

The Question of Food Security in Algeria: Between the Collapse of Petrol Price and the Growing Needs of the Population

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Abstract Algeria is mostly known and defined as an economy based entirely on the hydrocarbon sector, essentially the oil. It based mostly on the revenues transferred by this sector when the world prices are judged favorable for the exports countries, as it is the case with this country, meaning that the question of funding any economic program or project is handing upon the revenues from the oil markets. In this sense, the food policy or security is following the move and the fluctuations of this market, since the country needs to find the right amount to be consecrated to this question, especially when it is a question to import the required volume in order to respond to the increasing demand from the domestic customers and local markets. For this, we will try, in this paper, to examine and study this subject of food security in this country, taking into account its economic specificities and characteristics, and also the nature of its consumers markets. Since the problem is not only to analyze this confrontation, but to find out the policy or strategy to be adopted and set up in this new context of decreasing the financial revenues from the petrol market. Since June 2014, it has been announced that such revenues have decreased for about 60% from this period, with all the impacts, consequences and effects on the question of financing projects, including thus matter of food security and also food policy. The question of food policy is linked with agricultural sector and the majority of population living in bad economic and social conditions, meaning that the State is strongly recommended to establish a strong strategy regarding this matter.

Keywords Food Policy, Food Security, Algeria, Prices, Oil Revenues, Strategy

1. Some Writings Regarding the Question of Food Security

The debate on such subject has always been interesting

and attractive for the readers and deciders, since it is dealing with the crucial question about the feeding of population who are in need, and mostly those with restricted means of living and very hard conditions of living.

Let us propose the synthesis resumed at the World Food Summit organized in 1996 and which states that "Food security is ensured when all people, at all times, have economic, social and physical access to adequate food, safe and nutritious that meets their nutritional needs and dietary preferences to enable them to lead an active and healthy life", revealing that this is not just a question of availability and abundant production, but the ability of citizens to acquire and obtain the products that are essential to their lives and health, through revenues and remunerations that allow this acquisition in view of frequent fluctuations in international prices.

This reflection raises four interesting aspects and dimensions as follows:

A) Food security means free, flexible and less restrictive access to food for every citizen.

B) Food security requires regular and permanent food availability for market equilibrium and away from any distortions of price.

C) Food security is indicated for rational and recommendable use, for the sake of nutritional well-being.

D) Food security becomes a matter of stability and regularity of products at the market level, far from the disturbances by the international markets.

It seems important to raise the fact that the debate on food security does not only concern facts that are summarized around the rights and legal frameworks that force governments to facilitate access to food for every citizen, but recent theories of economic development insist and persist on the idea that, henceforth, any economic growth passes through a degree of satisfaction on a level of food security that meets the international recommendations.

Many economists and experts have expressed the

urgency of opening up a real responsible and credible debate in order to start a real alert for international institutions, much more concerned about financial, economic and commercial crisis.

In this matter, A.LEWIS, A.SEN, T.SHULTZ, P.DASGUPTA, A.BANERJEE, R.SOLOW and J.MIRLEES have tried to examine the fact that talking about food security means the discussion about the agricultural sector and the fact that many individual suffering from this are numbered in the rural and peasant areas and households living with vulnerable wages and revenues.

Related to this subject, U.HOFFMANN¹ consider that "agriculture is the sector that has the potential to transcend from being a problem to becoming an essential part of the solution to climate change provided there is a more holistic vision of food security".

Also, E.OLIVIER and B.CLEMENS² claimed that the lack of information is behind the difficulty to implement the food system, with regards to agricultural sector, arguing that "public agricultural extension systems often fail due to inadequate consultation of farmers about their information needs and poor understanding of their information search strategies. In discussing and implementing extension programs and advisory services".

Finally, J.VON BRAUN, H.BOUIIS, S.KUMAR and R.P.LORCH³ confirmed that "many developing countries are making efforts to improve their food security, but they face difficult choices due to budgetary and institutional resources constraints".

Regarding this issue of food security, all eyes are directly on governments and nations that suffer from an imbalance between the supply and demand of the products concerned, explained either by a lack of production for rather natural and climatic reasons, either because of a lack of food imports, mainly because of the prices applied by producers at international markets, or because of a mismatch between price policy and subsidy policy.

According to some report⁴, it is mentioned that nearly 33% of the sub-Saharan population (about 200 million people) are undernourished, which poses a threat and a risk for this region in the long term perspective especially for poor and disadvantaged people, which is true, not only for these targeted countries, but for the whole region, with the consequences of the exodus, the flight to other greener climates, congestion at the city level, the accumulation of social problems at the local and regional level, and many other negative effects.

It is also apparent from the literature and reports, linked

with such subject, that there has been some misunderstanding about the fact that the poor performance of the agricultural sector is the main cause of all this, ignoring another idea that other parameters should be pointed out, such as distributed income, social transfers, applied prices, and especially inequalities and injustices displayed at the level of the population.

To sum it up, there are usually four main dimensions in this debate:

a) The financial dimension (revenues, wages, incomes, financial household assets).

b) The human dimension (poverty, lack of essential means, unemployment).

c) The social dimension (bad social and economic conditions, bad housing, suffering from different diseases).

d) The economic dimension (the distribution of incomes, gender, equality, equity).

In another document, it is noted that the issue of food security involves an evaluation and impact analysis through a few indicators:

1) For a regular availability of products and food for the population, we use, generally, some indicators like the yield, the production per hectare, the surface area, the number of farms and farmers, the cost of inputs and raw materials, prices applied and also the contribution of the government in the consolidation of relations between farmers and administrations concerned.

2) For a regular access without constraint of the population to the food needs, one will retain the indicators like the incomes of the households, the incomes of the women in the households, the part of the children in these incomes, daily consumption of each family member, particularly in underprivileged areas, such as rural and semi-urban families, and activities carried out by households for the sake of calorific satisfaction of members.

3) For a regular use of food products, this requires specific indicators such as the rate of dietary consumption of each family member, namely women, children, infants, the elderly, the rate of consumption of the most used products such as milk, cereals, derived dairy products, bread, and pasta, as well as the other agricultural products which make up a fairly consistent share of household income and the consumption rate of these products.

4) Finally, for an effective and real evaluation of households' capital, this requires targeted indicators, such as existing and available properties, bank and savings accounts, financial and property assets, livestock numbers, rural households, the number of land and their area for agricultural households, and the value of the properties identified and accounted for.

These indicators are recommended for the treatment of food security issue in a response to questions including the link between the rate of increase in food and agricultural production and that of the population, given that more of

¹ U. Hoffmann, 2011. "Assuring Food Security In Developing Countries Under The Challenges Of Climate Change: Key Trade And Development Issues Of A Fundamental Transformation Of Agriculture," UNCTAD Discussion Papers 201, United Nations Conference on Trade and Development.

² E.Olivier & B.Clemens, 2012. "The food security system: A new conceptual framework," IFPRI discussion papers 1166, International Food Policy Research Institute (IFPRI).

³ J.V.BRAUN, H.BOUIIS, S.KUMAR and R.P.LORCH, «Improving food security for the poor: Concept, policy and programs», IFPRI, 1992, USA.

⁴ Food and Agricultural Organization, 2010.

people means more mouths to feed and therefore more production to provide, to avoid any untoward and uncontrollable overflow of the population, as was the case in some countries like Tunisia, Sudan, Morocco, and many other places.

According to another report⁵ it was possible to identify the following indicators:

1) Between 2011 and 2013, 842 million people suffer from chronic hunger, irregular and unsatisfactory consumption of food products available for lack of financial means.

2) Undernourishment is still an element of concern and attention for economic markets, despite the recording of the decline in poverty among the World Bank's 2015 Millennium Goals.

3) A significant and positive economic growth rate does not always mean a fair and legal distribution of income among the population, which can lead to the emergence of a class and a category that cannot guarantee a balance nutritional and calorific enough.

4) The persistence of gaps between regions of the world in resolving this issue of food availability and allowing large sections of the population easy access for consumption.

5) The fact remains that financial solutions are not always the appropriate model to tackle such a problem.

According to some available data, South Asia ranks first among the world's most hungry people with 295 million, followed by sub-Saharan Africa with 223 million and East Asia with 167 million, and Southeast Asia with 65 million, while Oceania records one million people in this category and the developed regions with 16 million, showing a global regions that suffer the most from food insecurity and are struggling to find methods and policies that effectively reduce the number of food insecure and allow the citizens to benefit from a calorific and nutritional needs.

The question of ensuring food security, mainly for the poor and economically lagging nations, depends on two essential factors:

A) The availability of food and agricultural products through domestic production.

B) Fluctuations in market prices of these products for both imports and exports, knowing that more developing countries rely on imports to meet domestic demand.

Many economists from the FAO have emphasized on the necessity to separate between the concept of food sufficiency and food security, and to concentrate mainly on the relation between this subject and rural and agricultural field, and inside the rural and urban area, in order to study more objectively and logically this question of food security and to find the roots of its origin.

2. The Question of Food Security in Algeria

Algeria has always campaigned for strengthening and ensuring food self-sufficiency for all citizens and the local population, either through domestic production, or import food with a concern to meet the nutritional needs of the inhabitants and to ensure a social and economic stability.

It seems to us necessary to review, briefly and furtively, the evolution of agrifood production in this country in order to evaluate the agricultural (and food) sector which contributes to 23% of the active population, second place after the industrial sector, and about 10 to 12% of GDP, whereas this rate was close to 40% at the time of the agrarian revolution, whereas nearly 40% of the turnover of all the companies that activate in non-hydrocarbon fields is carried out by agribusiness companies, knowing that nearly 45% of Algerian household budget is devoted to food expenditure.

In addition, with an estimated turnover of 250 billion dinars, in addition to the 400 billion dinars generated in the field of processing, the grain sector accounts for 30% of national agrifood production, based on the fact that the latter remains predominant in the choice of consumption of Algerian households.

It must be understood that the Algerian government is trying to reduce the bill, which has become too expensive for the public treasury to import foodstuffs, and at the same time to relaunch exports of these goods which are barely of \$ 2 billion, while the target was \$ 5 billion, with a major concern to reduce this food dependence, a real threat to the budget and trade balance for the country, and to allow a reorientation of the financial resources garnered by the bias of oil revenues in more promising investments and incentives for the government.

Linking with this subject, O.BESSAOUD⁶ confirms that "what is considered as a risk regarding food security in Algeria and making it more vulnerable is the fact to maintain an exclusive dependency on oil revenues in order to pay the essential products for the population on the international markets".

Also, A.DAOUDI⁷ considers that "Algeria, as the rest of the Maghreb countries, is confronting the challenge of food security which is guaranteed only by huge food imports and causing, automatically, a heavy financial constraint on the budget".

It should also be emphasized that the Algerian government is trying to make industry professionals aware of the interest this has in financial terms, a way of stressing that this type of activity is advantageous, not only in terms of tax exemptions and other benefits, but also for the government in terms of creating more jobs and

⁶ O.BESSAOUD, « Food security in Algeria », Study realized for the Algerian Forum of Managers, July 2016, Algiers, Algeria.

⁷ A.DAOUDI, « Report on the knowledge cartography related to food security, rural enterprises development and knowledge management in Algeria », IDRC, CRDI, Karianet, IFAD, Algiers, 2012.

⁵ Report of the World Bank, « the situation of hunger in the World », 2014.

revitalization of agribusiness, after a decade of financial and managerial troubles they have endured.

Thus, the index of agricultural production (IPA) has experienced a smaller evolution, according to the data collected, going from a negative rate of 0.77% during the period 1961/1969, to another negative rate of 0.67% during the period 1971/1980, to finally achieve more positive rates after this period, with a rate of 1.59% during the period 1981/1990, 1.97% for that of 1991 / 2000, and 2.76% during the period 2001/2004, quite satisfactory and encouraging results for a country that has lived through difficult and complicated times, like the transition from colonialism towards socialism, and then the latter towards an economy market, but remain far from expectations and wishes for self-sufficiency and agricultural production that can ensure such a challenge.

The available data teach us about a dramatic fact about agricultural production in this country, which fails to ensure convincing and sustainable self-sufficiency, hence the need to resort to food imports that have evolved, dangerously, in recent years, and which constantly alarm the national and international public opinion, on the risks and slippages that can lead in terms of conduct and management of fiscal policy.

As an example, the cereal production has shown an irregular production according to this table: Tons

Table 1. Cereal production 2005/2014

Year	Production
2005	3,48
2006	4,01
2007	3,6
2008	1,53
2009	5,25
2010	4,01
2011	3,72
2012	5,14
2013	4,9
2014	3,4

Source: Actualitix, World Atlas, Statistics by country, June 2016.

Also, it is known that Algeria is the largest African importer of food, and that nearly 75% of the needs of its population are provided by these imports, as well as the fact that this country is classified 73rd place out of 105 countries in terms of food security.

In general, Algerian imports increased by 42% in 2008 compared to 2007. At the same time, food imports grew by more than 55% to reach USD 7.7 billion, the third largest import from Algeria in 2008.

Food imports increased by more than 55% in absolute value compared to 2007, against 27% previously. With almost 4 billion \$ in 2008, double the 2007 figure, cereals rank first among all imports, which confirms a food

addiction that is still topical and in appalling growth, and also, a clear failure of domestic production that could, at least, reduce and curb this import trend of these goods.

It is also added that this country is ranked among the top importers of sugar, milk and cereals in the world, with an average consumption of 110 liters per year for milk, as well as for sugar and cereals with average consumption. 220 kg per year for the latter.

That said, the food import bill, and lacking a self-sufficiency strategy, has grown from nearly 3 billion \$ in 2003 to more than 10 billion \$ in the last two years (2013 and 2014).

Again, this can be proved and argument by the data provided in this table: billion \$

Table 2. Import of food 2011/2016

Year	Food imports
2011	7,77
2012	6,9
2013	7,6
2014	8,86
2015	9,32
2016	8,22

Source: National Office of Statistics (ONS), N°92, Statistical collections N°205/2017.

For 2017, the food imports have been estimated at 8,43 billion \$, confirming thus the large dependency of the State on the foreign assistance in order to secure this question of food and the failure to establish a strong strategy in this matter.

On a ranking of the Arab States, Syria occupies the first place in the food subsidy with a 2.1% of GDP devoted to this policy, followed by Jordan with 1.8% and Egypt with 1, 3%, while Algeria spends only 0.03% according to data from the World Bank in 2008, giving, as a result, an impression that this country is well protected from disruptions in world prices of food products, while this is wrong because this approach is regulated thanks to hydrocarbon revenues that can contain and control any increase in these prices, without it disturbing the economic decisions of the country.

Another study shows that Algeria is well placed to resolve this issue of food security, depending on its agri-food production for the coming years, as well as the evolution of hydrocarbon and food prices without failing to emphasize consumer behavior and consumption patterns, while noting that the population growth rate will reach nearly 47% between the years 2000 and 2030, the income growth rate of almost 200%, an appreciable increase for reserves of water, and a growth rate of only 18% for food imports, while for the same rates, Morocco and Tunisia may well compete with this country for this perspective.

In order to avoid contradictions and confusions in our analysis, it must be made clear that this issue of food security was relatively well controlled by economic

decision-makers, mainly due to the good performance of foreign exchange reserves of around 200 billion \$ at the end of 2013, and proceeds from the regulatory fund (the FRR) with close to 7000 billion DA, and other incomes from financial investments and sovereign wealth funds, which allowed the financing of food imports during the last decade, with promises that may still hold for more than three years yet, but also to agricultural products (and particularly cereals) which sometimes compensate for the differences between imports and consumption, depending on favorable natural conditions.

However, all this does not seem to reassure some experts as long as this funding remains random and fragile, as well as agricultural policy that does not seem to be part of a long-term and large-scale approach, for such a country that lives only to guarantee food availability to its population, even if it means supporting a food bill that is too expensive for the treasury.

Some of the concerns identified are:

- I. The lack of seed diversification.
- II. Lack of support and support for creation and varietal innovation.
- III. Lack of integration of sustainability factors and parameters into agricultural policies.
- IV. Risk of climate change.
- V. Insufficient research on the possibilities of improving agro-food production.

3. The Collapse of the Economy

From a range of \$ 105 to \$ 110 on average for a decade, the price per barrel has started a decreasing phase reaching an average price between \$ 40 and \$ 50 during the beginning of 2014., with a peak towards the end of 2016 when price was close to 30 \$, with the logical consequence that government revenues have lost almost 70% of their value since the fall, and the other effects linked with the financing of economic projects.

Thus, during this period (2013/2017), public expenditures continued their rise to 6879 billion DA in 2013, 7656 billion DA in 2014, 8753 billion DA in 2015 and 7984 billion DA in 2016 and it is planned to reach 6880 billion DA in 2017.

Concerning public revenues, they experienced relative and limited increases in view of the fall in the price of a barrel, showing an amount of 3820 billion DA in 2013, 4218 billion DA in 2014, 4952 billion DA in 2015, 4747 billion DA in 2016 and it is planned an amount of 5635 billion DA for 2017.

As a result, the budget deficit has followed the rule with a similar development, from 3059 billion DA in 2013, 3437 billion DA in 2014, 3801 billion DA in 2015, 3236 billion DA in 2016 and a budget deficit of an amount of more than 1200 billion DA in 2017.

Another fact must be pointed out regarding the setting of the reference price for the 2017 law and the following years,

which is 50 \$ and not 37 \$ as it was previously for the other PLFs⁸, showing, as a result, some fears to economic decision makers to avoid any further financial complication at a time when the urgency of financial availabilities is more than recommended and required, in the first place, the rebalancing budget and the return to a leveling off of public spending and budgeting sectors, taking into account that, henceforth, the financing of budget deficits, treasury and other, will no longer be provided by the revenue of the FRR⁹ as long as it was completely exhausted since February 2017 and we are already starting to nibble on the side of international reserves and possible sources of funding (as is the case with the FNC¹⁰).

The budget deficit is expected to be 15% of GDP in 2016 (compared to 15.9% in 2015) and could be reduced to 11.8% in 2017, the current account deficit will reach -28.3 billion dollars in 2016 against 27 billion dollars in 2015, and 28.2 billion dollars in 2017. The official reserves of Algeria are expected to decline under the effect of the oil prices fall to \$ 113.3 billion in 2016, covering 22.2 months of imports, compared to \$ 142.6 billion in 2015, and will continue to shrink to \$ 92.3 billion in 2017.

Thus, the consequences were brutal for such an economy that aspired to economic recovery through the five-year economic programs and the continuation of economic reforms, pointing out that the most binding in this report is the fact to indicate that the ideal price of the barrel must be higher than 87 \$ to hope for a balance, whereas at this moment, it could not exceed the 65 \$ which risks to further aggravate the local economic situation.

The most worrying is that these reserves have melted by nearly \$ 100 billion just between 2013 and 2017, and with a price per barrel that has not exceeded the 60\$, it may widen further and bog up more economic projects envisaged and the financing of socio-economic sectors, as long as exports stabilize at a level that does not favor an appreciable and suitable financial environment for this economy.

Another element and source of concern for the local economy is the decision to opt for austerity (or the rationalization of public spending) knowing that Algeria's trade deficit reached \$ 15.8 billion in 2016, against a deficit of 13.7 billion USD in the same period of 2015, an increase in the deficit of 14.75%, further depressing the financial difficulties of the country.

As a result, the economic situation of the country indicates a bad posture and a real impasse for the economic decision-makers, because the margins of maneuver are well reduced and limited, even if some alternatives have been put in place (with the example the MCFV¹¹ or the bond issue) which proved to be a failure in view of the great promises made.

We also wonder if the government will be able to

⁸ PLF=Financial Law

⁹ FRR=Regulatory Financial Fund

¹⁰ FNC=Non-Conventional Funding

¹¹ MCFV=Volunteer Fiscal Conformity

finance the next five-year program 2015/2019 in view of the deterioration of the price per barrel, since this latter requires a financial envelope of about 262 billion \$, and a price of barrel at nearly 60\$, it seems relatively complicated and delicate in an unstable international financial environment, being informed that the government have already used and utilized all the funds in the FRR¹² and is concerned how to satisfy all the increasing needs from the population, especially the youngest ones, in a national and international economic context which seems to be more instable and worrying that in the past.

4. How to Deal, in This Matter, with the Question of Food Security?

The recent dramatic situation of the Algerian economy, as the result of the decline of the price of barrel in the World market, is another concern for the deciders regarding this matter of food security, and needs a strategy to enhance the efforts to be employed in this sense, including the way to reinforce and emphasize on the agro-food production, a sector that has been abounded for a long time but it seems to be the best choice for decisions-makers.

It is generally known that the resolution of the food question takes into account two fundamental parameters:

- A. The demographic rate
- B. The performance of the agro-food sector (itself dependent on agricultural performance).

In the Algerian case, it must be admitted that the two elements cited are indeed a problematic subject for economic decision-makers, because the local population is close to 40 million and the agro-food sector is deadlocked and confronts a few shortcomings and gaps that seem reassuring for the preservation and resolution of the food security issue.

We know that Algeria is today the largest African importer of foodstuffs, with 75% of its needs insured by imports. The insufficiency of Algerian agricultural production, combined with a massive and growing demand for agro-food products, brought about by a gradual change in the food model, makes Algeria a structurally importing country and therefore highly dependent on imports of food products", reframing, thus, this debate on the agro-food sector and food security in three directions:

- a) A first that concerns food dependency that can harm the national economy and hinder this issue of food security.
- b) A second concerns the inadequacy of food production and its effects on the desired availability at the market level.
- c) A third which deals with the change in the food model which is characterized by a concentration on cereal-based products, thus requiring a necessary regularity and

progression in agro-food production.

According to many agro economists (J.L.RASTOIN, A.BENCHARIF, F.CHERIET, O.BESSAOUD dealing with the case of Algeria, the concern about this sector at this moment of decreasing prices and austerity policy is highly explained and justified by the fact that it is considered as a policy and strategy that can be developed by the local deciders themselves, and also the development of this sector is certainly recommended for an economy that is entirely based on oil revenue and that can be used, in times of financial euphoria caused by price increases at the market level, to resort to an import massive agro-food products, but this will depend on several factors and parameters as follows:

- i. A diversification of the activities of the sector according to the type and the nature of the model of food consumption of the population.
- ii. An elasticity of domestic demand according to the prices offered and the quality of the products sold at the market level.
- iii. An administrative and environmental strengthening to assist the sector and take into account the grievances and requests of local producers.
- iv. A clear and pronounced disposition against possible external shocks from international markets, including price rises for net importing states of food products and goods.
- v. A perfect and well-ordered synergy and coordination between the various stakeholders in this sector, based on win-win principles, and above all to highlight the fact that this production concerns the food for the population and the fight against the negative phenomena like poverty, undernourishment, nutritional deprivation and chronic hunger.
- vi. A firm and striking compromise on the fact that food security is based on a well-synchronized and accepted agreement between producers and consumers under the attentive eye of the government and its administrative relays.

All this remains, sometimes, ephemeral and relative, as long as enterprises do not take into account the evolution of some elements like the nutritional and food system, the standard of living, the rate of inflation, setting, only, objectives sales and placement of products at the market level, all too often, to the detriment of accepted rules and practices in this area.

However, the fact that the national budget is constrained with this question of decrease of barrel prices added to critical financial support means that the government has no choice that to focus and emphasize on this sector, at least for some three reasons:

- This sector represents a good opportunity to diversify the national economy.
- This sector is more aware of real needs of population regarding food matters.
- This sector is another solution to finance public budget without more imports.

¹² Regular Revenues Fund

5. Conclusions

The problem of food security remains full and recurrent for states that still depend on the external supply of food products and goods to feed their populations, as long as we suffer from a lack of local and domestic production to cope with a demand for consumption that is still rising and sometimes unidentified.

Concerning the case of Algerian economy, it seems that the decline of the barrel has induced some negative effects and consequences, resulting to the need and the urgency to review some projects and fields, including the question of food security, knowing the dependency of this to heavy imports, which means more use of foreign money and the probable deterioration of the trade balance.

So, it looks that there is no other way only to rely on the domestic sector of agro production, in order to respond to national consumption and to stimulate the local producers in this sector, by introducing some advantages, mainly fiscal, financial, and administrative means and tools.

The task is not easy for everyone but the financial situation is too complicated and fearing, meaning that some urgent decisions have to be adopted and exploited, especially when it's dealing with the crucial question of feeding population and the availability to simplify the access to the proposed foods at a prices that can be advantageous to every partner and actor, that is the government, the producers and the consumers.

It's up to economic deciders to find the right solution to resolve the food security without harming neither the state nor economic partners.

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