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Agribusiness development in Libya

A fact-finding mission

Willem Heemskerck
Esther Koopmanschap

Project Report



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Libya, a country full of largely unknown beauties to the rest of the world, is very motivated to move fast forward from being a heavily centralised state to a more decentralised and diversified economy with open, well-functioning markets in place. Improving agribusiness governance and creating an enabling environment for agribusiness development are currently topics high on Libya's agenda. This report is the result of a fact finding mission in frame of a Letter of Intent signed between the Libyan Ministry of Agriculture, Animal and Marine Wealth and the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation. With the signing of this letter, Libya and the Netherlands have expressed the wish to work together on creating the necessary capacities to guide and facilitate the transformation towards a more private-led agricultural sector in Libya. The Centre for Development Innovation, Wageningen UR (CDI) and the Royal Tropical Institute (KIT) together carried out this fact finding mission for the Netherlands. This report of the mission provides an initial overview of the current status of the agricultural sector of Libya in light of its ambition to integrate a value chain perspective in its national agricultural development strategy.

Photo front page

Willem Heemskerk

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Preface

Libya, a country full of largely unknown beauties to the rest of the world, is very motivated to move fast forward from being a heavily centralised state to a more decentralised and diversified market economy. Libya is currently focussing on better collaboration between actors in agribusiness and creating more supportive rules and enabling institutions for agribusiness. Food markets, and markets in general, only work because of these institutions. Considering the difficult circumstances in which the country operates, good progress is being made. Diversifying its economy, improving governance, its institutional setting, creating an enabling environment for agribusiness development: these are all topics high on Libya's agenda.

The current report presents elements demonstrating both the progress made so far as well as the challenges ahead. The report is the result of a fact finding mission commissioned by the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation in the context of a recently signed Letter of Intent between Libya and the Netherlands in support of developing better conditions for a market led agribusiness sector. This letter of intent, signed between the Libyan Ministry of Agriculture, Animal and Marine Wealth and the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation expressed the wish to work together on creating the necessary capacities to guide and facilitate the transformation towards a more private-led agricultural sector.

With this report the Centre for Development Innovation, Wageningen UR, and the Royal Tropical Institute provide an initial overview of the current status of agricultural production in Libya taking into account the country's potential in transforming raw materials into consumer products. Given the severe limiting natural conditions Libya may have to focus on specific niche products in agriculture. The country has a high potential in agribusiness where its role might focus less on primary production, and more on collection, processing, wholesaling and retailing. Other support functions, such as input supply, financial services, transport, packaging and advertising also do have good potential in the rapid development over the coming years.

Libya's post-revolutionary ambitions are only drawn back by the need for capacity development, at individual, organizational and institutional level and by the need to stimulate and facilitate the collaboration between policy makers, researchers and practitioners, whether from the private sector or civil society. The involvement of the Netherlands' public and private sector in agribusiness capacity development could contribute to the development of Libya as a whole.



Wouter Leen Hijweege
Acting director
Centre for Development Innovation, Wageningen UR

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The Embassy of the Kingdom of The Netherlands in Tripoli did a fantastic job in organising our visa and the programme in Tripoli, under relative difficult conditions. We thank Mr Michel Deelen, acting ambassador, for his enthusiastic support and participation in the interviews and the evening sessions. We thank above all Mr Salaheddien Boulaabi, who organised the interviews in Tripoli and without whom we would not have had a programme in the first place. Thanks to the security staff at the embassy, led by 'Toes', we felt, apart from welcome, also very safe.

Because of our heavy travel schedule in the months September and October we appreciate the coordination by Wouter Leen Hijweege (CDI) who provided continuity, also during briefing and debriefing sessions.

Above all we liked the positive atmosphere, the optimistic view on the future and the good sense of humour of all we met.

Willem Heemskerk and Esther Koopmanschap

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Executive summary

In the context of a Letter of Intent signed between the Libyan Ministry of Agriculture, Animal and Marine Wealth and the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation a fact finding mission was carried out in Libya from 22 to 27 September 2012. The mission, which was commissioned by the Ministry of Economic Affairs, Agriculture and Innovation and the NL Agency in The Netherlands, included Ms Esther Koopmanschap (CDI, Wageningen UR) and Mr Willem Heemskerk (KIT).

The objective of the mission was to identify opportunities for collaboration between the Libyan and the Netherlands Government in the area of agribusiness capacity development in its widest sense.

During the mission stakeholders from the agricultural sector were interviewed, notably within the public sector such as staff within the Ministry of Agriculture, Animal & Marine Wealth in Libya and the Chamber of Commerce. Others interviewed were representatives from the Libyan private sector and the international community, such as the World Bank, EU and the FAO. Meetings also took place with agricultural research staff from the ARC as well as collaborating partners from ICARDA. In addition to the interviews, documents provided by the interviewees and other literature further supported the mission.

Based on interview and literature results, the current report presents in Chapter 2 an overview of the background of agricultural development in Libya. It particularly presents the economic context, but also the access to natural resources (water and land), and the current state of the agricultural sector.

In Chapter 3 the envisaged agricultural strategy of the anticipated new Libyan Government is sketched, its principles, as well as the opportunities and challenges faced by the agricultural sector. An initial overview of the on-going initiatives in agribusiness development has been provided.

A short assessment of Libya's current National Agricultural Innovation System and especially its capacity is presented in Chapter 4. It also gives an insight in the characteristics and performance of the main actors such as government and international partners, farmers and small and medium-scale enterprises, market and processing actors, universities and research institutes, as well as support and intermediary services.

In Chapter 5 attention is given to the institutional issues, context and the governance in the agricultural sector and innovation system, with reference to the legal framework and governance practice, as well as coordination and management of stakeholder interaction.

Chapter 6 introduces the agricultural education system in Libya, which includes several faculties of agriculture and veterinary science, as well as vocational training institutes. It presents challenges in relation to agribusiness development and options for collaboration with the Dutch agricultural education system.

Chapter 7, finally, concludes by providing some concluding remarks and recommendations for follow-up. The mission suggests that although new agricultural strategies have not yet been formulated, a clear and consistent picture of the principles for future agricultural development in Libya emerges. The guiding principles highlight the need for SME agribusiness development based on sound economic principles and competitiveness, which would employ people in rural and urban areas. An agribusiness sector which embraces value chain development principles and concentrates on intensive agriculture (dairy, poultry and fruit and vegetable production), based on efficient use of natural resources (water and land). This presents a major shift from the top-down, large scale, national food self-sufficiency model to be achieved at any cost. The change implies a major capacity development switch in knowledge, skills and attitude in relation to the multi-stakeholder approach to agribusiness development.

The mission recommends, as requested by the Libyan authorities, to support Libya in this paradigm shift by developing capacity in the wider sense. This can be through individual training (MSc and PhD training through sandwich courses in collaboration with ARC/ICARDA and national faculties of agriculture, as well as through requested professional and vocational training), but also by developing capacity at organisational and institutional level. The latter would involve support in the development of public-private and private-private partnerships. It involves strategy development for the agricultural sector and agribusiness as a whole but also for agricultural research and capacity development in particular. Strategy development and priority initiatives have to go hand in hand, however.

A profound effort is needed by, preferably, all stakeholders of the agricultural sector to well understand the current institutional setting, to understand its current weaknesses and strengths, as it can reveal many priority actions (e.g. youth campaigns to show that the agricultural sector and agribusiness provide attractive employment opportunities).

Immediate follow-up would be needed in the appointment of focal coordination points at both Libyan and Netherlands' side, the exchange of information on capacity development demand and supply, as well as the identification of seed money for start-up activities, as recommended. Finally, it is recommended to make (a summary of) this report available to the public and private sector in Libya, as well as the Netherlands.

The appendices provide a list of annotated references used in the analysis, as well as a summary of the persons interviewed in Libya.

List of abbreviations and acronyms

AARINENA	Association of Agricultural Research Institutes of Near-East and North-Africa
ARC	Agricultural Research Centre
ASRC	Animal Studies and Research Centre
ATVET	Agricultural Technical and Vocational Education and Training
CDI	Centre for Development Innovation, Wageningen UR
CERA	Cambridge Energy Research Associates
CoC	Chamber of Commerce
CVO	Chief Veterinary Office
EACEA	Education, Audio-visual and Culture Executive Agency
EPRC	Environmental Protection Research Centre
ESRC	Economic Studies Research Centre
EU-NI	European Union National Indicative programme
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GMMR	Great Man Made River
GPCE&SR	General People's Committee for Education and Scientific Research
ICA	Investment Climate Assessment
ICARDA	International Centre for Agricultural Research in the Dry Areas
KIT	Koninklijk Instituut voor de Tropen / Royal Tropical Institute
LDTc	Libyan Dutch Training Centre
MAAMW	Ministry of Agriculture and Marine Wealth
MATRA-Zuid	Management of Transformation in the MENA Arab Countries
MBRC	Marine Biology Research Centre
MENA	Middle East and North Africa
MoEVT	Ministry of Employment and Vocational Training
NARS	National Agricultural Research Centre
NASR	National Authority for Scientific Research
NASCO	National Supply Corporation
PSI	Dutch Private Sector Investment Programme
PUM	Dutch Manager Deployment Programme
SME	Small and Medium Scale Enterprises
UNCAC	United Nations Convention Against Corruption
Wageningen UR	Wageningen University & Research centre
WFP	World Food Programme
WTO	World Trade Organization

1 Introduction

1.1 General

The New Government of Libya and the Netherlands Government signed a letter of Intent on the need to strengthen relations between Libya and the Netherlands in the areas of (i) trade and investment in the agribusiness sector; (ii) agribusiness knowledge exchange; (iii) water management; and (iv) bilateral collaboration between agricultural ministries.

In this context the Ministry of Economic Affairs, Agriculture and Innovation (EL&I) and NL Agency (Agentschap NL) commissioned a fact-finding mission to Libya in September 2012 by the Centre for Development Innovation, Wageningen University and Research centre (CDI) and the Royal Tropical Institute (KIT) for the further identification of areas of collaboration between Libya and The Netherlands. The mission was staffed by Ms Esther Koopmanschap of CDI and Mr Willem Heemskerk of KIT. The mission focused in particular on identifying *wishes and specific needs* of the Ministry of Agriculture and other representatives of the Agricultural Sector in general in Libya. In this view also the current status of the agricultural knowledge infrastructure and agricultural education capacity was explored, as well as the opportunities and challenges offered regarding agricultural development in Libya.

The terms of reference for the fact-finding mission in Libya were aiming at: (i) Supporting the preparation of the meeting agenda in Tripoli; (ii) Joining the interviews with key-actors in agricultural development in Libya; (iii) Supporting the identification of the immediate priorities and needs, as well as the wishes of the Ministry of Agriculture in Libya; the current agricultural knowledge and education infrastructure in Libya (including universities, training institutes, extension services); other stakeholders involved in agricultural development (e.g. farmers, unions, Chambers of Commerce); (iv) Supporting in distilling the key messages from interviews, as input for the final report; (v) Joining the debriefing meeting at the Embassy of the Kingdom of the Netherlands in Tripoli; (vi) Carrying out the debriefing meeting in the Netherlands with NL Agency and the Ministry of Economic Affairs, Agriculture and Innovation; (vii) Supporting the drafting and finalisation of the mission report; and, (viii) Supporting the formulation of opportunities for follow-up activities in agricultural development in Libya.

The mission's activities were facilitated by the Embassy of the Kingdom of the Netherlands in Libya and notably by Mr Michel Deelen (acting Ambassador and Private Sector Development) and Mr Salaheddien Rachid Boulaabi (Trade assistant). The team interviewed key actors (see Appendix 1 and 2), consulted relevant documents (see Appendix 3 list of annotated references) and had extensive discussions with the referred staff of the Embassy.

2 Background

2.1 General

Libya is classified as an upper-middle-income developing country with a GDP per capita of 14,429 USD in 2008 and in 2010 estimated at 18,000 GDP per capita (WFP/FAO, 2011). The total population is 6.3 million (in 2008) with 84.8 % of the people living in urban areas; the average growth is 2.9% over the last 30 years. Unemployment, and notably youth unemployment, is a serious problem in Libya. Available data are not very reliable (no single ministry collecting data comprehensively), but it is at least 14% (as in neighbouring countries), although there are reports up to 30% (quoted by EC-Trade, 2009). Industry (including the oil sector) contributes for 64% to Libya's GDP, the service sector 33% and agriculture 3% in 2010 (WFP/FAO, 2011). The Libya Investment Climate Assessment (WB,2011) states: 'With the hydrocarbon sector representing over 70% of GDP (in nominal terms), over 90% of government revenues and 95% of export earnings , Libya appears to be one of the least diversified oil-producing economies in the world'.

The 2011 civil war, that ended the long-time rule of Col Muammar Qaddafi, had an unprecedented impact on the Libyan economy. Oil production fell from 1.49 million barrels per day (bpd) in January 2011 to as low as 22 thousand bpd by July 2011 as a result of the conflict. GDP growth declined by 60 percent as oil production declined to an average of 500 thousand bpd by the end of 2011. Non-oil output growth also declined by 50 percent as economic activities were interrupted. Approximately 600 thousand migrant workers fled Libya during the 2011 civil war, making it the largest migration crisis since the first Gulf War (1991). In addition, food and cash shortages were reported in different parts of the country. (Source: <http://www.worldbank.org/en/country/libya/overview>, updated September 2012, accessed 6 October 2012).

In 2012, the economy has experienced an impressive recovery as oil production and exports have rebounded faster than originally predicted. The National Oil Company has announced that total oil production for the first seven months of 2012 reached 302 million barrels, equivalent to an average of 1.42 million bpd. Hydrocarbon output, including natural gas, is projected to increase by more than 170 percent in 2012 and continue to recover in 2013. Non-hydrocarbon GDP is projected to grow by 30 percent in 2012, driven mainly by reconstruction. (Source: <http://www.worldbank.org/en/country/libya/overview>, updated September 2012, accessed 6 October 2012).

Libya ranks high on the Human Development Index (53rd out of 169 in 2010), and literacy indicators, access to health services, education services all stand out favourably compared to neighbouring countries in North-Africa and the Near East. Poverty levels in Libya are low, also as all Libyans share in the oil revenues (some USD 6000/annually). Gender equity indicators are reported fine health-wise, but literacy is lower for women (75%) than for men (93%). Female participation in the labour force has doubled in recent years, and is as high as 67% in the agricultural sector workforce (EC-Trade, 2009). Only 26.1 % of women are part of the labour force, compared to 77.2 of the men (WFP/FAO, 2011), but many women are not registered workers in agriculture.

The pressure on public finances and fiscal policy is daunting as the Libyan Government seeks to respond to popular aspirations unleashed by the revolution. Current expenditures are ballooning due to a higher wage bill, compensations, and subsidies. The government announced in March 2012 a record breaking budget with expenditures reaching 50 percent of GDP for 2012. (Source: <http://www.worldbank.org/en/country/libya/overview>, updated September 2012, accessed 6 October 2012).

2.2 Natural resources

2.2.1 Land, land use and access to land

The country is over 90% desert, with most agriculturally productive land limited to a strip abutting the Mediterranean Sea. Only 5% of the territory receives more than 100 mm rain annually. Arable land amounts to about 2.2 million hectares and represents only 1.7% of the total country's area (WFP/FAO, 2011). The two main areas of natural farmland are the high coastal plateau of Jebel Akhdar in the north-east near Benghazi (25%) and the fertile coastal plain in the north-west near Tripoli (75%). These 2 areas account for more than 80% of the country's agricultural production. Fruits and vegetables including potatoes constitute the bulk of the output, with only 20% comprised of barley and wheat. Of the total arable land 52% has permanent crops such as olives, fruit trees, citrus, fodder and 42% has annual crops; wheat, barley, vegetables, potatoes, pulses, etc. (WFP/FAO, 2011).

Since coming to power in 1969, the Qaddafi government has been very concerned with land reform. Shortly after the revolution, the government confiscated all Italian-owned farms (about 38,000 hectares) and redistributed much of this land in smaller plots to Libyans. The state retained some of the confiscated lands for state farming ventures, but in general the government has not sought to eliminate the private sector from agriculture as it has with commerce. It did, however, take the further step in 1971 of declaring all uncultivated land to be state property. This measure was aimed mainly at certain powerful conservative tribal groups in the Jabal al Akhdar, who had laid claim to large tracts of land. Another law passed in 1977 placed further restriction on tribal systems of land ownership, emphasizing actual use as the deciding factor in determining land ownership. Since 1977 an individual family has been allotted only enough land to satisfy its own requirements; this policy was designed to prevent the development of large-scale private sector farms and to end the practice of using fertile "tribal" lands for grazing rather than cultivation. Partly as a result of these policies as well as the dictates of Islamic rules of inheritance, which stipulate that each son should receive an equal share of family land upon the father's death, in 1986 Libyan farms tended to be fragmented and too small to make efficient use of water. This problem was especially severe in the long-settled Jifarah Plain, which has been Libya's single most productive agricultural region (Source: http://www.mongabay.com/reference/country_studies/libya/ECONOMY.html, based on The Library of Congress's country profiles).

Total agricultural land is estimated at 15.4 million hectares composed primarily of pastures, which cover 13.3 million ha. Libya has vast resources of relatively fertile land, although in some coastal areas at risk due to seawater infiltration resulting in salinity problems, caused by subsequent irrigation through local boreholes. Access to land is therefore related to access to quality irrigation water.

Access to quality land is poorly organized. Private property rights were eliminated in March 1978. All land formally belongs to the state and old ownership records have been destroyed. A new system, also to address the many national and international land access claims and reclaims, needs to be established. Only 19% of Libyan households own farm land, while another 7% own other land. Family farm holdings are scattered and fragmented, 45% of farmers have less than 10 hectares, while only 25 to 30% have more than 30 hectares (CERA, 2006). WFP/FAO (2011) refers to 90% smallholders with less than 20 hectares, 9% medium scale farmers (20-100 hectares), and only 1% large farmers (over 100 hectares). The average farm size was about 11 hectares, although many were fragmented into small, non-contiguous plots. Studies published in the late 1970s indicated that at any given time, about one-third of the total arable land remained fallow. The World Bank mentions in its Libya Investment Climate Assessment 2011 (WB, 2011) outlines that accessing land is perceived as the leading constraint by firms operating in Libya: The ability to access land is mentioned as a major or very severe constraint by an overwhelmingly 65% of firms. The World Bank also states in the same Assessment that Libya stands out as the only country surveyed in the region to date, where land is the top-rated constraint for private sector operation and growth. Focus group

interviews with leading entrepreneurs revealed that dozens of investment projects today are at a standstill because of land scarcity issues.

2.2.2 Water, water supply and irrigation

Water shortage is one of the most limiting factors affecting agricultural production in the country. Libya is one of the driest countries in the world with a limited annual rainfall combined with high rates of evapotranspiration and little surface water resources available. Non-renewable groundwater provides the bulk of water needs for the country. Falling water tables caused by over-irrigation is creating a long-term ecological threat. (WB, 2011).

More than 20% of the arable land (470 000 hectares) is developed for irrigation, while there is a potential of 750,000 hectares (WFP/FAO, 2011). Around 196 000 hectares are potentially irrigated in the coastal areas and 113 000 hectares in the Southern and Central Zone. This means that in 2006 a total of 309 000 ha was estimated to be under irrigation (CERA, 2006), mainly through groundwater extraction far exceeding replenishment, in coastal areas. In 2011 240 000 hectares are actually irrigated. The irrigation areas in the Southern Zones of Murzuq and Al Kufrah are largely state-operated (50 000 hectares), while the rest is under private ownership. Most farms in the Jifarah Plain (Central Libya) were irrigated by individual wells and electric pumps, although in 1985 only about 1 percent of the arable land was irrigated. (Source: http://www.mongabay.com/reference/country_studies/libya/ECONOMY.html , based on The Library of Congress's country profiles). Half of the cereal production and 90% of the fruit (excluding dates and olives) and vegetable production originate from irrigated land.

The falling water tables in Libya's best agricultural lands caused by over-irrigation posed a severe long-term ecological threat to agriculture. The government began to recognize this in 1976, and took measures to discourage citrus and tomato cultivation, both of which required large amounts of water. However, the more stringent steps required to save the coastal water resources -principally the regulation of irrigation and changing the land tenure system to make it more water-efficient- conflicted with Qaddafi's concept of economic equity, which favoured intensive irrigated cultivation of small plots for family use. The government's overall strategy for dealing with the impending ecological crisis has not been to reform the practices that brought it about. Rather, the cornerstone of agricultural policy since 1983 has been to avert disaster by pumping large quantities of water to the coast from the fossil reserves of the southern desert by means of the Great Man-Made River (GMMR) project. This project, built for large-scale extraction of fossil water in the South, transports large amounts of water from southern to northern regions of the country.

Even though water shortages are not yet a problem for individuals or businesses, it has been a long-standing concern. Launched in 1984, the GMMR project was designed to carry over 5 million m³ per day across the desert, and increase the area of arable land by around 150 000 hectares. However, Libyan officials have concluded that the project does not provide a total solution to the country's water needs and that more water sources will be required. There are plans to build 11 new desalination plants in the coastal area (WFP/FAO, 2011). The fossil water resources from the GMMR programme are seemingly endless (estimated at 35 000 Bln m³, while 2 400 Mln m³ is expected to be used annually). If calculations and knowledge about the current sources are right, this level of irrigation could be sustained for almost 15 000 years with the current known resources. Serious questions are however raised on the costs, currently estimated at 0.90 USD/m³ and with farm level irrigation costs at 1 USD/m³. This, however, represents the costs at full operation of the GMMR, which is currently not yet the case. Costs therefore are more likely to amount to 2.50 USD/m³. The international cost of water from desalination plants (of which there are 17 in Libya, and another 11 were planned in 2010) is about 1 USD/m³ (CERA, 2006). The GMMR water is sold at USD 0.03/m³ for irrigation, while the costs are about USD 0.90/m³. This has led to the use of this scarce resource to relatively low value crops (wheat, barley and millet).

The World Bank (WB, 2011) stresses that water deficits are expected to worsen and that water consumers, whether urban, industrial or agricultural, need incentives and assistance to conserve water and adopt more sustainable water use practices.

2.3 Agriculture

2.3.1 Short historical overview

In the 1980s, statistics on Libyan agricultural production continued to vary widely. For example, figures compiled by the Central Bank of Libya generally exceeded those published by the UN Food and Agriculture Organization by 10 to 100 percent. During the 1980s, wheat and barley were the principal cereal crops, although millet was also grown in the southern oases. Both crops were cultivated throughout the country, in the coastal regions as well as in the desert oases. The optimum yield for wheat cultivation in Libya was thought to be about 5 MT/ha, but by the mid-1980s yields were only averaging about 0.5 MT/ha. Citrus production declined to insignificant levels following the government's water conservation measures of 1976. Other important crops were dates, olives, melons, onions, and potatoes. Vegetables were grown in specialized farms near Tripoli. Tree crops remained popular because many farmers combined olive, date, apple, or almond raising with cereal production.

In the 1980s, livestock represented the largest income producing item in agricultural production, and the government has instituted numerous measures designed to make the country self-sufficient in meat, poultry, and dairy products. The numbers of sheep, cattle, and poultry were slowly increasing, while the herds of goats and camels were decreasing. Sheep and goats were used for meat, milk, and wool and were found all over the country. The largest flocks were in the Al Kufrah settlement project. Modern range-management practices and techniques were being used to prevent overgrazing of the land and to make optimal use of the pastures. Thousands of hectares of pastureland had been fenced along the coastal regions for use as cattle breeding stations as well as livestock-fattening pens.

Until the 1970s, cattle were used mainly for transport. During the 1970s, the number of cattle—particularly dairy cattle—increased, as did milk and meat production. By 1985 there were nearly 209 000 head of cattle in the country, and several fodder plants were in various stages of completion as part of an effort to achieve self-sufficiency in animal feedstuffs. The General Dairy and Dairy Products Company was created in 1974 to take over most private dairies and to produce and market all dairy products. Private dairy farms were permitted to operate, but their milk had to be sold to the state company. The government also entered the poultry business on a large scale, and independent farmers found it difficult to compete against the large government poultry farms. (Source: The Library of Congress – country profile Libya: <http://lcweb2.loc.gov/frd/cs/profiles.html>, last updated April 2005)

2.3.2 The agricultural sector since 2000

The Libyan agricultural sector is constrained by the lack of arable land, uncertainty in rainfall and limited source-to-farm irrigation systems, combined with a poor enabling environment for private-sector driven agribusiness development (CERA, 2006; EC-Trade, 2009).

In an assessment of the national agricultural competitiveness for the national economic strategy (CERA, 2006), Michael Porter observed that the Libyan government will need to review the balance between the social, political and economic objectives of the agricultural sector. "Trade-offs between economic and social values should be assessed, and explicitly stated. Because of its central social role, the agriculture sector will continue to play an important, even iconic role in the country far beyond its actual economic

contribution for some years to come, as a source of income and employment to an important proportion of the population, especially in rural areas". This will require a new agricultural development strategy.

Although agriculture constitutes only 2-3% of GDP, while it was 25% before the oil boom started. Not more than 3% of the exports is agricultural produce, the rest are oil products (EC-Trade, 2009, WFP/FAO, 2011). A total of 75% of the food is imported, such as 1.5 million tons of wheat (or 80% of the wheat consumption) (CERA, 2006). Annual average inflation is estimated to have dropped to 2 % in 2009, down from 10.4 % in 2008, driven mainly by international commodities prices. Despite the massive government investment in agriculture agricultural growth has only been a modest 2.4%, which is less than the population growth (3.2%) (CERA, 2006). The agricultural sector employs 6-8% of the workforce (cf. oil industry 2% and industry 8%, public sector 16%, health 12% and education 27%) (CERA, 2006, FAO/WFP, 2011). Other sources refer to 18% employment in agriculture (USAID, 2011). This is particularly relevant for the rural areas. Of the total workforce 30 % is female, but in rural areas this is 70%.

Imports/Exports Commodities	Production at import prices	Import value	Export value
Cereals	75.53	626.32	0.00
Potatoes	76.04	5.12	0.19
Pulses	1.95	2.65	0.03
Vegetables	463.12	28.67	0.00
Fruits	237.08	18.04	0.48
Sugar (refined)	0.00	18.09	0.00
Fats and oils	43.95	168.57	2.95
Red meat	65.19	30.62	0.00
Poultry meat	157.50	0.03	0.00
Milk and dairy products	34.41	71.92	0.00
Total	1229.06	977.75	7.99
Overall self-sufficiency ratio	55.9%		

Source: EC-Trade (2009), derived from AOAD (2009)

2.3.3 Crop production

Out of the total Libyan population of over 6 million people, 70 000 are fulltime farming households and 100 000 part-time farming households. The 15 million hectares farmed land is mostly pasture, but some 1.8 million hectares arable land (wheat, barley) and 300 thousand hectares permanent crops (olives, grapes, dates, almonds and oranges), 240 thousand hectares are currently irrigated (vegetables, tomatoes, onions, potatoes, watermelons) (WFP/FAO, 2011).

Vegetables and fruit production and potatoes provide 70% of the total production valued at import prices, but hardly anything is being exported. The cereal production per capita has declined since 2005 (from an index of 97 to 78 in 2009), which results in only 16% wheat self-sufficiency (WFP/FAO, 2011). The publicly managed production projects but also the practice of the government to set production targets, as well as the corresponding subsidies has not led to an efficient and a market and export oriented agricultural sector. Viable export opportunities exist for olives and dates, but in practice only fish export has grown (tuna to Japan and other fish species to neighbouring countries) (CERA, 2006).

Based on FAO and USDA data the revenue potential for different agricultural commodities was calculated per irrigated hectare of land. Dates, citrus and vegetables gave the highest return (USD 3500- 4500/per ha) followed at a distance by not irrigated dates (USD 1500/ha) and olives (USD 1000/ha) (CERA, 2006).

Table 2.2		Production and import/export values (in 1000 MT) and rates of self-sufficiency for main agricultural commodities				
	Production	Imports	Exports	Available for consumption	Balance	Self-sufficiency ratio %
Cereals	296.4	2457.94	0	2754.34	2457.94	10.76
Potatoes	195.0	13.13	1.45	206.68	11.68	94.35
Pulses	7.4	10.05	0.11	17.34	9.94	42.68
Vegetables	697.5	43.18	0	740.68	43.18	94.17
Fruits	650.0	49.46	0.72	698.74	48.74	93.02
Sugar (refined)	0	56.22	0	56.22	56.22	0
Fats and oils	37.7	144.59	2.08	180.21	142.51	20.92
Red meat	81.6	38.34	0	119.97	38.34	68.04
Poultry meat	105.0	0.02	0	105.02	0.02	99.98
Eggs	55.0	0	0	55.00	0	100.00
Milk and dairy products	230.0	480.68	0	710.68	480.68	32.36

Source: EC-Trade (2009), derived from AOAD (2009)

2.3.4 Animal production and fisheries

Main animal products in Libya are chicken (meat and eggs), beef and small ruminants (meat, milk). In 2010 there were 24.8 million chicken, 5.1 million sheep, 1.9 million goats, 210 000 cattle and 71 000 camels (WFP/FAO, 2011). The national livestock sector is important and meets the local requirements of dairy products, eggs and meat, but is limited by the lack of quality grazing and feed and fodder production (see Table 2.2). The sector consequently heavily relies on subsidized imports of animal feed. The meat value chains are poorly developed and not well organized (see Interview with CVO).

On the coast line some 15 000 small-scale fisherman are part-time or fulltime involved in artisanal fishing. This strongly developed since the 80s strongly supported by Government. Several commercial companies (often joint ventures with Malta and other countries) are involved in tuna export to Japan and Korea, based on catching and several months fattening. Sardines and deep-water fish is exported to neighbouring countries (Tunisia, Malta and Turkey) (CERA, 2006). The fish sector represents 9% of agricultural GDP.

2.4 Agricultural subsidies

The Libyan Government has been investing heavily in agricultural production. The main driving motives for investment have been political and social rather than economic principles (CERA, 2006; IMF, 2012). The future objectives are likely to be a mix of economic and social principles, considering the need to address inclusive development, also in rural areas (IMF, 2012), which will require diversification of the economy beyond the oil industry.

The National Supply Corporation (NASCO) was coordinating the Government subsidies on flour and rice (the main subsidies), but also cooking oil, sugar, red tea, green tea, semolina, pasta and condensed milk, amounting in total to 2% of the GDP. Other subsidies were on fuel, electricity and water. In the agricultural production sector subsidies are provided on price support as well as inputs (e.g. through the Price Stabilization Fund). Some of main examples of subsidies are: (i) Supply of cheap credit (no interest and only small administration fees) through the Agricultural Investment Bank. The planned grant system for SME business development (including agribusiness development) is equally subsidized; (ii) Serious investment in the supply of water through the GMMR programme, but water is sold at very low prices (USD 0.03/m³) compared to the cost price of USD 0.90 (CERA, 2006); (iii) Subsidies on different projects, notably large dairy farms (e.g. Benghazi Dairy Farm with 1200 animals), irrigation projects (e.g. state run large grain circles with pivot irrigation system), often now labelled as political showcases; (iv) Subsidies of

inputs such as seeds, pesticides and fertilizer and equipment, as well as many other forms of subsidies. Special input subsidies are also claimed to be given to associations and cooperatives, although no evidence of their existence exists (EC-Trade, 2009).

Changes in the subsidy arrangements will only be gradual and based on on-going assessments (IMF, 2012; CERA, 2006). The independent farmers of Libya receive irrigation water free of charge, but will have to pay for pesticides and seeds (although currently at subsidized prices). Farmers have no title deeds or registered land ownership. Some less independent farmers also operate in governmental projects such as those benefiting from the GMMR but these government schemes and state farmers will be privatized. The general agricultural subsidies will be phased out, but will still be applied in special cases e.g. subsidy on sheep feed in order to address the effects of drought in the last two years (see interview 01 with the Deputy Minister of Agriculture, Animal and Marine Wealth in Appendix 4).

3 Agribusiness development

3.1 Strategy

The new Government of Libya has emphasized the need to not only recognize the role of the private sector in the economy, but also to strengthen it and to encourage entrepreneurship and Small and Medium Enterprise (SME) development. This will lead to needs to strengthen the regulatory and institutional framework for private sector development. Agricultural development strategies will follow the principles of value chain development. The focus will no longer be on only production but also on other value adding functions in the chain, such as storage (and to avoid e.g. the high level of harvest loss currently 25% post-harvest losses occur), processing and market orientation (Appendix 4 – Interview 01 with the Deputy Minister of Agriculture, Animal and Marine Wealth).

The World Bank works with the Libyan Export Promotion Agency (Ministry of Economic Affairs). An international trade policy needs to be developed in order to address issues such as olive oil exports and chicken imports. Options exist for the export of organic olive oil. This would require certification and relations with the EU markets and getting an accreditation for this EU market. Import-export relations are in general to be addressed. Libya's application to the WTO was received in 2004, but has been stalling since. An opportunity for Libya (with advice from World Bank and partners) to become a member of the WTO was recently missed, also due to the transition process.

The EU analysed in a *Trade Sustainability Impact Assessment* the consequences of full liberalization of the Libyan economy and notably the establishment of an EU - Libya Trade Agreement. An agreement as such can negatively affect some sectors such as the food processing and chemical industry. A Trade agreement will lead to additional imports of processed food with an increase of 16% (EC-Trade, 2009). Since 2006 the Government of Libya has started to introduce new legislation which supports business development, including agribusinesses.

Legislation	Main elements for agribusiness
Law no. 443 of 2006 on Foreign Investment	About how foreign investors operate in Libya, also in agriculture, enforcing local ownership and requiring that at least 35% of non-Libyan businesses controlled by Libyans, leading joint ventures. A related decree exists since 2009 indicating that all foreign branch companies must have Libyan general managers
Law no. 9 of 2010 on Promotion of Investment	Aiming at facilitating the investment in agriculture among other sectors for the diversification of the economy. It aims at tax and customs fee reduction The Privatization and Investment Board implements this law.

Source: EC-Trade (2009)

The World Bank in the Investment Climate Assessment (ICA) of 2011 (WB, 2011) suggests the new Government of Libya to urgently take up their recommendations in order to stimulate the diversification of the economy and the employment of a growing population. In order to achieve this objective the World Bank stresses the need for improved governance and public service delivery, obtaining a level economic playing field open to entry and competition, stronger institutions for rulemaking and market regulation, all complemented by improved service delivery and market linkages in infrastructure and education. While democracy and human right are not per se, central issues to an ICA, the themes of transparency, broader policy dialogue, and a more accountable, organised and ambitious approach to policy and institutional reforms are outlined to be essential elements of a strategy aiming at economic diversification and increase of employment opportunities.

3.2 Opportunities

3.2.1 General

Libya's economy and society has many unique features and on top of that it is pursuing an economic transition from central state control of the economy to a more decentralised and diversified economy led by the private sector. The World Bank (in WB, 2011) mentions in addition that accurate, up-to-date data on Libya's private sector are not available. The MENA PSD Flagship Report (quoted in WB, 2011) outlined that governments commitment to address key barriers and challenges will be essential to convince more entrepreneurs to take the risk to enter the market, to innovate and to create jobs. Credibility with investors, bureaucrats and the broader public will only be earned if political leaders dismantle the regulatory and administrative functions of the State in all areas of the business environment. This will require change in the way policy making is conducted and requires institutional reforms. The Flagship Report does not offer standard recipes on how to conduct reforms but does stress the following:

- **Foster competition:** Governments needs to encourage entry in all sectors of the economy by removing and formal and informal barriers to competition;
- **Reform Institutions:** Private sector development policies need to be systematically anchored in elements of public sector and institutional reforms to increase transparency and enhance services provided to the private sector;
- **Mobilise key-stakeholders** around a dedicated long term growth strategy: A new form of partnership is necessary between the government and the main stakeholders to underpin stronger reform alliances and broader participation in designing, implementing and evaluating policies.

3.2.2 Local markets and import substitution

Libya apparently had a competitive advantage for the production of chicken, eggs, and dairy products over imported products. Currently the local production of eggs is still effectively outcompeting imported eggs, but with chicken meat this is often problematic (see Appendix 4 - Interview 06). The dairy sector used to have 100 000 animals (see Table 2.1 and 2.2), and will require reconstruction. Currently the dairy sector has lost a major market share in imported dairy products to neighbouring countries.

The fruit and vegetable production (including potatoes) basically met the local demand, and can only expand by addressing quality supply and local processing. Classification of produce in different qualities (for sale, household consumption and processing) is hardly done, resulting in major losses. Options for export have yet to be developed.

The original objective of reaching national food self-sufficiency has been abandoned and replaced by objectives of important substitution, based on economic production of cereals. Cereal and grain legume production in Libya does not have a competitive advantage in general. Strategically, however and with regard to social objectives, cereals and grain legumes remain important commodities (CERA,2006). After all, the revolt against the previous regime was triggered by the rising bread and cereal prices. Economics of wheat and barley production will need to integrate a water management perspective (rainfall and irrigation supplementation) and water productivity or return to water (See Appendix 4 - Interview 09).

3.2.3 Export opportunities

Export opportunities largely exist in the irrigated horticultural sector and fruit production. The latter also in terms of rain-fed production of quality dates and olives, including olive oil and particularly in the organic produce markets. Options for quality honey production equally exist. Quality control, classification and

certification of organic produce are however all no standard mostly even alien concepts in the Libyan agricultural sector. The current export is marginal and almost entirely based on some olives, dates and fish.

The vegetable production sector also provides opportunities for export. This will however require improvements in quality (e.g. classification), packaging, and processing (chips and pre-cooked potato production). Libya has a comparative advantage in that it can produce vegetables for the EU in winter time and earlier than neighbouring countries, like Egypt, Tunisia and Algeria. An example would be to provide melons around Christmas and New Year for the European market. Initial market studies were undertaken by ZAGRIT Co. but will require follow-up (Appendix 4 - Interview 06).

3.3 Challenges identified

3.3.1 General constraints to Libyan firms

The investment climate survey of the World Bank provides insight into what managers of firms perceive as their most constraining obstacles in the growth and development of their firms. Access to land (mentioned by 65% of surveyed firms), regulatory policy uncertainty (63%) – relating to non-transparency and regulatory complexity-, access to finance (59%), macro- economic policy uncertainty (55%) and tax rates (54%) stand out as particularly constraining for firms operating in Libya. Tax rates and access to finance need careful consideration, as internationally, all managers complain about taxes. Access to finance seems to relate to evidence showing the unequal access to finance between firms (WB, 2011). Other severe constraints mentioned include: anti-competitive or informal practices (48%) and corruption (44%).

Other issues that are currently not mentioned as leading constraints may become more binding as the referred constraints are addressed. The availability of skilled labour, for example, is currently seen as a moderate constraint. The World Bank does stress in its ICA, however, with Libya continuing opening up sectors of its economy and with increased investment of foreign investors, having a supply of a skilled and productive workforce is key to meet the growing challenges of integration and competition (WB, 2011).

3.3.2 Challenges faced by the agricultural sector

The Libyan Government has been working with the EU and the WB on the development of trade agreements: EU-Libya Trade Agreement and the entry into the WTO. Considering the fact that the agricultural sector is currently heavily subsidized, that these subsidies are likely to change over the years, influencing the competitiveness of the Libyan agricultural sector, it is likely that 'some' water will flow through the GMMR before Libya will sign these agreements.

Senior staff of the new Ministry of Agriculture, Animal and Marine Wealth is strongly committed to adopt the value chain concept for economic and social reasons. Hardly any experience exists with this concept. The familiar system is that the public sector drives innovation and production through heavy investment and subsidies. The existing private sector has been suffering from government interference and crowding out by the public sector. The MoAAMW faces an enormous capacity challenge in supporting the above mentioned opportunities in a way which is not killing initiatives by the private sector.

Agribusiness development requires support by public and private sector services. One of the major constraints is the underdeveloped financial system to obtain loans and a lack of supporting infrastructure, such as information and ICT systems. Similarly research and advisory services need to focus on market-orientation and agribusiness development.

Quite a few of the interviewees also referred to the challenge of not having an agreed vision for the future for the agricultural sector and the economic development in general. Also the lack of a strategy for the agricultural sector was mentioned as one of the major priorities, and without an agreed vision developing a strategy is even a bigger challenge.

3.4 On-going and planned activities

The Ministry of Employment and Vocational Training has reserved 3 billion Libyan Dinars (1.8 billion Euros) for investment in a small and medium scale enterprise development programme. The programme faces challenges in terms of planning, organization and financial management. It aims at creating employment for 25 000 former ex-combatants and retrenched government workers. The Ministry of Agriculture, Animal and Marine Wealth is involved in the programme by identifying agribusiness opportunities for those of the referred 25 000 target group with an agricultural background, in practice and training.

The World Bank, active in Libya since 2004, has, in collaboration with the Ministry of Employment and Vocational Training, implemented a private sector development programme, notably on the business environment, commercial legislation, export promotion and trade facilitation, customs, etc. (WB, 2011). The World Bank and IMF implemented a Post-Conflict Needs Assessment which resulted in the identification of the following assessment priorities: (i) Infrastructure and Electricity; (ii) Service delivery and regional development; (iii) Job creation; and, (iv) Financial review. The service delivery component will result in four policy papers by the end of 2012: Local Governance; Public services; Functional decentralization and Participatory Reconciliation, Reconstruction and Recovery. The World Bank equally plans a quick survey on the job markets. The study will focus on finding out why over 2 million foreign workers are employed in Libya (during the Qaddafi-regime even up to 4 million workers) while there is a 30% unemployment rate, and 1.2 million people are employed in the public sector. Special attention will be paid to the agricultural sector which employs also seasonal workers. The survey will analyse which skills and opportunities are needed to address the discrepancy.

The National Indicative Programme (2011-2013) of the European Neighbourhood and Partnership Development programme will support Small, and Medium Business Development in Libya. To this extent a SME Development Fund and Business Incubator will be planned to start in 2013. In addition a special centre for training retrenched government workers in business development and entrepreneurship is on the agenda. The current ambitions and political direction taken by the new Libyan Government have yet to be developed in a national SME strategy for development. A new National Indicative Programme is currently being planned for the 2014-2016 period.

The WB also aims at an assessment of the private sector and its needs. This will be a coordinated action of the EU (providing support through the economic and private sector development advisor), DFID (supported by the presence of a 4-months expert stay), as well as USAID (through the presence of an expert). The main issues to be addressed in the assessment will be: the relation between the public and the private sector; relations within value chains; regional differences; the relation between the informal and formal sector. The EU also aims at improving VET quality, certification, curriculum development, and training of trainers.

4 Libya's National Agricultural Innovation System

4.1 Introduction

To get a strong private investment response in the non-oil sectors, but we focus here on the agricultural sector, and to address the main opportunities and challenges highlighted in the previous chapter, Libya needs to change some of its policies to create economic space and support for private sector entry and growth. Equally important and highlighted also by the World Bank (WB, 2011) the newly established government of Libya needs to convince investors and other 'players of the game' that the 'rules of the game' will be clearly, fairly and consistently applied. Establishing a clear strategy - based on an agreed vision for the agricultural sector- with specific and time-bound objectives is an important part of this. Secondly institutions need to be in place to apply the rules and regulations governing the markets and create an enabling environment for agribusiness development. Different stakeholders will be needed, and more than that, will be needed to interact intensively. Libya has a limited tradition in bringing different actors together, as the whole society was strongly controlled by the state and all activities were driven by the state, as in a centrally led economic development model.

The main functions relevant for a blossoming agricultural sector – based on interviews (see Appendix 4) and literature (see Appendix 3) - are as follows: (i) Strategy development and institutional reform, including establishing an enabling environment for agribusiness development, mainly provided by the government in interaction with representatives of actors; (ii) Production and small-scale processing; (iii) Market parties and large-scale processing; (iv) Knowledge and education services; (v) Infrastructural services including financial services; (vi) Intermediary services. Different actors are involved in the implementation of these functions. The following paragraphs provide a short overview of the current state of affairs regarding the primary stakeholders involved ('the players of the (agribusiness) game').

4.2 Government and international partners

The new Government aims at diversifying the economy by investing in the agricultural sector on the basis of sound economic principles. The key Ministries involved in this are: Ministry of Agriculture and Animal and Marine Wealth (MoAAMW) and the Ministry of Employment and Vocational Training.

The MoAAMW has, during the Qaddafi regime, largely been focusing on agricultural production aiming at achieving National Food Security at any costs (Taher Al Azzabi, 1999; WB, 2006). This strategy has resulted in a public sector driven agricultural development programmes such as the Great Man-made River Project, many showcases projects (e.g. in dairy sector, and irrigation projects) without any sound economic basis. The current MoAAMW is developing a new strategy which is based on the recognition that the markets drive agricultural development and innovation. The new government accepts that some products (including basic food) might have to be imported as other countries have a comparative and competitive advantage for these. Libya needs to concentrate on what it can produce well for an existing market (nationally and internationally), by adopting a value chain approach.

The Ministry of Employment and Vocational Training (MoEVT) is developing programmes for the establishment of small and medium scale enterprises. To this extent it made a budget of 3 billion LYD available for the establishment of 25000 *agricultural* enterprises (production, processing, marketing etc.). A major challenge exists regarding the use of these investment funds in a transparent and economically responsible manner. It will require capacity development at institutional level regarding governance of the whole system to capacity development at organisational and individual level regarding the development of business plans and vocational training on practical skills and small scale entrepreneurship. The EU

Neighbour Initiative Programme is expected to support SME development through capacity development and business incubator programmes.

Different development partners (IMF, WB, EU) are working with the Government to develop a more (agri-)business-friendly environment (WB, 2011; Transtec, 2010; IMF, 2012). The vision for 2019, which was prepared during the Qaddafi regime, can be found in the National Economic Strategy: http://www.isc.hbs.edu/pdf/2006-0127_Libya_NES_report.pdf. Included in the vision: Libya as a world leader for water management. The agricultural sector, in order to develop a sound strategy needs a vision.

4.3 Farmers/SMEs

Out of the total Libyan population of 6 million people, 70 000 are fulltime farming households and 100 000 part-time farming households. The 15 million ha agricultural land is mostly rangeland. Around 1.8 million ha is arable land and 300 000 ha include permanent crops, while 250 000 to 300 000 ha are irrigated. The average farm size amounts 12 ha (including 1.8 ha permanent crops). The average irrigated area is small (1.4 ha), but no data were available for the percentage of farmers actually having access to irrigation water. Fulltime farmers often have larger farms, but data on land distribution are lacking. Most farmers (90%) are smallholders (less than 20 ha).

Farmers are not formally organised in associations and cooperatives, although some references mention their existence (EC-Trade, 2009). Recently larger farmers and entrepreneurs who have lost land and property to the government have organised themselves into an association for legal purposes. No organisations playing a farmer advocacy role have been identified.

Small and medium-scale agribusiness development has not been supported in the past, consequently most farmers (with perhaps few exceptions) have not engaged themselves in processing and value adding. This is largely caused by the public sector driven supply chain development, with a large focus on self-sufficiency in food production rather than on value adding aspects in the supply chain.

4.4 Markets and processing

Although the Libyan markets are left to the private sector, the governmental interference is strong. Until recently the government would indicate the levels of production for different commodities, while prices would be subsidized. The subsidy levels were (and are still) high, but are likely to decrease (further). The public-sector driven system has led to a relatively 'artificial' situation, but few well-functioning subsectors appear to be (come) promising: the dairy sector, the poultry sector and the horticultural sector. In these sectors the role of the private sector is strong and interaction with e.g. the Netherlands' private sector already exists.

Dairy sector

The Ministry is currently doing an assessment on the state of the dairy sector. The local dairy production valued at 34 million USD in 2004, which covered 32% of national demand for milk, while red meat production stood at 65 million and 68% of local demand (EC-Trade, 2009). Around 100 000 dairy cows (CVO, pers. communication, also see Appendix 4 - Interview 07) used to be kept including both the public and the private sector before the revolution. Many animals have died (due to the previous government regime but also through NATO bombardments). State-owned dairy processing facilities used to exist in all major urban areas (Al Bayda, Benghazi, Misratah, Tripoli, etc.), some of these have been privatized e.g. in Benghazi, and in Misratah, Sirte (by Al Naseem Dairy). In Benghazi the dairy production unit used to be a large 1200 dairy cattle project (DH Projects), which was run with Dutch staff for four years (1987 - 1991).

The current policy is to go for smaller dairy production units of 40 to 300 animals, animals which still have to be restocked. Contacts exist with VEEPRO (www.veepro.nl) and Van Aarsen livestock feed production (www.aarsen.com). A disease free (FMD and Anthrax) certificate is required for live cattle imports (WFP/FAO, 2011).

Poultry sector

The national chicken and eggs production was valued at 157 million poultry meat and 55 000 MT of eggs, both supplying 100% of the national demand in 2004 (EC-Trade, 2009). Libya is producing most of its chicken feed locally (The Abodhir Group), based on imported maize and soybeans. The resulting product is cheaper than the imported feed from Egypt or Tunis. The Abodhir group also imports hatching eggs (for eggs and meat) from the Netherlands by cool truck (Provimi, www.provimi.nl). The poultry producers are loosely organized in an association, in order to negotiate with the government the restrictions on frozen chicken imports from Brazil (currently estimated at 50% of consumption). The association is however powerless when it comes to controlling the highly fluctuating market prices, due to imports and uncoordinated production. This is in contrast to the eggs market which is controlled by a few large companies that even buy any eggs once imported.

Horticultural sector

Libya was in 2004 nearly self-sufficient in potatoes (94%), vegetables (94%) and fruit production (93%), with productions valued at 76 million USD, 463 million USD and 237 million USD. Local entrepreneurs such as Zagrit Co (see Appendix 4 - Interview 06) argue that Libya has a good potential for further expanding the sector, options for export to the EU and neighbouring countries have been explored in the recent past (market studies by Zagrit Co). An example of European investment in Libyan agriculture is the consortium from Rieti, Italy, which in 2006 invested EUR 500 000 to produce and process vegetables to export to Europe. When production reaches full capacity in 2012 the project will create up to 3 000 jobs and will have an estimated annual turnover of EUR 500 million. Zagrit Co collaborates with the Dutch horticultural sector on imports of greenhouses (plastic and glass), with different seed companies in the Seminis Group (www.seminis.com) for imports of hybrid vegetable seeds and with HZPC (www.hzpc.com) for the import of seed potatoes (10 000 MT/year), as well as with other companies.

Input supply

Most of the agricultural inputs for the mentioned sectors are imported. The MoAAMW claims to organize all the input imports, which they want to further privatize. Some private sector representatives mentioned that this government role is already reduced to providing licences. Local seed production is limited. Zagrit Co provides seedlings to producers and multiplies imported seed potatoes to Class E for distribution through local dealers. Libya is self-sufficient in urea production and actually exports to e.g. the United States. (Source: The Library of Congress – country profile Libya: <http://lcweb2.loc.gov/frd/cs/profiles.html>, last updated April 2005).

4.5 Universities and research

Since 1998 the National Agricultural Research System (NARS) is composed of three sets of scientific institutes: (i) Ministry of Agriculture, Animal and Marine Wealth centres: ARC, ASRC (Animal Studies and Research centre), MBRC (Marine Biology Research Centre) (73% of resources); (ii) Secretariat of Education and Scientific Research (SESAR): Seven Faculties of agriculture and veterinary science (9%); (iii) Other Secretariats of Research, such as the Nuclear Research centre, The Libyan Centre for Remote sensing and Space Sciences and the Economic Studies Research Centre (18%). In 1999 the NARS employed 620 scientists (141 foreigners), 29% at the Research institutes affiliated with the MoAAMW, 65% at the Faculties mentioned under (ii) and 6% at the other scientific institutes (iii).

Libya has five faculties of agriculture at the Universities of Tripoli, Sebta, Sirte, Zentan and Omar Al-Mukhtar University, as well as two faculties of veterinary medicine at the Universities of Tripoli and Al-Bayda. General challenges were identified such as: addressing the demand in quality and quantity, quality assurance, governance, use of ICT and scientific research. Special challenges exist in relation to the cooperation between universities and business and industry, and in fact the failure to meet the needs of the labour market and to respond to the changes of the national economy (Tempus, 2011).

In 1981, the General People's Committee (Minister's Cabinet) initiated the National Authority for Scientific Research (NASR) to formulate and supervise the national research policy, fill in gaps in research not tackled by any existing research institutes and centres, and technically coordinate research carried out at research centres. New research centres were established under the umbrella of NASR. The ARC is the major institute of the Libyan NARS, but also includes Environmental Protection Research Centre (EPRC), Industrial Research centre and the Oil Research centre. Libya's Agricultural Research Centre (ARC) is part of an international network of research such as AARINENA (Association of Agricultural Research Institutes of Near-East and North-Africa). Special collaboration exists with ICARDA since 1997, as well as with ICRISAT. The main challenges for the agricultural research institutes area: adequate strategy, human resource capacity, collaboration within the NARS, and interaction with the private sector and agricultural extension, which appear to be moderate and informal (Taher El-Azzabi, 1999).

The pool of skilled agricultural labour is very shallow (CERA, 2006). Although agricultural labour force of immigrants is widely used, little knowledge transfer takes place, as they are employed as low-skilled labour. Skills development in the agricultural sector through existing ATVET institutes could get support from the EU-supported programme on (A)TVETs.

4.6 Support services

Apart from the four main banks (Central Bank, Wahda Bank, Sahara Bank and the National Commerce Bank) there are four specialized banks such as The Agricultural Bank. Four major private banks exist (but not in agriculture) and a large number of smaller regional banks (some of which might be in agriculture as well). Some financial services exist for the agricultural sector such as the agribusiness development fund, banks, and other credit institutions. Currently there is one Agricultural Bank (state-run), where farmers can get loans (although land is not recognized as collateral); no interest is charged only some administration costs. The Agricultural Bank is crowding out the private sector in this way, while investment is also held back as land cannot be used as collateral (CERA, 2006).

The Government of Libya has invested heavily in a road infrastructure, although questions are raised about the quality. Although water harvesting infrastructure has been largely ignored in recent history, water supply systems reach more than 72% of the rural population. Communication and information infrastructure is however poorly developed (CERA, 2006). The electricity network in Libya is well developed, according to the National Economic Strategy (CERA, 2006), but based on the ICA survey of the World Bank (WB, 2011) shows that unreliable power delivery affects most firms. Since 2000, Libya has undergone rapid expansion of power generation, yet this must continue for many years to meet increasing demands. Despite the good will of and recent measures of policy makers, electricity remains an obstacle for private sector growth and operation (according to 44% of the surveyed firms).

4.7 Intermediary services

Intermediary actors are those that build bridges and facilitate interaction between different actors and categories of actors. Agricultural extension traditionally transfers knowledge from research to farmers, but at the same time transfer of knowledge from farmers to research is pivotal. What needs increased efforts is the building of bridges with actors related to markets, input supply and financial services.

An extension department exists within the Ministry and 60 sub-centres or local offices are spread over the country. Depending on the region (i.e. population density and number of projects), offices have 1 or 2 staff members up to x staff members (see Appendix 4 - Interview 02). Private companies such as ZAGRIT Co also employ extension workers who provide after-care to those farmers who have bought seeds and seedlings from the company.

The Tripoli Chamber of Commerce, Industry and Agriculture is 1 out of 14 Chambers in Libya. This Chamber covers 24 sectors and has 35 000 registrations (pers. Comment, see Appendix 4- Interview 05) (and even more according to the website), agriculture was only recently, in 2010, added. The Chambers of Commerce can potentially build bridges between all actors, but can in practice only do this for the registered members (farming enterprises are currently not registered). The Chamber of Commerce has a capacity development programme and budget. The programme is however currently only accessible for members and Chamber of Commerce staff. The programme is currently narrowly defined and focuses on computer and English language training, as well as some management skill training. Options for multi-stakeholder process facilitation exist, but expertise, notably in the agricultural sector, is missing.

One of the major strategic issues is to establish criteria for the selection of agribusiness enterprises or value chains to invest in. The role of the government would be to provide the training for the entrepreneurs, to support the organization of small and medium-scale entrepreneurs in agribusiness, as well as to provide services that would link up entrepreneurs with credit institutes and banks. Some specific business development services exist, but mainly of an international nature. Examples are the suppliers of greenhouses and other equipment. These services can also build bridges between value chain actors (national-international). New service providers are emerging that facilitate interaction between upcoming small-scale entrepreneurs and suppliers of equipment for small-scale processing (Embassy of the Kingdom of the Netherlands in Tripoli, pers. com.). The support for business development services is foreseen as part of the EU-NI programme (EU, 2010).

5 Institutional setting and governance

5.1 Introduction

Libya needs to change its institutional setting to create economic space and support for private sector entry and growth. Highlighted in the previous chapter, the World Bank (WB, 2011) stresses that the newly established government of Libya needs to convince investors and other stakeholders that the 'rules of the game' will be clearly, fairly and consistently applied. In Chapter 4 we focussed on the stakeholders involved in agribusiness development. An important part of the institutional reforms is to understand strengths and possible weaknesses of the different stakeholders. This chapter will focus on the institutions which need to be in place for successful agribusiness development. A short summary on the status of mandates, policies, regulations, laws and –informal or formal- agreements etc. (not an overview of the actual laws and regulations!) will be provided in this chapter. At the same time to have a better understanding of the current institutional setting, also a few words on how players think the game should be played', e.g. existing beliefs, norms and values of the agribusiness actors and how stakeholders see the necessary pathway of change for agribusiness, will be shared. 'How the players currently *actually* play the game', e.g. the current governance practice regarding agribusiness development and the current products and services that are being delivered by the different players is another essential part to better understand the current institutional setting. Thus, the supporting and limiting factors regarding the capacity at institutional level can be assessed more profoundly.

5.2 Legal framework and governance practice

The Libyan Government has been all over the national agricultural innovation system. All functions in the system were driven and controlled by the government, often leading to inefficiency and corruption. This has also led to a lack of innovation in the wider sense: no market innovation, no or very limited institutional innovation and expansion of large organizations in the public sector, like MAAMW and ARC, as well as public extension and irrigation development systems, which did not result in more efficiency (based on pers.comm. of several interviewees, see Appendix 4). This lack of innovation has led to a relatively stagnant agricultural growth.

Despite the enormous investments made, agricultural production has not been able to keep up with the population growth. Revision of the existing legislative and regulatory context which inhibits the role of the private sector e.g. legislation on establishment of joint ventures, access to land, subsidy framework etc. is necessary. Also new roles for building bridges between different actors in subsectors and value chains as should be made more explicit, as e.g. by the Chambers of Commerce or others.

Led by the Ministry of Economy, the Libyan government had embraced a 'diversification agenda', guiding many of its reforms and reverse oil dependency from 70% of the GDP to 30%. The diversification agenda even included a set of 24 laws already approved under reform plans. As in several other MENA countries, it is not always clear if the enactment of new laws in Libya fully supersedes exiting laws and are legally conclusive. It was generally observed by the Ministry of Economy (as stated in WB, 2011) that Libya needs to build up its institutional and administrative capacity to implement reforms. Consultations during the World Bank's Investment Climate Assessments suggested the following status of certain key areas of reform:

- **Access to finance:** The Central Bank was working to establish a credit bureau and collateral registries;

- **Company law:** Company Law 23 made the limited liability company (LLC) more flexible. Also joint ventures became eligible for LLC status;
- **Business establishment:** the government had created a one-stop under the Ministry (People's Committee) of Economy to allow basic licensing within a single day. Experts consulted, however mentioned that the one-stop option was not yet fully in place and legally conclusive. . Electronic systems were not yet operational and physical visits were still required;
- **Investment Law:** Investment Law 9 removed prior distinction between foreign and domestic investors (including relieving key constraints like residency visa for foreign investors or multiple entry visa). There was also uncertainty whether the new investment law would fully supersede existing investment laws and regulations;
- **Tax reform:** The corporate tax rate was reduced to a flat 20% and stamp duties were also reduced, but tax administration remained unreformed and the requirements to physically stamp each transaction remained;
- **Access to land:** Some amendments for Industrial Zones, but still a major constraint that deters new investments. Access to land is not a unique constraint in Libya; it is one of the characteristics that sets the MENA region apart: extensive public ownership of land and especially in Libya (pers. comm.) with subsidised allocation.

Libya ranks 146th out of 178 in the 2010 Corruption Perceptions Index (number 1 is perceived to be the least corruptive). Libya is signatory to the UN Convention Against Corruption (UNCAC). In general greater accountability has been called for: <http://www.state.gov/e/eb/rls/othr/ics/2011/157312.htm>. In the Investment Climate Assessment (WB, 2011) 44% of the respondents of the survey identified corruption as a serious constraint for their firm's operation and growth.

The introduction in the MoAMW and in the Chambers of Commerce of the value chain development concept is a positive change for agribusiness development. It does imply, however, the need to have interaction between the key actors in the value chain in order to improve the performance of each function in this chain. Major challenges in this are organisation and facilitation of the joint multi-stakeholder planning, chain analysis and action plan development. Crucial will be the interaction between public sector and support services, such as financial services, production and input market supply services, as well as knowledge services (ARC, extension). Currently all are operating in relative isolation.

It is difficult to navigate within the Libyan legal and policy regulatory framework for agribusiness development. There are no non-governmental organisations (NGOs) present in the country. NGOs could however facilitate the regulatory transparency. Some are coming up in the East of the country but mainly for providing social services.

A key challenge for Libya is providing the education and training opportunities to citizens that prepare themselves for sustainable employment in agribusiness. This includes the overall capacity to innovate, which is based on tools, individual skills, attitude and knowledge as well as the organizations and institutions. The quality of education and the level of education of the workforce directly affect productivity throughout the value chain. A stronger connection between curricular development and labour demand is indicated along with a system of public support for training (WB, 2011). The Labour Law is therefore another key area of reform. The Labour Law should, according to the World Bank, strike the appropriate balance between protecting Libyan workers and the need to allow flexibility to the new Libyan entrepreneurs. Also with regards to expatriate workers.

Libya has been striving towards improved governance with regard to women's issues, increasing women's participation in all fields of development, but also in economic activities. Currently women represent up to 70% of university graduates, but few women are found in higher positions. Concerns exist in relation to the

obstacles women encounter in establishing a small or medium-scale agribusiness firm. The World Bank outlines (WB, 2011) at the same time that women in Libya appear to have more opportunity as entrepreneurs and workers than women in many other countries in the region. Firms with female ownership, although rarely seen in the agribusiness sector (pers. comm. Appendix 4 - Interview 07), are far more likely to address access to finance as the biggest constraint for private sector development. Interesting addition was made in the World Bank report: 'In the Libyan firms surveyed, female workers are far more likely to be professionals than are male workers'.

While democracy and human rights might not be the first central themes for agribusiness development, still, transparency, broader policy dialogue, a more accountable, organised and ambitious approach to policy and institutional reforms are essential elements for an enabling environment for agribusiness development. The role and conditions of service of migrant workers in the agricultural sector needs special attention.

Quite a few interviewees referred to another issue hindering agribusiness development, which is the fact that working in the agricultural sector is currently not seen as attractive, especially not by younger future Libyan workforce and/or many of the 25 000 ex-combatants and/or retrenched civil servants. Agribusiness will benefit in that respect benefit by a better promotion of the value chain approach. Lobbying for engaging in the agricultural sector is therefore a must. A task for which the government needs to call upon the close collaboration with other stakeholders of the agricultural sector.

5.3 Coordination and management

Many specific suggestions for regulatory or, better, institutional reform can be made and perhaps that is for the newly established government the most logical advice for the short run: piece by piece and step by step. In the longer run, however, to modernise the legal and regulatory framework ('the rules of the game') and the institutional framework as a whole, needs a far more systematic approach. The institutional framework as a whole refers to (i) 'the players of the game', including the relationships between players and how players organise and position themselves towards each other; (ii) how these players currently play, but also (iii) how players think that game should or can be played and (iv) the actual rules (whether formal or informal) of the game. This 'enabling environment as a whole needs to be considered when developing a strategy for agribusiness development. For example, the government might try to change how the game is played by regulations or incentives (e.g. water pricing) but if people have the mind-set that water is a never ending resource, the objective of more sustainable use of water is not easily reached. Key stakeholders together need to develop a vision, set objectives, based on overcoming current challenges and needs and prioritise to avoid daunting unrealistic agendas.

The World Bank aims at mapping of the private sector and their needs. This will be coordinated by the EU (providing support through the economic and private sector development advisor), DFID (supported by the presence of a 4-months expert stay, as well as USAID (through presence of an expert). The main issues to be addressed in the mapping will be: relations between public and private sector; relations between stakeholders of the value chain; regional differences; relation between the informal and formal sector. This could be the basis for the development of multi-stakeholder platforms including private and public sector actors from all levels, including representatives of research institutes. Also exploring underlying principles and views of players about how the pathway of change should best be designed is an important part of understanding the context and will help to prioritise objectives.

Few examples of multi-stakeholder platforms exist already, e.g. ZAGRIT Co. brings together researchers, extension workers and local agro-dealers as well as larger level input supply in the vegetable sector (see Appendix 4 - Interview 06). Although olives and dates are partially exported, there are no commodity

boards or multi-stakeholder platforms which regulate the sector. Recently a special olive and date research station was established, it did not become clear whether the sector had a role in this.

For the overall business reform process the World Bank (2011) recommends the establishment of coordination mechanisms at different levels, notably: A central high level decision-making body; a reform management unit; public-private working groups; and, project implementation units. The organization of public-private working groups around key issues, sectors or regions to generate shared understanding, priorities and solutions, is an essential part in this process.

The network of Chambers of Commerce (CoC) could play an important role in identifying, and supporting business opportunities as well as coordinating the different interventions. Although farmers and their organizations are currently not registered with the CoC, other actors of the agricultural sector are, e.g. input suppliers, banks, market actors, processors, etc. Having meetings between these representatives of the agricultural sector could be the basis for development of platforms and the strengthening of farmers' organizations. The CoC could play a facilitating role in that respect.

The Ministry of Agriculture, Animal and Marine Wealth, as well as the Ministry of Employment and Vocational Training and the Ministry of Economy have an important, but for them new, role to facilitate interaction between actors. In collaboration with foreign trade missions (and corresponding foreign public agencies and ministries) the National Ministries will have a special function in also bringing foreign and national private sector together for e.g. investing in joint ventures.

The facilitation of business to business relations (B2B) is also done by the Libyan business association, in collaboration with foreign business associations. The Egyptian businessmen association and Libyan business association signed a protocol to establish a joint business council to encourage joint investments and develop the volume of trade exchange between Egypt and Libya (2011). The U.S.-Libya Business Association was established in 2005 to enhance the U.S.-Libya relationship, educate the public about the importance of U.S.-Libya trade and investment, and facilitate the commercial and diplomatic dialogue between the two countries. Libyan British Business Council established in 2004 promotes business relations and commercial activity between the British and Libyan business communities and is very active in providing English language courses.

6 Education in Libya

6.1 Introduction

A good and recent overview of tertiary education is provided by the Education, Audiovisual and Culture Executive Agency (EACEA) and the National Tempus office in Libya (Tempus, 2011). There are three types of tertiary institutions in Libya: (i) Universities, (ii) Technical Colleges (iii) Higher Vocational Institutes.

Universities offer three types of qualifications. The first degree offered is the bachelor degree (Al-Ejaza Al-Jameaya) which requires four years of study in most programmes after obtaining the secondary school certificate. Universities also offer programmes leading to Master's degree in most specializations (Al-Ejaza Al-Alea or Al-Majestair), which requires, on average, 2-3 years of study after obtaining the bachelor degree. Obtaining a Ph.D. degree (Al-Ejaza Al-Dakeka or Doctora) in selected specializations and at certain universities requires three to four years of study. According to regulations set by GPCE&SR, Master's and Ph.D. programmes have to be approved first by the National Committee for Universities, which also sets the admission requirements for both degrees (Tempus, 2011).

There are seven general universities and three universities of special nature in Libya. In addition, there are 4 accredited private universities. The total enrolment of all higher-level education institutes (universities and institutes of higher education) amounted to 72 899 students in 1992 (www.aet-africa.org). The number of female students had risen from a 25% enrolment in 1980 to 46% in 1992. There were about 340,000 students enrolled in all universities in Libya in the academic year 2008/09, about 57% of them female, and more than 90% enrolled in public universities. The current number of enrolled students is unknown.

Technical Colleges (Kuliat Tekania). In November 2009, 16 high vocational centres and institutes were converted into high technical colleges. These colleges offer "technical bachelor degrees" (Bakalurius Tekani) in certain specialities, which requires three years of study after obtaining the secondary school certificate.

Higher Vocational Institutes (Maahed Mehania Ulia). Currently, there are 63 high vocational institutes in Libya. These institutions offer programmes in many vocational specialities for a period of three years after obtaining the secondary school certificate. Graduates of these institutions are awarded high vocational/technical diplomas (Deplom Mehani/ Tekani Alea).

6.2 Tertiary education governance

The present structure of the Educational System was approved in 1984 (Tempus, 2011). Higher education is governed by the General Peoples' Committee for Education & Scientific Research (GPCE&SR). A new law entitled "Law No. 18 for Education" concerning the higher education sector in Libya was approved by the General Peoples' Congress in January 2010. The law determines that the higher education sector comprises public and private universities, technical colleges, and academies. The law also stipulates the conditions and criteria for the establishment of public and private institutions.

Within the GPCE&SR three bodies were responsible for the supervision of and the coordination among higher education institutions: (1) the National Committee for Universities, (2) the National Committee for Technical & Vocational Education, and (3) the National Committee for Private Education. In addition, the Center for Accreditation & Quality Assurance for Educational Institutions is responsible for the recognition and equivalence of diplomas, accreditation, and quality assurance of the public and private higher

education institutions. The National Authority for Scientific Research supervises the administration and finances of scientific research. For students' admission to tertiary institutions, the GPCE&SR regulates and determines annually the requirements, such as student's specialization in the intermediate education level and GPA (grade point average).

6.3 Tertiary education in agriculture

Libya has five faculties of agriculture at the Universities of Tripoli, Sebta, Sirte, Zentan and Omar Al-Mukthar University, as well as two faculties of veterinary medicine at the Universities of Tripoli and Al-Bayda. A total of 70 to 100 veterinarians (BSc) graduate annually (CVO, pers. comment), the number of graduates from agricultural faculties can only be estimated, but must near few hundreds. The EU-sponsored Tempus programme supports higher education in Libya. General challenges were identified such as: addressing the demand in quality and quantity, quality assurance, governance, use of ICT and scientific research. Special challenges exist in relation to the cooperation between universities and business and industry, and in fact the failure to meet the needs of the labour market and to respond to the changes of the national economy (Tempus, 2011).

6.4 Higher education in challenges

Higher education in Libya is facing some major challenges which could impact the near future. These challenges include (i) Meeting the increased demands for quality improvement in higher education; (ii) Raising the quality of higher education graduates and their abilities to take personal career initiatives; (iii) Accreditation and quality assurance of higher education institutions and programmes; (iv) Financing and governance of higher education institutions; (v) Increasing the use of IT in higher education institutions; (vi) Strengthening scientific research in higher education institutions (Tempus, 2011).

Based on the interviews held with different stakeholders in Libya a few additional challenges can be formulated (Ministry of Agriculture, Animal and Marine Health, World Bank, EU, FAO, ICARDA and to some extent ARC, see Appendix 4 for an overview of all interviews). All mentioned that a shift in mind-set is needed in the field of tertiary education towards more cooperation between Education Institutes, Research Institutes, Government and the private sector (including current farmers). "I am sure Wageningen University would not have its current status if it would never have talked to a farmer, a food processor..." (pers. comm.). This cooperation between sectoral stakeholders and across sectors is pivotal to decrease the gap between the need for skilled labour in the market and the current provision of capacity development.

Currently a trend exists to move away from import substitution and foreign dependency reduction through local production of food towards production based on economic principles and competitive advantages (value chain approach, adding value to imported products by food processing etc.). This requires an incredible change of culture, mind-set, governance structure, etc.) (MoAAMW and FAO pers. com.; Worldbank, 2011).

A 71 million USD agreement has been signed between FAO and the Government for the coming 5 years and although the Terms of Reference of the agreement have not been finalized as yet the focus will be on plant protection, natural resources management, animal health as well as institutional and capacity development. This programme is being further developed and will be financed by the Libyan Government.

6.5 Higher education cooperation Libya – The Netherlands

Libya has a specific interest in working with both the public (Wageningen UR and others) and the private sector in the field of agricultural knowledge exchange and development through research and education. The Netherlands has been recognized for its track record on water research (quality and irrigation efficiency), horticulture and potatoes, as well as the poultry and dairy sector, but also with regard to the governance system of agribusiness development.

Focal points are recommended between the NARS-Libya and Wageningen University & Research centre, which could eventually even lead to a Dutch-Libyan Centre for capacity development and joint research in the agricultural sector. The collaboration would have to be based on a twinning arrangement between the Wageningen UR.

Another centre, the Libyan Dutch Training Centre (LDTC), was being developed in Tripoli; the final phase of the development was to be completed in 2010 (Rhema and Miliszewska, 2010) and the centre would provide services to upgrade the qualifications of teachers and graduates in the field of technology, business administration, hotel and tourism and health and care. Agriculture or agribusiness development was not included. The training programs are considered a vital starting point in the development of e-learning in Libya. While they have a positive general impact on the development of the Libyan education sector, they specifically encourage the use of e-learning and the adoption of its tools and technologies to facilitate wider access to learning and improvement of educational achievements in Libya. Currently it is not known whether this centre indeed became operational.

There are many priorities with regard to education in general and to agricultural capacity development in particular. Like for the agricultural sector as a whole a strategy is needed to address the challenges as outlined above, but waiting for the strategy to be finished is not recommendable. A set of parallel processes of addressing priority challenges immediately is necessary (e.g. starting the set up platforms between research, education and the private sector; exchange between Netherlands' and Libyan universities; starting developing small projects between government and private sector, private sector and education institutes, between the Chambers of Commerce and Education etc.) and in parallel develop strategies for capacity development and institutional change with regard to agricultural education.

Although a strong wish for further cooperation has been mentioned, it has to be taken into account, that a lot of time is needed for people to firstly, trust the possibility to transparently cooperate and exchange (based on few comments during interviews, preferred not to be referred to).

From an import substitution policy towards an agricultural policy that will focus more on value adding by e.g. food processing, packaging etc. is a change to a situation for Libya that is total new. There are no benchmarks available, so lessons learnt from other countries are necessary.

7 Recommendations

7.1 Concluding remarks

7.1.1 Introduction

The Libyan agricultural economy is small in relation to the oil sector and the service sector, but significant in terms of rural employment. Agricultural development was until recently strongly dominated by the public sector resulting in many showcase projects without any relation with economic reality but based on access to free irrigation water, tax-free imports, low transport costs and direct subsidies for seeds, pesticides and fertilizers and services. The new Government and notably the Ministry of Agriculture, Animal and Marine Wealth, as well as the National Agricultural Research System are still to develop new strategies to face the situation: A situation which is characterised by serious employment challenges (lack of capacity), high unemployment rates and the additional employment need of ex-combatants and public servants, retrenched because of policy reforms.

7.1.2 The current guiding principles of agribusiness development

Some **guiding agribusiness development principles** have been stated during the interviews and in fact all of them come back in the literature as well:

- Diversification of the economy (beyond the oil economy), also to achieve inclusive development;
- From an import substitution policy towards market-orientation of agriculture production: Achieving national food security through domestic production *only* is no longer a target, instead the criterion of competitive advantage is being introduced;
- Creating employment opportunities;
- Introduction of value chain and supply chain approaches: Current emphasis in agricultural development is on value adding in the chain, based on the need to reduce post-harvest losses and based on the knowledge and acceptance that not all products can suitably be grown in Libya. A blooming agricultural sector of Libya will mainly be based on food processing, marketing, notably through Small and Medium Scale Enterprises (SMEs);
- Recognition of the private sector as a driving force in the agricultural sector;
- Sustainable water use principles and water harvesting. Production cannot any longer be at any water cost (irrigation water is currently provided free of charge), but strong emphasis on water use efficiency;
- Contributing to the wealth and stability of Northern Africa and being recognised in that respect as an important player.

7.1.3 Understanding the institutional setting for agribusiness development

The operationalization of above guiding principles and Agribusiness development will require a major **institutional change**. A thorough overview of the *complete* institutional setting is lacking however. This requires an analysis of the:

- Sphere of Control (mandates, policies, regulations, laws and -Informal or formal- agreements etc.), often referred to as the 'rules of the game' (e.g. WB, 2011): Revision of the existing legislative and regulatory context which regulates the role of the private sector e.g. legislation on joint ventures, land governance regulation, subsidy framework etc. The 'rules of the game' which need to be in place for successful agribusiness development, are currently being formed, reformed and

reformulated in order to create an enabling environment for agribusiness development. Institutional reform also requires new roles and mandates to support the building of linkages between different actors in subsectors and value chains; a role which could be taken up by the Chambers of Commerce or others;

- Sphere of Association (organisations, relationships, platforms, actors): the organisational architecture of the society). Agribusiness development in Libya requires a value chain approach and therefore strong network of the different players (actors or stakeholder) in the chains. It is not about the individual actors only but especially about the relationships (whether formal or informal) between them. Developing multi-stakeholder platforms is required;
- Sphere of Norms, Beliefs (paradigms), Values and the sphere of Actual Behaviour. These institutional spheres refer to 'how players think the game should be played', e.g. existing beliefs, norms and values of the agribusiness actors like for example the belief among youth that working in the agricultural sector is not attractive (which might hinder agribusiness development), the current agribusiness-oriented approach in the Ministry of Agriculture, Animal and Marine Wealth, the wish for more market-oriented research, the notion that individual career development is important, etc. (which most probably supports agribusiness development). The sphere of actual behaviour and current practice refers to 'how players currently actually play the game', e.g. the current governance practices regarding agribusiness development are not fully developed yet (partly because of a constraining legal framework) and in WB (2011) it is mentioned for instance that many investors still see corruption as a constraining practice. Another practice, according to many investors and other stakeholders is that there is a regional preference (investors from e.g. Benghazi do not experience the same support as investors from Tripoli).

The newly established government of Libya needs to convince investors and other 'players of the game' that the 'rules of the game' will be clearly, fairly and consistently applied (WB, 2011). It is very important to understand and analyse not only the current 'players involved in agribusiness development, but it is essential to thoroughly understand strengths and possible weaknesses of the institutional setting as a whole as it is the basis for building agricultural and agribusiness innovation capacity in the country.

7.1.4 Developing capacity for agribusiness development

Agribusiness development will require innovation capacity development resulting in a number of major challenges, which are interrelated:

- Short and long-term **individual capacity development**, which is skills development (language, communication and facilitation of participatory and multi-stakeholder approaches), as well as knowledge (content) development on specific priority topics (e.g. water, horticulture and animal husbandry). The actual capacity development can be implemented through MSc. or PhD programmes, but also through short-term course programmes, training of trainers programmes, the South2+ programme (special programme between Libya and other countries in the region, with a (knowledge) input by a third country such as the Netherlands);
- In order to be effective and have progress in agribusiness development developing individual capacity alone will not be sufficient. In addition **organisational capacity development**, such as developing proper human resource development strategies (as the MAAMW is trying to do at this moment) and providing incentives and opportunities for career development, is of extreme importance;
- Apart from developing individual and organisational capacity, **institutional capacity** needs to be developed. In particular, the development of effective interaction between different categories of actors in the innovation system through e.g. multi-stakeholder platforms (like public-private-research partnerships). It will also include **international collaboration** in the areas of research (on priority

commodities and topics), education (universities and vocational training institutes) and private sector (joint ventures on knowledge-rich investments).

Developing capacity does not work without the implementation of newly acquired knowledge and skills. In that respect, **employment** of young Libyans in the agriculture sector requires opportunities beyond the local production of traditional commodities. The SME investment fund, the Chamber of Commerce, all have a role in identifying promising business models for the priority commodities.

7.2 Recommendations

7.2.1 General

A letter of intent was signed between the Libyan Ministry of Agriculture, Animal and Marine Wealth and the Dutch Ministry of Economic Affairs, Agriculture and Innovation (April 2012). Based on that letter and the current mission findings it is recommended to establish a focal point in both Ministries for the joint programme to be developed. This will probably only be possible after the appointment of the new Government in Libya (expected before the end of October 2012) and the new Dutch Government.

The recommended first steps would be to start collaboration in the area of individual capacity development which would require first of all information exchange on opportunities. The initial individual capacity development activities (training at Wageningen UR, practical training through Dutch ATVET institutes, etc.) are to lead to wider collaboration in the area of organisational capacity development.

Organisational capacity development could further be initiated through e.g. twinning programmes between the Libyan Ministry Agriculture, Animal and Marine Wealth and the Ministry of Economic Affairs, Agriculture and Innovation in the Netherlands. In the field of science and research twinning between Agricultural Research institutes and Higher and Vocational Education institutes, including universities would be recommendable.

Development of business relations between the Dutch and Libyan agribusiness sectors in the priority areas will be encouraged simultaneously. This is beneficial for individual and organisational capacity development within the private sector.

Similarly focal points are recommended between the NARS-Libya and the Wageningen University and Research centre. This could eventually even lead to a Dutch-Libyan Centre for capacity development and joint research in the agricultural sector. The collaboration would have to be based on a twinning arrangement between Wageningen UR and Libyan Agricultural Research and Education Centres.

The agribusiness collaborative focus will therefore be on: capacity development, and notably research and education collaboration, as well as private-to-private sector facilitation. The main focus will be on priority commodities for which Libya can develop a competitive advantage such as fruit (citrus, grapes) and vegetable (including potato) production and animal husbandry (poultry and dairy, including forage production). Crosscutting issues in all of these is the need to increase water use efficiency, as well as to utilise methods for water harvesting and recycling.

A strong interest exists of the private sector in Libya as well as the Ministry of Agriculture, Animal and Marine Wealth to develop partnerships in the public and private sector. Libyan and Dutch Ministries could play a facilitating role. Specific requests relate to: (i) Joint ventures in the area of seed potato and vegetable seed production, dairy production; (ii) Research collaboration in the areas of horticulture and water use efficiency, animal husbandry; (iii) Twinning arrangements between universities (Wageningen UR),

Institutes of Higher Education and vocational training institutes (dairy cattle management, horticultural production etc.). The main activity would be here exchange of information and organizing encounters, which could possibly include well prepared trade missions (prepared on the basis of concrete investment opportunities). The latter will require local mapping of business opportunities, an activity foreseen in the wider sense (not focused on agribusiness) by the World Bank with national actors such as the Export Promotion Agency, the Economic Studies Research Centre (Al Bayda).

Libya has a specific interest in working with both the public (Wageningen UR and others) and the private sector on agricultural knowledge development through research and education. The Netherlands has been recognized for its record on water research (quality and irrigation efficiency), horticulture development and potato production, as well as the poultry and dairy sector innovation.

Land governance is a major issue in Libya, as entitlements cannot be substantiated due to the lack of a strategy and system. Many old land governance issues are emerging (old claims, mapping, land occupation, court cases etc.). The expressed ambition is to get it organised soon, but one of the principle problems is the absence of proper registration and documentation systems. A link could be established with the Netherlands' Cadastre, Land Registry and Mapping Agency for possible advice in this context.

7.2.2 Immediate follow up

Collaboration between Libya and the Netherlands based on provided suggestions will be based on the existing Letter of Intent between the Libyan Ministry of Agriculture, Animal and Marine Wealth and the Dutch Ministry of Economic Affairs, Agriculture and Innovation. There is currently no need for a formal agreement or Memorandum of Understanding, unless later identified as a specific requirement.

Based on the referred Letter of Intent, the current mission findings, the debriefing with the Netherlands Embassy of the Kingdom of the Netherlands in Libya and the debriefing with the Dutch Ministry of Economic Affairs, Agriculture and Innovation and NL Agency, a focal point will be established in each of the Ministries for the coordination of the joint activities. Similar focal points will be established within Wageningen UR and discussed with the existing ARC/ICARDA contact.

Considering the fact that both EU and the World Bank are involved in business development in general, a (knowledge and expertise) contribution to agribusiness development would be considered opportune and complementary. Both World Bank and EU would welcome coordination on these topics in Libya with the Embassy of the Kingdom of the Netherlands in Tripoli.

ICARDA will support Wageningen UR with the selection of ARC staff for further training at MSc and PhD level. This will however to be based on a plan to be developed by ARC for the priority areas, for which further studies and capacity development are required. The programme between ARC and ICARDA (financed by the Libyan Government) foresees 18 MSc and 9 PhD studies in total, most of them preferred to be carried out in Wageningen. Wageningen UR is preferred as it guarantees quality, courses are provided in English and it applies the 'sandwich programme' opportunities. The latter would allow embedding the studies into a new more focused research programme with a four-party supervision (by an Agricultural Faculty in Libya and Wageningen University) and interaction from ICARDA and ARC.

The MAAMW and the Agricultural Research Centre (ARC) are in a period of transition towards more multi-stakeholder interaction, market-orientation, value chain development and agribusiness development, based on an assessment and a reconsideration of the priorities set. This will require a paradigm shift in the referred organizations and the development of a new strategy. The ARC, supported by ICARDA, is interested in getting support from the ICRA/CDI/KIT alliance on institutional and organisational change processes, including the required innovation capacity development. A combination of short courses and

coaching through a tripartite arrangement between ARC, ICARDA and the alliance could be a recommended way forward. Feedback needs to be provided by the alliance to ARC and ICARDA on the diversity of options.

The EU is expected to start working with the Ministry of Employment and Vocational Training on the TVET improvement. In coordination with the EU and the Ministry of Employment and Vocational Training, and the Ministry of Agriculture, Animal and Marine Wealth a special programme could be developed on Agricultural Technical and Vocational Education and Training. Libya (MAAMW) would be interested to receive information on the options and experiences as well as Netherlands actors in ATVET notably on the referred priority sectors.

Although above mentioned programmes can be financed by the Libyan Government, and this has indeed been offered as such, some initial investments and seed money would be needed from the Netherlands. Options for this might exist within existing programmes, such as 'MATRA-Zuid' or opportunities provided by the Embassy of the Kingdom of the Netherlands. For the private sector linkages PUM and PSI-Arabic might be supportive financial instruments.

References and resources

- AfDB, 2011. Libya: Post-War Challenges. An Economic Brief, September 2011.
- AfDB, 2011. New Libya, New Neighbourhood: What Opportunities for Tunisia? Emanuele Santi, Saoussen Ben Romdhane and Mohamed Safouane Ben Aïssa. AfDB, North-Africa Quarterly Journal, Number 1, 2012.
- Rhema A. and I. Miliszewska, 2012. Towards E-Learning in Higher Education in Libya. Issues in Informing Science and Information Technology Volume 7, 2010
- Bertelsmann Stiftung, BTI, 2012 — Libya Country Report. Gütersloh: Bertelsmann Stiftung, 2012
- CERA, 2006. National Economic Strategy. An Assessment of the Competitiveness of the Libyan Arab Jamahiriya. Completed under the guidance of the International Advisory Board Co-Chairs: Professor Michael E. Porter, Harvard University, Dr. Daniel Yergin, Chairman, Cambridge Energy Research Associates (CERA).
- EC-Trade, 2009. Trade Sustainability Impact Assessment (SIA) of the EU-Libya Free Trade Agreement. Final Report, October 2009. European Union.
- EL&I, 2009. LNV in Noord Afrika? Een verkenning.
- EL&I, 2012. Verslag van de landbouwmissie naar Libië van 14 – 16 mei 2012.
- EU, 2010. Libya, Strategic Paper and National Indicative Programme 2011-2013. European Neighbourhood and Partnership Development.
- EU, 2012. EU funded projects in Libya (June 2012)
- ICARDA, 2011. An integrated approach to select and characterize benchmark watersheds for sustainable resources management in Libya.
- ICARDA, 2012. Rebuilding Libya's agriculture and agricultural research system.
- ICCAT, 2008. Current Condition of the Atlantic Bluefin Resources by G. Scott, SCRS Chairman. Tokya, 2008.
- IMF, 2012. Libya beyond the Revolution: Challenges and Opportunities. Prepared by a staff team led by Ralph Chami, and comprising Ahmed Al-Darwish, Serhan Cevik, Joshua Charap, Susan George, Borja Gracia, Simon Gray, and Sailendra Pattanayak
- Mounir Belloumi and Mohamed Salah Matoussi, 2011. Measuring agricultural productivity growth in MENA countries. Journal of Development and Agricultural Economics Vol. 1(4), pp. 103-113, July, 2009
- Rhema, Amal and Iwona Miliszewska, 2010. Towards E-Learning in Higher Education in Libya. In: Issues in Informing Science and Information Technology, Volume 7, 2010.
- Sanders A., 2011. Libya's Great Man-Made River and the Supply of Water during Libya's Conflict. Civil-Military Fusion Centre
- Taher Al Azzabi, 1999. The National Agricultural Research System of Libya. WANA NARS Study (1999) – Libya.
- Taher Azzabi, 1999. Food Self-Sufficiency and Agricultural Research in Libya. Agricultural Research Center, Tripoli (Libya). Cahiers Options Méditerranéennes, vol. 1, n° 5
- Tempus, 2011. Higher Education In Libya. European Commission.

- Transtec, 2010. Needs Assessment Trade And Trade Related Assistance For Libya. Final Report by John Linton, Abdelkrim Ben Fadhl, Ahmed Ghoneim, for the EU.
- US State department, 2011. 2011 Investment Climate Statement – Libya. March 2011.
<http://www.state.gov/e/eb/rls/othr/ics/2011/157312.htm>
- WB, 2006. Water, Food Security and Agricultural Policy in the Middle East and North Africa region. Working Papers Series no 47 by Shobha Shetty.
- WB, 2011. Libya Investment Climate Assessment 2011: Enhancing Private Sector Performance for Diversification and Employment. Financial and Private Sector Development Department. Middle East and North Africa region. The World Bank
- WFP/FAO, 2011. Food Security in Libya, an Overview.
- World Economic Forum (2012). Global Competitiveness Index.
- WDE, 2007. World Data on Education. Libyan Arab Jamahiriya.
http://www.ibe.unesco.org/fileadmin/user_upload/archive/Countries/WDE/2006/ARAB_STATES/Libyan_Arab_Jamahiriya/Libyan_Arab_Jamahiriya.pdf

Appendix 1 – List of people met

Name	Function
Michel Deelen Mlh.deelen@minbuza.nl	Acting Ambassador and Private Sector Development of the Embassy of the Kingdom of The Netherlands in Tripoli
Salaheddien Rachid Boulaabi tri-ea@minbuza.nl	Trade assistant of the Embassy of the Kingdom of The Netherlands in Tripoli
Prof. Ahmed A. Abuzkhar prof_abuzkhar@yahoo.com	Deputy Minister of Agriculture, Animal and Marine Welfare (MAAMW)
Hanan Ibrahim Aghil mont.ha2002@hotmail.com	Director Human Resource Development (MAAMW)
Riaad Biraan	Head of the Education and Training Department
Juan Zaratiegui Biurrun juan.zaratiegui@eeas.europa.eu	Attaché, Political and Economic Advisor, EU delegation
Patrick McClay Patrick.mcclay@eeas.europa.eu	Advisor Economic Private Sector and Trade Development
Khalil Masoud Mahfoud kalil.ma@yahoo.com	Chairman of Board of Directors Tripoli Chamber of Commerce Industry and Commerce
Ahmed M. El Faghi ahmedfaghi@yahoo.com	General Manager Tripoli Chamber of Commerce Industry and Agriculture
Ramadan Zabtia rzabtia@zagritseed.com	General Manager Zagrit Co. Ltd.
Maraouane El Abassi melabassi@worldbank.org	Country Manager, Senior Economist World Bank
Ms. Hend Irhiam	Operations Analyst, World Bank
Mr. Abdul Karim	Analyst, World Bank
Aladdin M. Wefati A_wefati@yahoo.co.uk	President and general manager of NAFCO (Nour Alhaiat Fishery Co.)
Salem A. Gerwi Algamr41mport@yahoo.com	Tripoli Chamber of Commerce and Industry, Member of the Board of Executives. CEO of El Yakut Import Food and Dry Fruit Ltd
Mounir Abodhir	Abodhir group

Dr. Abdunaser Dayhum adayhum@agriculture.gov.ly	Chief Veterinary Officer, MINAG
Mohammed M. Zurghani Taha.zorgani@yahoo.com	Meat Inspection, MINAG
Yosef Aborwes Yosfeaborwes@yahoo.com	Director Animal Production, MINAG
Prof. Dr. Ramadan A. M. Alhendawi alhendawiramadan@hotmail.com	Director General Agricultural Research Centre
Dr. Idress Hamad Attitalla idressattitalla2004@yahoo.com ; idressattitalla2004@gmail.com	Director of Research and Studies in Libyan Agriculture and Animal Center; Head of Microbiology Department; Department of Botany Associate professor, Omar Al-Mukthar University, Faculty of Sciences
Dr. Faizal Shalloof	Head of Agricultural Research Teams for International Programmes
Dr. Said	Water harvesting
Dr. Mohammed El Mourid m.elmourid@CGIAR.com	ICARDA North Africa Coordinator (ICARDA-Tunis)
Dr. Habib Ketata	Wheat breeder, ICARDA-Tunis
Dr. Al Azhari m_alazhari@yahoo.com	ARC-ICARDA Contact
Mr. Pirro-Tomaso Perri, PirroTomaso.Perri@fao.org	Programme Advisor, representative of FAO in Libya

Appendix 2 – Itinerary

Date	Activity
22 nd of September	Arrival Tripoli Meeting with Michel Deelen
23 rd September	Ministry of Agriculture, Animal and Marine Wealth Directorate of Human Resource Development of MAAMW EU Delegation
24 th September	World Bank Delegation Tripoli Chamber of Commerce ZAGRIT Co. Ltd Dinner with private sector representatives
25 th of September	Chief Veterinary Officer Director Animal Production Director General Agricultural Research Centre Director Research International Liaison Officer
26 th of September	Report writing Embassy of the Kingdom of the Netherlands Meeting with ICARDA
27 th of September	Debriefing Embassy of the Kingdom of the Netherlands Departure from Tripoli

Appendix 3 – List of Annotated References

AfDB, 2011. Libya: Post-War Challenges. An Economic Brief, September 2011.

- Reference to the creation of an Export Promotion Center to boost trade, and to boost agriculture, light manufacturing and under-promoted sectors, as part of the diversification plans.
- Overview of the different economic strategies followed in Libya.

AfDB, 2011. New Libya, New Neighbourhood: What Opportunities for Tunisia? Emanuele Santi, Saoussen Ben Romdhane and Mohamed Safouane Ben Aïssa. AfDB, North-Africa Quarterly Journal, Number 1, 2012.

- Any new opportunities for Tunisia.
- Significant increase in agricultural exports to Libya in 2011. Sustained?

Amal Rhema and Iwona Miliszewska, 2012. Towards E-Learning in Higher Education in Libya . Issues in Informing Science and Information Technology Volume 7, 2010

- ICT in the learning and teaching processes including technological infrastructure, curriculum development, cultural and language aspects, and management support.

Bertelsmann Stiftung, BTI, 2012 — Libya Country Report. Gütersloh: Bertelsmann Stiftung, 2012

- Main data on the pre-revolution transformation process.
- Some reference to the agricultural colonies in West-Libya resulting from GRM water supply.
- No specific details on agricultural development.

CERA, 2006. National Economic Strategy. An Assessment of the Competitiveness

of the Libyan Arab Jamahiriya. Completed under the guidance of the International Advisory Board Co-Chairs: Professor Michael E. Porter, Harvard University

Dr. Daniel Yergin, Chairman, Cambridge Energy Research Associates (CERA).

- The national economic strategy was developed during the previous regime, but still used by different agencies. It provides a vision for 2019.
- Good overview of the agricultural cluster and presenting the need to have a clear agricultural strategy considering both economic, social and environmental objectives.
- It observes: “Historically, agriculture and livestock have been important components of the Libyan social, political and economic fabric, with more than half the population engaged in agriculture in some form until the 1950s or 1960s. The sector has received generous subsidies in the quest for self-sufficiency. However, it is highly unlikely that agriculture can become a key contributor to exports or the economy overall, as the sector is limited by scarce and expensive factor inputs. The government needs to be clear about the economic and social objectives it wants to achieve through agriculture. Trade-offs between economic and social values should be assessed, and explicitly stated. Because of its central social role, the agriculture sector will continue to play an important, even iconic role in the country far beyond its actual economic contribution for some years to come, as a source of income and employment to an important proportion of the population, especially in rural areas.”
- An analysis of the economics of the Great Man-made river is made, which does not compare favourably for other water resources such water from desalination plants for economically and socially viable purposes.
- Options for development exist possibly with olives, grapes, dates and fish.

EC-Trade, 2009. Trade Sustainability Impact Assessment (SIA) of the EU-Libya Free Trade Agreement. Final Report, October 2009. European Union.

- Agriculture, forestry and fisheries employ about 7% of the people (oil industry 2% and industry 8%, public sector 16%, health 12% and education 27%).
- 3% export of agricultural produce, rest is oil products. Provides an overview of imports and rates of self-sufficiency. Some relevant table to be sued in the report.

- Vegetables and fruit production and potatoes provide 70% of the total production valued at import prices, but hardly anything is being exported.
- Specific agricultural sector analysis for liberalization of the sector and the consequences for agricultural growth social issues, food security and environment.

EC-Trade, 2009. Trade Sustainability Impact Assessment (SIA) of the EU-Libya Free Trade Agreement. Inception Report, February 2009. European Union.

- Providing baseline data for the modelling study.

EU, 2010. Libya, Strategic Paper and National Indicative Programme 2011-2013. European Neighbourhood and Partnership Development.

- See EU Interview.
- The agribusiness component not yet fully formulated nor interviewed.

EU, 2012. EU funded projects in Libya (June 2012)

- Overview of the Tempus Programme: “ The general objective of the project is to support the modernization agenda of Libyan universities through the promotion of quality assurance culture. More specifically, the project objective is to develop a sustainable quality assurance system within Libyan universities through the implementation of capacity building programme, the development of a quality strategic plan and the enhancement of quality assurance methodologies and mechanisms”.

ICCAT, 2008. Current Condition of the Atlantic Bluefin Resources by G. Scott, SCRS Chairman. Tokyo, 2008.

- Libya and Libyan Fishing companies, including NAFCO actively participate in the ICCAD.
- Interesting overview presentation on the state of affairs with the BlueFin tuna by D. Meski, ICCAT Executive Secretary.

IMF, 2012. Libya beyond the Revolution: Challenges and Opportunities. Prepared by a staff team led by Ralph Chami, and comprising Ahmed Al-Darwish, Serhan Cevik, Joshua Charap, Susan George, Borja Gracia, Simon Gray, and Sailendra Pattanayak

- Not specific about agriculture in Libya.
- Emphasis is on inclusive growth and export diversification strategies and the new growth strategy.

Mena Associates: Doing Business in Libya

- The rank does not include Libya.
- The report is not specific about agribusiness.

Sanders A., 2011. Libya’s Great Man-Made River and the Supply of Water during Libya’s Conflict. Civil-Military Fusion Centre

- Details on the development of the Great man-made river project.

Taher Al Azzabi, 1999. THE NATIONAL AGRICULTURAL RESEARCH SYSTEM OF LIBYA. WANA NARS Study (1999) – Libya.

- Good overview of the National Agricultural Research System and its three main components and sets of research institutes (Ministry of Agriculture, Ministry of Education, and others).
- Challenges: (i) Poor coordination between Fas and other research institutes; (ii) Limited operational costs for research; (iii) Low qualifications of technical and support staff; (iv) Limited international relations; (v) Poor research policies.

Taher Azzabi, 1999. Food Self-Sufficiency and Agricultural Research in Libya Agricultural Research Center, Tripoli (Libya). Cahiers Options Méditerranéennes, vol. 1, n° 5

- Providing very optimistic for acquiring national household food security, probably influenced by the national politics at the time.

Tempus, 2011. Higher Education In Libya. European Commission.

- Good overview of the HE system in Libya.
- Concerns about the isolation of the universities and the limited links with the private sector, resulting in failure to meet the needs of the job market.
- Many students are studying abroad (more than 10000?)
- Existence of four accredited private universities.

Transtec, 2010. Needs Assessment Trade And Trade Related Assistance For Libya. Final Report By John Linton, Abdelkrim Ben Fadhl, Ahmed Ghoneim, For the European Union.

- Role of the Chamber of Commerce in trade issues.
- Small role of agricultural in trade (hardly any export).
- Legislative context, relations with EU and WTO.

WB, 2006. Water, Food Security and Agricultural Policy in the Middle East and North Africa region. Working Papers Series no 47 by Shobha Shetty.

- Information on the whole MENA region, but very little on Libya specifically.

WB, 2011. Libya Investment Climate Assessment 2011: Enhancing Private Sector Performance for Diversification and Employment. Financial and Private Sector Development Department. Middle East and North Africa region. The World Bank

- Detailed reference to this document in the main report.
- Reference to the access to land problems and the legal framework for private businesses and access to financial services.
- Role of women in the economy.
- Presentation of a proposed action programme.

WFP/FAO, 2011. Food Security in Libya, an Overview.

- Relatively recent overview of agricultural statistics data (2008).

World Economic Forum: Global Competiveness Index 2012

- Libya ranks 113 out of 144.
- The index is not very specific about the agribusiness climate.

Appendix 4 – Interviews

Interview 01 of 23 September 2012

Ministry of Agriculture, Animal and Marine Wealth

Prof. Ahmed A. Abuzkar - Deputy Minister of Agriculture, Animal and Marine Wealth

Dr. Abdunaser Dayhum - Director of the National Centre of Animal Health (Chief Veterinary Officer)

Main priorities for possible collaboration with the Netherlands: Agricultural research, animal husbandry (health) and water.

Vision 2030

In the future Libya will use water with great efficiency, also obtained from desalinated sea water using solar energy. Libya will only produce commodities that have a high return to water, and will import other commodities. Focus will also be on commodities that are competitive internationally such as early grapes (one month earlier than neighbouring countries). Intensification of agriculture and maximizing the return to water will mean a focus on fruit and horticulture production (including potatoes), but also on animal husbandry. Other priority commodities would be citrus, olives and dates. A new research centre on olives and dates will be established. In order to stimulate water efficiency, water will no longer be free in the future.

Agricultural development will follow the principles of value chain development. The focus will no longer be on only production but also on other value adding functions in the chain, such as storage (and to avoid the high level of harvest loss currently 25% post-harvest losses occur), processing and market orientation. There is a strong wish, which will be translated in their future strategies, for farms to be privatized and for the agricultural sector to employ more people.

The basis of the new agricultural strategy will be an assessment by national experts, which could be supported by external advisors, if needed. Emphasis in the agricultural policy and strategy to be developed will be on agribusiness development. Reaching national food self-sufficiency will *no longer* be a priority. The focus will be on the most efficient import and export system in agriculture. Production of urea for export is a better deal than producing wheat at high costs

Challenges

Water is a limiting factor in Libya. The Great Man Made River is the source of water for all inland irrigation schemes as well as drinking water in the coastal areas. Coastal irrigation water is abstracted from the first aquifer (between -30 and -130 m) and less from the second aquifer below 200 m. All projects that use water inefficiently will be (and will have to be) terminated, e.g. the use of 1000 to 2000 m³/ha for wheat production will in the future be out of the question. Many of such projects have only been political showcases of the Gadhafi regime. Apart from water availability a major challenge is salinization. In the water sector priorities are therefore water quantity and especially water use efficiency in and water quality. Farmers currently have free access to water, and most of the time have their 'own' wells.

Subsidies. The independent farmers of Libya receive irrigation water free of charge, but will have to pay for pesticides and seeds (although currently at subsidized prices). Farmers have no title deeds or registered land ownership. Some less independent farmers also operate in governmental projects such as those benefiting from the GMMR but these government schemes and state farmers will be privatized. The

general agricultural subsidies will be phased out but will still be applied in special cases e.g. subsidy on sheep feed in order to address the effects of the drought in the last two years.

Seed sector development. Libya is importing vegetable and potato seed. Recently ICARDA assisted Libya with the supply of grain crops seed to overcome the current shortages. Normally certified seed is imported and multiplied once more in Libya through contracted farmers. Good local varieties do exist (e.g. barley), but these are only informally multiplied. Although many seed and variety improvement programmes have started a commitment for the development of the sector for 10-15 years is needed. Programmes have often been interrupted after one or two years.

Fish production. The fish sector is not well developed, but the country is more or less self-sufficient in fish at the current levels of consumption, which could be as low as once a week. Opportunities exist for further development of the fish sector. The minister even wishes to see an increase in fish consumption in Libya.

Employment challenge. Many Libyans trained in agriculture, at professional as well as academic level (numbers not known) are unable to find a job in the agricultural sector. This also applies to many youngsters now with the militia with an agricultural training background or an agricultural degree. The Ministry of Agriculture collaborates with the Ministry of Labour and Vocational Training on an employment programme for 25000 former militias, to be employed in the next five years.

Many Libyans trained (especially at university level) are not ready for the 'market'. Education in general focuses too much on theoretical knowledge. Practical knowledge and skills development is needed.

In general the interest in getting into agricultural production is limited, often it is an option of last resort. This also applies to the interest to do certain studies such as agricultural extension, and to a lesser extent agricultural research. This will require an attitude change and focus on more business-like agriculture in training as well as a more practice-oriented studies. Interest in agriculture and agribusiness development exists with immigrants from Egypt and Tunisia. This is not considered an obstacle.

Supportive factors and opportunities

Agribusiness development. One of the major strategic issues is to establish criteria for the selection of agribusiness enterprises or value chains to invest in. One of the criteria already mentioned would be the production against water use unlike in the past. Other criteria need to be established.

The role of the government would be to provide the training for the entrepreneurs, the support to the organization of small and medium-scale entrepreneurs in agribusiness, as well as the provision of services that would link up entrepreneurs to credit institutions and banks. Currently there is one agricultural bank, where farmers can get loans (although land is not recognized as collateral), no interest is charged only some administration costs.

Capacity Development

Capacity Development programmes. The Ministry of Agriculture, Animal and Marine Wealth planned more focus on capacity development of own staff, i.e. career development opportunities, for the upgrading of its staff. A new Capacity Development Department has been established in that respect. Instead of working with experts from abroad to guide the implementation of our strategy the minister sees a strong need to increase the level of local experts to lead change processes.

Agricultural research requires strengthening. Research is implemented by young scientists who need capacity development, leadership and a well-functioning infrastructure and support in the interpretation of research results. Currently the capacity is mainly operational for data collection.

The Ministry collaborates with various international agencies in capacity development. FAO is supporting a programme on agribusiness and value chain development. ICARDA supports agricultural research (which has 18 main programmes) on water harvesting, small ruminants (goats, sheep), as well as grain crops, including a training support programme.

Collaboration with the Netherlands

The Ministry is interested in working with the Netherlands on the intensification of agriculture in Libya, based on value chain development and water use efficiency. The programme could start small and further develop along the lines of mutual respect and mutual benefits. The Minister recommends the establishment of focal points for some of the main priorities at the Dutch and Libyan side.

Interview 02 of 23 September 2012

Ministry of Agriculture, Animal and Marine Wealth

Mrs. Hanan Ibrahim Aghil, Head of the Human Resources Directorate
Mr. Riad Biram, Head of Education and Training Department

Vision 2030

Considering the Ministry of Agriculture 20 years from now, there is a strong wish to make the ministry more efficient. A ministry that provides the ground for sound agribusiness development in Libya.

A strategy to reach the vision does not yet exist, not for Libya as a whole and not for agriculture in particular. A policy review and reform is needed: which policies, laws, regulations can be maintained and which need to be adapted, changed or replaced. Major emphasis will be given to capacity development. The following needs or challenges exist.

Human Resources Directorate includes the following departments:

- Education and Training Department
- Department of Capacity Assessment
- Department of career development (Job Descriptions, etc.)

These new departments reflect the changing priorities for career development and performance in the Ministry, rather than having the Ministry as an employment project. The latter happened in the past, when qualified people were posted on non-relevant positions.

Needs, Challenges and Priorities

The road towards this vision includes several pre-conditions or essential gateways:

Training and coaching – target groups

- Training and coaching of government (technical or operational) staff
- Training and coaching of extension officers
- Training and coaching of farmers or managers of SMEs
- Training of future trainers

Training and coaching – content priorities

- Horticulture:
 - Water management
 - Water allocation
 - Citrus fruit production and other fruits. Specific horticultural crops: e.g. tomatoes

- Forestry:
 - Animal husbandry and forestry (about forest boundaries)
 - Conservation of forests
 - Deforestation
 - Forest fire management
- Plant protection:
 - In general
 - For some crops in particular (tomatoes, red palm mites in dates) use of pesticides (used too much), and Integrated Pest Management (IPM)
 - Waste management of non-used pesticides and over use of pesticides
 - Fisheries (captive fisheries, aquaculture, diseases)
- Poultry, disease control and chicken development (eggs and meat production)

Policy reform and addressing bureaucracy

- Policy reform is not yet possible at this moment in time, until the government is settled and established after the elections
- Existing policies and regulations are not always beneficial, sometimes even hindering agricultural development.
 - E.g. farmers cannot be 'given' a piece of land, as it cannot be registered in their name
 - E.g. pesticides cannot be bought individually; they have to be bought through the government, resulting in farmers not obtaining the product they need
 - E.g. seeds need to be ordered through the government, resulting in farmers receiving sometimes seeds that are climatologically not suitable, or not the ones they preferred.

Organisational structure, staffing and recruitment

- Staffing and organisational structure needs to be reviewed. During the Khadafi - regime focus was on providing people a function or a position, rather than the right position fitting their strengths and qualifications. Many people ended up in a not suitable or even wrong position, e.g. agricultural engineers having a job as waiter within the ministry.
- Job descriptions need to be written
- Criteria are not clearly developed for new young staff (we discussed whether the capacity to speak English should be more prominent in recruiting, as it opens doors for Libyan staff to join international training opportunities)

Intensifying the network of extension and information centres

- An extension department exists within the Ministry and 60 sub-centres or local offices are spread over the country. Depending on the region (i.e. population density and number of projects), offices have 1 or 2 staff members up to x staff members

Supportive factors

- A Ministry Capacity Development Budget is available to work on the above mentioned needs.

First steps necessary

- Exchange information on capacity development options in the Netherlands

Interview 03 of 23 September 2012

EU Delegation to Libya

Mr. Juan Zaratiegui Biurrun, Attaché, Political and Economic Advisor

Mr. Patrick McClay, Advisor Economic Private Sector and Trade Development

Vision

Already during the last decade of the Gadhafi regime, Libya made a deliberate choice to develop its prosperity by reintegrating into the international community, while preserving its unique identity. This choice requires deep reflection and analysis of national priorities so that Libya can leverage its opportunities to generate and spread prosperity among all Libyans. With this objective in mind, the National Economic Strategy (NES) was established in 2005 to define a comprehensive and integrated approach to achieving greater and sustained prosperity for Libya.

The National Economic Strategy (2006), prepared by the Cambridge Energy Research Associates (CERA) included an assessment of the competitiveness of the Libyan Arab Jamahiriya. It was completed under the guidance of amongst others Professor Michael E. Porter of Harvard University. It outlines a vision and includes an analysis of the macroeconomic, political and social context and the microeconomic business environment; an analysis of key existing and potential industry clusters; as well as an analysis of critical social sectors such as healthcare, education and urban planning. The study also informs an action agenda outlining the near-term choices for Libya to create a more participative, productive and competitive modern economy.

The complete vision for 2019, can be found in the National Economic Strategy:

http://www.isc.hbs.edu/pdf/2006-0127_Libya_NES_report.pdf

Planning towards the vision

The current Libya-EU “association agreement” and the corresponding indicative plan 2011-2013 was revised with the new government. It concentrates on human resource development; immigration and private sector development. Next month the EU commissioner will visit Libya to discuss the start of the preparation of the new “association agreement” for the 2014-2016 period. The current programme invests Euro 10 million. The immigration and border control components are being implemented the others are to start in 2013. The private sector development component includes agribusiness development such as the business development fund and training centre, SME agency, etc.. Not all are functioning yet. The vocational training centres are training skills, based on the local demand.

Challenges

In Libya the 2.3 million strong Libyan labour force is matched by an estimated similar strong immigrant labour force (Egyptians, Tunisians, other Africans). More than half of the Libyan labour force is employed by the Government at Federal and Regional level. Libyans are more likely to go into business and management rather than directly into agricultural production this is left to foreigners. The dependency on foreign labour needs to be taken into account in the development of the agricultural sector.

The various assessments illustrate that the legislation will require some major changes in order to be in line with the stated political commitments, notably those on private sector development. An example is the foreign investment legislation (Amendment 207 to the Join-Venture Legislation), which still require Libyan co-financing, others are the regulations to land governance (title deeds, land registration and use of land as collateral for access to credit). Nevertheless no major legislative changes are expected, in order to maintain the social stability and security. The short-term interests will be more important than the long-term effects of reforms for the time being.

The EU Delegation reminds that the World Economic Forums' Global Competitiveness Index indicates that Libya ranks 113 out of 144 in 2011.. The WB's Investment Climate Assessment of 2011 made an assessment of Libya's Investment Climate for the Doing Business Rank 2012, Libya has an estimated position of 50. The EU Delegation to Libya therefore strongly recommends to develop public services and further recommends the public sector to invest in capacity development as the technical cadre will be the stable factor in the ministries and are at the same time instrumental in implementing change.

The role of the EU is a humble one, as it has limited capacity to lobby the Government. Recommendations and advise are, however, taken into account by the current government. The further identification of development priorities should be done by the actors in the agricultural sector together, perhaps the Chambers of Commerce could play an additional facilitating role

Documents for further reading provided by the EU Delegation to Libya

- AfDB, 2011. Libya: Post-War Challenges. An Economic Brief, September 2011.
- CERA, 2006. National Economic Strategy. An Assessment of the Competitiveness of the Libyan Arab Jamahiriya. Completed under the guidance of the International Advisory Board Co-Chairs: Professor Michael E. Porter, Harvard University Dr. Daniel Yergin, Chairman, Cambridge Energy Research Associates (CERA).
- EC-Trade, 2009. Trade Sustainability Impact Assessment (SIA) of the EU-Libya Free Trade Agreement. Final Report, October 2009. European Union.
- EU, 2010. Libya, Strategic Paper and National Indicative Programme 2011-2013. European Neighbourhood and Partnership Development.
- EU, 2012. EU funded projects in Libya (June 2012).
- IMF, 2012. Libya beyond the Revolution: Challenges and Opportunities. Prepared by a staff team led by Ralph Chami, and comprising Ahmed Al-Darwish, Serhan Cevik, Joshua Charap, Susan George, Borja Gracia, Simon Gray, and Sailendra Pattanayak.
- Transtec, 2010. Needs Assessment Trade And Trade Related Assistance For Libya. Final Report By John Linton, Abdelkrim Ben Fadhl, Ahmed Ghoneim, for the EU.

Interview 04 of 24 September 2012

The World Bank

Mr. Marouane El Abassi, Country Manager, Senior Economist

Ms. Hend Irhiam, Operations Analyst

Mr. Abdul Karim, Analyst

The World Bank is operational in Libya since 2004 in the areas of Economic Development and Financial Planning. The following priorities have been pursued since then: Public sector, Public Expenditure Reviews, Education, Workforce, Water and Sanitation, Infrastructure and Electricity. The World Bank focuses on knowledge management such as analysing and documenting the current situation in Libya and sharing experiences from neighbouring countries and the region. The World Bank regularly implements a public expenditure review. Costs of assessments are financed by Libya (Refundable Technical Assistance Mechanism), but have a 25% contribution by the World Bank, while the Bank can also finance knowledge management and study tours in the region.

In collaboration with the Ministry of Economic Affairs a private sector development assessment has been implemented, notably on the business environment, commercial legislation, export promotion and trade facilitation, customs. A request was attended on the analysis of the Doing Business Rank (DBR), not to be confused with The Global Competitiveness Index (TGCI) (in which Libya ranked 113th). The DBR process was used to develop a virtual rank bit mainly to develop a Libyan capacity. The assessment was done with

the Economic and Social Research Bureau and the Benghazi University in Benghazi. The comprehensive study which was co-financed and co-implemented between Libya and the World Bank for 1.5 years by 40 people. Some 500 firms were interviewed and a report was presented on 10/11 December 2010. The final report was presented and slightly adapted after the revolution and was endorsed by the new interim government (WB, 2011).

The World Bank and IMF implemented a Post-Conflict Needs Assessment which resulted in the identification of the following assessment priorities: (i) Infrastructure and Electricity; (ii) Service delivery and regional development; (iii) Job creation; and, (iv) Financial review. The service delivery component will result in four policy papers by the end of 2012: Local Governance; Public services; functional decentralization and participatory reconstruction.

The World Bank aims at mapping of the private sector and its needs. This will be coordinated the EU (providing support through the economic and private sector development advisor), DFID (supported by the presence of a 4-months expert stay, as well as USAID (through presence of an expert). The main issues to be addressed in the mapping will be: relation between public and private sector; relation within value chains; regional differences; relation between the informal and formal sector.

The World Bank plans a quick survey on the job markets. The study will focus on finding out why over two million foreign workers are employed in Libya (before even up to 4 million workers) while there is a 30% unemployment rate, and 1.2 million public workers are employed. Special attention will be paid to the agricultural sector which employs also seasonal workers. The survey will analyse which skills and opportunities are needed to address the discrepancy. Young Libyans are interested in agribusiness opportunities, such as e.g. in the Misrata dairy processing unit employing 600 people. Opportunity costs of Libyan labour will be analysed (such as informal trade and other jobs outside the agricultural sector). A related constraint in the Libyan economy is the widespread allocation of government subsidies. Just the subsidies for basic services are already use, while subsidies are provided in all sectors and services. The World Bank is considering using the successful Iranian Model on the reduction of government subsidies. How can subsidies be redirected to Small and Medium-Scale Business Development?

The World Bank will follow a triangular approach in knowledge management, building South-South bridges and bringing in expertise from other sources (World Bank network and e.g. the Netherlands). They will include resources from Libya and bring in language skills from neighbouring countries. The emphasis in such knowledge exchange and capacity development needs to be on practice and on-the job learning (including contracted experts in Ministries e.g. agriculture). A special programme could be on irrigation bringing in expertise from Egypt, Tunisia, Morocco and Jordan. Training of some staff in other countries is also fruitful, but final selection of candidates should not be done by Libyan authorities.

The World Bank works with the Libyan Export Promotion Agency (Ministry of Economic Affairs). An international trade policy needs to be developed in order to address issues such as olive oil exports and chicken imports. Options exist for the export of organic olive oil. This would require certification and relations with the EU markets and getting an accreditation for this EU market. Import-export relations are in general to be addressed. Another striking example is the complete collapse of the poultry sector after cheap Brazilian frozen chicken were allowed into the country. An opportunity for Libya (with advice from World Bank and partners) to become a member of the WTO was recently missed.

Recommendations for partnerships

(In collaboration with EU and World Bank) Develop Learning trajectories, not just a few independent training programmes.

Interview 05 of 24 September 2012

Tripoli Chamber of Commerce, Industry and Agriculture

Industry and Agriculture

Mr. Khalil Masoud Mahfud, Chairman of the Board of Directors

Mr. Ahmed M. El Faghi, General Manager

Background information

The primary mission of the Chambers of Commerce, as an umbrella organisation, is supporting the private sector in the adoption of Libya as a partner in economic development. Its role in addition is to push forward for a more diversified economy of Libya, and as such refocus Libya's economy on the non-hydrocarbon sector.

Because of Libya's great dependence on oil revenues, the general level of the Libyan economy is closely related to the performance of the petrochemical industry. Despite massive investment in agriculture and nonpetroleum-related industry, the percentage of Libya's GDP derived from oil has remained fairly constant since the early 1970s. Since Muammar al Qadhafi and his associates came to power in 1969, reducing Libya's dependence on oil has been the government's major economic policy objective. Its inability to achieve this goal stems apart from policy 'mistakes' but also from lacking in both basic infrastructure (physical and institutional) and water resources.

Diversification is still a hugely important issue because at current rates of production, Libyan oil reserves are not expected to last beyond the second decade of the next century. Thus, the long-term health of the Libyan economy hinges on developing a self-sustaining nonpetroleum sector.

Agriculture has recently, in 2010, been added to the Tripoli Chamber of Commerce, Industry & Agriculture, but farmers are not obliged to register. The Tripoli Chamber of Commerce, Industry & Agriculture is 1 of the 14 Chambers in Libya. This Chamber covers 24 sectors and has 35000 registrations [N.B. the website however mentions 44,800 member companies and individuals - according to census of April year 2012 -] across 24 Divisions.

Tripoli Chamber of Commerce, Industry & Agriculture contributes to the development and formulation of laws and decisions in the economic sector. To change the situation for the better the Tripoli Chamber of Commerce, Industry & Agriculture aims to participate in conferences, seminars and workshops and also attracting and hosting business meetings in order to provide a more suitable environment for investment and partnerships of mutual benefit.

Vision for Agribusiness Development

Agriculture is concentrated in those places where there is water, as water will remain to be an important limiting factor. Agricultural lands are shared with those who are motivated to develop agricultural activities. Farmers are entrepreneurs and are registered as such with the Chamber of Commerce. The Chamber of Commerce is recognised as a professional body that can provide support for business development for individuals as well as organisations, by the public as well as the private sector.

Needs, Challenges and Priorities

The government provides support to the Small and Medium Enterprises in agriculture, but the Tripoli Chamber of Commerce, Industry & Agriculture is not yet involved in performing such a role.

Farmers should be obliged to register, so that support to farmers and thus indirectly to the government can be provided. Some notes in that respect:

- a. registration costs are max. LYD 51, which equals around EUR 30;
- b. The answer to the question 'Although farmers are not obliged to register maybe the Farmers' Unions / Cooperatives are?', revealed that cooperatives nor farmers' unions exist; Only a farmer workers' association exists, but it is not registered with the Chamber of Commerce

Other actors in the agricultural system such as input suppliers (seeds, fertilizers, pesticides), market actors, however *are* required to register with the Tripoli Chamber of Commerce, Industry & Agriculture.

The general attitude in Libya as well as policies and regulations do not support an entrepreneurial motivation; E.g. in Tarhunah (65 km South East of Tripoli) a government project provided farmers with land. However, farmers all *had to* grow tomatoes. Market demands for tomatoes were as such answered by the State.

There is not a 'healthy' communication between public and private sector along the value chain: although all input delivering companies (pesticides, seeds, marketing) are registered at the Tripoli Chamber of Commerce, Industry & Agriculture, these companies still deliver on basis of public sector requests rather than private sector requests (i.e. on the basis of farmers' needs). The Chambers are not able to influence this situation directly but they are able to give advise to the government to improve the situation. [*Note: whether this really happens at this moment remained unclear*].

There is a need for capacity development along the whole value chain. An analysis of stakeholders is necessary in this respect and the role they play. [*Note: Currently there is no 'atmosphere' that supports exchange between different actors that play a role in the value chain. For instance, in the value chain for the production of olive oil, different actors did not form a negotiation platform. The Chamber, however would be able to provide the role of facilitator to explore the sector and alert on business opportunities*].

Supportive factors

Regarding Challenge 5.: Budget is available for capacity development, however only for those registered and for Chamber staff themselves. [*Note: Capacity Development was quite narrowly defined and was seen more as providing training opportunities in the field of computer illiteracy, English language skills, management skills*]

First steps necessary

Tripoli Chamber of Commerce, Industry & Agriculture has a strong wish to collaborate with the Netherlands. The money is available but the technical know-how in many directions and at many different scales is missing to boost economic development in a more diversified way.

Interviews 06 of 24 September 2012

Private agri-business sector

Seed sector

ZAGRIT Co was established in the 70s by Ramadan Zabtia, General Manager. The company was named after his first daughter. He graduated as a seed technology expert in 1969. He started farming without public sector support but with some financial support from his family with five plastic greenhouses, he had seen abroad. He himself was the farmer and grew vegetable crops (started with tomatoes), but soon he recognized the need to have quality seed. In 1975 he introduced hybrid vegetable varieties (tomatoes, peppers), until then unknown in Libya, and started also distributing plantlets to other farmers. In the early nineties he ran into problems with the Gadhafi regime and was jailed for two years while his farm with the green houses was confiscated and handed over to the Ministry of Agriculture, which failed to run it. Currently he has formed an association with 100 other entrepreneurs who are suing the government for returning their confiscated properties. His son is now into his company and will eventually take over.

Zagrit Co is producing vegetable seedlings in a modern, climate controlled greenhouse near Tripoli. The firm has two other farmers in Sabha (only production) and in Benghazi, also focussing on seedling production. The company has distribution outlets in various towns. Zagrit Co works closely with Seminis Vegetable Seeds of Monsanto. (The Seminis Group includes among others De Ruiters, Royal Sluis, Western Seeds, Bruinsma, HortiCeres, Asgrow, Petoseed, etc.). The demand for quality seedlings remains high because of the fear of nematodes, diseases and of hybrid seeds. Therefore, recently, also graftings, notably for Cucurbitaceae, have been introduced (watermelon, cucumber), because of Fusarium wilts. Zagrit Co has close collaboration with research (joint research activities in the glass green house, as well as on-station and with farmers) and company employed extension (disseminating the new seedlings, and service after sale). Although direct interaction with farmers exists, the low organisation rate of farmers makes this complicated. The role of the Ministry of Agriculture, Animal and Marine Wealth in the import of varieties is limited to the registration of varieties and is not a major obstacle for Zagrit Co.

The company also imports seed potatoes for one local multiplication before it is distributed as seed. Imported seed potatoes (about 10 000 MT annually of certified varieties such as Spunta) are planted in February/March for Class E seed production, to be planted in October of the same year. A major challenge would be to produce seed potatoes locally. Other agencies also import varieties from Agrico and HZPC into Libya. Zagrit Co has identified many opportunities through market research in European countries as well as in Libya. Other criteria used to identify different options are: Climate, use of water, amount of labour needed.

Some of the identified opportunities are:

- The production and export of organic melons around Christmas/ New Year's Eve to Europe (France).
- Special programmes using hot ground water would be an option (e.g. in Sirte).
- Export of organic olive oil and quality dates from dry areas to Europe. (Certification will be necessary, as well as classification on quality).
- Packing of vegetables for the local market, as losses are enormous and no classification is done.
- Processing potatoes such as chips factory and pre-cooking potatoes, as the consumption of potatoes is likely to increase.

Some options like quality oranges and other citrus products, as well as alfalfa production look promising but are rather costly in water use.

Important for the future is the knowledge transfer which needs to be primarily done *between companies*, according to Mr. Zabtia. Examples are the recent training by the Dutch supplier of the greenhouse and the Danish supplier of the equipment. This could also be done through joint ventures in vegetable and seed production.

The current legislation is in principle ok, according to Mr. Zabtia, but it is not applied properly.

Fisheries

NAFCO (Nour Alhaiat Fishery Co). This Maltese-Libyan fishing company specialized in catching Bluefin tuna in Libyan territorial waters and fattening these for four months on fish farms in Malta. The tuna is exported to Japan. The joint venture was established in Malta for logistical reasons, the main one being that no adequate insurance service was found in Libya. Feed for the tuna farming also requires quality feed, notably anchovy of a specific fat content. Other fish export opportunities to the EU exist, as quality fish is found in Libyan territorial waters, but there is no trade agreement with the EU on fish.

Sugar Industry

El Yakut Import Food and Dry Fruit Ltd. The company imports beet sugar from the EU in 50 kg bags for retail repacking in Libya (1 kg packs). Previously the sugar was imported from Brazil, but quantities can be smaller from EU (5000 MT compared to 15000 MT), which makes storage costs lower. The owner graduated long ago during the Gadhafi regime and was imprisoned for some time after return, this is how he became interested in private business development. He has been working for the national tobacco company before in the days that Libya was still producing low quality tobacco for chewing.

Chicken Industry

Mr. Mounir Abodhir (Abodhir group) runs his company (together with his brother) is specialized in chicken feed production, based on imported maize and soybeans. The resulting product is cheaper than the imported feed from Egypt or Tunis. The company is also importing hatching eggs from the Netherlands (Provimi), they used to bring ten trucks per month but now this has gone down to 4-5 trucks (Netherlands-Genoa, Genoa-Tunis by Ferry, Tunis-Tripoli). The transport by plane is 3-4 times more expensive than transport by road. The demand for chicks is high by chicken meat producers. The producers are loosely organized in an association, in order to negotiate with the government the restrictions on frozen chicken imports from Brazil (currently estimated at 50% of consumption). The association is however powerless when it comes to controlling the highly fluctuating market prices, due to imports and uncoordinated production. This is in contrast to the eggs market which is controlled by a few large companies, which even buy any eggs once imported.

Juridical advise

Lawyer (working for the Abodhir Group). The private law firm was specialized in private sector cases, notably also against the government. Cases relate to the claims on taken property during the previous regime.

Interview 07 of 25 September 2012

Ministry of Agriculture, Animal and Marine Wealth - Livestock Development

Dr. Abdunaser Dayhum - Chief Veterinary Officer

Mr. Mohammed M. Zurghani - Meat Inspection

Mr. Yosef Aborwes - Director Animal Production

Dairy Industry

The Ministry is currently doing an assessment on the state of the dairy sector. Some 100 000 dairy cows used to exist including both the public and the private sector before the revolution. Many animals have died (due to the previous government regime and through NATO bombardments). State-owned dairy processing facilities used to exist in all major urban areas (Al Bayda, Benghazi, Misratah, Tripoli, etc.), some of these have been privatized e.g. in Benghazi, and in Misratah, Sirte (by Al Naseem Dairy). In Benghazi this used to be a large 1200 dairy cattle project (DH Projects), which was run with Dutch staff for four years (1987 - 1991).

The dairy sector has two main challenges: restocking and dairy production capacity. The Ministry is providing licences for the import of dairy cattle, mostly licences of 40 up to 300 cows, based on initial local licences. The Ministry also intends to start a unit of 400 dairy cows in Tripoli, for scientific research and education purposes, as well as for production in order to cover the costs. The animals are to be imported from Europe. Concrete options exist with Spain, France, Cyprus, and Germany. All have provided veterinary certificates based on Libyan requirements of having FMD and Anthrax free (not vaccinated) animals. This has not been agreed with the Netherlands yet.

The dairy production has run into problems due to quality of the feed, access to water and the management. Based on experience in Saudi Arabia it should be possible, but experience to deal with the problems is missing. The Libyan dairy products can compete with imports and could be even exported as agreements with neighbouring countries (Tunisia, Egypt, Sudan) have been established.

Veterinary services.

The faculties of veterinary medicine (Tripoli and Omar Al-Mukhtar University) have delivered 3000 veterinarians over the years, some 700 are employed by the Ministry, others operate as private doctors or are out of the profession. Currently around 70 are graduating from the faculties annually. As many of the vets are not implementing their veterinary knowledge and skills for over 25 years there is an urgent need for refresher courses. The services are equally looking for partners for the improvement of veterinary laboratories. The FAO is currently providing support on laboratory capacity; disease surveillance, border control and communication (GIS, GPS).

Capacity development

A new system of career development in animal husbandry is being introduced, based on providing incentives for upgrades to MSc and PhD. Special training is needed for dairy farm management and optimization of the use of feed. Interest also exists for collaboration on sheep breeding (using the local sheep breed) and racehorse breeding.

The three main areas of collaboration in the development of animal produce value chains would be:

- Support to vision formulation and strategy development, based on multi-stakeholder approaches, market demand orientation and institutional change. This would have to address also the policy and regulatory context apart from technical issues.
- Capacity development would involve parallel trajectories focussed on:
 - strategy development (including capacity development in situation analysis, stakeholder analysis) based on training and coaching;

- technical knowledge transfer based on training of trainers, practical training and triangular arrangements between e.g. Netherlands, Libya and neighbouring countries (Universities of Sudan, Egypt and France-Lyon), for the implementation of sandwich programmes (MSc and PhD);
- participatory planning, implementation, monitoring and evaluation (based on facilitation, coaching and training of trainers programmes);
- Facilitation of private partnerships and joint ventures. This can be a role of the respective Ministries of Agriculture. One need is to bring in private sector expertise into the Libyan Dairy Industry (DHP , VEEPRO, www.veepro.nl).

<http://www.dhprojects.org/curriculumvitae.html>

<http://www.youtube.com/watch?v=vcLj352Bhlc>

Interview 08 of 25 September 2012

Agricultural Research Centre

Prof. Dr. Ramadan A. M. Alhendawi (DG. of the Agricultural Research Centre (ARC)

alhendawiramadan@hotmail.com; Dr. Faizal Shalloof (Head of Agricultural Research Teams for International Programmes); Mr. Said (Water harvesting); Dr. Idress Hamad Attitalla, PhD. (Associate professor ; Director of Research and Studies in Libyan Agriculture and Animal Center; Head of Microbiology Department, Department of Botany. Omar Al-Mukthar University, Faculty of Sciences, Box 919, Al-Bayda, Libya, Tel: +218 91 399 8351

idressattitalla2004@yahoo.com, idressattitalla2004@gmail.com).

Background ARC

(based on 'The National Agricultural Research System of Libya' (1999), by Dr Taher El-Azzabi, in 1999 Deputy Director General, Agricultural Research Center, Tripoli, and Dr Khaled R. Ben Mahmoud, Professor, Faculty of Agriculture, Al-Fateh University, and Research Coordinator of Al-Fateh University, Tripoli, Libya)

Agricultural Research in Libya dates back to the early part of this century during the colonial era, where the "Centro Sperimentale Agrario e Zootecnico della Libya" at Sidi El Masri near Tripoli was established to serve the Italian agricultural settlers.

In the early 1950s to the late 1960s, the Ministry of Agriculture was initiated and Agricultural Research became affiliated to the Directorate of Plant and Animal Production, with major changes in goals and organization.

In 1969, the Marine Biology Research Center (MBRC, currently affiliated to the Secretariat of Marine Wealth: SMW) was created. The next year (1970) the Agricultural Research Center (ARC) was established by the Ministry of Agriculture (then called the Secretariat of Agriculture: SA) to serve as an umbrella and authorized organization for the implementation of agricultural research in the country with an adopted national agricultural research work plan. Four regional research branches were initiated according to altitude, climatic factors, rainfall, and agricultural activities.

In 1981, the General People's Committee (Minister's Cabinet) initiated the National Authority for Scientific Research (NASR) to formulate and supervise the national research policy, fill in gaps in research not tackled by any existing research institutes and centres, and technically coordinate research carried out at research centres. New research centres were established under the umbrella of NASR. The ARC is the

major institute of the Libyan NASR, but also includes Environmental Protection Research Centre (EPRC), Industrial Research centre and the Oil Research centre.

Since 1998 the National Agricultural Research System is composed of three sets of scientific institutes: (i) Ministry of Agriculture, Animal and Marine Wealth centres: Institutes: ARC, ASRC (Animal Studies and Research centre), MBRC (Marine Biology Research Centre) (73% of resources); (ii) Secretariat of Education and Scientific Research (SESAR): Seven Faculties of agriculture and veterinary science (9%); (iii) Other secretariats research, such as the Nuclear Research centre, The Libyan Centre for Remote sensing and Space Sciences and the Economic Studies Research Centre (18%).

Libya's Agricultural Research Centre (ARC) is part of an international network of research such as AARINENA (Association of Agricultural Research Institutes of Near-East and North-Africa. Special collaboration exists with ICARDA since 1997, as well as with ICRISAT.

ARC and ICARDA (CGIAR institute)

The ARC requested support from the International Center for Agricultural Research in the Dry Areas (ICARDA) to rehabilitate and reactivate the national agricultural research system with technical assistance, strategic support for the quest to find funding and continued capacity building.

Mohammed El Mourid, regional coordinator for ICARDA's North Africa Regional Program will provide assistance to ARC to save the Libyan agricultural sector after the success of the Libyan revolution. ICARDA has centres in Egypt, Morocco and Tunisia which could support the rehabilitation of the research system

A Libyan national team, supported by ICARDA, will assess the state of infrastructure and the human resources required to sustain an optimal level of agricultural research. The assessment will help in identifying gaps and needs for urgent reconstruction of Libya's agricultural research infrastructure. The current programme with ICARDA concentrates on grain crop improvement (cereals and legumes), small ruminants; and water management.

Vision ARC

A flourishing research sector with a high exchange between Libyan and foreign universities: in terms of 1. Students, 2. Scientists and their research.

Needs, Challenges and Priorities

Development of a new research and development strategy as part of the new strategy of the Ministry of Agriculture, also based on the initial assessment. Problem oriented and an innovation systems approach to research is new in Libya. The multi-stakeholder approach in research can be based on the current experience with on-farm research.

The current national research network of 13 research stations requires stabilizing, as many landownership issues have cropped up, and some stations might have to find other land.

Strengthening the human resource capacity of the research organization by:

- More students need to be able to study abroad (MSc and PhD, but also short training programmes) to increase motivation of students to choose for an agricultural education; at the same time if more students study abroad there is an increased opportunity to ensure high quality education; Links exist with many universities abroad (e.g. University of Granada, University of Sheffield, Portugal, Malta ...), but links with universities offering agricultural education do not yet exist;
- Students are provided with too much theoretical knowledge, rather than knowing what is happening in the field;
- Students need to be able to speak English.

Strengthen the research capacity in particular in a number of priority areas:

- Horticulture (e.g. crop protection, water quality, water use efficiency);
- Grain crops (cereals and food legumes);
- Water harvesting and irrigation;
- Animal science: e.g. animal breeding, animal nutrition, animal health;
- Soil science;
- Integrated Pest Management (e.g. for date palm trees).

More publications need to be written to increase the visibility of the ARC

Supportive factors

- EU helps Libyan Universities in many ways (e.g. through Tempus Programme)
- Current Minister of Agriculture is very supportive
- British Council supports Libya in sponsoring course in the English language

Priority first steps and ideas

- Establish an exchange with Wageningen University and Research centre for collaboration of research approaches, specific research topics (see above) and MSc and PhD training: initially provide 20 to 30 students (MSc) the opportunity to study in the Netherlands [*Note: 1. special request includes a lower tuition fee, because of the large number of students that will apply; 2. Costs for living can be provided*]
- Establish an Agro-Education Centre in Libya as a joint initiative of e.g. Wageningen University and Research centre and Libyan universities

Interview 09 of 26 September 2012

ICARDA

Dr. Mohammed El Mourid (m.elmourid@cgiar.com), North Africa Coordinator (ICARDA-Tunis), Dr. Habib Ketata (Wheat breeder, ICARDA-Tunis), Dr. Al Azhari (ARC-ICARDA Contact: m_alazhari@yahoo.com)

ICARDA has been working with the Agricultural Research Centre (ARC in Arabic also includes crop, livestock research, rangeland), which is part of the Ministry of Agriculture, since the early 80s on crops and livestock research. The Research and Development Programme was agreed upon (Libya-ICARDA agreement of 24 okt 2007), and largely financed by the Libyan Government (notably 6 million USD for long-term training and purchase of equipment). The programme focuses on (i) Water harvesting and water management'; (ii) Small ruminants and rangeland management; and, (iii) Integrated management of wheat and barley production. The programme envisaged to develop ARC capacity through: (i) Upgrading and equipping research stations and laboratories; (ii) Short and medium term training, as well as degree training; and (iii) Support to regional and international research and development exchange and linkages.

The collaborative programme was implemented during the first two agricultural seasons (2008/2009 and 2009/2010). During the third season had to be interrupted in March 2011 due to the turmoil of the revolution. The programme was hitherto successful in equipping research stations and laboratories, organizing short-term training and implementing field research on water management, small ruminants and crops. The long-term training did not start, as the funds had not been made available yet to ICARDA by the Libyan Government (27 fellowships abroad, 18 MSc and 9PhD, were planned). Recent assessments (since

October 2011, but still on-going) have shown that many research stations have been occupied by people, as well as looted, although laboratories are generally still OK. ICARDA will sign an agreement with the new Libyan Government (on 27th of September 2012) for the restart of the programme for the 2012/2013 season. The initial emphasis of the new programme will be on capacity development: (i) Human resource development and degree training; (ii) Rehabilitation of research stations; (iii) continuation of research on the three focus themes.

The ARC, also through ICARDA, plays an active role in the region and the Maghreb Union of Research Institutes in recent years. The ARC is an active member of AARINENA (Association of Agricultural Research Institutes in the Near-East and North-Africa), as well as of the FARA (Forum for Agricultural Research in Africa).

Water use is among the priority of priorities! Libya has no running rivers; the GMR operates at 50% efficiency; traditional water harvesting systems (collection in cisterns etc.) have gone in decline; existing springs (Eastern Libya) are not well used; groundwater tables are receding; and, salt water intrusion occurs along the coast, which is relatively fertile. These and other water productivity and efficiency challenges are to be addressed in the ARC-ICARDA programme.

Another challenge is to efficiently use and manage rangeland natural resources. Rangeland coverage, and dry matter production are also affected by climate change. The rangeland management needs to be integrated with livestock keeping, notably small ruminants, also based on experiences elsewhere (such as in Australia). The small ruminants value chain can also be further developed.

National wheat and barley production should at least produce enough to decrease the imports in an economic and water efficient manner. Libya might not become self-sufficient in cereals, but wheat yields of 10 MT/ha in the South of the country under full irrigation have been obtained. In the East wheat can be grown on the annual rainfall of 400 mm with supplementary irrigation. Horticulture and fruit production in irrigated orchards is another interesting development option. The whole coastal zone is planted with date palms, olive trees and used for vegetable production, such as onions.

The ARC has few research staff beyond the BSc level, and are except for management mainly trained in Libya. Research became further isolated since the early eighties when the English language was banned from the education system. Training up to MSc and PhD level and international exposure are urgently needed. The ARC therefore needs to develop a human resource development strategy, which identifies needs and sets priorities. A next step would be the identification and preparation (e.g. English language training) of candidates, and subsequently an analysis where the training can best be done, based on a cost/quality comparison as well as taking into account the diversification in use of different universities (based on competitive advantages and type of courses) and contributing to networks.

ICARDA has a longstanding relation with the Netherlands (in terms of funding), as well as with Wageningen University Research Centre (for research and education). The WUR is ICARDA's preferred partner for the MSc and PhD programme, due to quality of the education, English curriculum and teaching, and the possibility of having sandwich programmes. ICARDA would like to see (depending on the referred strategy to be developed) to have a considerable number of degree studies in Wageningen. In this way research can be done with the ARC in Libya, supervised by WUR and ICARDA staff as well as by a national faculty of agriculture staff. ICARDA has also good experience with short-term training in Wageningen (with ICRA and WUR) and would like to see these involved in the short-term training programme as well.

The new strategy for the agricultural sector which is being prepared will be based on principles of value chain development and market-orientation. Research will also need to be based on demand by chain actors, this will require new thinking, a new vision and a new paradigm for research, and indeed a new strategy with clear priorities. ICARDA would like to see these priorities to be market-oriented and based on principles of competitive advantage and integrated research for development principles, as well as based on existing resources and networks. The challenge is to have such a strategy developed by the ARC itself based on interaction with other actors in public and private sector. This process will require considerable training and coaching, which could possibly be provided by the ICRA/CDI/KIT alliance.

Governance issues need to be addressed in the programme. This will mean investment in people in a transparent business-oriented environment. Transparency, interaction and accountability to research clients and beneficiaries will need to be addressed, requiring major changes in attitude and thinking. WUR and other Netherlands actors are known for their experience in this and could support this.

Interview 10 of 19 October 2012 (Telephone)

Food and Agriculture Organization of the UN (FAO)

Mr. Pirro-Tomaso Perri, Programme Advisor, representative of FAO in Libya PirroTomaso.Perri@fao.org

Background

Libya and FAO have committed themselves to work together to develop the country's agricultural sector and improve food security by signing a cooperation agreement. Under the agreement, Libya will provide \$71 million in funding needed to develop different areas, such as plant and animal health and production, pesticide management, seed development, natural resource management, capacity building and institutional strengthening. Projects under the agreement will aim to increase food production and improve productivity while preserving natural resources such as water, all with the goal of improving food security in the country. Beneficiaries will include farmers, herders and fishers as well as their organizations and cooperatives and traders. The projects aim to significantly enhance the capacity of the Ministry of Agriculture, Animal Wealth and Marine Resources to implement all the proposed activities under the agreement. Ministry staff will receive both short- and long-term technical training.

Vision: Agriculture for development

Agriculture is a sector that is self-sustaining on the basis of *sound* investments (which includes producing a selection of suitable crops that bring economic returns considering Libya's climatic conditions). Agriculture is a sector developed together (which means it includes *all* relevant players important for the agro-food sector).

Agribusiness development

The initiated trend of the Government from former import substitution policies has been replaced towards an agricultural policy that will focus more on value adding by e.g. food processing, packaging etc. is a new era for Libya. The FAO and the Libyan government agreed to find each other on that road. Cooperation with other countries at an early stage is essential in this respect so that lessons learnt can be exchanged.

Libya has a huge potential to become an agro-industry hub and that focus is a good focus since land and water resources are scarce. But it requires a change in culture in mind set, but opportunities are ample for the private sector. Relevant stakeholders need to be brought together to show that agriculture is a bit broader than just going back to the field.

The agribusiness sector is essential to diversify the economy and to create jobs for ex-combatants, for civil servants (as a result of policy reforms) for Libyan youth.

Investing in Libya becoming this agro-industry hub means adapting politically and also requires investments in the social situation. Libya has this potential technically, because Libya has known already these agro hub functions from the past (e.g. Misrata was a good example, serving the role of one of Libya's commercial hubs; Its citizens were largely viewed by other Libyans as business oriented), but also socially Libya has this potential, but it might take time to accept and to 'fit' such a huge new opportunity: 'Agriculture for Development', which is a Libyan driven pillar.

Challenges in this respect are still plentiful:

- (i) Everything' needs to be resumed by the newly established government, where to start? A strategy is needed for the agricultural sector, but we cannot wait for a strategy to start addressing some priorities. These are parallel processes of starting up new projects between government and the private sector, with a strong link to research and education;
- (ii) one of these immediate priorities is address the high unemployment rates (also salaries have been frozen for decades);
- (iii) tremendous efforts have to be made with regard to capacity development, e.g. the capacity to develop strategies, but strategies that are developed in consultation with a multitude of relevant stakeholders, capacities to support institutional reform; but also technical capacity to use the latest tools and equipment in agriculture ('and we are not just speaking of tractors of course...'), capacities in strategic thinking in understanding the system as a whole;
- (iv) the population needs to understand the new agricultural approach is being different and not just about going back to the field. It is about skilled cooperation, supportive institutions to enable agriculture for development. A new generation need to be created that understands this approach;
- (v) Time will be an essential element, and that is always a big challenge in itself. Time to develop trust and time for the institutional setting to become more transparent

Education

Tertiary education needs to be reviewed, whether it can deliver up to the standard needed in the market. It will be beneficial for the educational sector, if we consider the agriculture in particular, to work more closely together with practitioners (including, or especially with farmers).

Recommended reading :

- Dirk J. Vandewalle (2006). A history of modern Libya, 2nd edition, Cambridge University Press, 2006.
- Waniss Otman and Erling Karlberg (2007). The Libyan Economy: Economic Diversification and International Repositioning, Springer, 2007 (available online).

Libya, a country full of largely unknown beauties to the rest of the world, is very motivated to move fast forward from being a heavily centralised state to a more decentralised and diversified economy with open, well-functioning markets in place. Improving agribusiness governance and creating an enabling environment for agribusiness development are currently topics high on Libya's agenda. This report is the result of a fact finding mission in frame of a Letter of Intent signed between the Libyan Ministry of Agriculture, Animal and Marine Wealth and the Netherlands' Ministry of Economic Affairs, Agriculture and Innovation. With the signing of this letter, Libya and the Netherlands have expressed the wish to work together on creating the necessary capacities to guide and facilitate the transformation towards a more private-led agricultural sector in Libya. The Centre for Development Innovation, Wageningen UR (CDI) and the Royal Tropical Institute (KIT) together carried out this fact finding mission for the Netherlands. This report of the mission provides an initial overview of the current status of the agricultural sector of Libya in light of its ambition to integrate a value chain perspective in its national agricultural development strategy.

More information: www.wageningenUR.nl/cdi

