

***“Aiming a productive, a viable and a sustainable agriculture for the emergence of Algerian economy in the framework of the unavoidable globalization”***

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**ABSTRACT**

The evolution of the Algerian agriculture is undoubtedly one of the most negative aspects of the economic policy applied in Algeria since independence. Indeed, the Algerian agriculture barely covers 15% of national food needs and contributes only with 10% of GDP. This weakness of agricultural production places Algeria among the world's largest importers of food products, with a food bill that amounts annually to nearly \$ 4 billion (with a clear predominance of cereals on which the national food intake is based). This very high food dependence of Algeria is not only the result of under-utilization of existing agricultural resources and the low performance of production processes, but also the consequence of the failure of different reforms applied to the agricultural sector. The crisis that has shaken the Algerian economy in 1986 has clearly revealed its extreme fragility due to its high dependence on oil and gas sector and the international price of oil. The remedy for this weakness lies in a large part in increasing economic diversification in which agricultural development emerges as a fundamental element because it is unavoidable. Indeed, the construction and the emergence of a developed modern economy is not conceivable without a modern and efficient agricultural sector that contributes actively to the national food supply, economic growth and promotion of rural areas that are home to far the majority of the national population.

In addition to its highly strategic role, agricultural development is crucial in the case of Algeria which has to strengthen its economy in order to face economic globalization in some favorable conditions. Agricultural policy is imperatively called to adapt to this new situation and to the new challenges introduced by globalization. Those challenges

are looming over with the recent Association Agreement of Algeria with the European Union and the prospects for future accession to the WTO.

Preparing Algerian agriculture to meet these challenges, inevitably passes through the realization of an agriculture which fulfils the following triple conditions:

- a productive agriculture based on scientific and technical progress;
- a viable agriculture based on the exploitation of comparative advantages and aiming the satisfaction of national food needs;
- a sustainable agriculture that reconciles productivity with respect of the environment and promotes the exploitation of renewable resources in priority.

In the present paper, we have tried to determine, given the objective conditions of the Algerian agriculture in one hand, and the national existing potential (material, financial and human) in the other hand, how and under what conditions Algeria can succeed in realizing such a type of agricultural development which is actually the key to its economic emergence?

**Keywords:** Algerian economy, economic diversification, promotion of rural zones, globalization, sustainable agricultural development.

### Introduction

Is it really worth to recall the major importance of the agricultural sector in the economy?

Agriculture is the sole or at least the main food provider at local and global level as it assures a normal food supply preserving the country from large external food dependence which may certainly constitute a serious handicap concerning the security aspect as food is usually used as weapon in international relationships.

Agriculture promotes economic activity in rural areas and contributes efficiently to keep rural population in its area, and thus permits to control the flows of rural exodus and to avoid the harmful economic and social consequences of a massive rural exodus.

Agriculture is the main provider of in puts to the transformation industry and thus contributes indirectly to the development of local food industry

that plays an important role in improving national food production capacities.

A dynamic agriculture supports the satisfaction of domestic food demand but may also contribute in a large part in national exports and thus it may constitute an important actor in international trade and a precious source of foreign currency. In the U.S.A, France, Australia and New Zealand agriculture constitutes a model of efficiency in international trade as it plays a determinant role in its nearly ever favorable balance.

Through a rational exploitation of the natural resources, agriculture contributes to the preservation of biodiversity and to the protection of the natural environment. Thus, agriculture appears as a central element in keeping the nature alive and active, and in permitting the on going of the life in our planet.

The economic and social role of agriculture is even more and from far important in developing countries as it constitutes the main economic sector and the main base from which can be launched the economic development. Indeed, agriculture in developing countries contains an important potential of resources not yet or weakly exploited and thus contains important reserves of unexploited productive capacities that constitute an efficient mean of economic emergence. In addition, if one takes into account the fact that as main economic sector, agriculture is the main source of income for a large part of rural population, it follows that agriculture may certainly constitute the ideal means of economic and social promotion of rural population as well as rural areas which are shelter for the major part of national population in developing countries.

Taking into account the importance of agriculture in developing countries, the development appears in consequence as a vital and a strategic aim to reach for every economy which tries to evolve to a developed one.

In our present study, first we will make an effort to determine the main elements which make agricultural development so important in developing countries and which is the ideal kind of development in their case? In a second time, we will try to make a projection in the case of Algeria where agricultural underdevelopment has constituted the main reason of the failure of its development strategy.

### I. The main elements of the ideal agricultural development

The importance of agricultural development in developing countries appears through its economic, social and environmental dimensions. Four necessities illustrate this vital importance:

- the necessity of building an efficient and productive agricultural sector while it constitutes a necessary condition for building a modern economy;
- the necessity of increasing the productivity in agriculture in order to increase the food self sufficiency level and to fight against starvation and malnutrition which affects a large part of the population;
- the necessity to exploit national resources and comparative advantages by mobilizing the totality of the existent national productive capacities in favor of economic and social development;
- the necessity of rehabilitating the rural areas and their populations by promoting the small and the middle exploitation which is really an asset in agricultural development.

On the basis of these necessities which constitute in fact the conditions on which agricultural development is based, developing countries have to choose a better way or model of developing agriculture than the one formerly adopted by the present developed countries. Indeed, two main factors make the developed countries model unsuitable in the case of the developing countries:

- it is particularly voracious concerning the resources consumption. Waste of resources is its main characteristic;
- it is mainly based on production of animal proteins while production of vegetal proteins is more economic, much healthier and more careful for the environment.

In the case of developing country the agricultural development with the vegetal option as dominant food production is not only a moral or economic option, but it is an imperative necessity for the survival of our planet. The planet will not stand a generalization of the model of developed countries, and consequently the salvation of our planet is in part up to developing countries who must find a new way to develop their

agriculture according to productive, social and environmental requirements. That is the challenge that these countries have to face in the future.

What is about the projection of the case of Algerian economy in this original way of agricultural development?

## II. The agricultural development in Algeria

### 1. The unsuitable agricultural development model of the period 1970-1990

One of the main reasons of the failure of the development strategy initiated in the beginning of the 1970s is the negligible place accorded to the development of the agricultural sector. One talks about “agricultural disappointing model” (contre-modèle de développement) so much the results of the agriculture were bad during the application of the different plans of economic development. The disappointing results can be spotted at the level of the gap between the assigned tasks to the agriculture by the different plans and the effectively realized results.

- Task 1: the satisfaction of the national food demand.
- Task 2: the active and massive participation at the national effort of investment.
- Task 3: to stabilize rural population in rural areas by providing jobs and activity.
- Task 4: to provide raw material to the food transformation industry.
  
- Task 6: to provide foreign currency by exporting agricultural products.

None of these major tasks has been adequately fulfilled and the reason is because of the negligible level of financial, human and material resources which has been accorded to the agricultural sector. The insufficiency of the means leads unavoidably to the incapacity of reaching the targeted economic and social aims. The worrying downward trend of the contribution of agricultural to the foreign trade and the non less worrying increase of the level of the “food bill”, as obvious consequence of the increase of food dependence, are evidence of the failure of the Algerian agricultural model of development.

## 2- The extent of food dependence and the « food bill ».

The value of food imports has evolved quantitatively, rising from 46.9 billion dinars in 1992 to reach 276 billion dinars in 2006, with an annual increase of 13.5%.

With regard to the share of food imports to total imports, they are ranging between 30% in 2004 to 18 % in 2005 and 2006.

Table 1: Evolution of food imports 1992 – 2006 ( billion dinars)

Denomination	1992	1996	1999	2001	2004	2006
Food; beverages and Tobacco (1)	46.9	142.5	153.7	184.0	259.4	276.0
Agricultural equipment (2)	1.2	2.2	4.8	12.0	12.0	6.9
<b>Total</b>	188.5	498.3	610.7	764.8	1314.4	1558.5
<b>(1)/Total</b>	0.25	0.29	0.25	0.24	.20	0.18

Source: ONS : [http://www.ons.dz/IMG/pdf/Evolution\\_impo\\_92-06-4.pdf](http://www.ons.dz/IMG/pdf/Evolution_impo_92-06-4.pdf)

The study of agricultural-food balance shows up that the rate of coverage of imports by exports is nearly non-existent, and therefore imbalance of the agricultural balance is large and steady, as the share of the four most important commodities (cereals, fats and oils, meat, and dry beans) of food imports rose from 44.5% during the period 1999-2001 to 59.5% in 2008, and the share of food imports in total imports did not decline below 19.7%, as shown in the table2.

**Table2: Agri-food imports (US \$ millions)**

	1999-2001 (average)	2003-2005 (average)	2006	2007	2008
The value of imports of eggs	6.87	4.01	1.72	0.49	1.01
The value of imports of fresh milk	0.19	0.15	0.03	0.88	0.03
The value of imports of meat	29.11	162.40	164.01	152.51	222.70
The value of imports of dry beans	109.27	108.87	106.72	139.75	175.31
The value of imports of oils and fats	259.76	369.61	411.70	465.01	632.72
The value of imports of fruit	9.87	95.96	85.87	79.56	88.19
The value of imports of cereals	990.85	1 310.09	1 385.95	1 829.02	3 623.71
The value of imports of potatoes	37.19	46.36	58.63	109.37	100.10
<b>Total imports</b>	<b>1 445.68</b>	<b>2 100.98</b>	<b>2 218.74</b>	<b>2 781.01</b>	<b>4 851.52</b>
cereals to the total agricultural		0,75	0,66	0,62	0,69
Meat to the total agricultural		0,05	0,05	0,07	0,02
Oils and fats to the total agricultural		0,13	0,17	0,19	0,18
Dry beans to the total agricultural		0,04	0,05	0,05	0,08

Source : FAO Statistical Yearbook 2010.

The major part of food imports of Algeria consists of basic commodities, and that evolution is harmful concerning national food security. But beyond that security aspect, the high level of food dependence makes Algerian economy allocates huge amounts as food bill. These amounts grow exponentially consequently to the increase of domestic food demand and to the world inflation (particularly since 2008). The proof is the evolution of imports value (table2), from 1.44 Billion \$ during the period 1999-2001 to 4.85 Billion \$ in 2008. These important financial resources could have been allocated to national economic development,

and are considered as waste of development opportunities for Algerian economy.

### 3 - Potential of Algerian agriculture

Realizing food security, overcoming the marginalization in the global markets, and increasing agricultural export earnings are linked with several factors that affect the production and the trade. Among the most important of these factors, we can mention potential resources, technical level, and economic performance.

#### 3-1- Potential resources

In Algeria there are a lot of agricultural capacities, if they are optimally exploited with various human and financial capabilities and knowledge, they will give more opportunities to increase production and improve productivity levels, and thus achieve higher levels of food self sufficiency.

##### a. Land resources and climate

Algerian agricultural land includes spaces for permanent crops, seasonal crops and other as fallow lands which increase and decrease according to the dictates of natural conditions, especially rainfall that controls the largest percentage of the arable area.

##### b - Cultivable area as a ratio to total area

The area of arable land in Algeria is estimated up to 40 million hectares, while the cultivated area did not actually exceed 8.7 million hectares and it is mainly concentrated in the northern region of the country. Approximately 0.5 million hectares of fertile lands are subject to serious desertification, while in the west region a large part of irrigated areas is threatened too by salinity.

##### c - Space per capita of agricultural useful land

There is a considerable decrease of the average per capita of agricultural land in Algeria. It decreased from 0.82 hectares per capita in 1962 to 0.21 hectares per capita in 2011, this means a decrease of 2.7% annually.

##### d - Distribution of agricultural area:

There are in Algeria three contradictory climate groups:



- The coastal area and the mountains which covers 9.6 million hectares (4% of the total area) of which 2.5 million hectares of rich agricultural land. The characteristic of this agricultural areas is that they are situated in a strongly and severe penchant. It is threatened by excessive concentration of population and activities as well as by chaotic urbanization.

- The high plateaus cover about 20 million hectares (9% of the total) among which 5 million hectares are exploited by agriculture. This region is characterized by semi-arid climate (rainfall between 100 and 400 mm/year), and by a high degree of salinity. It is noted that in this region, the desertification process is important because of the drought, poor soil exposed to erosion by wind, poor water resources as well as intensive grazing practices.

- The desert region (Sahara) is a barren land with an average rainfall of less than 100 mm/year. It covers 87% of the total superficies of Algeria (more than 2 million squared kilometers of which only 100 thousand hectares of agricultural land (less than 0.5% of desert area). One practices only some extended crops, traditional and random breeding of sheep, goats and camels). Its soil is poor, the weather is extremely variable, very cold in winter and very hot in summer. In addition to the shortage of land, the high reliance of major agricultural sector on rainwater and expanded crops methods make the agricultural activity very precarious and random.

### 3-2 Human Resources.

The high population growth is one of the several reasons of the food problem in Algeria, while the young represent a rate of 67% of the total population (25 million people). Algeria nowadays knows a major demographic shift which may provide latent human energies for agriculture, especially that rural population represents at least 34% of the total population. Despite the deterioration of the economic and

social conditions in rural areas, these ones still represent 14% of the national workforce in 2008.

### 3.3 Water resources.

Agriculture is a strategic sector of Algerian economy, because of the importance of its active population and its large contribution to GDP (about 10 per cent).

Because of the semi-arid character of climate, the irrigation remains necessary in a large part of agricultural areas. Irrigated agriculture contributes to more than 50% of agricultural production, while the irrigated area accounts only for 5% of the total arable land.

Consequently, the development of hydraulic projects in Algeria (dams) may contribute actively and efficiently to increase the level of food self sufficiency.

National water needs in Algeria are between 15 and 20 billion m<sup>3</sup> per year, and agriculture needs 70% of this total. It is a gigantic challenge to meet when one knows that at present, Algeria mobilizes barely 5 billion m<sup>3</sup> of water per year. However, the global water potential is valued at 19.4 billion m<sup>3</sup>/year.

In the north of the country, the groundwater resources contained in aquifers (renewable resources) are estimated at nearly 2 billion m<sup>3</sup>/year, and surface water resources are estimated at 12 billion m<sup>3</sup>. In the south, there is a volume of 5.2 billion m<sup>3</sup>/year exploitable without risk of hydrodynamics imbalance.

The total capacity of water mobilization is 12 billion m<sup>3</sup> if hydraulic layout is undertaken by building adequate dams.

### 3.4. Financial resources.

At the beginning of 2001 Algerian authorities have decided to institute a stabilization fund fed by the difference between a reference price of oil and the effective annual average oil price. The role of this fund is essentially to provide security to investment of the development program.

The first decade of the 21st century has seen the restoration of the also used the entry of oil and gas to fund an major economic balances in Algeria, an average annual growth rate of GDP up to 5%, a purification of the external debt and the balance of payments, and the launching of

ambitious five-year development plans. Since 2005, 60 billion \$ have been allocated to development program aiming the creation and the development of various economic activities in order to reduce the major role of the hydrocarbon sector in the Algerian economy.

The quasi continual increase of oil price since 1999, added to a relative discipline in state expenditures have permitted to improve the financial situation of Algerian economy, thus in 2009 Algeria has accumulated in the stabilization fund 69 billion \$ which is equivalent to three months of imports. Consequently, this high level of currency reserves added to a quasi inexistent external neither internal debt, Algerian economy is a comfortable financial situation which should open the way to an economic development strategy whose main aim is to diversify economy. In this unavoidable economic development strategy, the development of the agricultural sector should or, rather, must be a priority.

#### 4. The necessity of more care about agricultural development: sustainability

##### 4.1 Position of the environmental problem in the framework of globalization

The particularly high level of food dependence of Algeria is not the result of the sole under-utilization of existing agricultural resources and the low performance of production processes, but also the consequence of the failure of different reforms applied to the agricultural sector. The acute crisis that has shaken the Algerian economy in 1986 following the fall of the international price of oil, has clearly revealed its extreme fragility due to its high dependence on oil and gas sector and the international price of oil. The remedy for this weakness lies in a large part in increasing economic diversification in which agricultural development emerges as a fundamental element because it is unavoidable. Indeed, the construction and the emergence of a developed modern economy is not conceivable without a modern and efficient agricultural sector that contributes actively to the national food supply, economic growth and promotion of rural areas that are home to far the majority of the national population. In addition to its highly strategic role, agricultural development is crucial in the case of Algeria which has to strengthen its

economy in order to face economic globalization in favorable conditions as Algeria has signed an association accord with E.U and is nearly to be a member of W.T.O.

At present, globalization has practically affected all the aspects of the economic activities and in particular the ones which are noxious for environment. Moreover, economic globalization emphasizes ecological crisis through promoting a limitless economic growth which has as direct consequences over-exploitation of natural resources and extreme intensification of the production so constituting a real threat for the environment.

#### 4.2 Environment problem and sustainable agriculture in the case of Algeria

One has to replace the present ecological crisis in the framework of globalization and the example of Algerian economy illustrates perfectly this fact as the deep damage caused to the environment has reached a level as high as it may not only compromise the economic results of the last decade but may also limit the economic possibilities and the wellbeing for future generations. Taking into account these conditions, Algeria has decided to initiate a policy of protection of the environment in the framework of a sustainable development. Thus, after having determined the state of the future of the environment, Algerian authorities have worked out a national action plan aiming environment protection and sustainable development.

The notion of sustainability is based on the principle that the present generation must meet her needs without compromising the ability of future generations to meet their own needs. Starving people in developing countries, increasing food prices, climate changes, flaws of the global market, loss of soil fertility and organic carbon, soil erosion, decreasing biodiversity, desertification. Despite unprecedented advances in sciences and management, serious issues about food show clearly that conventional agriculture is not suited any longer to feed humans and to preserve ecosystems.

Sustainable agriculture is an alternative for solving all kinds of problems related to food production in an ecological way.

While conventional agriculture focus is almost solely productivity and profit, sustainable agriculture integrates biological, chemical, physical,

ecological, economic and social sciences in aiming the development of new farming practices that are safe and do not degrade natural environment. Instead of solving problems by using the classical painkiller approach that treats only negative impacts, sustainable agriculture treats problem sources. As most actual society issues are global and fast-developing, sustainable agriculture will certainly bring solutions to build a safer world.

Productive, viable and sustainable are the key words of the new and adequate model of agricultural development in Algeria.

- Productive agriculture through, in one hand by exploiting rationally of the national natural resources available with an emphasis on the renewable ones, and in the other hand, by exploiting the available scientific, technique and technological progress aiming the increase of the level of food production and consequently the level of national level of food self-sufficiency.
- Viable agriculture by using available local resources to produce in priority strategic food on which national food intake is based, and also by promoting food consumption patterns which fit national resources potential.
- Sustainable agriculture by taking into account the serious problem of environment. The care about environment lies in choosing adequate processes and in according the priority to the exploitation of renewable resources.

### Conclusion

If the agricultural development is a fundamental condition of the development in developing countries, the sustainable development as way of development of the agriculture is a vital necessity as it determines the on going of the life in the earth. Indeed, our planet can stand any more neither the model of development of developed countries nor their food consumption patterns, and that because of three main factors: exaggerated economic growth promoted by globalization, exhaustion of the natural resources, and degradation of the environment consequently to unsuitable ways of exploitation of the ecosystems.

In the case of Algerian economy, the imperative need of economic diversification places the promotion of the agricultural sector as one of the main ways to reach this aim. Taking into account the negative consequences of the economic model adopted during the decades 1970, 1980 and 1990 the Algerian authorities have taken important measures aiming the protection of the environment, and it is in this framework that the P.N.D.A.R (plan of development of agriculture and rural areas) has been initiated.

The three main linked factors responsible of the environment degradation are from now on taken into account and controlled in Algeria, the high levels demographic growth, the accelerated urban areas extent, and the high rhythm of industrialization.

The financial, the material and the human conditions place Algeria in favourable position to realize a sustainable agriculture able to satisfy national food needs, to promote rural areas which have been till now neglected, to realize economic diversification and to contribute actively to the national investment effort in order to relieve the hydrocarbons sector which has played and continues till now to play the major role in financing economic development in Algeria.

It is time to make the necessary transformations in the way of development in order to result in a sustainable agriculture nutritious, not much resources demanding, concerned about environment preservation, and caring about biodiversity on which is based the on going of the natural life in our planet. This way of agricultural development is a challenge to meet and it is perfectly possible if ever one cares a little less about economic growth and making financial profits at all costs lead unavoidably to excess and to over exploitation which may harm seriously the environment and compromise the future development.

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