



Investing In Agriculture

Executive Summary

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This content is a summary of a research entitled “Investing in Agriculture” prepared by The National Initiative for Agricultural Development (NIAD) in keeping with the Kingdom’s need to increase the overall national income from the agricultural sector and to encourage investors and entrepreneurs to get involved in this vital sector. NIAD has ensured that Investing in Agriculture is the slogan of the 9th Bahrain International Garden Show 2013 for promotion of this culture and highlighting the available opportunities.

The sudden increase in staple food prices in June 2012 owing to poor weather conditions in the grain producing countries raised deep concerns towards food security within the Food and Agriculture

Organization. There were concerns of a likely food crisis similar to that witnessed by the world in 2007 and in the first half of 2008, which put into focus the millennia objectives of confronting poverty and starvation on the global level.

Given the prevailing global environmental decline, the Food Price Index (FPI) rose by 123% during the period from 2000 to March 2012. Oils and fats registered an increase of 225% followed by grains with 160%, sugar with 150%, dairy products with 82% and meat with 81.3% according to



the figures revealed by the Food and Agriculture Organization (FAO). In July 2012, wheat prices in the United States rose by more than 55% in five weeks due to the worst drought in the US Midwest region since 1956.

The world's population growth has played a role owing to the increase in demand for food and the growing gap caused by urbanization and transgression upon agricultural land which played an effective role on arable land stock. The situation deteriorated further due to the concern raised by the international organizations about the economies of the environment and the increase in demand for accounting for natural resources, implications of environmental decline and the land attrition in conventional national accounting systems that do not take such decline into consideration.

On the pan-Arab level, the population grew from 243 million in 2000 to around 342 million in 2011 registering around 40% population growth while the GDP grew from \$661 billion in 2000 to around \$2,081 billion in 2011 showing a growth of 214.5% that resulted in double the demand for food items. The share of each Arab citizen in the GDP rose on average from \$2,719 in 2000 to \$6,094 in 2011 driving up the demand for goods, especially food products.

During the period from 2000 to 2009 the contribution of Arab agricultural output to the GDP varied between the highest contribution of 8.3% in 2000 to its lowest level of 5.2% in 2008, according to figures of Arab Monetary Fund. The relative significance of agricultural output to the GDP varied according to the different states. In 2009, it amounted to 30.4% in the case of Sudan, while it ranged between 18.8% and 2.9% for Mauritania, Yemen, Lebanon and Jordan, however, there was no mention of the GCC states in the report.

Meanwhile, the food gap widened with the continuous population growth on the one hand and the modest agricultural output on the other. Thus, the Arab states became net importers of one half of their grain requirements, 63% of vegetable oils and 71% of sugar. These goods accounted for 76% of the main food gap in 1997 which led to a significant increase in food imports. The value of the main food gap grew from \$13.9 billion to around \$35.4 billion during the period 2000 -2009. It should be noted that the Middle East and North Africa imports one third of the available wheat sold on the world markets, a level which is set to increase significantly.



Roof Garden

In fact, the principle of relative advantage becomes particularly sensitive when the matter relates to the region's food security. The waste of water resources has continued in several Arab countries due to insistence on the production of foodstuff that require massive financial assistance. They have high water environmental costs in spite of the huge gap between local prices and corresponding prices oversea. Insistence upon rejecting the principle of relative advantage and continuation to respond to the emotional rhetoric that has recently prevailed and resulted in injecting investments in the cultivation of non-viable crops have led to worsening the water situation in the Arab Gulf states due to the improper allocation of resources. This has not ensured the sustainability of food production. Such conditions have

subsequently led these countries to abandon their agricultural strategy. In fact, the proper selection and specific production of certain food crops based on sound scientific analysis with the employment of investments in some Arab countries to bridge the agricultural gap in the Arab world remains much more effective and productive.

The current realization of the relative advantage in the production of certain crops has resulted in redrafting of the region's agricultural strategies. On the one hand, the Arab Gulf states have

embarked upon exploring investment opportunities in agriculture in countries with close proximity to their territories and in some geographically remote regions that enjoy a relative advantage for the production of certain agricultural items. On the other hand, they encouraged investors to get involved in agricultural investments for the production of other crops that can absorb modern technologies in the local environment.

In order to promote pan-Arab integration and to bridge the Arab food gap, calls have been made for resolving this dilemma within an Arab framework. However, the Arab Monetary Fund (AMF) has concluded that Arab integration efforts are fragile in spite of the availability of resources and advantages enjoyed by the region and presence of pan-Arab and regional organizations concerned with the industrial sector.

On the local level, the Kingdom of Bahrain suffers from harsh constraints that strongly restrict the country's agricultural situation. These are constituted by the scarcity of underground water reserves and decline in quality owing to the high demand for it against the limitations of natural recovery of underground water aquifers that represent the sole natural water source. The situation is made even worse with the hot and dry climate, limited rainfall that hardly provide a reprieve from the harsh conditions resulting in high evaporation levels. The Kingdom's small land area that does not exceed 760 square kilometers suffers from high salinity levels and modest fertility conditions.

While Bahrain's land area increased from 711.8 square kilometers in 2000 to 759 square kilometers in 2010, the cultivable area shrank because of the increased construction development in farm areas from 110 square kilometers in 2000 to 640 square kilometers in 2010. Farm land areas declined during the same period from around 42 square kilometers to 37.32 square kilometers. Cultivable area compared to the Kingdom's land area declined to 8.4% in 2010 compared to 15.5% in 2000. The limited availability of soil suitable for agriculture remains as a real problem and represents a challenge that cannot be dealt with by conventional methods.

In spite of the clearly poor contribution of the entire agricultural sector (Broad concept of agriculture which includes cultivation, fish, livestock and poultry) to the GDP, its contribution to the GDP continued to fall representing 0.3% in 2011 compared to 0.6% in 2000 at current prices and from

0.4% in 2000 to 0.3% in 2011 at fixed prices. In its average sense (includes the sector except for fishing) its share to the GDP declined by current prices from 0.4% in 2000 to 0.2% in 2011 and at fixed prices it declined from 0.3% to 0.2% in 2011.

Treated sewerage water is considered as one of the most viable alternatives for providing a sustainable water resource for agriculture as underground water has become totally undesirable for agricultural purposes owing to the high salinity levels. Of course, we rule out the use of soil free cultivation technology which requires the use of water from the main distribution network. With the increase in production of sewerage water from 1.5 million cubic meters in 1988 to 36.14 million cubic meters in 2010, it was possible to reduce the rates of attrition of underground water for agricultural purposes by around 63% as demand for underground water was around 67 million cubic metres in 2010 compared with 180.5 million cubic metres in 1988. In spite of all the achievements in this sector, the shortage in treated water supplies constitutes a major problem for farmers who have increasingly called for an end to the water cuts to their farms resulting in significant crop damage in 2011.

On the other hand, the study confirms that the relative advantage of producing certain crops can be actually achieved in the soil free agricultural technology environment, hence many of the constraints affecting conventional farming can be alleviated, especially if multi-storey smart buildings can be designed combining in their designs efficiencies of architecture and agricultural engineering. Thus, returns of agricultural investment can be optimized in areas that do not enjoy the relative advantage of conventional farming methods. Successes on the global level explain the rapid spread of such technology in many countries of the world including these with vast farming areas.

As for investment, the study notes that the entire direct foreign investments in the Arab countries have kept clear from the agricultural sector, hence it is concluded that direct foreign investments cannot be relied upon in achieving progress in conventional agriculture in the GCC states. Therefore, the only alternative is to focus on the use of modern agricultural technologies and focusing investments upon them for production of carefully selected strategic goods in greenhouses and vertical farms.

Meanwhile, in the 1980s the government sponsored a plan for developing the agricultural sector as part of the four year programme of economic and social development. The scheme targeted several agricultural projects that was led by making use of the treated sewerage water for irrigation and Hoorat Aali Agricultural Development Project. Other plans included an agricultural support and incentive scheme that involved providing chemical fertilizers, improved seeds, requirements of modern irrigation and requirements of greenhouses. Such projects focused on encouraging the private sector to invest in agricultural production and these efforts culminated in the launch of government-backed projects for processing of dairy products and dates.



For the area of farm finance, an agricultural finance scheme was launched by the Government to provide finance to local farmers in late 1985. After some 17 years, its mandate was transferred in October 2002 from the Municipalities Affairs and Urban Planning to Bahrain Development Bank. In spite of the scheme's ability during the period from 1985 to 2001 to provide 585 loans with a total value of BD2,508,000 the contribution of the agricultural sector continued to decline.

In spite of the huge finance provided by commercial banks to the business community and private



individuals, the share of the agricultural sector of such credits remained quite modest. Loans targeting agriculture and fishing totaled BD10.5 million only. In spite of this very modest figure which did not exceed 0.000,000,2% (2×10^{-7}) of the total loans, yet it is even much smaller than that as the agricultural sector was incorporated with the fishing industry. Thus, one can judge with a high degree of confidence that investors and finance institutions did not show much interest in agriculture. It should be noted that commercial banks have often been criticized for showing no willingness to look at the feasibility of certain projects to which they could contribute in spite of their profitability potential.

In the light of commercial banks' lack of interest in new projects, especially agricultural ventures and the declared statements of commercial bankers that financing agricultural projects should be

Vertical Garden



provided by specialized banks, the government sponsored an agricultural credit scheme which was handled by the Ministry of Municipalities and Agriculture since the 1980s. In late 2001, such duties were transferred to Bahrain Development Bank, which is a finance institution for small and medium size projects. This move brought an end to credit programmes for local farmers during the first six years of the Bank's inception leading to a finance vacuum in the agricultural sector although BDB is one of the main source of support and finance for small and medium size projects in the Kingdom of Bahrain. During the

period from 1992 to June 2012 the Bank extended loans with a total of BD270,713,134 to several sectors in the country. However, agricultural loans only started to be extended in 2001, i.e. nine years after the launch of the Bank. During the period from 2001 to 2012 the Bank provided 316 agricultural loans with an overall total of BD1,645,121. The share of agricultural loans did not exceed 0.6% in terms of value and 3.5% in terms of numbers. It is noted that during the period from 2001 to 2012, the average value of loans constituted in average around six times the loans extended to agricultural activities, which is an indication of investors' lack of interest in agriculture.

In addition to finance institutions, other significant organizations have been set up such as the Tamkeen and Ghetha Fund. Nevertheless, such finance institutions have not had much of an impact

on the state of agriculture as proved by its contribution to the GDP which continues to decline in terms of its contribution and added value. Furthermore, we do not have enough statistics as regards the definition of field farming or agricultural industry and whether agricultural finance includes conventional farming or soil free cultivation.

Since the stock exchange is the true mirror of the economy and as an indication of interest in local agricultural investment, there is no company concerned with production of any agricultural crop in the Kingdom of Bahrain. That applies to both public and closed joint stock companies. In fact, amongst all the Gulf stock exchanges, the Saudi Stock Exchange is only one in the Gulf that has a special sector for agriculture called “Agricultural and Food Industries”. This sector in the Saudi Stock Exchange comprises 16 different companies. It is noted that not all these companies are engaged in the production of agricultural goods such as fruit and vegetables only but some of them are also active in remote areas of business from the agricultural business such as the management of fast food restaurants and sale of bakery items and sweets. Some of them are active in retail trade, real estate, plastics, management of major international franchises, marketing of fashions and business of buying and selling land and property. It is noted that a significant proportion of the operating profits of some listed “agricultural companies” was gained from operations that are not even remotely related to agriculture. However, this has not undermined the viability of investments in this sector whose operations yielded attractive returns to





Greenhouse

investors in the medium to the long term.

Against this background and given the magnitude of Gulf investments overseas which suffered substantial losses during the recent global financial crisis and decline of its assets amounting to 50% and taking into account the dire need to invest a proportion of such assets locally to diversify the income sources and to boost strategic agricultural objectives, the paper concludes that a feasibility study should be conducted on attracting Gulf and non-Gulf investments and the launch of government initiatives to create partnerships for setting up agricultural projects or industries related to the agricultural sector. In this context, it is possible for the government to establish public or closed joint stock companies for the production of main agricultural crops and goods with the use of the latest agricultural technologies. On the local level, it is possible to launch initiatives for the production of animal feed and organic fertilizers with the participation of the government, private sector, Bahrain Development Bank, other banks, individual investors, the National Initiative for Agricultural Development and local farmers. It is envisaged that the government could subsequently sell its equity in the projects when they prove their viability and get converted into public joint stock companies. This could be the springboard for the launch of similar projects in the future.

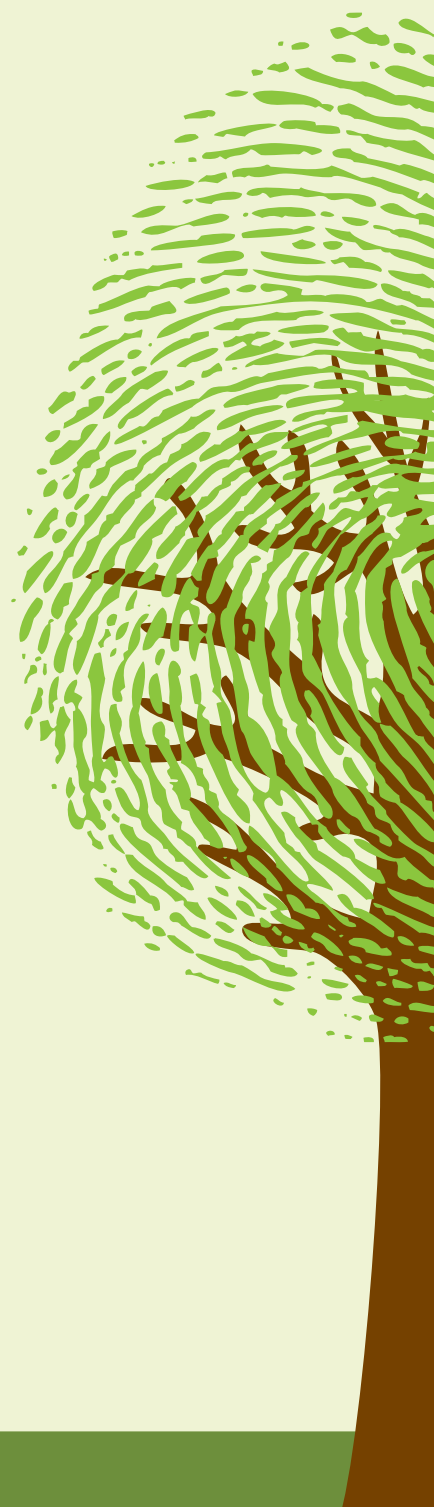
On the regional level, the study asserts that the changing picture calls for the need to re-examine many projects that proved unfeasible in the past owing to the available knowledge and information at that time. However, in view

of the continuous increase in prices of many food items and advancement of non-conventional agricultural technologies in greenhouses and vertical farms on the other hand there is a need to study the viability of injecting more investments in agriculture for the production of main goods and crops, such as vegetables, throughout the different seasons while activating the regional strategy to achieve this end.

The study proposed a number of projects hoped to generate attractive returns especially investment in projects using soil free agricultural technology that overcomes the natural constraints affecting agricultural production while enjoying the benefit of proximity to the markets, growth of individual income, increased demand for foodstuffs and availability of the basic and legislative infrastructure in the GCC states.

Proposed projects covered in more detail include processing of palm fronds, use of some tree leaves as animal feed for livestock and poultry, soil free agriculture in vertical farms, date marmalade processing project and manufacture of fertilizers from organic waste. The projects were concluded by presenting the results of a virtual greenhouse project.

Finally, the study deals with investment in environmental, awareness and landscaping dimensions (government and private sector projects) noting that the loss of investments and assets is dependent upon the quality of plant cultivation decisions, as many varieties of trees imported from abroad could not be cultivated successfully in the local environment. Perhaps studies conducted on such cultivation were not adequate as proved by the fact that they could not survive. There is no doubt that such poor decision making has been costly and has been classified as part of losses of agricultural investments. This process highlights the importance of research centres that should be concerned with identifying the characteristics and needs of different tree and plant varieties.



اقترحت الدراسة جملة من المشروعات التي يؤمل منها أن تحقق عائدا مجزيا، وخاصة الاستثمار في المشروعات التي تستخدم تقنية الزراعة بدون تربة التي تحيّد القيود والمحددات الطبيعية المؤثرة في الإنتاج الزراعي، مع الاستفادة من ميزة القرب من الأسواق ونمو الدخل الفردي ونمو الطلب على السلع الغذائية وتوفر البنية الأساسية والتشريعية المتوفرة في مجمل دول مجلس التعاون .

أما المشروعات المقترحة التي عرضت بقدر من التفصيل، فهي تصنيع الأعلاف من سعف النخيل وأوراق بعض الأشجار للماشية والدواجن، ومشروع الزراعة بدون تربة في مبان متعددة الطوابق، ومشروع صناعة مربى الرطب، ومشروع صناعة الأسمدة من المخلفات العضوية، ومشروع إنشاء شركة لتقديم الاستشارات الزراعية الهوجهة للمشروعات الصخرية والمتوسطة والمشروعات المنزلية، وقد اختتمت المشروعات بعرض نتائج مشروع افتراضي لهجية زراعية .

تناولت الدراسة موضوع الاستثمار في البعد البيئي والتوعوي والتجويلي (حكومي وخاص)، مذكرة بأن ضياع الاستثمارات والأصول مرهون بجودة قرارات التشجير، حيث أن الكثير من الأشجار المستقدمة من الخارج التي زرعت في سنوات ماضية ولم يثبت نجاحها في البيئة المحلية لم تجر عليها دراسات، أو أن تلك الدراسات لم تكن كافية، بدليل هلاكها . ومن دون شك أن تلك القرارات غير الهوفقة كانت مكلفة، مما يمكن تصنيفه ضمن خسائر الاستثمارات في الزراعة، وهذا ما يصب كذلك في خانة حماية المستهلك، حيث ان الشتلات المنزلية هي سلاح تؤسس لأصول، مما يبرز أهمية مراكز الأبحاث التي يجب أن تعنى بالتعريف بخصائص وحاجات مختلف الأصناف الشجرية .

وأخيرا، لاننسى أن نشير إلى الحاجة الهاسة لتطوير قاعدة المعلومات باعتبارها المقدمة الأولى لأي دراسات يعتد بنتائجها، وهذه في الواقع إحدى أهم العقبات التي تواجه الباحثين .