Arab Food security between development and agricultural policies: experiences of Iraq and Algeria.

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Introduction:

The Arab economies, ten years ago, had detectably low levels of agricultural productivity compared with global averages as the first report of the Arab Human Development 2002 showed[1]. Only the economies of sub-Saharan Africa are organized lower. The global food market does not bode well, and it has been involved in crises in the past. The current situation therefore suggests an impending crisis.

The features displayed include: global policies aimed at increasing the production of biofuel sources of renewable energy is causing (among others) higher food prices; the pressure of global population growth is putting in danger the goals of the third millennium goals of the United Nations for the year 2015 in the eradication of poverty to the half; a growing global demand for food, most of that increase coming from developing countries.

In Arab areas, there is an increasing dependence on food imports. This contributes to food insecurity, along with the

political risks and risks to society's future. Less than a third of Arab agricultural lands, 160 million hectares, are unused (in Algeria and Iraq, half is unused), and agriculture contributes about 10% of Gross Domestic Product (GDP) and 25% of the workforce.

There is a serious and unfortunate Arabic food dependency on imports, despite the abundance of resources. So, the main question has to be answered by the current is: where does the problem lie? Does it in agricultural land ownership and tenure, water, finance, regulating the market, lack of agricultural knowledge, basic scientific research and development, or rural development?

This study aims to analyze the main cause of the Arab food gap and, discussing the most important indicators of development and agricultural policies. The analysis focuses on the experiences of Iraq and Algeria as two symmetry models of wealthy economies. They are still suffering, and seeking development and growth.

The main solutions, as always, focus on the development of Arab agricultural capacity. But how should this be achieved? This paper discusses this question, assuming many solutions. In other words, it is always suggests focusing on rural agricultural development integrated strategy. It also looks at how to adopt this responsibility!

The research, on the likely problematic core, hypotheses the availability of all needed resources at the level of the Arab. It is postulates that: the problem is one of: institutional, scientific, and systematic development, rather than a material one. Thus, it has seen that the Arab countries can support and cooperate other economies, not only to resolve this chronic problem. This would be true if and only if they captured the crucial reason.

The value of the Arab States food gap, in 2000, amounted to $12 billion[2] (Population of 260 million). This figure has

constantly grew to the current one, between 30 and 40 billion dollars per annum[3] (Population of 310 million in 2010).

The value of Arab agricultural output in 2001 was $80.3 billion (less than of the two years earlier). The dimension of the Arab food gap was in 2000 as following. For grain and flour 49.9%, sugar 66.1%, and oils and fats 45.3%. That's means that the food gap average for these three strategic commodities was 50.4%. In other words, domestic production covered half of the total Arab requirements. This situation has become a concern one since it began to worsen from the mid-nineties of the past century[4]. In order to eliminate the food gap or treat it, the value of local agricultural output for 5101 has to be twice of 2001. Can the current system of production produce, for example what equal to 160.6+27=187.6 billion dollars. in 2011?

This is particularly fitted in Iraq, specifically in the governorate of Nineveh in northern Iraq, the breadbasket of Iraq (has the second largest population beyond Baghdad, whose capital is Mosul). The food gap of the Iraq makes up 75-80% of the overall needs[5], in a proportional sense[6].

The same thing can be said for other Arab economies, such as Syria, Algeria, Sudan and Yemen.

The situation in Egypt is the most pressing[7]. This is one of the most crucial challenges faced by Arab economies in the era of globalization[8]. The problem is not new.it existed tens of years ago[9].

The problematic case is still one of the adverse effects created when developed countries ask developing ones to draw their support from the agriculture sector, but do not commit themselves. It is expected that the negative impacts will continue to increase for Arab countries in the case of a reduction by the developed countries in their support of agricultural products[10].

As the problem becomes more serious for the Arab economies, it could force their agricultural policies to have a positive step (through agricultural reforms) and get benefit from higher world prices, and then making the transition to cover their entire food needs, locally, by encouraging Arab agricultural investments[11].

In Algeria, falling of oil and gas production 2.6% resulted in drop GDP growth to 3.4% in 2007.

While in 2006 to 1.8%. Economic growth is still driven by the revenue growth of hydrocarbons.

However, activities unassociated with this production expanded to around 6% in 2006. This supports the hypotheses of what the Algerian's potential for growth, particularly agricultural sector growth, without the petroleum sector.

The new initiative of Algerian public investment has committed to spending more than $22 billion on housing, transport and agriculture in the coming years, hoping to raise employment growth in the construction sector and related sectors, supporting household spending and improving investment conditions in the agricultural sector. The assumption is considering it vital for food security[12]. Unfortunately, however, this remains an indirect policy.

1-Agricultural Costs, Openness, and Competition:

It is well known that the Arab agricultural sector faces extensive climatic changes, including unreliable rain supply and unsustainable irrigation surface systems. Thus, it is not a coherent sector in comparison with other economic sectors. This issue weakens its openness on international markets. Agriculture can be hit by negative effects has always been transmitted to the agricultural trade balance. The costs involved in agricultural production economies are an essential part of agricultural policies, particularly those focusing on remedies for the Arab food security gap. This is the subject of the next section. Prior to

that, the study focuses on the elements involved in closing the gap in Arab food security.

In order to meet growing domestic needs in today's markets, the goal of agricultural development is mainly to increase agricultural production. The latter comes from increased productivity and other factors. The quantitative margin between the need for basic foods (mainly grain, sugar and oils) and the size of aggregate supply known as food gap, and this begins with imports. But the decisive factor in the continuing the gap is the cost of imports, the factor which determines whether a country has the relative competitive advantage or not. The later is essential to open up to global markets and to determine both the ability to respond to the WTO agreements and the stages of implementation after accession.

In the eighties of the last century, the value of the Arab food gap was $ 21 billion. It had been reduced to $ 12 billion by 2002, and then rebounded to more than $ 13 billion in 2003. Since that time, there has been a sustained increase in the indicators. The gap kept more features and increasing risks, besides the continued failure of Arab agricultural policies that have been introduced in an attempt to overcome the existed limitations for decades. Since the nineties the Arab countries have been swept up in the wave of globalization, and further determinants of the food gap have arisen. The problem has become comprised of: the globalization of the agricultural sector plus the fragility of the agricultural sector. This mean growing gap in food security as well as chronic failures in agricultural policies.

2-Elements of the food gap:

Most of Iraqi wheat corn agriculture constrained in the north part, especially in Nineveh. In Iraq, for example, an agricultural country, lot of rainwater agricultural land is in the province of Nineveh. It depends basically on rainfall, by ideal of the Levant. It is classified by the rates of annual rainfall: high rainfall,

almost guaranteed rainfall, limited rainfall, and of natural pasture , depending almost on rain. While in the mid of the country, depending almost on rain. While in the mid of the country rice farming diffused, depending on surface water.

It is noted that more than two thirds of the agricultural areas in Nineveh are comprised of areas with limited rainfall and natural pastures. This is not conducive to ensuring sustainable targets of agricultural output, between the latitudes of 36 and 37. In this case it has to rely on supplementary irrigation techniques in the projects east and south of the island irrigation. Although the area of Nineveh constitutes about 10% of the total area of Iraq, it is currently providing 70% of Iraq's total output of wheat.

For the Arab countries, the total area is more than 1,400 million hectares (01 million square kilometers), represents 10% of land area in the world. The agricultural land that can be reformed to be arable and Suitable for cultivation making up about 26%. Between one third to half only of the later has been exploited. For Algeria and Iraq, half. But this still a noticeable and essential restricting element. If all agricultural land exploited by the current traditional manner food production may be duplicated, then treating the entire food gap.

In 2000, actually cultivated land made up 70 out of 197 million hectares used. Moved slowly within one decade, in 2010 to about 100 million hectares. So it is still little increasing, compared with the public investments and assistances for the agric-sector. This issue is one of the most often diagnosed causes of food shortages and non-farmed land should be used as required.

The reforms of fifties and sixties of the last century, has now become a need for reform steps, but in the opposite direction and on a completely new basis. It should build a state's strategy of modern agricultural sector and developing sophisticated technology of using the limited water resources. It requires a distribution of agricultural land by large spaces to big farmers -

those peasants who are able to engage with mass production. They may to adopt programs and procedures that are being introduced for rural resettlement. While the Arab world forms one tenth of the world's land area, their population is less than 5% of the world's, and they have only 0.5% of global renewable water resources. It also means that Arabic per capita water is only one-seventh of the world's one.

The Union Maghreb countries (Libya, Tunisia, Algeria, Morocco and Mauritania) have 19.7% of the available surface water resources, comparing with more than one third of the total, less than 37%, for the Arab Middle East district (Syria, Iraq, Lebanon, Jordan and the occupied Palestinian territory), the Mediterranean territory (Egypt, Sudan, Djibouti and Somalia), 38.5%. The remaining 4.8% for Arabian Peninsula.

There is a noticeable scarcity of water in Algeria as well as the rest of the Maghreb countries, but there is miss efficiency use in the whole district, and bad water use like in Iraq. There is a severe scarcity in Jordan, Kuwait, Saudi Arabia. Agri-sector alone consumes 87% of available water resources, leaving the rest for industrial, residential, service and others uses.

The food gap quantitatively determined by the proportional difference between what is actually produced and the total need (sealing of self-sufficiency). It which covers the society's needs. Half of the Arab food gap is for cereals, especially wheat. It is equal six billion dollars with the same ratio (and value) for oil, and about two-thirds for sugar (1999 figures)[13].

The District witnesses: 1) A relatively high rate of population growth; 2) A relative improvement in overall levels of income, leading to the development of contemporary lifestyles and higher rates of water consumption alongside the nature of nutrition, and; (3) A very high rate of consuming cereals, sugar and oils. These three aspects (demography, incomes, and the evolution of tastes) are external variables relating to food demand elasticity. They, therefore cannot be

considered influential sources to be used in economic policy to any great extent. The food style may described as inelastic demand just for a water scarcity.

Low levels of Arab agricultural production of the three strategic goods (cereals, oils and sugars) are due to two factors, (I) lack of production volume; and (II) deterioration of agricultural productivity. The first is due to a lower contribution of cultivated land and then the production techniques. The second is due to the incorrect large dependence on rain-fed agriculture, associated with climate change, and the absence of the expansion of new methods of irrigate-agric to produce the necessary levels to reduce food gap.

More efficient land use and better using of the surface and groundwater, with new (investment) technology (agricultural equipment, pesticides and natural organic) is what assist agricultural policies.

Consequently, Arab agricultural production must meet the local needs for self-sufficiency and eliminate unsecure food gap by: doubling the exploited agricultural land, upgrading irrigation and other agricultural techniques, to achieve mass production. This relationship can be expressed as follows:

$$Y = f (L, S, W, T)$$

As: Y: Agric Production, L: labor, S: Land space, use, W: Water usage, T: Embodied Technology.

It has suggested that production value is the product of global technology for the three explanatory factors.

$$Y = F(L,2S,WI,MT)$$

Were I: investment, M: method of mass production. Supposing that production function with Cobb-Douglas one:

$$Y=Aert.La.S..WIß.MTO$$

As, A: stand to Exogenous disembodied Technology; e: natural base; r: rate of growth with the time; I: gross

Investment in water irrigation improvement; M: net embedded Investment in agricultural production techniques.

then the linear interpretation for it postulate:

$$LogY = r.logA + a.logL + ..logS + ß.logWI + O.logMT$$

The current production function relation (i.e. in period 1):

$$LogY1 = r.logA + a.\ logL1 + ..I.logS + ß\ I.logWI1 + O\ I.logMT1$$

After achieving three agricultural Investments, production relation:

$$Y = r.\ .A + .a.\ I.\ L + ..I.\ S + .ß.\ I.WI + .O.\ I.MT$$

logA: log of constant, I: new net investments.

$$Y = r.\ .A + a\ L + I\ (..S + ß.WI + O.MT)$$

These elements impose three basis ambushes to address the Arab food security gap, avoiding competing with less expensive foreign imports. The only key factor behind: land reforms, irrigation improvements, and production techniques is the investment in new and recent technologies. This includes machines, equipment, tools, professional skills, and training in and maintenance of the new technologies. It includes investment in mankind and human capital.

The pace of introducing new technologies can be considered as the rate of technological change, in this case. The process from this point of view has two dimensions. They are finance using natural wealth revenues, for rich countries, and the investment climate (rules and legislations related to introducing and using recent technology).

However, to begin with, all of the investment it depends on the public policy by state investment in irrigation infrastructure besides sophisticated technology. In next stages, the climate of investment must allow private investments to be work. The

model can be used by experimental data to estimate and predict production information.

Arab agriculture has long been overtaken by the literature and policies concerned with the problem of the agricultural sector. There must be a direct jump to economic integration and cooperation policies between Arab countries, including holding workshop sessions, in order to overcome the abovementioned obstacles and start the work. This has been omitted for more than two generations, while the policies have worked towards placing hope in joint Arab treatments.

Not all of the causes of the gaps in food and agricultural output, or the policies, strategies or solutions for the agricultural sector, are portrayed. only the common denominators and distinctive aspects. These policies contained by huge literature couldn't success including joint solutions. Thos have exacerbated the problem of food security, and caused useless economic developments in Arabic countries in various sectors during three past decades.

Hereby, each country must engage in self-reliance and endogenous development. There is no later benefit for others from such experiences.

Current diagnoses do not exclude financial and technical cooperation, as well as the employment of labor potential among the Arab countries. This sounds good but it's the best that Arab countries can do as they really having to guess what can meant by integration and Arab Agric development.

They stressed the necessity of the integration for dependence and reliability in their solutions to all existing Arab gaps, particularly Arab food security gap.

3-Iraqi agric Experiment:

To demonstrate the effect of self-reliance by each Arab country instead of joint teamwork, we can look at the Iraqi

situation during the economic blockade. It forced the rely on local agriculture to cover their need for basic food crops. Iraq achieved the highest rates of self-sufficiency in cereals, oils and the cultivation of beet and sugar production. The old waived factories operated using sugar beet and produced sugar and yeasts. It had not been done in the country for many years. Throughout the nineties of the last century, successful efforts in other agricultural programs stimulated the growth and productivity of the agricultural sector despite the continuing low proportion of people working in agriculture.

Agricultural efficiency indices were recorded as 0.15 in 1980, 0.62 in 1989 and 2.54 in 2000 in Iraq[14]. It was despite the fact that the agricultural labor proportional to total employment fell from 30.44% in 1980 to 21.92% in 1989 and then to 12.61% in 2000. Note that over the same period, agricultural rates of efficiency across all Arabic countries were estimated at 0.55. One of the reasons behind the Iraqi numbers was the increasing contribution of agricultural output in total GDP from 5.69% (1980) to 13.71% (1989) to 32.1% (2000)[15]. "Per capita share from the Iraqi agricultural GDP equalized more than four times the per capita of Tunisian and Syrian, and eight times of that of Moroccan, while the three mentioned countries were not experiencing lack of nutrition such as Iraq, never the less they were respectively occupying the three first ranks in Arab agricultural exports"[16].

Other Arabic countries were not able to assist Iraq at the time, but some economists considered their achievements an economic miracle, suggesting causes such as the use of modern scientific techniques and appropriate materials in the production stages and improving agricultural productivity, while operating under the shadow of limited financial resources. So the local efficiency still differ between and not sufficient although some Here is to mention reminiscent of the Saudi experience of achieving self-sufficiency in cereal production, especially wheat. It clearly demonstrates the potential to bridge the Arab

food security gap, despite the large amount of government support, provided for fertilizers and the incentive prices offered for crops. This may not allow them to compete with global production, but is sufficient to solve the current dilemma and overcome the food gap and being under the will to abroad[17].

4-Algerian Agric Experience:

Development reports, in calling for a renewed focus and increased investment in agriculture (for transition economies) stress its great importance for improving welfare and reducing the number of poor people, currently millions living in rural areas[18]. At the same time, the reports warn that the targeted reduction in their numbers by the year 2015 will not be met unless there is an increase in the level of investment in agriculture and the infrastructures in rural areas, over the next two decades.

In Algeria, the proportion of people living on less than one dollar per day was about 2% of the population of 25.3 million in 1990. They represent 506,000 people considered in poverty living.

The third millennium goals have identified the need to reduce the number of poor people by half by the year 2015. This will lift 253 thousand people plus, 160 thousand more, from half of the 8 million increase of population growth until the end of 2006. So it has to reduce poverty from 0.8 to 0.4 million people.

In late 2006, the Algerian population exceeded 33 million. Gross National Income exceeded $100 billion, while GDP recorded about $114.7 billion. The later grew by an annual rate of 3% lower than of the previous year 5.3%, despite the decline in the inflation rate from 15.6% to 1.0% between the two.

The agricultural land was less than 17% of the total area of Algeria (comparing with 26% in Iraq), see (Map No. 2). However. the contribution of agriculture was 5.2% of the aggregate value added for 2005 (for Arab agricultural output

6.4% of total GDP). The contribution of industry was 61.5% and for services sector 30.1%. Agricultural efficiency in Algeria in 2005 amounted to 0.37 (8.5/23), comparing with 1.13 for Iraq (8.9/7.9) for the same year. This necessitates, at least doubling the contribution of the agricultural sector, which could be achieved by intensifying production using more advanced, modern technology in irrigation agric. However, this must be accompanied by spending 20% and 30% of their budgets on water in Algeria, Morocco and Egypt[19].

Weak public sector has associated for long time with slow growth of agriculture in the Arab countries. There will be no balance to the private sector to be interested. The development of a domestic agricultural market, for each Arab country will require to make a private sector participation in self-sufficiency.

The current paper views the focus to be on expansion of a public agric sector, i.e. government investment in rural infrastructure, irrigation, and land reclamation. The second best is the government to take role in appropriate reforms and transformations that represent the foundations of a new agricultural investment climate. This is the gate to the development of local and private sector in competitiveness in importing fertilizers, agricultural machines and so on.

In oil rich countries, like Iraq, Algeria and Libya, there is a need to establish a stock exchange, especially for grain. They also need to create markets for crops, and agricultural products, particularly for grains and oils produced by the private agricultural sector. The later will move so quick with technical sophisticated communications and production. companies should have to offer incentive prices for farmers compete world prices.

Finally, there is a great need to increase individual ownership of agricultural land. Land rehabilitation and a reform of agricultural production is required too, to adopt mass production techniques. The system might be controlled by taxes

in advanced stages, adapting a considerable source of the public investment revenues to the state[20].

So, public agricultural policies initiated during the eighties of the last century in Iraq and Algeria were unable to reduce the food gap. The same was true for Egypt and Sudan and somewhat for Syria[21]. So many objective in-depth studies focused on policies[22], but couldn't share a useful contribution produced any success in raising economic efficiency in their Arab countries.

Inadequate production remains and there has been no modernization of the technologies used in the agriculture sector. For reasons related with government departments state farms and cooperatives, the administrative policies were politically rather than economically or agriculturally based[23].

Conclusion:

Half of the agric lands in Iraq and more than half in Algeria stayed unexploited. Distribution policies to stimulate the exploitation of unused land have not been effective in achieving their targets of doubling the quantities of staple crops, particularly grains.

The following options are really the choices founded useful for oil rich countries. With abundance of reasonable budget and finance country, such as Iraq and Algeria, in their attempts to double their production levels, assuring as a whole for the state[24]:

1) Intensive use of advanced agric technology, such as modern irrigation systems;

2) Developing sensor equipment that symmetrically and equally distributes irrigation water to all areas;

3) Applying feasibility studies for the least expensive techniques and most efficient technologies, such as desalination of sea water, for Algeria, substituting

groundwater for watering semi-rained lands. The following views are complements:

4) Introduction organic fertilizer policies, non-chemical, with tax exceptions and seed subsidies in the early stages of agric investment;

5) Supporting the costs of energy used in the extraction, transfer, and pumping of groundwater;

6) Terrestrial distribution stations.

It is essential for investors to be encouraged by providing new agricultural lending. Tax deductions might be provided for land reclamation and the ownership of modern equipment used to achieve mass production.

From the above views and the analytical conversation of the paper, it has seen that the Arab food deficit remains a voluntary one, not imposed. It can benefit from several past experiences focusing on productive efficiency, and also continue developing it. The main suggested remedies include the following:

1. The state has to encourage agric investment for exploiting all available agric land and encouraging private sector to introduce natural fertilizers, mechanization, and equipment.

2. Developing the use of modern and sophisticated agric technology of irrigation methods, which might raise the economic efficiency and increase agric productivity, as mentioned above.

3. Increasing the number of bank branches offering agricultural lending within easy policies on zero interest rates. This needs to be consistent with the aims of the Islamic Sharee'a and the general orientations of an Islamic resource-rich country, as well as the habits of Muslim society.

4. Doubling agricultural credit, possibly by expanding the credit offered to peasants and farmers, especially large farmers.

5. Providing customs exemptions for the procurement of technical equipment, land reclamation, and stations and equipment involved in the extraction, desalination, irrigation and distribution of groundwater.

6. Expansion of infrastructure networks and basic services for rural development that will enable the resettlement of intensive farming families on new land, provided through the new investment.

If these policies get integrated with each other and there is coordination between the financial, commercial and industrial sectors and the agricultural and irrigational sectors, there is a real possibility of finally eliminating the Arab food security gap. With the resulting reductions in the costs of production and the achievement of an agricultural surplus, Arab countries may be able to enter the global market, on a competitive basis. With efficiency of the ripe conditions for the other economic sectors and desired stages of development. This efficiency could lead to the right conditions to develop other sectors of the economy.

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http://www.amf.org.ae/amf/website/pages/page.aspx?Type=8&ID=455&forceLanguage=ar
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5 - Agriculture is deteriorated because of the wars that went on Iraq (the first Gulf war 1980-1988 and the second in 1990 and the economic blockade, which lasted until the invasion of Iraq in 2003.

6- Mohamed Ould ABDEL DAYEM: special files 2003: basic concepts of food security, knowledge of electronic newspaper, told Al Jazeera:
http://www.aljazeera.net/NR/exeres/9C5C4F51-74D4-40B9-A119-AD6F4EB44AAB.htm .
And about the increasing reliance of its food in the developing world markets look to the writer himself: the morning paper - food security. Strategic programs: http://www.alsabaah.com/paper.php?source=akbar&mlf=copy&sid=34345.

7 - Food security and the associated concepts have expanded implications can be summarized as follows: Self-sufficiency, it means the ability to complete reliance on self to cover the needs of the food product resources and potential self. The food security is the insurance of the community needs of food from within the geographical area of society. It will be absolute secure if the volume of production exceeded demand, and be relatively secure if to be almost as well. Food security refers to a safe food of all aspects of production starting from the organic compost instead of chemicals ending with storage and delivery to the consumer's hand. All of these concepts fall under criteria and specific conditions. The Author.

8 - About Arabs options in the era of globalization, explained in a recent poll revealed the outcome for the possibility of designing Arabian strategy for an era of globalization, that 38% of the respondents counted globalization a cultural, 29% counted it an inevitable matter, and 33 % of them went to consider it a U.S. plot to dominate. If it was civilization it does not distinct of Arabs contribution in the foreseeable future, and so on with a remaining percentages (63%) reality of imposed situation on Arabs, and this is not inevitable, but only prevention of risks, at least to themselves by adopting upon their the adequacy of food needs in the first place. See: Arabs Dialogue program, Al Arabia satellite on 04.01.2008.

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