

Supporting the Aquaculture industry in Egypt:

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1. Introduction¹⁾.

Egyptian fish farming has witnessed a spectacular development resulting in an industry that is number 7 worldwide and number two in tilapia production. As such the industry is an important contributor to Egypt's economy as well as a major provider of cheap fish protein. However, there are a number of developments that potentially could result in a stagnation or even collapse of the industry. Some important issues are:

- Low fish prices and increasing fish production costs resulting in eroding profitability of farms and thus no investment in technology development and innovation.
- Lack of processing and freezing capacity which results in an inability to access new export markets
- Low priority of government, lack of legislation and harmonisation of legislation, no operational extension service, weak professional organisations and weak linkage between research and industry
- Rather traditional farming technology (tilapia) including use of low quality feeds and wild fry (marine aquaculture).

The IMARES/Wageningen UR study¹ illustrated that within the currently available land and water resources, Egypt can potentially increase its total tilapia production from 700,000 tonnes to 1,400,000 tonnes, resulting in an increase in the economic value of the sector to over 1% of the current GDP. In order to realize this potential, the first requirement is to increase the current farm profitability. When this is realized, capital will become available that allow farmers to invest into new production technologies, market innovations and new organisational structures, that will then result in more fish and new markets. Among the issues at stake are improvements in fish feed and on-farm feed management, breeding and genetics and export of fish to new international markets (Middle East and Europe).

According to Goulding et al (2013)², Egypt is currently not able to export aquaculture products to the EU, not because of high contaminant levels, but due to non-compliance with residue monitoring requirements set out in EU Directive 96/23/EC. To meet both export market requirements, as well as protecting the health of Egyptian consumers, there is a need for a scientifically designed and published annual monitoring scheme for farmed fishery products, to be executed by an independent body, with follow up and transparent reporting. Furthermore, since Egypt does not possess a system of coherent animal health control for aquaculture, and compliance with EU sanitary regulations (General Food Law), the organisation and implementation of these matters is regarded as an important marketing tool for increased penetration of other markets, including Gulf countries, as well as Egypt's domestic tourist and multiple retail markets.

Among the proposed interventions that the Embassy of the Kingdom of the Netherlands (EKN) could facilitate is the improvement of fish quality management. The present mission was aimed to identify the needs of the Egyptian industry and government in this area, and to define a capacity building activity that fits within the available budget of the EKN.

¹ Based on Rothuis et. al. 2013. Aquaculture business opportunities in Egypt. IMARES report C091/13.

² Institutional, Policy and Regulatory Framework for Sustainable Development of the Egyptian Aquaculture Sector. Ian Goulding and Maggie Kamelb. Project Report 2013-39 (2013).

2. Meetings

World Fish (WF; Malcom Dickson & Ahmed Nasr-Alla). Based on the recommendations made by Ian Goulding²⁾ WF has prepared a project proposal to be funded by DANIDA, but not yet approved. Another possibility is that WF will include the institutional requirements for fish quality management and export of fish to the EU in the next phase of the IEIDEAS Project, starting in 2015. This is currently been discussed with the Swiss Agency for Development and Cooperation. WF's focus is on small holders. Concerning fish quality management WF's priority is on the provision of good quality fish for the rural poor. Key issues are extending the shelf life of Tilapia (handling of fish, use of ice) and domestic marketing (who is willing to pay for a better quality Tilapia?). Export issues are not a priority for WF.

Fish Basket International (Ali El Haddad). The fish processing plant (capacity 45.000 MT of fish/year) is expected to be completed soon. Initial focus will be on export (USA) of processed products (frozen fillets, fried, smoked and cooked fish products). Raw material will come from contracted fish farms using specific feed from specific fish feed companies. Fish Basket will set up its own water and food safety monitoring and control program in order to qualify for the US market. Priority areas for (Train the Trainers) training include: EU regulation, hygienic control, farm traceability, and fish food technology including fish processing and processing of fish waste.

Ideal Food (Mohamed El Morshedy, Ayman Hamdy). Operate a fish farm and feed mill, production approximately 4800 MT (tilapia and some mullet). Egypt currently exports 12.000-15.000 MT/yr whole (chilled) fresh tilapia to Saudi Arabia, UAE, and Kuwait (by plane). Volumes are growing with 25-30% per year. Saudi Arabia requires an health certificate (for every shipment) to be issued by the Ministry of Health (visual inspection on fish appearance and quality), and an export permit to be issued by the Ministry of Agriculture and Land Reclamation (MoALR; valid for three months). Saudi authorities sample each shipment and test for bacterial and other contamination. Ideal Food exports 2500 MT/yr, including processed tilapia (fillets) to Turkey and Jordan. Export is done in the period that prices of tilapia on the domestic market are low. Training needs to include: post-harvest treatment, preservation and cooling technology, handling and transport methods, and EU legislation and EU market requirements.

General Organization for Veterinary Services (GOVS) (Sayed Gad El Mawla, Rasha M. Tawfik). The GOVS, under the MoARL is the Competent Authority for the implementation of sanitary controls of fishery products exported to the EU. At this moment 12 fish processing facilities/cold stores have been certified and approved for export of wild caught marine fishery products. Because the GOVS has no residue monitoring plan for aquaculture products as set out by EU Directive 96/23, it cannot export aquaculture products (including tilapia) to the EU. This situation was discussed with GOVS staff. Consensus was reached on an step-by-step approach, consisting of a roadmap with a sequence of actions, leading to the implementation of a EU-proof residue monitoring program that allows not only export of aquaculture products to the EU but also guarantees a certain level of quality of Egyptian aquaculture products that create confidence among domestic consumers and international tourists. The roadmap is further detailed in the next paragraph and will be discussed by Netherlands Embassy and representatives of the aquaculture industry with the Minister of Agriculture, for approval and further implementation.

Sheta Export & Import (Nagy M. Sheta). Operates a fish processing (300 MT/yr) and cold storage (1200 m³) near Damietta. Also import/export. Species: herring, seas bass, sea bream, snapper, octopus, cuttlefish. Estimates that the export of tilapia to the EU could grow to 250.000 MT/yr. Is interested in EU market information, market requirements, type of product etc. Training needed in fish smoking technology.

El Masreya (Ali Thabet; Elaa el-Shazly, Nesma el-Shazly). El Masreya is an Import & Export Company specialized in seafood and fish products. The company is importing shrimp from India and Vietnam, and is exporting marine fish, tilapia (1-3 MT/week) and Nile perch to Turkey, Kuwait and the Gulf. The company is also producing smoked sea food including Herring and Salmon. They are supplying local super markets and hotels with sea food. On the supply side the company is insuring the quality of fish by using refrigerated trucks. They have an in-house fish quality management system and regularly test fish through laboratory analysis. The company expressed a strong interest in exporting to the European Union countries. However, the available volumes of wild caught fish from Egypt are a limiting factor. In order to understand the needs of the European market they expressed the need for market intelligence and knowledge on EU import regulation.

Red Sea World (Emad Abdel Rahman, Waleed Abdel Rahman). Is trading in various commodities (Douwe Egberts coffee) including sea food, mainly for the upper market (hotels and restaurants). They process fish (sorting, cleaning, filleting, smoking, freezing) mostly locally sourced tilapia, but also imported herring and salmon. Processing capacity is approximately 10MT/day, facility is HACCP certified. The domestic market is the main outlet for their fish products. The company has recently obtained an export license for Canada and is in the process of obtaining an export license for wild caught marine fish to the EU. They consider shrimp, marine fish and tilapia as potential export products for the EU market. They expressed a need for more information on EU market requirements etc.

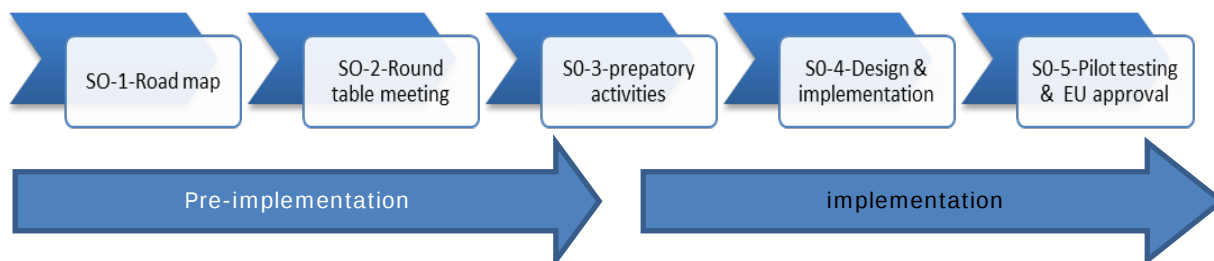
3. Conclusion

- Fish quality and quality management is an important issue in Egypt, including fish handling and fish transport, fish preservation, managing the cold chain, food safety, HACCP etc.
- There is a need to develop new markets for Egyptian aquaculture products. Besides regional markets (Saudi Arabia and GCC countries), there is a considerable interest for the EU market.
- Not much is known about EU regulations and quality standards, EU market requirements (product type, size, type processing) and potential buyers
- There is considerable interest from the private sector for capacity building in above areas.

4. Road map for fish quality management

The overall objective of this activity is to make it possible to export aquaculture products from Egypt to the European Union. Through the implementation of the required residue monitoring program and other identified activities, the domestic consumers and international tourists visiting Egypt will (re)gain confidence in the quality and food safety aspects of Egyptian aquaculture products. This will increase the demand for these products and will contribute to a further growth of the aquaculture industry in Egypt. This in turn will enhance business opportunities for Dutch companies active in the fish value chain such as suppliers of fish feed, fish processing and cooling equipment, and knowledge and technology providers in these areas.

To achieve the overall objective the following specific objectives (SO) will need to be completed. The major actor is the General Organization for Veterinary Services (GOVS).



SO-1- Road map. The road map prepared within the framework of this mission will be forwarded by the EKN Cairo to the GOVS, in preparation of a meeting with the EKN and representatives of the aquaculture industry, with the Minister of Agriculture, for approval and further implementation.

SO-2- Round table meeting (facilitated by EKN Cairo). Representatives from GOVS, the private sector, WF, U.S soy bean export council, IMARES/Wageningen UR, and EKN Cairo will come together for a round table meeting (possible participants are listed in Annex 2). Purpose is to discuss and agree on the road map and the role and contribution from each of the stakeholders. Also the possibility to form a platform that will guide the overall process will be discussed. Agreements will be documented in the form of a “Letter of Intent”.

SO-3- Preparatory activities. In order to build capacity for the actual preparation of the residue monitoring program, it is advised to undertake the following preparatory activities: study tour to the Netherlands, preparatory expert mission to Egypt, and a short training program for the private sector (see “activities 2014”).

SO-4- In accordance with Council Directive 96/23/EC of 29 April 1996 on measures to monitor certain substances and residues in live animals and animal products, a residue monitoring plan will be prepared and implemented by the GOVS and the Central Laboratory for Residue Analysis of Pesticides and Heavy Metals in Foods, in cooperation with the stakeholder platform. Activities include³: revision of legislation, design and implementation of residue plan, training for GOVS/laboratory staff, upgrading/development of appropriate testing methodologies, supply of reference materials and proficiency testing, and development of a funding methodology to cover the expenses of the monitoring plan. The GOVS needs to be supported with technical assistance and capacity building. It is anticipated that the WF IEIDEAS Project-2 can provide a significant part of the required Technical Assistance. Possible other linkages to other donor funded projects and/or through other funding opportunities need to be investigated as well as private sector contributions.

SO-5- Through a series of pilots the residue monitoring plan will be tested and afterwards forwarded to the EU for approval. It is expected that the overall process will require two years. SO-1 and SO-2 can be realized in the coming months. SO-3 can be implemented in the second half of 2014. SO-4 and SO-5 in 2015. Supplementary to above activities it is proposed to organize a number of parallel capacity building activities directly aimed at the private sector (large aquaculture companies and processors of farmed fish). These could include training on fish handling, processing and fish quality management, but also on

³ Institutional, Policy and Regulatory Framework for Sustainable Development of the Egyptian Aquaculture Sector. Ian Goulding and Maggie Kamelb. Project Report 2013-39 (2013).

market intelligence needed to export to the EU market (market requirements, type of products, presentation of products, potential buyers etc).

Specifically for 2014 the following capacity building activities are proposed:

1). For the GOVS, to organise a study tour to the Netherlands (June 2014??). A one week program for 4 participants could include the following elements: training on EU regulation, risk assessment, monitoring programmes, and laboratory analysis; visits to the Dutch Food Safety Authority, fish processing companies and food quality control laboratories. This activity will be organised by IMARES/Wageningen UR and supported by the EKN Cairo.

2). A one week mission of two Dutch experts (VWA & IMARES/Wageningen UR) to assist the GOVS with defining the lay-out of the residue monitoring program, preparing a detailed work plan, assessing the approximate costs and identify possible mechanism for funding of the operational costs of the plan⁴.

3). For the private sector (large fish farms and fish processing companies that export or have an interest to export aquaculture products), a three day training program in Egypt that includes: fish handling & transport, fish preservation, managing the cold chain, fish quality management & food safety, HACCP etc⁴.

It is recommended that the EKN in Cairo initiates the identification of appropriate Dutch funding instruments (including G2G and K2K) and other (EU?) instruments, to facilitate support for above activities. IMARES will investigate possibilities through the Dutch Centre for promotion of imports from developing countries (CBI). For certain specific activities it could be considered to approach the Netherlands senior experts program (PUM).

5. Thematic workshops

Next to above activities the EKN will facilitate two thematic workshops that will be organised in 2014, one of feed and feed management including overwintering concepts, the other workshop will be on breeding and genetics. The feed workshop will be organised by Skretting, who will take the responsibility for the location, invitations, food & drinks etc. Presentations will be given by Jeroen Kals (fish nutritionist IMARES), Arjen Roem (Nutreco), World Fish (possible presentation on Best Management Practices for overwintering of Tilapia), and from a to be identified fish farmer. The workshop will take place in October or November. The Breeding and Genetics workshop will be facilitated by the EKN. Presentations will be provided by Eric Bink (Til-Aqua International) on the use of YY males, by Dr. Robert Blonk (IMARES fish genetics expert) on smart breeding programs, World Fish on the performance of the new Abassa tilapia strain, and from a to be identified fish farmer. The workshop will take place in September. Co-hosting of this workshop by a third partner will be further investigated

6. Quality Assurance

IMARES utilises an ISO 9001:2008 certified quality management system (certificate number: 124296-2012-AQ-NLD-RvA). This certificate is valid until 15 December 2015. The organisation has been certified since 27 February 2001. The certification was issued by DNV Certification B.V. Furthermore, the chemical laboratory of the Fish Division has NEN-EN-ISO/IEC 17025:2005 accreditation for test laboratories with number L097. This accreditation is valid until 1st of April 2017 and was first issued on 27 March 1997. Accreditation was granted by the Council for Accreditation.

⁴ No funding secured yet

Justification

Rapport C062/14

Project Number: 4304103803

The scientific quality of this report has been peer reviewed by the a colleague scientist and the head of the department of IMARES.

Approved: MSc. Ing. M. Poelman
Researcher

Signature:



Date: 11 April 2014

Approved: Dr. ir. L.J.W. van Hoof
(Interim) Head of department Aquacultuur

Signature:



Date: 16 April 2014

Annex 1. Day-to-day program

Sunday 30th March 2014

Pickup and transfer to the **World Fish Organization (WFO)**

Meeting with **Mr. Malcolm William**, Senior Scientist, IEIDEAS Project Leader

Subject: secondary data collection (old reports related to post harvest and fish marketing as well as expert opinion) plus quality of tilapia produced in Egypt

Address: 18 (B) El Maraashly St, Zamalek. 4th floor, Apt#17; Phone: +201020043121;

Departure to **Fish Basket International**. Meeting with **Mr. Ali El Haddad**. Subject: He is pioneering a large fish processing plant. Currently launching the processing plant and have wealth of information on the regulatory framework for the imports in to Egypt

Address: 7, Ibn Gobair Street, beside el Baron Palace. Heliopolis; Phone: +201001314455;

Contact: Mrs. Inas Office manager phone (+202 2694263)

Departure to **Ideal Food**. Meeting with **Mr. Mohamed El Morshedy**, Chairman.

Subject: Ideal food is major trader and supplier, operates large farm and a Feed mill (quality of tilapia produced in Egypt). Address: 1 El Obour Buildings Nasr City, 13th floor. Cairo. Egypt. Phone: +20 506956713

Monday 31st March 2014 (TBC)

Meeting with **Dr. Youssef shalaby**, Head of **Veterinary Quarantine General Organization for Veterinary Services (GOVS)**.

Subject: the willingness to implement the EU regulations

Address: General Organization for Veterinary Services; 1, Nadi El-Said Street, 5th Floor. Dokki, Giza, Egypt; Phone: + 202 37481751 ; 37481750

Meeting **With Dr. Nagy Sheta**, Head of **sheta export & Import**

Subject: Exporter and a processor operating out of Domiat and he will discuss life case regarding export of tilapia out of Egypt

Address : Marriot Zamalek; Phone: + +201223236838

Tuesday 1st April 2014

Meeting with **Mr. Ali Thabet** general Manger, **El Masreya (Processing and Manufacturing Fish - Import & Export)**

Subject: Mr. Thabet is an importer /exporter and has a processing plant as well as an outlet in Obour market. Address: 33 Haroun st , Dokki ,Giza; Phone: +2037498431 / 3

Meeting with **Mr. Waleed Abdel Rahman** -Business development Manager **Red Sea World**

Subject: Mr. Abdel Rahman own large operations for seafood

Address: 4A Maadi Star Towers. Floor 19. Cairo; Phone: +20 25278 7982

Debriefing at EKN with Joost Geijer and Marwa Hossein.

Annex 2. Possible participants Round table meeting

World Fish Organization (WFO)

Fish Basket International

Ideal Food

General Organization for Veterinary Services (GOVS)

Sheta export & Import

El Masreya (Processing and Manufacturing Fish - Import & Export)

Red Sea World

Egyptian fish producer and exporters association (EFPE)

King Fish

Ragab Farms

Wadi Fish

Skretting -(Nutreco)

World Bridges Trading

Aller Aqua

U.S Soybean Export Council

Netherlands Embassy Cairo