vision for the agricultural development of Egypt indicates also a need for improving the legislative and institutional base of Egypt's agricultural sector. This includes activities to improve data collection and analyses and the promotion of policy making based on available data trend analyses. A good example is presented by the Dutch brown rot project and the experiences gained in this project should be used for other purposes.

A prerequisite for the development of the agricultural sector is to invest in the cadastre registration of land and also in this topic the Netherlands can offer valuable knowledge.

### ***Agro-logistics***

Next to the development of retail sector in Egypt is improving the agro-logistics is an important prerequisite for the development of the agricultural sector in Egypt.

#### ***Recommendations***

The Netherlands can provide support on various parts in the agro-logistical system including:

- setting up an auction system for flowers
- setting up supply chain management for vegetables and flowers
- Improving packaging and storing facilities
- Introducing quality standards (Certification)
- Setting up agro-parks ( 2 projects on-going)
- Assessing the options for the "Green boat to Rotterdam" ( direct fruit and vegetable export)
- Establishment of collection centres for local crops like milk, grains, wheat, cotton.
- Support aimed to improve food safety including the introduction of food processing techniques

The establishment of joint ventures between Egyptian and Dutch companies in agro-logistics should be actively promoted.

### ***Training, capacity building and research***

There is a need to increase the level of knowledge and research in the agricultural sector at all levels. Here the Niche program offers opportunities. The EKN has identified 5 themes: Institutional development of Agricultural (Technical) Schools and vocational training; Farm management (entrepreneurship); e-learning with a focus on aqua culture; quality control and accreditation, agricultural extension services.

#### *Recommendations*

Little is known about the impact of climate change on agriculture in Egypt and further research and strategy development on the impact of climate change on agriculture is required (see agricultural strategy). Dutch science institutes (WUR, IHE) can help to map out the impact as a base for the design of adaptation strategies

There is also space for increased cooperation between Dutch and Egyptian universities including promoting the exchange of (PHD) students among others through the promotion of NFP. Dutch universities should be more visible in Egypt and the example of Wageningen UR to be present on the International Education Fair in Alexandria and Cairo in December 2010 should be followed by more Dutch universities.

### ***Sector specific opportunities***

#### *Flower sector*

A recent study on the cut flower sector revealed that Egypt has a huge potential but that post-harvest losses due to inadequate logistics are hampering a strong market push. The flower industry in Egypt is too small to finance the required infrastructure by itself and foreign aid is needed to implement the recommendations presented above. The Netherlands can help to set up the auction and sustainable processing chains.

Dutch support and knowledge can help to modernize, improve and broaden the current assortment which will contribute to a better performance of the flower industry in Egypt. It will increase sales in Egypt because consumers are triggered to buy when they see new products and it will strengthen the position of Egyptian producers in the Arab world and in Europe.

Research and the implementation of the research outcomes into the practice of flower production needs to be strengthened. Dutch research centres can help to set up a modern research centre, if possible as a part of an existing research infrastructure. Connecting this Research Station with a Training Centre and Extension Service will make these facilities more useful for the Egyptian entrepreneurs.

#### *Horticulture*

The efficiency of water use and the use of nutrients in the horticulture sector need significant improvement. Means to achieve this are the application of effective irrigation systems, recirculation systems for protected cultivation and sensor-supported precision systems for water supply can be included in the Code of Conduct.

It is recommended to support improved branding (and marketing) of Egyptian horticulture products to increase market share and market penetration in Europe. This should be combined with actions mentioned under the support to improving agro-logistical sector. But also sustainable and environmental friendly production methods should be actively promoted including Integrated Pest Management (IPM) techniques and ecological agriculture along with improved on farm water management. Also improvement of phytosanitary requirements is an issue in which the Netherlands can provide valuable support. The BOCI project to introduce a code of conduct will be prolonged for 2011 with on farm testing and where necessary the formulation of recommendations for rules and legislation. Cooperation between the stakeholders in the chain of custody will need to be strengthened.

### *Aquaculture*

The aqua-culture sector has a potential to be further developed. Under the BOCI program a strategy for the development of the aqua culture sector will be produced. Capacity building of the Egyptian Fish Council is needed especially to improve the application of durable fish growing techniques.

### *Seed potatoes*

There is also space for increasing the seed potato export to Egypt and for increasing the potato production in Egypt itself both for internal use and for export purposes. Agrico and HZPC are present in Egypt to produce seed potatoes and further support is needed to increase the knowledge and capacities of Egyptian farmers to produce seed potatoes.



## 6. Programmes available

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### 6.1 Introduction

The instruments listed below are available in the current situation but not all will remain to be available in the future since some are linked to the fact that Egypt is included of the target countries for the Ministry of Development Cooperation. Egypt however is selected as one of the 4 “brede relatie landen” meaning that the Ministry of Foreign Affairs considers Egypt as an important country for which the cooperation should be sustained and for which a set of programmes and instruments should be available that facilitates the continuation of the cooperation.

A working group of the NL EVD International has investigated how and with what kind of tools broadening the relation with among others Egypt can be facilitated focusing not only on financial mechanisms but also on the provision of information. The working group proposes a “broadening facility” that includes the following elements:

1. Providing information;
2. Building capacity;
3. Knowledge exchange;
4. Invest;
5. Promote ( e.g. trade missions).

An alternative possibility to partly replace the current cooperation budget is the so called G2G programme (government to government projects) which focuses on twinning and information exchange between government bodies. This offers opportunities for working with Egyptian government bodies on institutional and organizational change projects aiming at the creating an enabling environment for doing business.

Another opportunity for supporting initiatives of Dutch business organisations is the possibility to receive investment guarantees through the FMO the Dutch investment bank. Further talks with the FMO are needed to get more clarity about the conditions and policies.

A promising development is that the Dutch drinking water companies signed the “Schokland agreement” and are committed to support achieving the MDG’s. The city of Amsterdam recently agreed to allocate 1% of its budget to support Wowanet and it is expected that also the other communities will follow soon. This implies that Wowanet has a significant amount of core funding to continue with its activities.

Also the Egyptian government has financial resources available from which Dutch companies can benefit. Making use of this opportunity requires investing in establishing partnerships between Dutch and Egyptian companies.

An option for alternative funding after bilateral aid has ceased is to make better use of the Dutch contributions to funds of international banks like the WB and the African Development Bank. The visibility of the Dutch contributions can be leveraged by harmonising the allocation of the funds with Dutch international policies and themes, the funding of (Dutch) technical assistance and opting for a closer involvement in decision making on projects and programs of these trust funds.

The policy program “Water Mondiaal” offers Dutch companies opportunities to apply for seed projects that can help them to open doors and maintain existing contacts needed to support the Dutch water sector in promoting its knowledge and expertise abroad. Since budgets will be limited the allocation needs to be focused on strategic forms of cooperation not only between private sector companies but also between knowledge institutes and government organisations. The added value of the Netherlands lays in offering combined experiences and knowledge from knowledge institutes, government organisations and private sector companies.

## 6.2 PSI Private Sector Investment Programme

The PSI Program is financed by the Minister for Development Cooperation, has a budget of about € 70 million (2010) and works in around 50 countries. According to the current planning the PSI will be phased out in 2014.

The aim of the program is to support initiatives of the private sector to invest in emerging economies in cooperation or partnership with local enterprises/ entrepreneurs. The initiatives should have a durable impact, should be innovative for the local economy/sector and should have a fair chance of being up-scaled. Transfer of capital, knowledge & experience and technology are important elements of the projects that are being subsidized. The ultimate goal of PSI to create through the private sector development impact in local economies: work and income and spin off (catalyst) for the sector/chain.

The PSI Program supports up to 50% of the total investment costs of a pilot project; the other 50% are covered by the initiators. The maximum budget of a PSI project is 1.5 EUR million and the duration of a pilot is maximum 36 months. The program is a clear example of a Public-Private Partnership Program at the programme level in terms of stimulating Dutch firms to invest abroad. Essentially, at the project level, it is a business-to-business concept.

The focus of the projects that are currently supported in Egypt is on agribusiness. Examples are the support to stimulate the use of potatoes as staple food in Egypt through a project that is initiated by Agrico, a firm that trades in seed potatoes and hopes to expand their market share for seed potatoes in Egypt.

Other initiatives are aimed to stimulate the development of the horticulture (export) sector (fruits and vegetables) and to strengthen the processing of products in the food chain (from producer to consumer). Egypt has the potential to develop as an important player in the production and export of vegetables (incl. onions), herbs and fruits ( mango, peaches, grapes).

An interesting and successful PSI project is the processing and pasteurization of the yog/white of chicken eggs. The end product is an ingredient for bakeries, hotels, manufacturers of mayonnaises and other sauces (e.g. Kraft, Unilever).

MAKRO is planning to open a chain of wholesale hypermarkets in Egypt and intends to buy as much as possible products from local producers like fresh vegetables and fruits. This project is subsidized because it has a clear spin off on the development of the local economy and enhances the capacities and position of small scale producers.

See Annex 4 for an overview of PSI funded project for Egypt.

### *Recommendations*

PSI is crucial in the efforts to enhance the cooperation between Dutch and Egyptian companies and it is therefore strongly recommended to maintain the PSI program for Egypt after 2014. The budget implications are not big while the spin off in terms of contacts and future prospects are significant. The investments done through PSI pay off easily. Continuation of the PSI program fits well in the selection of Egypt as "brede relatie land". It is obvious that the PSI support should be targeted at the agri-food and water sector as much as possible and that synergies with other programs ( Water Mondiaal) is promoted. The best options for PSI supported projects are still in the agri-food sector including stimulating the establishment of agro-business parks, increasing expert opportunities for Egyptian horticulture and floristic cultural products with an emphasis on investments in the improvement of collecting, storing, packaging, transporting and distributing the products.

In the water sector investments in small scale purification plants, detection equipment for indicating leakages in the water distribution system and water meters offer opportunities.

### **6.3 2xplora Feasibility studies (formerly PESP)**

Financial assistance for several types of feasibility studies to enhance Dutch exports and investments in emerging markets. 2xplora activities are financed up to 50% of the budget with a maximum of €125.000 per project by the EVD (the Netherlands government Agency for International Business and Cooperation). A consortium of at least two Dutch companies can submit an application form to the EVD containing a clear project description, work plan, indication on follow-up investments and expected exports of Dutch goods and services. Application through: EVD: [www.evd.nl/pepsp](http://www.evd.nl/pepsp).

#### *Recommendations*

Next to the PSI program for investment support the 2xplora program is an important instrument to promote feasibility studies. In the past several feasibility studies in the agricultural sector have been carried out including a study into the possibility of starting a cheese factory, establishment of a desert greenhouse and a study into the use of rest products of the potato industry. There have only been a few applications from the water sector in the past. Apparently the program is not of a big value for the water sector. The success rate of the studies financed through 2xplora is unclear reason why no clear recommendations can be given at this moment.

### **6.4 Development Cooperation Matchmaking Facility (MMF)**

Companies in developing countries are often on the lookout for reliable business partners abroad. The Development Cooperation Matchmaking facility puts those foreign companies in touch with Dutch businesses. Egyptian companies interested in the programme must submit a proposal for cooperation with a Dutch company to the Embassy of the Kingdom of the Netherlands in Cairo, who will assess the proposal. Proposals should be clearly formulated using a specific format, available on the Embassy website: [www.mfa.nl/cai-en](http://www.mfa.nl/cai-en), under Economy and Trade section, Matchmaking Programme Egyptian Dutch companies, before being taken into consideration. The Netherlands government Agency for International Business and Cooperation, EVD runs the MMF on behalf of the Dutch Minister for Development Cooperation. Based on the application, the EVD will identify Dutch businesses that match the Egyptian company's profile. If a suitable match is found, the Egyptian company will receive a voucher worth € 5,000 to be used to hire a Dutch consultant who will help the company to explore and define the possible cooperation between the Egyptian company and potential Dutch business partners. The consultant's duties include arranging a visit for the Egyptian company to the Netherlands and developing a joint action plan. All travel and accommodation expenses are the responsibility of the applicant. Proposals can be submitted during the three tendering rounds held annually for MMF. The deadlines are February 15, May 15 and October 15, 2010. Application through: [www.mfa.nl/cai-en](http://www.mfa.nl/cai-en) or [www.evd.nl/mmf](http://www.evd.nl/mmf).

#### *Recommendations*

Egyptian companies looking for a Dutch partner to further develop their business are shown on the EVD web-site; two citrus fruit processing and one on using rice straw for the production of charcoal and bear proof of the fact that there is an interest from Egyptian side. Since it both helps the development of foreign and Dutch companies to expand their businesses it is not only important in terms of development cooperation and should therefore not suffer from budget cut downs.

### **6.5 Netherlands Senior Experts (PUM)**

PUM is an independent non-profit organization in the Netherlands established by the government and the Central Employers Federations in the Netherlands. PUM provides Technical Assistance to Egyptian Small and Medium-sized Companies (SMEs). PUM advisers are volunteers and are selected on the basis of their many years of experience and excellent knowledge. They are independent and receive no financial reward for their services. PUM pays for international travelling expenses while applicants requesting assistance pay for local travel and accommodation costs.

### *Recommendations*

PUM offers excellent opportunities for knowledge transfer and for strengthening ties between the Netherlands and Egypt at low costs and should therefore be maintained.

## **6.6 Facility for Infrastructure Development (ORIO)**

ORIO (Facility for Infrastructure Development) is a grant facility funded by the government of The Netherlands. ORIO contributes to the development, implementation (construction and/or expansion), operations and maintenance of public infrastructure in developing countries in cooperation with the Dutch business community. Prime focus goes to what the applicant country requests. This is why the respective government submits the application, although the initial stimulus can come from a private company. ORIO is executed by the Netherlands government Agency for International Business and Cooperation, EVD on behalf of the Minister for Development Cooperation. Selection of grant applications is made on the basis of competition. The applications will be assessed according to a number of impact and quality criteria. The scope of the project budget must be between €2 million and €60 million. For Egypt, the grant percentage is 50% of the project budget in the development phase and 35% of the project budget in the implementation, operation and maintenance phase. The recipient government will finance the remaining amount. Project proposals can be submitted during the two "Call for Proposals" held annually for ORIO. For additional information on ORIO, please visit: [www.orio.nl](http://www.orio.nl).

### *Recommendations*

Orio is also funded from the budget of the Ministry of Development Cooperation and it is unclear whether Egypt will remain to be eligible for funding from the Orio facility. Currently ORIO finances projects in the water sector, transport and social services. Agriculture is not included.

In view of the "brede relatie landen" strategy it is recommended to maintain the Orio facility for Egypt especially for improving the infra structure for water including the drinking water distribution network, waste water collection and sanitation facilities for waste water. In the agriculture sector improvements in the road infra structure can be of great support for the collection and transport of agricultural products.

## **6.7 NICHE**

NICHE is a Netherlands-funded development cooperation programme that started in 2009 aimed at strengthening institutional capacity in developing countries for providing post-secondary education and training. Egypt is one of the selected countries for which the programme is available.

The programme focuses on sectors that are supported under the Dutch Bilateral Cooperation Programme, in the higher education sector in general or in cross-cutting themes. In all cases, the relationship with the post-secondary education sector is taken into account.

Through the programme organizations in developing will be assisted by coupling the expertise of Dutch organizations with local or regional expertise. A variety of organizations in NICHE countries can be eligible for support including institutions for post-secondary education, government ministries, national commissions and non-governmental organizations (NGOs).

### *Recommendations*

The embassy has elaborated the program outline indicating the priority subjects for NICHE in Egypt. For agriculture the focus will be on the following 5 themes: Institutional development of Agricultural (Technical) Schools and vocational training; Farm management (entrepreneurship); E-learning with a focus on aqua culture; Quality control and accreditation; Agricultural extension services.

For the water sector the preliminary identified subjects are: Technical education for the water and sanitation sector; capacity building and training on Integrated Water Management; Capacity building and training on Water Transport.

Based on the proposal Plans of Implementation will be developed which will define concrete interventions.

## 6.8 The Netherlands Fellowship Programme

In October 2008 the Dutch government launched the new Fellowship Programmes ( NFP) The overall aim of these new international cooperation programs is to help alleviate qualitative and quantitative shortages in skilled labour, and to do so within the framework of sustainable capacity building, aiming to reduce poverty in developing countries. The programs are funded by the Netherlands Ministry of Foreign Affairs out of the budget for development cooperation. The programs are administered by the Netherlands Organisation for international Cooperation in Higher Education ( NUFFIC) on behalf of the Dutch government.

The NFP are demand driven- oriented fellowship programs. To maximize the fellowship impact on capacity building the NFP funded trainings must be linked to institutional development of originations. A wide range of government, private and not governmental originations (educational originations, planning agencies, ministries, community based originations, private enterprises) are eligible.

Candidates can apply directly but the embassies plays a vital role in the evolution of the applications and can because of their role in the evaluation prioritize candidates from sectors which are found important in the frame of the sustainable development of the country.

### *Recommendations*

It is believed that there are opportunities to make better use of the Fellowship program and to bring more Egyptian students to the Netherlands as part of the efforts to strengthen the ties between the two countries. Dutch research and universities have a good name but the promotion of the follow ship program needs to be intensified.

## 6.9 Dutch Policy Document “Water Mondiaal”

The purpose of the NL government program “Water Mondiaal” is to strengthen water policy as a link between people, ecology and economy, thereby contributing to sustainable development.

The focus of the Water Mondiaal Program funding will be on 5 delta areas including the delta of the Nile and the programme has three main themes:

- Water and Safety ( contact and/responsible Ministry Transport, Public Works and Water Management)
- Drinking water and sanitation ( Ministry for Development Aid and Ministry of Environment and Housing)
- Water Agriculture and Ecosystems ( Ministry of LNV)

The “Nile Delta Advisory Group” headed by a representative of the Ministry of LNV, in close cooperation with the NL Embassy in Egypt has held a fact finding mission in July 2010 to identify initiatives and plans in Egypt that might be relevant for strengthening the cooperation between the Netherlands and Egypt on the themes mentioned above. The outcomes of the fact finding will produce a framework for guidance and direction for decision making on allocating funds to proposals that will support the implementation of the goals of the “Water Mondiaal” Program.

The embassy together with the “Delta Advisory Group” will play a key role in selecting promising initiatives for implementation; the actual allocation of the funds and the administration of projects will be the responsibility of the Partners for Water Program

The approximate € 10 million Euros available on an annual base to support the goals of “Water Mondiaal” must be considered as seed money to broaden the cooperation between the Netherlands and the selected countries and to identify additional sources of funding for broadening the cooperation.

### *Recommendations*

The implementation of the policy goals of Water Mondiaal is taking place through the Partners for Water Programme; see below.

## **6.10 Partners for Water Program**

The Partners for Water Program aims to unite the Dutch water sector (knowledge institutes, private companies, government and non-government organisations) to strengthen its international position in tackling international water issues. The Program exists since 2000 and provides financial support in exporting Dutch knowledge and expertise in water management. The PFW program is coordinated by the "Interdepartmental Steering Group" Partners for Water in which relevant Ministries are represented including the Ministry for Transport, Public Works and Water Management, The Ministry of Economic Affairs, the Ministry of Development Cooperation and the Ministry for Agriculture, Nature and Food Safety. The Partners for Water Program in which the Netherlands Water Partnership and the Agency of the Ministry of Economic Affairs cooperate is the executing agency of the Program "Water Mondiaal".

In 2010 the third program period of Partners for Water started and its main issue is to guide the implementation of the Water Mondiaal Program.

The joint projects will be tendered and the Dutch water sector will be invited to submit project proposals in partnership with Dutch and Egyptian organisations. In addition Dutch organisations have the possibility to submit project proposals that they believe are relevant for the implementation of the Water Mondiaal Program in the delta countries and that propose innovative approaches to the problems identified and for which the government to government program has not given appropriate attention.

The new the subsidy requirements are not yet available but two tendering rounds are planned for 2010. Proposals can be submitted for the following fields of activity:

- Identification missions and market analyses
- Feasibility studies
- Business development trajectories
- Demonstration and pilot projects
- Institutional strengthening.

### *Recommendations*

The following recommendations listed in chapter 4 are recommended to be funded through the partners for water Program:

- Support to the elaboration of an action plan to address the impact of the climate change on the rising sea level. Organise seminar/conference to exchange views and strategies to plan actions in the Netherlands and Egypt.
- The design of a sanitation strategy for rural areas in collaboration with the Holding Company.
- Development of a Master plan for drainage aimed at the rehabilitation of the drainage networks.
- Research into options for the re-use of treated waste water for various purposes (Aqua culture? Agriculture/floriculture?).
- Research into the possibilities of using small scale artificial wetlands for water purification and fish breeding.
- Research into possibilities to support the design and building of small scale sewage water treatment for rural areas in cooperation with Ministry of Water Resources and Irrigation and the Holding Company.

- Strategy development to reduce the impact of water pollution and the encroachment of agriculture on the ecological qualities of the wetlands e.g Burullus lake ( see Egypt State of the Environment Report).
- Strategy developments aimed at improving the ecological and environmental conditions of the Nile and its floodplains as part of the introduction of integrated water resources management and as a way to reduce the water stress, adapt to climate change impacts and improve water quality. This includes also investigations in enhancing the role of the Nile as an ecological corridor. ( South-North) ( see Egypt State of the Environment Report).
- Elaborate strategies that link water distribution/availability to water pricing for the big farms; (see example of MABA Farm).
- Feasibility study into the possibilities to use the Nile for transport over water.
- Capacity building initiatives in:
  - Human resources management
  - Strategic planning methodologies
  - Improvement of coordination between sectors.
  - Monitoring and evaluation techniques

## 6.11 Netherlands Water Partnership

The Netherlands Water Partnership is an information clearing house for the Dutch water sector. A wide array of organisations is member of the NWP including science organisations (universities, research centres) consultancy companies, suppliers of hard ware for water management like purification plants and drainage systems and government organisations like ministries, provinces and water boards.

NWP's main aims are networking, promotion, and marketing of the Dutch water sector abroad;

NWP maintains contacts where individual organisations are not able to do that on their own. The NWP runs part of the Partners for Water Program. (Communication and coordination). The NWP develops and plans its activities based on the needs and wishes of its members.

An important part of the NWP members consider Egypt as an interesting and important market. In the past a lot of consultancy work has been carried out for a big deal covered by Dutch development aid budget. A number of companies is involved in the delivery of hardware and technology (eg Dacom). Norit has shown interest to deliver technology for water purification.

Despite the fact that the Netherlands has played an important role in water management in the past the future perspective looks a bit grim. There is a hard competition and the internal market is hard to get in to. Egypt is seen as a difficult market and the budgets available via among others Partners for Water will not be sufficient to fill the gap of the vanishing development aid budget; strategic allocation is required to maintain the good profile of the Dutch water sector. The Dutch water sector is not good in investing in opening up markets.

One other problem indicated by Dutch organisations is the lack of a developed private sector in Egypt. Therefore close cooperation with the public sector is needed. It is important to get an overview of the main water management priorities in Egypt. How relevant is the sea level rise for instance

### *Recommendations*

Based on the interviews held in Egypt it has become clear that the establishment of a Dutch Egyptian Water Partnership would be highly appreciated.

## **6.12 EU Funds**

In the frame of its neighbourhood policy the European Union has a mechanism available through which projects can be supported via tendering procedures. Dutch companies have proven to be successful in these procedures possibly helped by good knowledge of the situation in Egypt, the network established by previous projects and the good name Dutch companies and organisations have in the field of water management.



## Annex 1: Overview of documents analysed

- Agriculture, rural economic development and food security: Ministry of Foreign Affairs, September 2008.
- Assessment of the Egyptian Floriculture Industry; Horticonsult Global Partners bv Boskoop, The Netherlands, 2009.
- Agentschap NL. Ministerie van Buitenlands Zaken. Naar een faciliteit voor brede relatie landen. Augustus 2010. NL EVD Internationaal. Postbus 20105, 2500 EC Den Haag.
- Bilateral relationship Netherlands-Egypt; Multi-annual Strategic Plan 2008-2011; Royal Netherlands Embassy in Egypt
- Cairo Agenda for Action on Aid Effectiveness; Situation Analysis (Draft One); May 2010.
- Deltares; Towards sustainable development of deltas, estuaries and coastal zones; Trends and responses; Executive summary of the research program in preparation of the Aquaterra 2009 conference, the World Forum on Delta and Coastal Development (Delft 2009).: e
- De Watervisie 'Nederland veroveren op de toekomst': Ministerie van Verkeer en Waterstaat (2007)
- Discussion Note for the Agricultural Attaché Netherlands Embassy for dialogue with the Egyptian Ministry of Agriculture about support to the Egyptian National Pilot Program for Rural Development. LEI, The Hague, 2010.
- Egyptian-Dutch Advisory Panel Project on Water Management; Various documents. <http://www.app-wm.org/>
- Egypt agribusiness report: Including 5-year industry forecasts to 2014; Business Monitor International Publication date: May 2010; ISSN 1759-1597
- Egypt water report; Including a 5 year forecast to 2014; Business Monitor International Publication date: March 2010; ISSN 2040-6533
- Egypt State of the Environment Report 2007; Ministry of State for Environmental Affairs, Egyptian Environmental Affairs Agency; December 2008.
- Egyptian-Netherlands Development Cooperation; The Contours of the Future Programme in the field of water and environment: 2005-2009, May 2004.
- Facing Water Scarcity; Egyptian-Netherlands Advisory Panel Project: Final draft, April 2008.
- Food for Thought: Supporting the Nile Basin Strategic Dialogue; Bart Hilhorst , Peter Schütte , Simon Thuo; FAO; no date.
- Increasing productivity in the agricultural sector; working paper; Initiative on soaring food prices; FAO 2009
- National Waterplan 2009-2015; Ministerie van Verkeer en Waterstaat (2008)
- National Water Resources Plan for Egypt- 2017; Ministry of Water Resources and Irrigation; Cairo January 2005.
- Strategy of Sustainable Agricultural development 2030: Agricultural Research and Development Council; Ministry of Agriculture and Land Reclamation; January 2009.
- Wolters. Dr. Ir. W. en Roest, K: Water demand management in the Egyptian Nile Delta: The need for innovation; Internal document; Alterra; 2010.





## Annex 2: Project Proposal for Mapping Survey

### **Mapping Survey of possible opportunities to broaden bilateral relations in the areas of water management and agriculture**

**Project proposal for the Embassy of the Kingdom of the Netherlands in  
Cairo**

Submitted by:

**Centre for Development Innovation**  
February 2010

Centre for Development Innovation



## TABLE OF CONTENTS

<b>CORE INFORMATION</b>	<b>38</b>
<b>1 Introduction</b>	<b>39</b>
<b>2 Outcome</b>	<b>40</b>
<b>3 Activities</b>	<b>40</b>
<b>4 Approach</b>	<b>41</b>
<b>5 Responsibilities and time planning</b>	<b>42</b>
<b>6 Workplan</b>	<b>42</b>

## CORE INFORMATION

<b>Project name</b>	Mapping survey of possible opportunities to broaden bilateral relations in the areas of agriculture and water management'.
<b>Location</b>	Egypt
<b>Theme</b>	Integrated Land and Water Management
<b>Target group</b>	Embassy of the Kingdom of the Netherlands in Egypt
<b>Dutch implementing organisation(s)</b>	Wageningen Centre for Development Innovation Post Box 88 6700 AB Wageningen The Netherlands Bank Account Number: 39.70.87.632  Contact Person: Henk Zingstra E-mail: <a href="mailto:henk.zingstra@wur.nl">henk.zingstra@wur.nl</a> Telephone: +31 317 49 54 22 Fax: +31 317 48 68 01
<b>Bank details</b>	<u>Bank</u> Rabobank Wageningen  <u>Address and name of accountholder:</u> Centre for Development Innovation , Lawickse Allee 11, 6701 AN Wageningen, Netherlands  <u>Bankaccount:</u> 39.70.87.632 <u>IBAN-nr:</u> NL25RABO0397087632 <u>SWIFT/BIC:</u> RABONL2U <u>Account name:</u> Centre for Development Innovation
<b>Duration</b>	1/02/2010 – 31/06/2010
<b>Total project budget</b>	€ 20.000,-

# 1 Introduction

This document presents the proposal of the Centre for Development Innovation (formerly Wageningen International) to the Embassy of the Kingdom of the Netherlands in Cairo aimed to provide an overview and analyses of possible opportunities to broaden bilateral relations between the Netherlands and Egypt in water management and the development of sustainable agriculture.

The background for this proposal is the following.

The Government of the Netherlands considers Egypt an important and well-respected player in the region. Egypt holds a prominent position in the Middle East Peace Process, in the Arab and Islamic World, in the African Union as well as in the international UN debate. Egypt also is acting as a spokesperson for the Arab countries in the dialogue with the EU on reforms. With Islam being a prominent theme in the political debate in the Netherlands nowadays, it is important to develop a mutual relation that is more diverse and resilient.

Egypt nowadays belongs to the category of lower middle income countries and the time is considered right to phase out the development aid by 2012 and to start moving into the direction of a more equal partnership.

It is the assessment of the Embassy that in various sectors good possibilities for developing partnerships occur. Based on a long standing history of cooperation and gained expertise partnerships in the water and agriculture sectors belong to the most promising to be developed. Reliable ties have been forged, having a favourable effect on the overall bilateral contacts. In these sectors the Netherlands has something extra to offer particularly in the aspects of integrating water use into the development of sustainable agriculture, in the management of delta areas, in flood prevention strategies and addressing the challenges of climate change in relation to water management and in applying an integrated approach to water management. From the Egyptian perspective, the structural cooperation could be extended to other fields of interest in which the Netherlands obviously proves to have the expertise, reputation, goodwill and comparative advantage.

The proposed activities include performing a mapping survey as a basis for elaborating a strategic advice to the Embassy about structural and promising Partnerships that can be forged in the water and agriculture sectors. The survey will take into account the already existing contacts, the history of cooperation, the needs and wishes on both sides (demand and supply), as well as existing tools and programmes currently available to Egypt.

The project will start with a brief analyses of past and ongoing projects funded or carried out by Dutch organisations plus a brief introduction into Dutch, Egyptian and international policies relevant for the subject. The analyses will include an evaluation of the successes and failures of the projects that have been implemented and the lessons that can be learned for setting up new form of cooperation. This will provide a basis for the elaboration of the strategy to broadening the cooperation between Egypt and the Netherlands in developing sustainable agriculture and introducing integrated water resources management.

Agriculture and water management are two separate sectors independent from each other with different organisational, institutional and cultural settings and different needs, expertises and expectations. There are however also clear links between the two sectors because the provision of sufficient water of good quality is crucial for the development of agriculture and vice versa agriculture has a big impact on water management. Apart from specific expertise the Netherlands has to offer in the development of sustainable agriculture and in water management (including river basin management, delta management, water sanitation and flood protection) the Netherlands has also valuable expertise in harmonising the development of sustainable agriculture with balanced water resources management. This holds especially true in a situation of changing precipitation and discharge patterns and the required adaptation of agriculture to the changing availability of water. Both countries can learn from each other by exchanging information, developing and carrying out joint research programmes and developing joint response strategies. Dutch expertise in the water management and agriculture sectors can have an added value in analysing the situation and exploring options for sustainable solutions.

The identification of promising opportunities and the elaboration of the strategic advice to the embassy will take due account of recent policy developments of the Dutch government and in particular of the of the policy document “Mondiaal Water” in which the Nile Delta is selected as one of the 5 focal delta areas. This implies that extra funding opportunities might emerge as the Dutch government aims to enhance bilateral cooperation between the selected delta areas and the Dutch water sector through targeted projects and programmes. Focal topics in “Water Mondiaal” include enhancing the sustainable use of water resources for food and ecosystems and the application of Dutch knowledge in delta management.

## 2 Outcome

The outcome of the assignment will be a strategy for broadening the basis for cooperation between Dutch and Egyptian organisations in the field of agriculture and water management in view of phasing out of the development aid budget from the Dutch government. The strategy will include a set of prioritised recommendations for the development of sustainable agriculture and the implementation of integrated water resources management including the development of strategies to address the impacts of climate change, flood protection strategies especially in delta areas, water scarcity and drought, water purification and sanitation, drinking water supply and integrated river basin management. The challenge will be to find the perfect match between demand and supply in terms of expertise, technologies and finances. For this purpose it is both crucial to identify the needs from Egyptian side and the possible supply from Dutch side. The strategy will build upon the existing forms of cooperation but will also identify other options for broadening the cooperation.

Important elements of the recommendations will be the role of the various partners in both the water sector and the agricultural sector and the possible sources for funding including options for public-private partnerships. These recommendations will take into consideration current tools/programmes available to Egypt including the ‘Water Mondiaal’, the ‘Egypt Facility’, and others available by EVD, etc. and to formulate a strategic guidance for priority interventions in water and agriculture that will lead to sustainable partnerships based on mutual interest. Other Dutch and international policy developments relevant for the subject will be taken into account including the recommendations of the “Water for Food and Ecosystems” programme and the recommendations formulated of the UN Commission on Sustainable Development held in 2009.

Important elements of the outcome will be:

- A brief description of the history and achievements of the cooperation between Egypt and the Netherlands in the field of water management and agriculture
- Overview of existing partnerships between the Netherlands and Egypt in the field of water management and agriculture
- Identification of the main obstacles and challenges for developing sustainable agriculture.
- Identification of the main issues and challenges for water management in Egypt.
- Identification of the interest of Dutch organisations in both sectors to be involved in the cooperation with Egypt.
- Prioritisation of actions for broadening the cooperation in the field of agriculture and water management
- Possible sources for funding including options for public-private partnerships.

## 3 Activities

The main activities of the Centre for Development Innovation will be:

- Evaluation of activities in the field of water management and agricultural development carried out or funded by Dutch public and private organisations, non governmental organisations and research organisations in the field of agriculture and water management. ( successes and failures)
- Brief overview of national and international policies on water management and agriculture.
- Desk study and interviews with stakeholders in the Netherlands to identify interest and expertise
- Interviews with Egyptian experts and organisations to identify needs and wishes



- Identification of threats and challenges in terms of the development of sustainable agriculture and integrated water resource management.
- Strategy development and identification of priority interventions that will lead to sustainable partnerships based on mutual interest
- Organising a workshop to discuss the draft strategic guidance;
- Final intervention strategy.

## 4 Approach

The activities are split into two phases. In the first phase known and available information of projects and policies will be analysed as a basis for drafting the strategy. The first phase will be concluded with a workshop at the embassy with participation of relevant Embassy staff (HEOS, DEOS, EOS, LR, OS1, GE, SETA & ETA.) to discuss the findings and to agree on the next steps to elaborate the strategy including a preliminary discussion on possible strategic directions and the steps required towards finalising the strategy.

Prior to the workshop the consultant will receive an overview and addresses of organisations and persons in Egypt which are relevant to meet to source the needs and wishes for collaboration in the field of water management and agriculture. These meetings will be held in the same week as the workshop will be conducted.

To perform the mapping survey and to draft recommendations the Centre for Development Innovation will make use of existing information available in open sources including the information available from the Egyptian Dutch Advisory Panel on Water Management. The survey will focus on past and ongoing projects and programmes in water management and agriculture including an analysis of their successes and failures to contribute to achieving sustainable agriculture and integrated water resources management. The embassy will provide a complete list of tools/programmes currently available to Egypt (with criteria for application) in the early stages of the project. Relevant Dutch consultancy companies, NGO's and science institutes will be approached to get a clear overview of the involvement of Dutch based organisations in water management and agricultural activities in Egypt. The organisations to be consulted include among others the Ministry of Agriculture, Nature and Food Safety (LNV), the Ministry of Transport, Public Works and Water Management, the Ministry of Foreign Affairs, the Dutch Government Service for Land and Water Management (DLG) the Netherlands Water Partnership (NWP), Deltares (Delft) and consultancy companies.

The date for the workshop will be set in close cooperation with the embassy and is preliminary scheduled in the week starting 5 April.

The second phase includes an identification of threats and challenges in terms of promoting the development of sustainable agriculture and integrated water resource management. The main topic for the second phase will be the drafting of the strategic guidance for priority interventions that will lead to sustainable partnerships based on mutual interest of Egypt and the Netherlands.

The Centre for Development Innovation will perform its activities in close cooperation with the secretariat of the Egyptian Dutch Advisory Panel on Water Management located at Alterra, Dr. Wouter Wolters. Also other researchers and experts within Wageningen UR will be consulted on their involvement and plans related to the Nile Delta.

The Centre for Development Innovation plans to organise two missions to Egypt. During the first mission meetings will be held with representatives of the Embassy in Egypt and with representatives of relevant Egyptian government bodies, research institutes and private organisations to get an overview of needs, wishes and challenges related to an integrated approach to water management and agriculture in the Nile delta..

During the second mission towards the end of the project a workshop with representatives of relevant Egyptian organisations and of the Dutch embassy will be held to discuss the draft recommendations for the development of sustainable agriculture harmonised with sustainable use of water resources. The Dutch

secretary of the Egyptian Dutch Advisory Panel on Water Management will be invited to participate in the workshop.

The project will be implemented in close cooperation and communication with the responsible contact person of the Dutch embassy in Cairo.

## **5 Responsibilities and time planning**

The Centre for Development Innovation will hold responsibility for a sound and timely implementation of the contract and delivery of the outcomes and will be responsible for identifying and contacting relevant Dutch organisations.

The Embassy will provide a complete list of tools/programmes and projects currently availed to Egypt (with criteria for application) and relevant for the project, support the identification and contacting of relevant Egyptian organisations and experts and facilitate the organisation of meetings with these stakeholders to gain insight in needs and wishes and to sketch the organisational and institutional setting of integrated water management, ecosystem management and agriculture in Egypt.

The two meetings planned in the frame of this assignment will be held in the premises of the Embassy.

The implementation starts on 1 February 2010 with a assessment of the relevant documents and information available including those available in the achieves of the Egyptian Dutch Advisory Panel on Water Management and those made available by the Dutch embassy. The findings of this assessment will be used to detail the agenda of the first meeting with representatives of the Embassy and to identify organisations and persons in Egypt who need to be interviewed.

The first mission to Egypt is planned in the week starting 5 April 2010.

The first draft of the recommendations will be available by the end of May 2010

The workshop is planned early June. The final conclusions based on the outcomes of the workshop will be available by the end of June.

## **6 Workplan**

## Annex 3: Reports of interviews; views, opinions and policies

### *Ministry of Foreign Affairs*

A meeting at the Ministry of Foreign Affairs was held on 31-03-2010 with the participation of: Ms. Karin Roelofs, Mr. Peter de Vries and Mr. Ron Havinga

The participants call for an integrated approach to both sectors since (rural) water management and agriculture are indissolubly linked; no sustainable development of the agricultural sector without sustainable water management and vice versa. The Netherlands has knowledge and experience to share when it comes to integrating agriculture and water management particularly when it comes to securing water quality and improving the efficiency of water use.

Recommendations and conclusions:

- An (external) evaluation of the role of the APP and a strategic discussion on its future role is considered important to get clarity about the role of the APP in the future cooperation between the NL and Egypt in the field of water management.
- The environmental dimension should play an important role in the future cooperation in the light of the ecological footprint of the Netherlands when importing food products from Egypt but also in view of the local environmental and health conditions in Egypt. Lake Fajoun is mentioned as an example of a heavily polluted lake.
- In continuation of the above the issue of water scarcity is stressed and based on this due attention should be paid to knowledge exchange on increasing the efficiency of water use and improving the water quality in relation to the development of agriculture. This is especially important because of Egypt's policy to further increase its food production.
- Continued cooperation between the NL and Egypt in improving drinking water supply is an important issue.
- Reference is made to a project started in 2002 that looked into the impact of climate change in the Nile delta and was funded by the NL with co-funding from Germany and the WB. The impact of climate change on the water situation in Egypt and discharge patterns of the Nile are important to be taken into consideration
- Also the building of new dam in Ethiopia will have an impact on the water situation in Egypt. Because of Egypt's dependency on Nile water the establishment of a "Nile Basin Commission" as a platform to manage and balance water demands between the Nile basin countries is considered to be crucial. Water provision to Egypt is based on an agreement between Sudan and Egypt dating back to 1920!

### *Egyptian-Dutch Advisory Panel Project on Water management*

The cooperation between the Netherlands and Egypt has a long standing history and dates back to 1976 with the establishment of the "Egyptian-Dutch Advisory Panel on Land Drainage".

That mono-disciplinary cooperation transformed throughout the years to the "Egyptian-Dutch Advisory Panel on Water Management", now being interdepartmental on both sides: from the Egyptian side are involved:

- Ministry of Water Resources and Irrigation
- Ministry of Agriculture and Land Reclamation
- Ministry of Housing, Utilities, and Urban Communities ((responsible for drinking water and sanitation),

and from the Dutch side:

- Ministry of Transport, Public Works and Water Management
- Ministry of Agriculture, Nature, and Food Quality
- Ministry for Economic Affairs
- Dutch Association of Regional Water Authorities (“Water Boards”)
- Netherlands private sector

The scope of the Panel cooperation is broad and among the recent issues dealt with are for instance: use of brackish groundwater for aquaculture; water governance; water policy evaluation; river management; water demand management; and future water scarcity.

Critical success factors in the current successful cooperation include: demand driven; high level persons involved; access to public and private knowledge; common understanding and trust; similarity of issues; commitment to discuss sensitive issues; unbiased advice; financial commitment of both countries; etc.. The Panel has generated over 150 M€ business over the last more than 30 years.

Currently the APP is evaluating its future role and scope of activities among others because of the new challenges in water management ahead both in Egypt and in the Netherlands as climate change will have an impact on the availability of water, the discharge patterns of rivers and the flood risks caused by sea level rise and changing discharge patterns.

The present day cooperation can be termed a dialogue on governance and policy (with attention for the private sector interests as well through representation of a representative of the NL private sector and Ministry for Economic Affairs).

Important subjects in this context:

- Water demand management policies
- Scenario analyses
- How to create an innovation stimulating environment
- Institutional reform
- Water finance
- Management development
- Etc.

### **Notes from the meeting with Dutch members of the Egyptian-Dutch Advisory Panel Project on Water management.**

Date: 13-04-2010, Unie van Waterschappen, Den Haag

Participants: Ir. C.D. van der Wildt, drs. J.M. de Vries, drs. H.J. Tankink, Dr.Ir. W. Wolters

Fundamental for the success of the work of the APP is the participation and involvement of the highest responsible Egyptian officials including the Minister for Water Resources and Irrigation and the fact that the existence of the panel is clearly demand driven. Over the past 34 years the Panel has created an atmosphere of trust and understanding on both sides which allows for the debate of fundamental water management issues including issues of governance and organisational issues. Over time the Panel has adapted to the needs of the Egyptian partners (as well as the Embassy) and transferred from a technical advisory panel on land drainage to a panel where the entire range of integrated water resources management issues is being debated. Another important aspect of the success of the panel is the continuity and stability from both sides but for sure from the Egyptian side. And last but not least the fact that the members of the panel do not have a commercial interest in the cooperation with Egypt adds to the reliability and credibility of the recommendations presented by the panel.

For a number of countries including Turkey and US a “Water Platform” is established with the aim to coordinate the promotion of the Dutch water sector in that specific country. The question whether the establishment of a “Water platform” next to the APP for Egypt would make sense evokes various reactions

but the general conclusion is that as long the objectives and functions of such a “Water Platform” are clear there would be no problem. The Panel members made it clear that, when companies had been on the table during Panel Meetings, many of the subjects dealt with at present would not have been discussed. This unique relation with Egypt will be seriously affected when “entrepreneurs” will join the Panel. The Panel members noted that the Panel has proven, throughout the years, to be very flexible: importance to subjects can be changed, etc and in essence the current system fits policy and it works. By cancelling, all that is built up, will be gone. In case a “Water Platform” would be established for Egypt this should work under the umbrella of the Netherlands Water Partnership to avoid misunderstandings and visibly function as a platform for Dutch companies and knowledge institutes to coordinate and tune research, consultancy and engineering activities.

The panel members have no doubt about the vital role the panel plays in the cooperation between Egypt and the Netherlands in the field of water management and the good name the Netherlands has in the water management sector in Egypt is for a big part attributed to the work of the panel. The spin-off of the work of the panel is considerable and has possibly had a much bigger impact than any other kind of programme available for the cooperation between Egypt and the Netherlands.

The Panel members note that the bilateral cooperation budget with Egypt (that was always about 10 M€) is of the same order as the entire annual “Water Mondiaal” expenditure under Partners for Water (for the 5 Delta’s and for the other 21 countries as well). In this context the Panel members also mention to be a little cautious to venture into the Nile Basin, as it will not be easy.

Despite the fact that 5 delta areas are selected as focal areas in “Water Mondiaal” the total budget available for cooperation on water management issues will decrease significantly; a maximum of 1, 5 million will be available for each of the delta areas annually. One of the Panel members was involved in the birth of “Partners for Water” and the experience is that it works well for the “collective” actions. As soon as activities at one level lower are coming to the fore, the interests of the separate companies will prevail (referring also to the “Holland Water Group” activities).

The panel members note that “landbouw” and “water” have already been chosen and agree that the planned increase of the agricultural production in Egypt will have a big impact on the water resources and (rural) water management. Items were mentioned as agro-logistics and climate advantage, and subjects could be “prepared” through the Panel.

Some Panel members mention that perhaps the choice for “agriculture” has been made too quick? The question could also be: in which fields The Netherlands take a unique position, and in answering this question you should be very selective. Not only issues that sound nice, but look strategically to the issues important for Egypt as well: inflow of labour force on the market; need to raise production; export position, etc. What is the impact of this Egyptian context on the possibilities for The Netherlands?

Although environmental and ecological issues feature on the agenda of the panel, the actual impact of the recommendations in these fields is still limited mainly because environment and ecology are not within the formal mandate of the Egyptian Ministry of Water Resources and Irrigation who is the main representative from the Egyptian side in the panel. Two other Ministries are involved in the Panel, i.e. Ministry of Agriculture and Land Reclamation and Ministry of Housing, Utilities and Urban Development.

To achieve a real integrated approach to land and water management it is strongly advised to pay also more attention to physical planning aspects.

### **Notes from the telephone conference with 3 Dutch members of the Egyptian-Dutch Advisory Panel on Water Management.**

Date: 16-04-2010,

Participants: Ir. L. Bijlsma, Ir. C.Kalden, Mr. H.C. Slegtenhorst, Dr.Ir. W. Wolters.

The specific feature of the APP is that discussions are taking place in a safe and quiet environment without political and/or commercial interests and with a focus on the exchange of knowledge and experiences. The meetings are based on mutual trust and acknowledgement of each other's positions and go beyond the formality of conventions and agreements. The APP can continue to play its role if the relevance of this specific feature will be understood and recognized by the embassy and the Ministry of Foreign Affairs.

The Panel went from technical to policy development and to policy implementation, and in the latter there is a real problem. The Dutch panel members are in favour to promote an integrated approach and to strengthen the cooperation with other sectors like, agriculture, environment and health but at the same there is awareness that this is only possible and effective if this is supported from the Egyptian side. Warning is given to be not too integrated and lose focus. NL can be of help by referring to the direct relation between agriculture and water management and how an integrated approach is paying off in the Netherlands. .

There is a continuous need for the APP to evaluate the subjects dealt with and to assess whether its current composition with mostly representatives from the public sector best serves the subjects that are on the table. A topic that needs more attention for the future is the role of the private sector in relation to the required investments in the infrastructure. Inviting the private sector representatives to present show cases of their knowledge and experiences could be an option.

There was discussion about the question whether the APP should pay more attention to the business side of the cooperation. The focus of the APP is on "knowledge" and not on "interest. It was stated that the APP should not be afraid to have an eye for the interest of the Dutch private sector. The "public to public" cooperation is working well; "public to business" will be difficult but for "business to business" issues another platform is needed. Next to the panel a more business to business platform could well be established without jeopardizing the work of the panel.

Indirectly the private sector however benefits from the exchange of knowledge as is shown for instance by spin off of the huge network of alumni from the UNESCO-IHE and courses from other Dutch knowledge institutes.

There is not a big deal of optimism when it comes to the possibilities of PPP constructions to stimulate investments in Egypt due to the strong link between the public and private sector in Egypt and the bureaucratic system. The complexity of the governing structures in Egypt also hampers policy implementation and not many good examples of successful and real public private partnership projects are known. Apart from the traditional private investments in business ventures and public investments to build the infra-structure. Restructuring the public sector and providing a better platform for the private sector is considered crucial for the development of the economy and required investments in water management.

The question is whether the government will be capable of paying for the required infrastructure and have the users to pay for this; how to involve the private sector to stimulate the economy? Governance and technology (and education in that sense) will be important and NL can play a role there

It would be relevant to make an analysis of the obstacles that prevent further development of private investments and PPP constructions in Egypt.

"Orio" (Facility for Infrastructure Development) is mentioned as an opportunity to stimulate private investments and the question is whether the panel can play a role in stimulating the use of this mechanism for Egypt.

The panel should look beyond the various funds available and focus on the question; how do we want to maintain the relation with Egypt. It is important is to strengthen the relation with, and involvement of the

agricultural sector. The panel has an important role to play here by showing how cooperation between the various sectors has helped to tackle complex problems which otherwise would have remained unsolved. The focus should be on stressing the integration of processes, content issues and tools. At the same time it is crucial to maintain the good relation with the Minister of Water Resources and Irrigation. This should be an important aspect in the strategy of the embassy including clarification of the role the embassy can play to broaden the cooperation.

Two documents depicting important issues for the future cooperation between Egypt and the Netherlands should be taken into account. : “Water, key to prosperity and stability”( 2006) and “Facing Water Scarcity”( 2008)

#### Unie van Waterschappen/ Dutch Association of Regional Water Authorities.

The Association signed the “Schokland agreement” and its Water Boards feel committed to support the implementation of the MDG’s. The individual water boards have taken upon them to invest in projects and programmes in developing countries while the work is for 50% of the costs financially supported by a fund for international cooperation established by the Water Boards Bank. The intensity and level of energy devoted to invest in these projects and programmes depends on the interest and policies of each of the water boards. Also the commitment of the chairman of the Union to international cooperation is an important element in the level of intensity, energy and interest of the water boards. An example of the work of water boards plan to do is the MoU on the “Water Operator Partnership on Integrated Water Resources Management MoU signed by the Waterboard Aa and Maas, Wowanet, and Brabant Water, with partners in Egypt.

The Association has recently debated its new role in development cooperation but at the moment it is unclear whether the new board member of the Union responsible for international cooperation will become a member of the APP.

The focus of the Association will be on larger issues as “water governance” and “financing” and these two issues could also be the mandate for the Union for continued participation in the Panel. The Association is also involved in fora as the IPO (inter-provincial meeting) and meetings with VNG (the Association of Netherlands Municipalities). For the Association, always a Head of a Water Board (with the title Dijkgraaf, etc) has acted in the Panel, and this will be continued in the future at this level (though perhaps not by a member of the board of the Association).

#### ***UNESCO-IHE***

(Jetze Heun)

One may find requests for Dutch expertise also outside the Dutch development projects and one meets Dutch experts at many places: for example, in the past and more recent recently water supply and water sanitation projects outside Dutch development cooperation started in which Dutch companies or individuals are included possibly bearing testimony of the fact that there is appreciation for or confidence in the Dutch water sector.

While the Netherlands is well appreciated for its expertise and knowledge in water management it remains questionable how long this appreciation will sustain when investments and projects funded from the Netherlands will stop. Preaching that we are good without being able to show it might not work on the long run.

The starting point and main vehicle for the appreciation and reputation of the Dutch water sector is most likely linked to the considerable share of development cooperation budget allocated to projects in which the Dutch water sector has been involved. The question is how long the sector can benefit from this good name and competitive advantage once the development cooperation budget has dried out. It can be assumed that some financial support will remain to be needed to support the Dutch water sector in promoting its knowledge and expertise abroad. Since budgets will be limited the allocation needs to be

focused on strategic forms of cooperation not only between private sector companies but also between knowledge institutes and government organisations. (Twinning)

Although hard to prove it can be assumed that the significant amount of trainees that is coming to the Netherlands for various trainings and water management will add to the good name the Dutch water sector has. It is however difficult to quantify the impact of this huge network of alumni on the success of the Dutch water sector and the chances to be successful in international tendering procedures. It is however beyond doubt that it has made access much easier.

The development of Egypt as an exporting nation for high value agricultural products has an impact on water resources management and offers opportunities for promoting the integrated approach to rural water management as practiced in the Netherlands. With a growing water demand for agricultural production and decreased water availability there is a need to improve the effectiveness of water use in Egypt. The necessary practical, organisational and scientific knowledge to improve rural water management in Egypt requires that the various actors involved in rural water management in the Netherlands including the water boards, private companies, agricultural banks and relevant scientific institutes offer a consistent envelope of services to Egyptian partners. Sustainable production of agricultural products will be one of the key elements through which Egypt can increase its market share in the EU and this includes efficient use of water and water pollution is stopped..

The development and introduction of small scale water sanitation technologies will be crucial to improve the water situation in rural areas.

Water supply and water sanitation are two sectors in which the Netherlands has developed good knowledge and reputation and where there is a big need for improvements. Good examples that can be replicated across Egypt are the activities to improve water management both at organisational and technical level in the Fayoum district.

The Netherlands ( UNESCO-IHE, Deltares, WUR APP) has always had good contacts with the Ministry of Water Resources and Irrigation but these contacts were greatly facilitated and supported through development cooperation budgets and again the question arises how these contacts can be continued especially when the current administration will change. The same counts for the National Water Research Centre and the Hydrological Research Institute which both have a long standing cooperation with UNESCO-IHE and Deltares.

The added value of the Netherlands lays in the cooperation between knowledge institutes, government organisations and private sector companies.

UNESCO-IHE provides technical assistance to the secretariat of the Nile Basin Capacity Building Network based at the Hydraulic Research Institute in Egypt funded through the DGIS- UNESCO-IHE cooperation programme (running until 2013). Each of the participating countries (10 in total) is responsible for one water management issue and the Hydraulic Research Institute is responsible for river engineering and overall coordination

UNESCO-IHE is involved in a project of Mott MacDonald through which the implementation of the National Water Resources Plan is being monitored (funded by the MWRI; Contact Steve Collombie).

The organization is also involved in a water quality assessment project in the downstream stretches of the Nile ( funded by the EU)

The Nuffic Niche programme offers good alternative funding opportunities for capacity building programmes and for continuation of the trainings and education programmes offered by Dutch knowledge institutes..



An option for alternative funding after bilateral aid has ceased is to make better use of the Dutch contributions to funds of international banks like the WB and the African Development Bank. The visibility of the Dutch contributions can be leveraged by harmonising the allocation of the funds with Dutch international policies and themes, the funding of (Dutch) technical assistance and opting for a closer involvement in decision making on projects and programmes of these trust funds.

### ***Netherlands Water Partnership***

#### **Meeting with Mr. Ivo Demmers 28-04-2010, The Hague**

The Netherlands Water Partnership is an information clearing house for the Dutch water sector. A wide array of organisations is member of the NWP including science organisations (universities, research centres) consultancy companies, suppliers of hard ware for water management like purification plants and drainage systems and government organisations like ministries, provinces and water boards.

NWP's main aims are networking, promotion, and marketing of the Dutch water sector abroad;

NWP maintains contacts where individual organisations are not able to do that on their own. The NWP runs part of the Partners for Water Program. (Communication and coordination) NWP develops and plans its activities based on the needs and wishes of its members. It helps to open up new markets or profiles the Dutch water sector in specific areas or events ( e.g. after Katrina hit new Orleans the NWP placed the Dutch expertise in the floodlight and helped Dutch companies to acquire contracts)

An important part of the NWP members consider Egypt as an interesting and important market. In the past a lot of consultancy work has been carried out for a big deal covered by Dutch development aid budget. A number of companies is involved in the delivery of hardware and technology (eg Dacom) . Norit has shown interest to deliver technology for water purification.

Despite the fact that the Netherlands has played an important role in water management in the past the future perspective looks a bit grim. There is a hard competition and the internal market is hard to get in to. Egypt is seen as a difficult market and the budgets available via among others Partners for Water will not be sufficient to fill the gap of the vanishing development aid budget; strategic allocation is required to maintain the good profile of the Dutch water sector. The Dutch water sector is not good in investing in opening up markets.

One other problem is the lack of a developed private sector in Egypt. Therefore close cooperation with the public sector is needed. Here the APP could play a role in linking public with private sector interests; the panel could offer a platform for Dutch companies without jeopardizing its important relation with the MoAI of Egypt. The spin off of the work of the panel is well recognized but more could be done.

It is important to get an overview of the main water management priorities in Egypt. How relevant is the sea level rise for instance

### ***World Waternet***

Notes from a telephone conversation with Gerard Rundberg; 28-04-2010.

Waternet, established in 2006 through a merger of the Waterboard Amstelland and the communal drinking water company of Amsterdam, is world-wide the first so called "water cycle" organisation taking care of drinking water winning and distribution, waste water collection and transport, waste water treatment, and the qualitative and quantitative aspects of surface and ground water management. "Waternet" has established "Wowanet" ("Wowanet") with the aim to promote the concept of water cycle organisations

world-wide and to apply the expertise and experiences of the “Waternet” abroad and in developing countries in particular.

Wowanet builds on the experiences and contacts that were established between the communal drinking water company of Amsterdam and Egypt and that has been instrumental in improving the waste water collection system of Alexandria.

The Dutch drinking water companies signed the “Schokland agreement” and are committed to support achieving the MDG’s. Amsterdam recently agreed to allocate 1% of its budget to support Wowanet and it is expected that also the other communities will follow soon. This implies that Wowanet has a significant amount of core funding to continue with its activities.

The core business of Wowanet is capacity building at 4 levels:

- Operational; training of staff on the job; enhancing technical capacities of staff through direct knowledge transfer. ( cooperation of Dutch and Egyptian experts)
- Organisational; Is the organisational set up fit to meet the new challenges. Are new departments needed? Is the staffing sufficient?
- Institutional including legislation and inspection
- Political; awareness raising and lobbying.

Effective capacity building requires long lasting partnerships.

Wowanet is working with the Egyptian nation-wide operating Holding Company to which all Egyptian water companies belong.

Recently Wowanet together with “Brabant Water” and the Waterboard “Maas and Aa” started a project to establish a “water cycle” organisation in two pilot areas in Egypt. To this effect the three organisations signed a MOU with relevant Egyptian organisations. Improving water quality management is one of the main challenges; formally the Ministry of Water works and Irrigation is responsible but it is unclear how the process of monitoring, inspection and sanctioning is working in practice and who is responsible for what. (“Who is pulling the strings”) The Waterboards (established among others in Fayoum, one of the two pilot areas) will become an integral part of the water cycle organisations that will be established.

After a long period of cooperation Wowanet announced recently to stop the cooperation with the Holding Company because according to the assessment of Wowanet the organisational situation in Egypt had improved to the extent that further input for the Dutch side was not needed anymore. Based on the request from the Egyptian partners Wowanet has agreed to continue its cooperation with the Egyptian organisations under the condition that Egypt would take up a lead role in capacity building neighbouring countries in introducing integrated water cycle management. (Wowanet has a similar agreement with Morocco and South Africa)

One of the objectives is to create training centres where trainings will be given on:

- The operational, organisational and institutional aspects of water management
- Research and Development in the water cycle
- The development of human capital

Various Dutch organisations including Detares, UNESCO-IHE and Universities have joined the initiative.

It is assumed that the APP will not play an important role anymore once the development aid budget has dried up.

To conclude:

Wowanet will stay involved in capacity building of water cycle organisations in Egypt through own funding resources and will continue to support Egypt in promoting the concept of integral water cycle organisations to its neighbouring countries.

The relation with and involvement of agriculture ( the main water user in Egypt) in the capacity building activities and in the establishment of the water cycle organisations is not clear

### ***Royal Haskoning:***

Telephone meeting with Albert Thiadens

Big investments in small scale water purifications are needed; the water quality is deteriorating because it is used over and over again leading to salination problems. Delivery of hardware for purification plants is one of the big challenges.

A good development is that the water consumption per person is going down from 70 litre per person in Fayoum to 40 in Cairo. Another problem is the high water demand which has to decrease.

Orio is considered as a good programme to help Dutch companies to invest in Egypt. The same counts hopefully for the new Partners for water Program

Together with Nijhuis Haskoning has tried to set up a factory for pumps but that failed ( funded through Oret)

The “to get there” facility should remain to be open.

The rising sea level is seen as an enormous challenge for the future where the Netherlands could play a role.

Haskoning wonders why NWP has not established a water platform for Egypt since it is considered to be an important market.

### ***Deltares***

Telephone meeting with Mr. Mohamed Yossef.

Deltares has a long history of close involvement and cooperation with the Hydrologic Research Institute in Egypt. Deltares has also been instrumental in the elaboration of the National Water Resources Plan of Egypt.. (funded through the embassy) The cooperation however stopped in 2009 because of the lack of financial resources. According to Deltares there is a need for on-going capacity building of organisations involved in water management in Egypt and this offers a window of opportunity for Dutch knowledge institutes like Deltares, UNESCO-IHE and relevant institutes in Wageningen.

An increase of capacities and knowledge is needed in the field of project development and implementation needed to create a good bases for the implementation of the National Water Resources Plan. Deltares has an MoU with the National Water Research Centre of Egypt aimed to sustain the cooperation in the field of research and capacity building but the cooperation is not intense due to the lack of funds.

### ***The view of the RABO Bank***

The following is based on an interview with Mr. Ben Valk, Region Manager Asia and Middle East, Rabo International Services.

Rabo Bank is active in developing countries through two separate initiatives:

1. Rabo Foundation. A charitable fund that focuses on providing micro credits for producers and stimulates the establishment of producer groups. Because the term “cooperation” has a negative tone in many countries the food processor plays an important role in improving the conditions of the producers by guaranteeing the purchase of the products against guaranteed prices. Producers are stimulated to organize themselves to bargain better prices and conditions.
2. Rabo International Advisory Service. The RIAS operates as a consultant firm for banks against “not for profit” tariffs providing technical assistance to banks with a focus on rural areas.

In addition the RABO bank invests in banks by being up a minority share of the stocks that allows the Rabo-bank to influence the banks policies and strategic decisions through board membership or having a strategic position in the management. Examples are banks in Rwanda, Tanzania, Kenya and Zambia. Initiatives are also on-going in China, Brazil and Vietnam.

The involvement of RIAS in the PBDEC –bank in Egypt started in 2002 and is still ongoing. The PBDEC is 100% state owned and state controlled bank and together with an unclear management structure decision taking is very slow and procedures are heavily bureaucratic. The chairman of the bank is at the same time the chairman of the board and managing director and is directly subordinate to the Minister of Agriculture. More than once the bank is used as an instrument of the ruling party when prior to the elections a debt waiver for the clients ( mostly farmers) is given.

Improvements are needed in the sphere of governance of the bank, in creating a savings branch and collecting savings from urban population to increase the financial stability of the bank and to broaden up the activities to other sectors.

RIAS has argued for some time now that for the sake of improving the banking activities and for the sake of rural development privatization would be the best option but since this currently a bridge too far the second best option is to change the status into an independent bank owned by the state. A proposal to make this happen is on the agenda of the parliament but it is uncertain when this will be approved. Meanwhile since a new chairman was appointed in 2007 who has asked RIAS to stay a while longer (although the time of the project to support the bank had expired) and since then some improvements are occurring and the bank is improving its standards and procedures.

Besides the (national) PBDEC two regional banks are operating; one for the Lower Egypt and one for Upper Egypt. These are also working in rural areas but independently from the PBDEC. RIAS has strongly recommended to integrate these three banks into one and to create one strong bank for the rural development and the development of the agricultural sector.

The current involvement of the RIAS will stop by the end of 2010 when the current project stops and whether RIAS will embark on a new project depends highly on the developments in the coming period and whether the recommendations given will be implemented and most importantly whether the bank will become independent. Another element that will influence the decision of RIAS is who will become the new chairman of the bank

Egypt is no focus country for the Rabo Bank because the prospects in terms of the development of international trade and the development of the agricultural sector are not strong enough; Rabo Bank has no office in Egypt and will not open one in the short term..

The Rabo Bank has a so called “emerging farmers” programme that aims to support the development of sustainable agriculture through support to promising agricultural entrepreneurs. This could be an option for Egypt and for the development of its agricultural sector

Rabo Bank does not receive many requests from Dutch entrepreneurs who want to invest in Egypt. Possible reasons are the bureaucracy and because Egyptian employees are not very disciplined, reliable and committed towards the employer.

## Annex 4: Overview of PSI funded Projects

Table: Overview of projects supported in Egypt (PSOM and PSI).

Egypt	Transport / Infrastructure	DAF Trucks	The establishment of a local assembly line	June 2002	5	+	619,852
Egypt	Transport / Infrastructure	WL Delft Hydraulics	A study of possible problems in the control of the working of pump systems	October 2002	12	-	356,823
Egypt	Transport / Infrastructure	DAF Bus International	A study of the regional passengers- transport per modus of transport	April 2005	0	-	548,877
Egypt	Agriculture	Hagé International	The cultivation of seeds for capsicum production for local consumption and export	August 2002	0	-	453,701
Egypt	Transport / Infrastructure	Nepostel	The introduction of modern logistics services for post- and parcel-delivery	April 2005	0	-	453,78
Egypt	Agriculture	Hifeed	The establishment of a factory for the production of cattle feed extracts	September 2003	13	+	680,467
Egypt	Agriculture	Yara Agri Sluiskil B.V.	The construction of a drip fertigation system for agricultural land	February 2006	39	+	670,364
Egypt	Transport / Infrastructure	Danser Container Line	The start-up of the transport of containers by inland barges by building two container barges	June 2005	17	-	680,67
Egypt	Transport / Infrastructure	HTM Consultancy B.V.	Introduction of Light Rail in Egypt	November 2003	7	++	349,404
Egypt	Energy / Environment	Nadco	The reduction of pollution by local production of PP plastic fittings	June 2005	25	+	453,41
Egypt	Agriculture	HZPC Holland	Demonstration of technical and commercial feasibility of local seed production	September 2003	4	+	453,735

Egypt	Agriculture	De Heus Brokking	The development and introduction of high quality cattle feed	October 2004	16	+	357,935
Egypt	Transport	Logistic Services Wim Bosman B.V.	The introduction of a new logistic service system	August 2006	9	-	728,014
Egypt	Agriculture	Kempex B.V.	Production of poultry feed additives for local and export markets	January 2007	0	++	425,515
Egypt	Agriculture	Eierprodukten Donkerbroek B.V. (Frisian Egg)	Grading and packing of eggs and production of pasteurised egg products for local market and export to Arabic markets	February 2008	21	++	643,814
Egypt	Agriculture	Organic Flavour Company B.V.	Production of Fair Trade organic herbs for sales through European supermarkets	June 2008	3	++	621,939
Egypt	Agriculture	Grow Holding B.V.	Growing of grafted vegetable seedlings for domestic market and export	June 2009	12	+/-	600,144
Egypt	Industry	Standard Holland B.V.	Recycling of low grade metal waste into a high quality raw material for the local and/or international steel industry	March 2009	9	+/-	750
Egypt	Agriculture	Van Rijn International	The establishment of a production facility for capsicums for export	September 2009	12	+	750
Egypt	Industry	NEM B.V.	The establishment of a high quality piping production facility to provide power plants with pipe spools		8	+	748,25
Egypt	Agriculture / Retail	Metro Cash and Carry International Holding B.V.	Quality controlled logistics & distribution of high quality fresh vegetables & fruits for the domestic urban market in Egypt		35	+	
Egypt	Agro-processing	Agrico	MABA Retail Joint Venture for the retail packing and distribution of ware potatoes in Egypt.		35	+	
Egypt	Agriculture	Zwin Brothers BV	Growing radish in the Egyptian desert for the European markets		14	+	
Egypt	Agro-processing	VNK BV	Sinai integrated chain project for freezing and drying of herbs		61	+	

## Annex 5: Meeting report representatives agricultural sector in Egypt

### Opportunities in the agricultural sector

The issues brought forward can be grouped as follows:

- water and agriculture
- Small en medium sized farm development: quality and logistics, rural development
- Education, research, training
- Food safety
- Marketing
- Logistics (EG gov puts a bid for centres all over EG: open for Dutch firms)
- Institutional aspects (coops)
- Breeding (dairy, aquaculture, seed)
- Nutrition and health

The opportunities can be grouped in:

- Nile delta ( and valley)
- New agricultural areas
- Cross cutting

### Nile delta:

- Focus on increasing the outputs and economic viability of medium sized farms. ( 10-50 feddan)  
What are the critical success factors? And what is the best model for success. Success factors; post-harvest losses, packaging, service centres for groups of farms, Cooperation in storage, processing, distribution and marketing is critical.
- Improve functioning of local markets. Reduce post-harvest losses up to 30-40%.
- Developing the SME farms to contribute to export.

*Action:* What can NL do help to establish farmers' associations and remove current obstacles? This requires changes in legislation and institutional change Analyses of existing cooperations. Analyses of institutional hurdles and blockades. Pilot project in establishing producer cooperations ( Dutch partner?) (POP project failed, contact: Agriterra).Setting up a programme to increase entrepreneurship of farmers. Value chain projects, Projects to introduce food safety standards.

Discuss strategy with Minister of Agriculture.

Identify Dutch partners (Cooperatives) PUM ?

6000 cooperatives; 22 units.

- Better branding (and marketing) of Egyptian horticulture products to increase market share and market penetration.

*Action: ??*

- Increase the level of knowledge and research in the agricultural sector. Increase knowledge and competences at all levels.

*Action:*

Niche; 4 programmes identified: Institutional development of Agricultural (Technical) Schools and vocational training. ; Farm management (entrepreneurship); e-learning with a focus on aqua culture,; quality control and accreditation, agricultural extension services.

- Introduction of quality management of drainage water at farm level also in view of increasing the options for the reuse of water.

*Action:*

Small scale purification plants. Surface purification? Pilot research project with IHE? Alterra?

- Labour costs are increasing and skills of labour are limited. Need to replace labour by small scale machinery.

*Action: ???*

- Land fragmentation and decreasing availability of agricultural land in the Delta. Design incentive to make people move out of the delta. Separate between farmers income and return on the land. Return on the land is extremely low. Need for change in heritage systems is non-negotiable. Imagine; physical area is stable, but fragmentation goes on. Find employment for the increased population. Lease instead of ownership could be a solution. Selling of shares instead of land. This is not resolving the traditional systems. Also: increasing farmers income. In NL cooperative system is the basis. Problem in EG is government involvement and use the cooperatives for political purposes. Coops cannot be involved in investments of factories e.d. There is a draft text for a revised law.

*Action:* Design of a coherent masterplan for the delta including poverty reduction, housing and physical planning, water use and water management, restructuring agricultural organisation, salination and water quality issues, infra-structure. Pilot project. Need for action plan in identifying projects for rural development. Example the 1100 village plan. Link with cooperatives, start with the good working ones.

### **Desert area**

- Develop the desert area for sustainable farm land: garden for EU. Proper irrigation and water management of ground water. It is realistic to realise that a lot of Delta grounds will be used for housing. Alternative: move people from the delta with alternatives. Also reform the cooperative system away from government control to economic system.

*Action:* Analyse existing projects on water use efficiency and incentive system to reduce water use. (e.g. MABA farm)

- Poverty level in upper Egypt. Problem is logistics: where to go with the crop? Idea to develop side-ways. Corridor plan: N-S high way. Combine with agri-parks.

*Action:* Link with development of agri-parks

- Preservation of underground water (Most important for Dr. Ahmed)

*Action: ??*

### **Cross cutting**

- Agrolistics; EG want local centres for marketing

*Action:*

Establishment of collection centres for local crops. Milk, grains, wheat, cotton. Value chain projects. Improved food safety. Development of retail sector



- Development of dairy sector. More focus on milk and dairy, instead of only on fruits and vegetables. For big and modern farms.

*Action:* link with relevant institutes and businesses in NL

- Training and education. Not only skills of farmers but also policy makers and researchers. Egypt should learn from the model of India. Send students abroad.

*Action:* NFP; NUFFIC. More exchange of students from NL to Egypt; PHD students. Model it Minufeya univ with input on curriculum from private sector, with direct employment chances. This model could be copied. Also training on irrigation / drainage treatment

- Food safety; New food processing techniques. New technologies in drying food, etc
- Joint ventures between Eg-NL companies.

*Action*

1. realising opportunities: e.g. in logistics
  2. S-S cooperation (UNIDO) using EU partners
  3. Joint Venture in Gambia in potatoes and onions, with Dutch partner. Cooperation with EG: cheaper than NL.
  4. ARC letter of intend with science parc in India. Start with NL under PPP.
- Nutrition. Malnutrition and obesities. Highest wheat consumption of the world. Change of habits.
  - Recycling of waste. Main challenge is logistics: collection and transport to factories.
  - Increase water use efficiency

*Action:* Research: maximizing efficiency of water use: focus on food security and not on self-provision. Introduce NL greenhouse systems. Research into new crops and varieties  
Support introduction of DACOM Technology. Design incentives for efficient water use. Set up model farms

- Breeding. EG can be a hub for breeds of many crops. Cooperation with Dutch firms offers good opportunities. Production of seeds: currently monopoly by ARC
- Institutional support:

*Action:* optimize legislation, organisational set up and institutions. Improve data collection and analyses. Adaptation of policy making using data. E.g. cadastre registration of land. It exists. Bureaucracy point. Good example: Dutch brown rot project. Use this system for other purposes. Start G2G projects

- Phytosanitary reforms. Twinning
- FSA: as soon as law is accepted, cooperation for FSA.

## Annex 6: Participants of round table discussion on agriculture in Egypt

### Round table discussion, Agriculture

**23 June 2010**

<i>Name</i>	<i>Organisation</i>	<i>Position</i>
Dr Ayman Abou Hadid	Agricultural Research Centre	President
Mr Tarek Tawfik	Farm Frites	Managing Director
Dr Omar Abdin	Ministry of Finance	Executive Director, Ministerial Group for Agricultural Policies & Projects
Mr Abdelhamid Demerdash	HEIA	Chairman
Mr Abou Basha	MABA	Chairman
Mr Tarek Gamgoum	HEIA	Executive Director
Mr Amr Farouk Abdelkhalik	Ministry of Higher Education	Member of Strategic Planning and Technical Support Centre
Dr Safwat el Haddad	Ministry of Agriculture	First Secretary, Head of Agricultural services and Follow up Sector & Director of Potato Brown Rot Project
Dr Farouk El Aidy	University of Kafr El Sheikh	Professor of Vegetables
Reserve		
Mohsen El Beltagy	BELCO	General Manager

## Annex 7: Meeting report representatives water sector in Egypt

### Opportunities Water Sector

#### **General remark:**

Lack of sustainability of project results; make sure the project outcomes are sustainable through transfer of knowledge and training throughout the project implementation process. Make human resources available to be involved in the implementation process.

#### **Government to government cooperation**

Key for success: Recipient capacity of the organisation.

Subjects:

- Human resources management
- Strategic planning methodologies
- Strengthening the institutional/organisational aspects of water management. Exchange of civil servants and experts is seen as very important. Support is needed to: Improve coordination between sectors. Awareness campaign. (Strategy is developed by the APP). Niche programme offers opportunities
- Inter-ministerial platform is needed.
- Water watch project is a good example

#### **Monitoring and evaluation; (no concrete data available to assess policy impact and adapt policies)**

- Capacity building in monitoring and evaluation techniques

#### **Groundwater**

*Research Institute Ground Water*

- Artificial recharge of ground water. Implement pilot project by using non purified water. Condition: Environmental impact assessment. More attention for the quality and quantity aspects of ground water
- Salination/ de-saline waste water before recharging ground water
- Use solar energy in ground water extraction
- Set up water user associations for the oases. Oases need more attention.

#### **Awareness raising and communication**

The issue of water scarcity needs more attention in public awareness campaigns. Water communication unit in the Ministry. Integrated approach is needed with Ministry of Housing. The minister indicated that he does not want new agricultural areas.

#### **Strategy development**

A new strategy on water use is going to be elaborated ( 2050)

National Programme of rehabilitation of drainage networks needed.

Masterplan for drainage.

#### **Training and capacity building**

NWRC (under min of agric.) is accredited for performing trainings of the IHE in Africa. Like IHE is a UNESCO Centre

Marketing of trainings needs to be improved.

Staff: Train the Trainers

Differentiate between capacity development and capacity management. Vision on capacity management is needed.

### **Research**

Building on the Lol between the National Water Research Centre and the Environmental Science Group of WUR. New technology for water harvesting

Does the ministry have an influence on the training programme and curriculum development of universities?

### **Drainage**

More attention for pollution of drainage water. How can it be purified and re-used.

Increase knowledge. Self-purification in drains? (Surface purification in artificial wetlands with helofytes??)

New techniques for drainage implementation; controlled drainage system.

Train engineers in improving drainage systems.

Human resource management

Need to improve small management structures.

Cooperation with RIZA stopped 5 years ago

Need to resume cooperation with ...?? Alterra,

### **Business opportunities**

Optimisation drainage systems. Combine Dutch –Egyptian knowledge. Consortium to Transfer knowledge to Africa. !!

Triple P project; water user organisations; guaranteed amounts of water provided. No incentive to reduce water use.

### **Ecosystems**

More attention is needed for ecosystems and ecosystems services. UNDP project?

### **Other topics**

- Support to the development of water savings techniques and approaches.
- Climate change adaptation strategies
- Remote sensing and GIS
- Future role of the APP
- Shore protection/integrated coastal zone management/sea level rise. Cooperation with Deltares. Ministry has a department on coastal zone management

### **Prof. Ahmad Gaber.**

Associated with Royal Haskoning and DHV and in the past with IWACO.

He sees a lot of opportunities for joint ventures between Dutch en Egyptian companies; have complementary knowledge and because of lower labour costs in Egypt these joint ventures can work very competitive n the African market.

NL can help to build regionally operating companies in Egypt through capacity building and training.

Make clear what the added value of Dutch water expertise is. (Niche)

*(You can not continue to work with the old model where the western firm comes in to solve a problem and leaves the country in desperation).*

### **Egyptian Water Partnership**

Need to invest why is not active and whether there is a need to bring it to live again. Support to matchmaking is considered to be crucial.

KFW??

### **Criteria for successful joint ventures: :**

- Personal relationship
- Decision making procedures of the company
- Willingness to help and invest

### **Priority projects/ prime opportunities.**

- Interlink between waste water and drinking water. Particularly in rural areas. Time bomb in the holding company -> vulnerable to disasters
- Water intake susceptible to a disaster
- Develop tools and techniques for early detection of disasters, detect vulnerable areas.
- Sludge application. Sometimes applied in stupid ways. Develop new techniques on the bases of no cure no pay!
- Agriculture: seeds import. We need expertise and know how to be able to export seeds adapted to North African situation.
- Italy; mobile desalination techniques. Can it be modified to be used on a larger scale.
- Development of water management installations adapted to Egyptian / north African situation ( e.g. small scale purification)
- Water billing needs improvement
- Human resource management

### ***Institutional aspects of drinking water and sanitation in Egypt***

Current situation is working well ..just started to function well. We are an example to other countries.

Accountability is needs to be improved. Trainings; impact needs to be evaluated. No attendance certificates anymore!!!

You need a training plan next to the business plan.

Lack of accountability is a cultural aspect as well as political!

### ***Cooperation between universities***

Redundancy of our graduate system. The top students are coming from public universities.

Promote cooperation between universities. Delft is very well known. Maastricht is also known. In general we know little about the Dutch system. NL needs to promote herself better. The effort has to come from Holland. Invite Egyptian students to the Netherlands. That influences the thinking of the top decision making!!

### ***Private to private partnerships.***

Bridging gaps between companies in for instance food sector. Show the various techniques to set up partnership. Organise "marriage fairs".

Taking it further than matchmaking. What is the best technique for Holland. (DK has a successful programme) E.g. Innovation centre model. Requires analyses.

## **Holding Company on Water Management and Waste Water Treatment**

### **Important topics;**

- sanitation strategy for rural areas! Rural areas are only to a limited part connected to a sewage system. Invest plan of billions of pounds.
- Re-use of treated waste water for various purposes ( Aqua culture? Agriculture/floriculture?)
- Reduce leakage in drinking water supply; sometimes up to 30%
- Opportunities in delivery of meters. Big investment plan to install meters.
- Introducing an automated billing systems
- How to make use of groundwater; the content of iron is problem.

Staff is sent to Germany ( INWERT-Bonn) for training

## Annex 8: Participants meeting water sector

**Date :** Tuesday 22.06.2010

**Time:** 10:00 am

**Location:** Dr. Hussein El-Atfy Office - MWRI

	Name	Position
1	Dr. Hussein El-Atfy	Head of Irrigation Department
2	Dr. Mohamed Fawzy	Deputy Chairperson of National Water Research Center – NWRC
3	Dr. Mohamed Bakr	Deputy Director of Regional Center for Training and Water Studies (RCTWS)
4	Dr. Ibrahim El-Shenawi	Director of Coastal Research Institute (CoRI)
5	Eng. Ibrahim Harhash	Chairman of EPADP
6	Dr. Essam Khalifa	Sector Head, Minister Office
7	Dr. Abdel Moneim Shehata	DG for Studies and Research of Water, Irrigation Department
8	Dr. Madeha Mostafa Hassan	Head of Ground Water Sector
9	Eng. Adel Saied El-Madbouly	Head of Irrigation Development Sector
10	Dr. Samia El Guindy	Head of APP Central Office
11	Dr. Magdy Salah edeen	Deputy Head of APP Central Office

12	Dr. Tarek Kotb	Director of Integrated Management Project and Irrigation Development – IIIMP
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## Annex 9: Dutch involvement in the agri-food sector

Egypt has the potential to develop as an important player in the production and export of vegetables (incl. onions), herbs and fruits (mango, peaches, grapes).

The two main horticulture areas are the Nile Delta and Basin with small-scale traditional farming systems, and the desert with more modern, large-scale farming systems. Despite some good exceptions in the desert areas, neither system is generally spoken sustainable in terms of use of chemicals, water and nutrients.

This has adverse impacts on the environment (water, ecology) and on the labor conditions. But it also impacts the quality of the products in terms of food safety and nutrition standards and negatively impacts the marketing opportunities and consumers' appreciation for home grown food products.

Post-harvest losses can exceed 30%, affecting the profitability of the production system and rotation schemes are inadequate further impacting the income situation of the farmers.

There is great need for innovative steps in farming systems that reduce the use of chemicals and improve the efficiency of water and nutrient use, both in open and protected cultivation systems. More sustainably produced products will reduce the environmental impact, improve working conditions and lead to higher quality food products with increased the food safety standards creating better marketing opportunities for both the domestic as for the export market.

A Code of Conduct is a way to tackle the shortcomings and to improve the sustainability and quality of agricultural production. This Code of Conduct can include elements of "Integrated Pest Management" to reduce the reliance on chemicals.

Funded through the Policy Support Program of the Ministry of LNV a survey is being carried out to develop a triple P approach for selected products in close cooperation with the stakeholders from within the chain of custody.

On farm testing of this approach is included and where necessary recommendations for rules and legislation may have to be discussed, and cooperation between the stakeholders in the chain of custody will need to be strengthened.

For 2011, on-farm 'proof of principle' trials and fine-tuning of technology are planned to continue, before criteria are fully met.

The project runs in parallel with a PSI funded project though which MAKRO aims to set up a chain of custody for vegetables and fruits (see below)

### **8.1 Horticulture: Flowers**

Early 2008 Horticonsult Global Partners BV was invited by the Egyptian Flower Council to execute an extended study of the Egyptian floriculture industry. This study should be the corner stone of a programme for improvement of this industry. Many discussions took place before in the autumn of 2008 the Flower Council of Egypt, the Agricultural Export Council and the Industrial Modernization Centre as the financing organization all agreed upon the set up of the study.

Starting point of the study was that it should lead to recommendations for the Egyptian floriculture industry and possible third parties. Also, the recommendations as a result of the study should be to the benefit of floricultural companies of all dimensions and for both the local market as well as the export market.

The Egyptian flower industry appears to be much bigger than formerly presumed. According to the inventory and recalculations of Horticonsult Global Partners BV, the production of local producers in the Nile Delta alone amounts to 380 million stems. Local producers are mainly small family enterprises with only a basic equipment and little knowledge of the flower industry. There are an estimated 300-350 local

producers in Egypt, most of them situated in the Nile Delta north of Cairo. Their production value is estimated at EGP 190 million (almost EUR 24 million). Quality after harvest is average or poor, caused by insufficient cooling facilities and poor and old fashioned assortment.

Wholesale producers, mainly larger companies with a local and sometimes international distribution structure produce an estimated 210 million stems of cut flowers, including 15 million stems of specialized producers. The production value of the wholesale and specialized producers is EGP 263 million (EUR 33 million)

Specialized producers are flower producers with only one, but not more than a few specialized products for export to mainly the auctions in Europe. Specialized producers exported about 15 million stems in 2008, mainly to the flower auction Floraholland

The project proposes three targets within 7-8 years after the start of the execution of the recommendations. These targets are:

- 1 Egypt is an important regional supplier as producing and trading country;
- 2 Egypt is a significant producer of specialized products for bulk export to the European market;
- 3 Egypt is a flower producing nation with a strong local market.

The project also recognizes that, to meet these targets, measures have to be taken:

1. Investment in infrastructure & knowledge;
2. Improvement of performance producers;
3. Strengthening and restructuring of the organization of flower producers;
4. Increase regional marketing efforts;
5. Improve and increase local market ;
6. Modernize governmental rules & regulations;

The main recommendation is the establishment of an Egyptian Flower Center, including a Central Market Place for the local market and for export. This will be the back bone of the entire industry. It is recommended to establish a flower auction to improve transparency of the market, to make the entire industry more efficient and also to improve the position of the local producers. Also the wholesale and specialized producers will benefit from this auction.

The establishment of a Central Market Place, including an auction will also enable the industry to set up a cold chain. This should start with so called Collection & Service Centers in villages with a concentration of local cut flower producers. From this CSC's, the products from the local producers can be delivered to the Central Market Place by temperature controlled trucks in order to be auctioned and sold to the flower shops and other types of outlets in the Greater Cairo area.

The local market is considered to be a strong point for the Egyptian floriculture industry. More promotion and up scaling the (artistic) skills of the local florists will contribute to even better local sales.

In addition it is strongly advised that Egypt takes measures to position itself as a main supplier of cut flowers in the Arab world.

### ***8.2 Chain of custody for vegetables and fruits***

MAKRO is planning to open a chain of wholesale hypermarkets in Egypt and intends to buy as much as possible products from local producers like fresh vegetables and fruits. This is however only possible when investments are made to improve the quality of the products and to invest downwards in the food chain. MAKRO applies its own quality certification scheme that takes into consideration strict environmental and social standards but also food safety standards and sustainable production methods. The project that is being subsidized by PSI aims to increase the capacities of local producers to produce against the quality standards set by MAKRO and to improve the food chain until the product is ready for sale in the



supermarket. To increase the quality of the farming methods MAKRO has employed extension workers who advise farmers about how to improve production methods. This project is subsidized because it has a clear spin off on the development of the local economy and enhances the capacities and position of small scale producers.

### **8.3 Aquaculture**

The contribution of aquaculture to total fishery production has steadily increased. Aquaculture production has increased from 12,400 tons in 1977 (8.3% of total fish production) to surpassing capture fishery and amounted to 693,000 tons representing about 60-65% of total fish production in 2008.

The production mostly consists of fresh and brackish water fish species like tilapia, mullet and carp. Egypt has become the no. 1 aquaculture producer of the African continent and no. 2 for Tilapia production worldwide. It is estimated that approx. 60,000 persons are involved as owner or employee in fish farming (FAO, 2007). Most fish farms are located in the Nile delta region, with smaller number of farms in Fayoum region, along the Mediterranean coast and in the eastern dessert area.

With fish catches from the sea, rivers and lakes stagnating around 400,000 tons due to fully exploited or overexploited stocks the level of fish supply for the growing Egyptian population can only be maintained by means of increasing imports or by expanding aquaculture. However, expansion of fish farming in Egypt is mainly hampered by the exclusion of fish farming from the short list of first users of Egypt's limited fresh water resources and limited leasing periods of farming land. At present such first use is only entitled to drinking water, agriculture and industry. Egyptian law does at present not consider fish farming as a form of agriculture.

Treated wastewater is expected to be the renewable water resource for agriculture expansion in the future, if no additional share of Nile waters is mobilized, and the existing Egyptian code for treated wastewater reuse in agriculture will need to be implemented. Using agricultural waste water would significantly increase the production possibilities of some fish species.

Among the various stakeholder groups the opinions on this topic differ. The legal and institutional blockades with regard to freshwater use are based on different arguments, perceptions and opinions with regard to fish farming. The amount of water used by fish farming and the quality and usability for irrigation purposes of the water leaving fish ponds are among the issues already debated for considerable time between irrigation water managers and the fish farming sector. It is not expected that the issues will be resolved and that the debate among stakeholder groups and the many government institutions that play a role in this will end on the short term.

The problem is being amplified by the considerable number of government institutions that play a role in agriculture and fresh water use and their relationships to this topic are complex.

Egypt needs to use its freshwater resources efficiently and economically, and even more so in the future. It will increasingly be an important source of animal protein for the country. Integrating aquaculture and agriculture by using water first for fish production and then for irrigation is one way of raising the food production per cubic meter of water.

The Netherlands Government is supporting the aquaculture sector through capacity building and technical projects. Initiated by the Embassy of the Netherlands in Egypt the Centre for Development Innovation (WUR) is implementing a project through the Policy Support Program of the Ministry of LNV.

Based on the results of previous projects the project aims to achieve a more efficient use of available freshwater resources (higher food production / m<sup>3</sup> of water) in Egypt by influencing Egyptian policies and regulations in such a way that juridical and institutional limitations and obstacles with regard to freshwater use by fish farms will be reduced or removed. Such a policy change will be attempted by:

- Generating vital hard quantitative information about water use by, and water quality changes in integrated fish farming systems under Egyptian conditions. Such information is important in the debate about the right of fish farms to first use of irrigation water;

- Developing a strategy on how to remove the obstacles for a wider application of integrated aquaculture in Egyptian agriculture. The strategy will be developed in close cooperation with the Egyptian Fish Council, national and international aquaculture research centers, private companies and with the Egyptian-Dutch Advisory Panel Project on Water Management (APP) in which the Embassy is participating closely.

#### **8.4 Rice straw**

Improving the utilization of farm residues will have health, environmental (black cloud), income, employment and gender implications.

Improving the use of the agricultural byproduct streams have been initiated in recent years in Egypt. Probably the most prominent example of this is rice straw, of which yearly 3 million tons is burned in the field, creating both an economic waste and an environmental problem (air pollution; smog formation). The well-known “Black Cloud” is a yearly health problem covering a.o. Cairo. An integrated approach on the farmer’s level is needed by which a closed system is pursued in order to make optimal efficient use of agricultural product and byproducts. In view of the actual rising food prices, high population growth rate, and higher energy prices in Egypt, efficiency and improvement of the whole production chain process becomes more important. In this context, the beneficial re-use of agricultural waste will be economically profitable for both the farmer and the industry, environmentally sound by better using the biomass (bio-based economy), and will add to human health quality as large scale rice straw burning is reduced leading to less air pollution in Cairo and other areas.

Under the patronage of the Egyptian Minister of Agriculture & Land Reclamation and the minister of Environment, a seminar was organised by the Embassy and Wageningen UR in June 2009 during which an overview was given of the current situation and practices were presented of recycling applications in other rice producing areas in the world.

The main conclusions and recommendations of the seminar were:

- There is a general awareness in Egypt that field burning of straw, in particular rice straw, leads to unacceptable air quality. This is partly brought about by recent reports on what is locally known as “the Black Cloud” in the media, newspapers, etc;
- The main driver for field burning for farmers is the rapid turn-a-round of agricultural fields after rice harvest, and the lack of economic incentives for farmers to use rice straw for other purposes.

While there are many initiatives such as pilot projects on alternative rice straw utilisation, these initiatives are generally fragmented, and projects are not linked. There is not much exchange of knowledge and experience.

An integrated approach is needed in order to make optimal efficient use of agricultural produce and byproducts.

Financially supported by the Ministry of LNV (Policy Support Program) Wageningen UR is conducting a research with the overall project goal to identify economically viable and environmentally sound alternative uses for the rice straw in Egypt that are produced each year and thereby reduce the environmental impact of field burning.

The research will build upon the outcomes of previous investigations that identified promising alternatives listed in the “List of prospective Rice straw Recycling/Utilization methods”. One of the alternatives is to use straw in the production of light-weight, sustainable building materials (e.g. MDF) for use in local markets as alternative for imported, wood-based materials, or for export to other countries.

#### **8.5 Seed potatoes.**

Egypt exports on a yearly base somewhat like 300.000 tons of potatoes to north Western Europe. The main reason why Egypt manages for being able to export this considerable amount of potatoes to Western Europe is because the Egyptian potatoes can be harvested much earlier than the potatoes in North West

Europe. But as soon as the potato harvest in North Western Europe starts the interest in Egyptian potatoes falters because of the high transport costs.

It is the assessment of Agrico that the export of Egyptian potatoes will therefore remain to be on that level. Growth is foreseen in the domestic market where a steady increase of potato consumption can be seen for some years; the current consumption per person is around 25 kg. (NL around 60 kg). The Egyptian government sees the potato as a good alternative for other staple food products because it consumes less water. See potatoes for the potato growers in Egypt are currently for about 60% imported from the Netherlands.

With financial support via the PSI Program of the EVD Agrico is investigating the possibilities to increase potato consumption in Egypt.. One of the big challenges to tackle to increase the consumption of potatoes in Egypt is to improve the product chain from harvesting to retail. In addition (and as a result of an ineffective product chain) potatoes are displayed in a rather poor manner making it not attractive to buy potatoes.

The project of Agrico is aimed to improve the product chain and to improve the way the potatoes are being displayed especially in supermarkets and to increase the capacities and skills of potato growers.

### ***8.6 Poultry farming***

Poultry farming is under stress because of the Avian Flu. An interesting and successful PSI project in this sector is the processing and pasteurization of the yolk/white of chicken eggs. The end product is an ingredient for bakeries, hotels, manufacturers of mayonnaises and other sauces (e.g. Kraft, Unilever).

