

# ■ Algeria

**Land and Food Sovereignty in  
Algeria:**

**The Algerian peasantry between  
colonial dispossession and the  
upheavals of Inftah**

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## Introduction

The question of food sovereignty and the right to food cannot be dissociated from the political, socio-economic, cultural, and ecological context of the entity where the issue is being analyzed, be it a community, a nation, or a region. The analysis will necessarily dig into the current global structures of power, epitomized by the global political economy, rooted in the historical legacies of colonialism and neo-colonialism, especially in the global South.

Based on this logic, any discussion of food sovereignty in Algeria must grapple with questions of political economy and the historical dispossession and destabilization of the peasantry in the colonial period and, to a certain extent, in the post-colonial era. Having left deep scars on the social fabric, the colonial legacy is still permeating and influencing all aspects of everyday life in Algeria.

I will start at the outset by offering a historical perspective of the evolution of the Algerian peasantry since colonial times. Then, I will turn to cover some aspects of the Algerian political economy in the last fifty years. I will begin by offering an analysis and a critique of Algeria's attempt to delink from the imperialist-capitalist system in the 1960s and 1970s, placing the agrarian question in this context. More specifically, an assessment of the self-management experience and the "agrarian revolution" will be advanced in order to understand how those developments - with their achievements, failures and shortcomings - have influenced agrarian policies in the following periods. Then I will turn to the period of liberalization of the sector starting from the 80s and how it undermined and reversed the achievements of the previous two decades, furthering the destabilization of the peasantry and the rural world in the country. Following this, I will analyze the "food security" paradigm of Algerian decision-makers, which is synonymous with a double-dependence; in other words, dependence on oil rent finances Algeria's food imports and dependence. Last but not least, I will attempt to offer a precise picture of Algeria's agricultural potential in order to deconstruct the persisting myths around the Maghreb countries becoming agricultural exporters. I will finish this study by providing some thoughts and reflections in the guise of recommendations, striving to be consistent with the principles of food sovereignty.

## 1. The Algerian peasantry: dislocations in the colonial period and the neoliberal era

One myth constructed about Algeria and more widely the countries of the Maghreb/North Africa is their supposed huge agricultural potential, to the point of being dubbed as the bountiful "granary of Rome". The conventional environmental history of North Africa most widely accepted today was created during the French colonial period. Before the conquest of Algeria, North Africa had been depicted in French and European writings as a fertile land that had lapsed into decadence under the "primitive" techniques of the "lazy natives" (Davis 2007). This view changed under French rule of the Maghreb and a colonial environmental narrative emerged, blaming the indigenous peoples, especially herders, for the deforestation and degradation of what was once an apparently highly fertile "granary of Rome".<sup>1</sup>

This declensionist narrative was fashioned as a justification for French colonial projects. In fact, this deceptive representation of presumed environmental degradation and ecological disaster has been used by colonial authorities to justify all sorts of dispossessions, policies designed to control the populations and their environments as well as the transformation of subsistence production into commodity production.

### 1. Pre-colonial Period

Since antiquity till the 19th century, rural Algeria has been fundamentally pastoral in character and historical attempts to sedentarize the population and create a peasant basis have been brought to an end by Roman colonization. Berbers had no sedentary culture before the arrival of Arabs in the 7th century (Bessaoud 2008). Ibn Khaldoun observed that, contrary to other foreign countries, "where civilization is either rural or urban, like in Spain, Syria, Egypt, and Persian Iraq," on the eve of the Arabs' arrival, "the population of Ifrikiya and the

<sup>1</sup> The idea that the Maghreb had supplied grain to the Roman Empire is well supported by the historical record. The French colonial belief that the Maghreb had produced significantly more grain during the Roman period than afterward, however, is not well supported by the available evidence.

Maghreb is predominantly Bedouin. It lives under the tent and moves around on camels or settles in mountains." (Quoted in Bessaoud 367, 2008)

With the development of urbanism in the following centuries, the Berber dynasties and the Andalusians favored the constitution of peasant societies owning land under an ownership regime called Melk<sup>2</sup> and mastering agricultural methods and irrigation techniques. These societies, with a solid attachment to and an intensive use of land and strong social cohesion, developed and grew mainly in peri-urban zones (around towns, gardens, groves, etc.) and in the countryside (growing grains, animal breeding, olive plantations...) as well as inside oases (Ibid).

So, just before the French conquest, private property was mainly located at the periphery of towns or cities of dynastic states. Apart from these and mountain zones where the Muslim Melk tradition dominated, communal forms of appropriation of resources (arch) were the norm for the rest of the agricultural territories organized around pastoral and semi-pastoral activities, combining breeding with extensive grain cultures in the Steppe zone." (Bendjaballah 2001, Berque 1939, Bessaoud 2013a and Milliot 1911).

To sum up, two types of agriculture co-existed in a complementary fashion prior to the French conquest:

- **An intensive agriculture, localized in the humid plain and mountain zones, and taken care of by a peasant population grounded/fixated to the land and mobilizing knowledge and principles originating from Arab (Andalusian) or antique agronomies.**
- **A dominant extensive agriculture (production of grains/cereals) which is agro-pastoral in its orientation, using a know-how inherited and transmitted from generation to generation**

In the centuries before French colonization, there has been a certain correspondence between the social structures (communities and tribes), the demographic conditions (slow growth), as well as the productive base on one hand, and the extensive systems of exploitation of resources in the other. Basically, there was no need to intensify agriculture, as it was sustainable as it is, given the then demographics and social structures.

<sup>2</sup> Melk corresponds more or less to private property under Islamic law.

French colonization will radically change this state of affairs, disrupting and introducing irreversible dislocations to the peasantry and to the physical environment, basically operating fundamental ruptures. Colonization has shifted Algerian agriculture to the North with an over-development of coastal agricultural activities leading to high demographic density. As a concrete consequence, this gave rise to a mismatch and disequilibrium between social forms of organization and the natural environment (Bessaoud 2008).

## 2. French Colonialism (1962-1830): dispossessions, proletarianization, and sedentarization

Colonization involved the expropriation of the basic factor of production, land, from the indigenous peasantry and its redistribution to the settlers, unleashing the deterioration of the peasant subsistence economy (Lacheraf 1965). This seriously reduced the scope of the application/expression of the peasant know-how and thwarted their competencies and expertise. It was accompanied by the forced sedentarization of the nomads and semi-nomads, which caused fundamental changes leading to immiseration, poverty, and big losses of livelihoods.

When it comes to agriculture, the colonial period can be described as being dualistic:

A colonial sector: commodity capitalist agriculture for cash crops, mechanized, "modernized" and using technical knowledge of French agriculture, led by settlers and large companies that run huge agricultural estates for export production. By the end of the colonial period, most agricultural revenues were garnered by the export of commercially produced wine, early vegetables, and citrus, almost all produced on such large holdings. A traditional sector based on subsistence and traditional agriculture that will see profound disruptions of social structures initiated by expropriation of lands and resources, through privatization and de-collectivization of agricultural land.

With an arsenal of laws, institutions, techniques, and scientific expertise, colonial agriculture saw its development at the expense of a traditional and subsistence agriculture. The aim was to fundamentally destroy collective ownership and the corresponding tribal organization and relations (Bessaoud 2013b and Davis 2007). However, the

peasantry was not passive and resisted in organized and resilient ways for decades. The rural masses fought the encroachment of the colonial army until 1884, but the core of the Algerian rural resistance to colonialism was smashed in 1871, when the big politico-agrarian insurgency that spread over three quarters of the country had been crushed. This historic peasant uprising was a reaction to a series of disastrous confiscatory measures during the 1860s. By the 1870, most rural Algerians were outraged and terrified for their lives. Their situation was made worse by a period of drought, harvest failures, famine, locust invasions, and disease that resulted in the deaths of more than 500,000 victims (around fifth of the population then). It is estimated that several million died between 1830 and 1870 (Bennoune 1988, Davis 2007 and Lacheraf 1965). Confronted with stiff peasant resistance, the French army adopted from the outset a “scorched-earth strategy” in order to subjugate the peasantry and expropriate its land: wars, burning villages, famines, massacres, collective genocide, etc. Samir Amin described in these words how the Algerian rural population transformed the colonial conquest into a protracted and devastating war:

“The collapse of the regency government and the war of extermination undertaken by the French army gave this early period (1884-1830) certain special characteristics, which are not found elsewhere... Faced with military power, the urban ruling class was thrown into thorough disarray and could think of no other alternative but flight... As for the peasants, flight was out of the question. Faced with the threat of extermination, they turned the Algerian countryside into the terrain for a fifty-year war which claimed millions of victims.” (Amin 1970, quoted in Bennoune 3, 1988)

The colonial period can be summarized in three words: expropriations, proletarianization, and sedentarization. Near the end of the colonial period, the European population accounted for about 984,000 (10%) of the total population, and only 3.5% of the agricultural population, yet it controlled approximately 38% of the best and most fertile agricultural land (2,818,000 hectares). The

state and the communes owned a further 7,235,000 hectares, constituting about half of all the land in northern Algeria. Two thirds of the land assigned to the Algerian peasants was minimal pasture and unproductive plots. Each settler owned an average of 109 hectares, while each Algerian owned only about 14 hectares on average. 73% of Algerian peasant households owned less than ten hectares; less than the threshold of malnutrition estimated at 12 hectares (Bennoune 1981, Bourdieu and Sayad 1964).

In the pastoral sector, the nomads had been forced into sedentarism and reduced to only 5% of the population, whereas they had accounted for about 60 to 65% of the population in 1830. Livestock owned and raised by Algerians declined significantly between the 1880s and the 1950s. Sheep owned by Algerians, for instance, were estimated at about 10.5 million in 1887 but only at about 3.5 million in 1955. An unknown amount of the best grazing lands had been appropriated for colonial agriculture (Bennoune 1988, Davis 2007). Deprived of land and resources, the only course for the destitute masses lay in wage labor in the colonial sector. Being either sharecroppers or wage laborers was a matter of survival for them. At the end of the 1950s, just before independence, the process of depeasantization was so advanced that most of the agricultural population were daily wage laborers, semi-proletarians, and or khammes.<sup>3</sup> In 1914, 32% of the Algerian rural population was employed as sharecroppers (Davis 2007). The last colonial census of 1951-1950 estimated the number of agricultural workers and landless peasants at more than half a million, which represented 50% of the active agricultural population back then. Statistics vary, but it is likely that between half a million and a million rural Algerians were unemployed in 1954 (Bessaoud 2013b), a situation that will worsen during the war of independence in the following eight years.

Colonization of Algeria resulted in the division of society into two antagonistic classes: a colonial bourgeoisie monopolizing the means of production and a dispossessed proletariat or more specifically a lumpen-proletariat, which served the function of a colonial reserve army (Fanon 1961, Bennoune 1981). What fuelled the Algerian drive for independence were the continuous

<sup>3</sup> Khammes are sharecroppers who receive a fifth of revenues in the domain they cultivate.

immiseration and various dispossessions that had profound consequences on traditional society. The war of national liberation of 1954-1962, which raged most strongly in the countryside, resulted not only in the destruction of the peasant economy but also in the final dislocation of rural society. French counter-revolutionary strategy was aimed at the neutralization of the peasantry in order to cut it from the National Liberation Front (FLN). The results were disastrous: a quarter of the population (2.35 million) was in concentration camps; at least 3 million people (half the rural population) were affected by displacement, which was considered by Bourdieu and Sayad in 1964 as one of the most brutal displacements in history; around 8,000 villages were destroyed or burned, hundreds of thousands of hectares of forests were burned or defoliated by napalm bombs, cultivable lands were either sown with mines or declared “prohibited zones”; the country’s livestock was almost decimated, etc. (Bourdieu and Sayad 1964, Bennoune 1973). Retrospectively, French colonization of Algeria was unique, as it was the first Arabic-speaking country to be annexed by the West (it was considered an integral part of France) and one of the first countries in Africa to be subjugated by a Western empire, way before the Berlin Conference in 1884, when different European empires (British, French, German, Belgian, Italian, Spanish, Portuguese...) met to carve up the continent between themselves. French rule in Algeria lasted for 132 years (from 1830), as opposed to 75 years in Tunisia and 44 in Morocco, a depth and duration of a cruel and inhumane colonial experience unique within Africa and the Arab world, with lasting effects. Compared to Tunisia and Morocco, the property laws introduced by colonization unleashed the most dramatic changes in Algeria: the peasantry has become a minority and its foundations in rural society were destroyed (Benachenhou 1976, Bessaoud 2008). Ultimately, colonization definitely compromised any possibility of the emergence of an Algerian peasantry solidly attached to the land and mastering its livelihood and work environment, except for certain areas such as the Kabylie, the oases and agricultural spaces around old cities such as Tlemcen, Constantine, Algiers, and Annaba (Bessaoud 2013, 2008b). Unfortunately, the post-independence agricultural and rural policies have not reinvigorated this peasantry class due to the instability and inconsistency of the policy framework throughout the following decades. Moreover, the turmoil unleashed by Structural Adjustment Programs (SAPs) dictated by the

International Monetary Fund (IMF) in the 1990s will participate in the process of disintegration of this peasantry as an organized class aware of itself.

### 3. Attempts at rupture after independence (1978-1963): The period of land reform and agrarian revolution

In 1962, The Algerian people did not only celebrate their newly found sovereignty but also expressed their dreams and aspirations for a different, a more just and egalitarian society. Proud of its victory and animated with a revolutionary fervor, Algeria wanted to build a new socialist order, to halt underdevelopment, put in place an agrarian reform, and achieve mass education. The Algerian strategy of development during the period of 1962-1978 was designed to delink and break away from the capitalist-imperialist system in order to prevent the restoration of a neo-colonial capitalism that has pushed the third world into an economic impasse (Amin 1990, Hamouchene and Rouabah 2016).

#### A. Self-management experience

In the first year of independence, with an incredible spontaneity and voluntarism, Algerian workers took over operations of modern farms and units in industrial settings abandoned by European settlers fleeing to France and engaged in an inspiring grassroots experience of self-management and socialism from below (Gauthier 1966).

Starting from July 1962, the first month of independence, the employees of the colonial agricultural estates occupied the lands abandoned by the colons, especially in the richest regions of the country, imposing a direct form of management over them. The “self-managed” public sector will subsequently be constituted of 2.5 million hectares of former colonial lands, nationalized and distributed between 2,200 public land-holdings with an average of 1000 hectares per holding. In 1965-1964, the number of people employed by this sector was 100,000, 237,400 of which were seasonal workers (Ait -Amara 1999, Bennoune 1988, Bessaoud 2008).

Soon, the autonomy of the self-management experience would be undermined by the intervention of the state, which took initiative away from workers and emptied it from any claim for self-

management. In fact, the state was managing the sector and placed the “self-managed” land-holdings under the authority of l’Office National de la Reforme Agraire (ONRA). Mahfoud Bennoune eloquently summarized this state of affairs: “by the 1970s, workers’ self managed agriculture constituted a ‘socialist’ island surrounded by a stormy ocean of paralyzing bureaucracy determined to assert its prerogatives and a stagnating heterogeneous private sector” (Bennoune 183 ,1988).

## B. The Agrarian revolution – 72-1971

At the time of independence, the choice for industrialization was a necessary one given the sluggish, stagnant nature of agriculture, huge unemployment, and poverty. It was decided that the development of agriculture and other vital services cannot be envisaged seriously without the establishment of a modern basic industry that would both stimulate their growth and be stimulated by it (Bennoune 1988, El Kenz 2009, Bellaloufi 2012).

The agrarian reform of 1971 needs to be understood within this strategic framework of industrialization of a country that newly acquired its independence. The agrarian reform was technically, economically, and socially necessary in order to neutralize the power of an agrarian bourgeoisie inherited from the colonial period and to support the peasants who were the principal victims of colonialism and the war operations.

Land reform had been delayed for several years, under the influence of a conservative bourgeoisie that was very hostile to it. And this is despite the ongoing huge disparities in rural areas. The population there continued to have a differential access to land. On the eve of the agrarian revolution initiated in 1972, the wealthy Algerian landlords, %4 of all landowners, possessed %38 of the land. Those holders of more than 100 hectares, constituting %2 of all landowners concentrated around %23 of fertile land, while %69 of owners of less than 10 hectares shared only %18.7 (Bennoune 1988).

At the end of the 60s, the major problem of Algerian agriculture was rather overproduction or the inability to sell its principal crops, namely wine and fruit. For political reasons, the French market, which was the main outlet for Algerian agricultural produce had become not guaranteed, proven by the exports crisis of 1965. This led to the financial ruin of the viticulture sector: in 1963, the stocks of unsold wine were 2 million hectoliters; they were 16

million in 1967 and 22 million in 1968. This situation necessitated the reconversion or restructuring of the former colonial sector and the modernization of the Algerian private sector. This came at a cost: the urgent reconversion from vineyards to other produce led to massive unemployment, touching 23,000 permanent workers between 1965 and 1968 who were often the most experienced (Bouarfa 2010).

The explicit objective of agrarian reform was, on one hand, to redistribute land in favor of landless and poor peasants and, on the other, to modify the conditions of production by introducing changes in the forms of organization of work and the agricultural environment (Chalet 1997, Ait-Amara 1999). After three years of the application of this reform (1975-1972), the results were rather disappointing. Only around 1 million hectares of public land were recovered and nationalization only touched 500,000 hectares, which amounted to less than %9 of all legally private land. These figures reveal the minimal impact of the agrarian revolution on land ownership in rural Algeria (Bennoune 1988, Bessaoud 2008).

Nevertheless, the reform introduced profound changes in the social and political order of rural areas in Algeria. The large landowners who derived their titles from colonization had lost some of their power and political influence. Moreover, the control of urban dwellers on land has been seriously called into question by the prohibition of absenteeism. In the name of the principle “the land belongs to those who work it”, the agrarian revolution of 1971 declared that nobody could own land without working it directly (Ait-Amara 1999).

Without any doubt, the agrarian revolution improved the livelihoods of peasant populations as well as significantly developing the rural infrastructure: agricultural villages, roads, electrification, access to drinking water, schools, health centers, etc. However, agriculture was not given the priority it deserved in the economy as the primacy and emphasis were industrialization and urbanization, which created some distortions and encouraged rural exodus and exit from the agricultural sector.

Contrary to the official rhetoric about the collectivist character of Algerian agriculture, in reality, it was tightly managed by the state between 1962 and 1980. This authoritarian control failed in genuinely involving workers in the control of the processes of production and marketing, stifled their creativity,

and inhibited them from taking their own initiatives. Moreover, excessive bureaucratization also pushed some to be indifferent and do the minimum rather than work to increase productivity. This led to a state of chronic deficit of the public and cooperative sector (Bedrani 2010). This lack of democracy was concomitant with the ascendancy of pro-comprador and parasitic classes that were hostile to socialism, state development, and staunchly opposed to genuine land reform, forcing it to halt between 1975 and 1978 (Bennoune 1988, Bessaoud 2008). Upon the death of Boumediene in 1978, there was a reversal and abandoning of the previous regime’s strategy in favor of the private sector and the opportunist comprador bourgeoisies (Bellaloufi 2012, El Kenz 2009, Bennoune 1988, Hamouchene and Rouabah 2016). A new age of neoliberal de-industrialization and pro-market policies was ushered in at the expense of the popular strata that largely benefited from the progressive policies of the 1960s and 1970s.

## 4. The process of liberalization of the agricultural sector in the 1980s and 90s: The March towards privatization

With the global neoliberal wave gaining momentum in the 1980s, spreading to the whole world, and with the plummeting of oil revenues, the Algerian national development project was abandoned by the Chadli clique. It was dismantled, as a process of deindustrialization was carried out to give way to neoliberal policies and the submission to the dictates of IFIs.

The dignitaries of the new neoliberal orthodoxy declared that everything was for sale and opened the way for privatizations. This allowed an explosion of import activity, which pronounced a death sentence on the productive economy (Tlemçani 1999). Under President Bouteflika, from 1999, this neoliberal logic of undermining national production while promoting an import-import economy (imports increased from 9.3 billion USD in 2000 to 27.6 billion in 2007 and 54.85 billion by 2013) was pushed even further, aiming for a complete integration into the global economy.

In the agricultural sector during the 1980s, the state departed radically from the previous policies of “collectivization” and “state development” towards a process of privatization of public lands and individualization of agricultural domains.

The context of negative growth and the dramatic decrease of hydrocarbon revenues represented an opportunity for the right-wing and conservative forces in the regime to call into question the collectivist doctrine of the previous regime, by putting forward a new agricultural policy that was very favorable to the private sector that has been relatively ostracized till then (Ait-Amara 1999, Bedrani 2010, Chalet 1997).

The gradual restructuring of the state agricultural sector consisted mainly of:

- **The liberalization of marketing mechanisms and prices of services: Agricultural equipment prices were multiplied by 3.5 times in the 1980s while those of inputs such as fertilizers and plant protection products were multiplied by 3). All state subsidies were eliminated except for milk. When it comes to support for prices of production, it only concerned wheat, dry vegetables, potatoes, raw milk, industrial tomatoes, etc. (Bessaoud 2008).**
- **More incentives to the private sector to produce: Loans allocated to this sector multiplied by 7 times between 1976 and 1980. However, instead of increasing the production of basic food crops, the private farmers specialized in the cultivation of speculative products such as watermelons, melons, and fruit, a fact that has accentuated the crisis in Algerian agriculture and hence contributed to the increase in food imports: milk production decreased and by ,1983 %62 of the national consumption was imported from abroad. While the production of watermelons rose by about %115, imports of vegetables tripled between 1980 and 1984. More serious still, the imports of basic cereals, mostly wheat, averaged 17.3 million quintals during the period of -1974 1977, rising to 26 million quintals during the period of 1983-1978. The total value of imported foodstuffs almost doubled between 1979 and 1984 (Bennoune 1988, Bedrani 2010).**
- **The dissolution of the communal polyvalent agricultural cooperatives of service (CAPCS) created within the framework of the agrarian revolution: These cooperatives’ role was to provide inputs and carry out various works for farmers. The dissolution of the CAPCS had a negative impact on small and medium farmers because these cooperatives were offering their services at very affordable prices contrary to the private sector (Bedrani**

2010).

- The physical restructuring of estates/farms by removing the duality 'self-management sector – Agrarian revolution' sector and the creation of 3400 socialist agricultural domains (DAS) out of around 2000 self-managed estates: These measures were deemed insufficient and were complemented in 1987 by a new measure aiming to eliminate all constraints and obstacles facing producers in their activities as well as in their integration into the market. This ended up in the further fragmentation and splintering of estates that were judged to be too big, resulting in the creation of collective agricultural estates (EACs) as well as individual ones (EAI). 2.8 million hectares of state land were attributed for permanent use to agricultural operators in more than 30,000 EACs and 22,206 EAI (CNES 2004). However, the beneficiaries within the EACs developed informal arrangements: divisions, sub-divisions, letting, subletting, some forms of association with other private operators, and even alienation of their right of use (to entrepreneurs and merchants), all illegal and under the aegis of implementing the 1987 reform, the EACs had only a fictive existence in juridical terms as individual strategies dominated the scene (Ait-Amara 1999, Imache et al 2010). As the law only recognizes the EAC as it was originally formed as a collective entity, this complicates things for those who directly work the land in terms of getting help and access to subsidized inputs, other subsidies and credit, and even in marketing their produce, as they cannot officially prove their activities.
- The redistribution of land championed by the agrarian revolution of 1971 was neutralized by the promulgation of the Access to agricultural real estate law (APFA) in 1983: This law authorized the state to sell its non-cultivated lands at symbolic prices to those ready to work and improve them. Originally, this law only concerned the south and the high plains, but it has been also used in the northern part of the country as well as on pasture land (Bedrani 1992). With the 1987, 1983 and 1997 decrees, around 1 million hectares of public land were transferred into private hands, mainly in the south (650,000 between 1981 and

1985). This privatization continued into the 2010s, when authorities showed their intent of ceding more agricultural and pasture land to private investors (Bessaoud 2013a). What is even more shocking is that in 1990, the authorities dared to cancel the agrarian reform law and proceeded to give back expropriated land in 1971 to its previous owners, who consolidated their economic base by benefiting from state support. Landless and poor peasants had thus lost all political support even from the National union of Algerian peasants (UNPA) who supported the authorities' measures. These land restitutions to the descendants of Caid and Bachaghas (Muslim dignitaries and officials) who benefited from colonization indicated the extent of the compradorization of the ruling classes that operated a shift to the right and in favor of parasitic bourgeoisies (Ait-Amara 1999). These measures heralded the end of a state agricultural sector and rehabilitated individual private property and use.

**Table 1.** The state of agricultural structures in Algeria. Based on CNES 2004 data. It is clear from the table that the majority (around %65) of all land is privately owned. The public domains amount to 2.8 million hectares in total.

Legal Status of Land	Number of units	Total Surface (ha)
Total Private Land-holdings	N/A	5.400.000
APFA Attributions	N/A	90,000
EAC	30,519	1,841.000
EAI	66,110	674,000
Pilot Farms	177	151,000
Institutes and Offices	222	14,000
Non-attributed Land	N/A	31,000

By 1994, when the country signed a "stand-by" agreement with the IMF, the agricultural sector had already achieved its structural adjustment (even before the application of IMF agreements) as agricultural investment was at its lowest since independence. All these measures wreaked havoc on small farmers who constitute the majority in the countryside (Bessaoud 2008, Benbekhti 2008).

The IMF's structural adjustment programs had exacerbated the situation; hikes in basic food

prices (partly due to the removal of subsidies), the dissolution of public companies, and the reduction of public social spending enterprises resulted in the worsening of standards of living of rural populations. At a time of a cruel war against civilians in the 1990s, Algerians had their painful experience of the shock doctrine: huge decreases in incomes (%27 between 1985 and 1995 at the national level), higher inflation (%30 annual average between 1990 and 1999), and an increase in poverty, especially in rural areas (Hamouchene and Rouabah 2016). According to a 1995 study conducted by the World Bank, the fifth of the rural population was living under the threshold of poverty (World Bank 1995). Another significant development of all these liberal policies was the emergence of private agro-industrial entrepreneurs. Through public private partnerships (PPPs), some private companies like Cevital are developing large farms to produce fruit tree seedlings, seeds, fruits, and vegetables. These projects sometimes are spread over more than 2000 hectares (Hammouchi 2012). These agribusiness corporations are candidates to acquire the state pilot farms and are also participating in land grabbing operations in other African countries (Grain 2016).

## A critical examination of the "food security" paradigm in current Algeria: oil rent and real constraints on agriculture

### 1. Investment in agriculture and the redistributive functions of the state from early 2000s

The evolution seen in the agricultural sector is partly a reflection of the economic orientations that the country went through, from auto-centered developmentalist policies of the 60s and 70s to a rentier oil and gas exporting economy (Rebah 2011). The 2000s saw an increase in oil prices, which generated huge surpluses for the Algerian economy. Oil prices went from an average of 17.5\$ in 1999-1990 to an average of 47.6\$ in the 2000s, multiplying hydrocarbon revenues by four: from an average of 10 billion USD in the period of -1994 1999 to an average of 42 billion in the period of 2009-2000.

This resulted in some serious investment in agriculture and rural development, but always within a neoliberal framework. Some constraints imposed by various neoliberal policies and SAPs were progressively removed and a strategic plan to stimulate the economy was launched for the period 2004-2000, consolidated for 2009-2005, and completed by further programs. Public spending multiplied by 8.5 between 2000 and 2007. The agricultural sector has been one of the principal beneficiaries of these programs and plans. The National Agricultural Development Plan (PNDA) that was launched in 2000 (Omari et al 2012) had the objectives of:

- **The reconversion of soils: This concerns around 3 million hectares, which aims to concentrate the production of cereals in favorable areas (1.2 million hectares) as the reconversion of lands from cereal culture into arboriculture, viticulture, and animal husbandry in dry and arid regions.**
- **The development of production: by improving the yield and productivity in several sectors: cereals, dairy, potatoes and fruits.**
- **The valorization of agricultural domains in mountains, piedmonts, steppe and Saharan zones.**
- **A national program for reforestation:**

concerning around 1.2 million hectares in order to increase the afforestation rate in northern Algeria from 11 to %14.

This program was reinforced by the Policy of Agricultural and Rural Renewal (PRAR), launched in 2009-2008 and aimed at reinforcing the country's food security (MADR 2010). PNDA was funded by the national fund for agricultural development and regulation (FNDRA) that started to invest from 2001/2000 an annual amount of 40 billion DA, which is four times the average annual amount that was spent between 1995 and 1998 and 10 times the amount spent in 1994-1993, the year the IMF structural adjustment program started being implemented (Bessaoud 2008 and 2016).

Important price support measures for the production of cereals and milk have been introduced, as well as subsidies and tax breaks around the purchase of agricultural inputs and equipment and the regulation of widely consumed products (potatoes, garlic, onions, and meats). More than 400 billion DA were invested in agriculture and food supply between 2000 and 2007 (MADR 2008). Between 2010 and 2014 billion USD per year were allocated to support investments within the framework of PRAR and another 2 billion for subsidies (Bessaoud 2016). All these resources and policies, in addition to rural development projects, have contributed to the reduction of rural poverty inherited from SAPs and the attenuation of the imbalances between urban and rural areas through the transfer of financial resources to the latter.

Despite signaling a relative renewal of the redistributive functions of the state, the PNDA and other programs were based on an entrepreneurial model of agriculture (agribusiness), opening the way to private investment and to Public Private Partnerships, merely a euphemism for privatization. This model has been far removed from the social reality of 950,000 agricultural households that constitute the "Algerian peasantry". For example, the measures to provide bank loans, state subsidies, and technical support were not accessible for the majority of small farmers who do not hold land titles (Nemouchi 2011, Omari 2012, Bessaoud 2016). Other shortcomings are the ongoing undervaluation of agronomic research in the development strategy, the misappropriation of funds and financial supports by clientelist parasitic networks, and the encroachment of import-centered initiatives only interested in making super-profits. And more importantly, the achievements

of the PNDA are largely dependent on imports of inputs and equipment, in turn dependent on exporting oil and gas, which reveals the fragility of the whole enterprise.

## 2. The paradox of plenty and food vulnerability

As most of the income from exports comes from hydrocarbons (usually more than %94), the Algerian economy shows a huge vulnerability to cyclical changes of oil prices, evident in the table below. From 2000 to 2008, the price of oil saw an unprecedented spike, going from under 25\$ to almost 150\$ per barrel, which multiplied export income by four compared to the 1990s (Algerian Customs data). Shortly thereafter, a deep global recession throttled demand for energy and sent oil and gas prices into a precipitous free fall. By the end of 2008, the price of oil had bottomed out at 40\$, which reduced income from hydrocarbon exports from 76 billion USD in 2008 to 44.3 billion USD in 2009, a reduction of almost %60.

**Table 4.** Evolution of income from hydrocarbon exports (in billion USD) from 2002 to 2017. These usually constitute more than %94 of total exports. Source, Rebah (2012) completed by checking Algerian Customs' statistics (Algerian Customs online statistics).

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Total Exports</b>	18.1	24.1	38.0	55.0	66.0	59.0	76.0	44.3	56.0	72.0	73.0	63.7	60.3	32.7	28.2	32.8
<b>Hydrocarbon exports (%)</b>	96.1	97.3	97.6	98.0	97.8	97.7	97.5	97.6	97.1	97.2	97.1	96.9	95.9	94.5	93.84	94.5
<b>Proportion of exports to imports (%)</b>	157	182	175	226	255	218	201	115	141	156	143	118	103	67	64	76

The global economic recovery that began the following year sent the price of oil back over 100\$; it hovered between 100\$ and 125\$ until 2014, when it experienced another steep drop (this has triggered economic austerity policies in the country). This steep drop again had a negative impact on export incomes as these almost halved between 2014 and 2015 (from 60.3 to 32.7

billion USD). These brutal changes are translated into surpluses or deficits. The trade balance (proportion of exports to imports) has been %143 in %118 ,2012 in %103 ,2013 in 2014, only %67 in %64 ,2015 in 2016 and %76 in 2017. Around one fifth of these imports is food products, including cereals and derivatives, milk and derivatives, crude oils and brown sugar, red meats, etc.

Costs of food imports shot from 2.4 billion USD in 2000 to 6 billion USD in 2010. It crossed the 10 billion mark in 2012 and reached 11 billion USD in 2014 before stabilizing around 9-8 billion USD between 2015 and 2017 (cereals and derivatives take the first spot with around 3 billion USD followed by milk and derivatives at 1.5-1 billion USD). The bill of food imports multiplied by 3.5 between 2000 and 2017 for several reasons including the multiple global food crises during this period, the demographic growth (from 31 million in 2000 to 41 million inhabitants in 2017), an increasing urbanization (from %58.3 in 2000 to %71.30 in 2016), and an improvement in incomes (ONS online statistics, Algerian Customs data).

According to Sofiane Benadjila, an Algerian agronomist, the official statistics are only the tree that hides the forest of the shocking picture of food dependency and vulnerability in the country. The situation is alarming indeed. The country faces a serious reduction of its biocapacity (erosion, urbanization, water shortages, etc.) and a significant demographic pressure, in addition to climatic constraints. The agricultural trade balance went from %143 in 1965 to %1.8 in 2003 reaching a low of %1 in 2017. Algeria is one of the countries that are the least resilient in North Africa and West Asia; its food imports represent around %30-25 of the whole food imports of the African continent (%3 of the African population imports %30 of the total food products for the continent). (Benadjila 2017a and 2017b)

It is therefore clear that, currently, Algeria's "food security" paradigm relies on a hydrocarbon export-based model which shows a high dependence on international markets to sell oil and gas, on one hand, and, on the other, import what is lacking in food, especially staple products such as cereals and milk. In other words, Algeria's ability to cover the costs of its food imports (among others that include agricultural inputs and equipment) is dictated by external factors (oil and food prices fluctuations). Basically, oil and gas rent finances Algeria's food dependence, creating a situation of double-dependence. This extreme vulnerability has been demonstrated in the past when the country witnessed a crisis in 1986 (oil prices plummeted), which was translated into inflation, serious food shortages, and an acute economic crisis that was partly responsible for the 1988 youth uprising.

## 3. Deconstructing the myths around Algeria becoming an agricultural exporter

The myths constructed around Algeria being the "granary of Rome" at some point in its history are re-enacted again by some decision-makers to flaunt Algeria's supposed agricultural potential in order to feed the illusions of making Algeria an agricultural exporting country.

This is impossible to achieve, because of the agro-climatic conditions in the Maghreb/North Africa, which are marked by dryness and aridity. Due to a combination of factors, including topography, latitude, altitude, and its relationship with the Mediterranean Sea and the Sahara desert, the vast majority of Algeria is arid or semi-arid. Most of the south is hyper-arid and only small pockets along the coast or in high mountains are sub-humid. The ecosystems (Tell, Steppe and southern oases) are fragile and precarious. The Steppe (around 30

million hectares), in addition to the Sahara (which occupies 3/2 of the country's surface), does not offer much space for human settlements, not to mention agriculture.

Although it is the largest country in the Maghreb, Algeria has the lowest proportion of arable land. Of its 2,381,741 square kilometers, only about 8.4 million hectares (%3.5) are considered arable today, compared to %18 in Morocco and %30 in Tunisia (Davis 2007).

Agricultural surfaces that receive more than 600 mm of rainfall and with slopes inferior to %3 constitute 500,000 hectares only (around %6 of the total agricultural surface). This is a huge constraint for Algerian agriculture that can only deal with by adaptation through agronomic research and ancestral practices (Benbekhti 2008, Omari 2012). The most fertile land for agriculture in Algeria is the Tell, a strip of land across the northern plains of the country, stretching from the coast to the High Plateaus in the south. The "breadbasket" of Algeria – the Mitidja, a former swamp just south of Algiers – is located in this region. The semi-arid character of most of the useful agricultural land surface makes the generalization of an intensive mode of agriculture, similar to the one developed in Europe, a very uncertain endeavor. Moreover, the severity of winter in the mountains and the High plains as well as the summer heat sometimes compromises the harvests. These conditions are exacerbated by the seasonal and inter-annual irregularities in rainfalls and temperatures, which mostly determine the outcomes and performances obtained. Without irrigation, agriculture in much of Algeria is precarious. For example, despite the increase in production (an average 3.7 million tons in the period 2014-2000 compared to 2.25 in the period 1999-1990), the cereal sector is confronted to this major problem as it remains highly dependent on rainfall and shows an irregular production over the years. For example, in the drought-ridden year of 2008, production equaled 1.7 million tons while it reached a high record in 2009 of 6.2 million tons (MADR statistics).

Algeria's per capita water availability is less than 300 cubic meters per year, which puts the country well below the World Bank scarcity threshold of 1000 cubic meters, making it a poor country in water resources (Stratfor Worldview 2016). This situation is made worse by:

- **Over-exploitation of surface and ground water reserves through unregulated**

**drillings in the North as well as in the Sahara.**

- **The phenomenon of seawater intrusion into groundwater reserves in coastal areas.**
- **The plans to extend irrigated surfaces to 2 million hectares by 2020-2019, with most of the land in arid and semi arid regions, which will exercise more pressure on water resources and might potentially exhaust the already fragile lands.**
- **Problems of salinization of water and land, associated with extracting water from arid and semi-arid lands.**

Last but not least, the effects of climate change exacerbate the already-existing constraints on agriculture: decrease in snow fall, intensification of erosion, increase of evaporation and evapotranspiration, shortening of the crops cycle due to a warmer climate, aridification in the northern regions, desertification of the semi-arid landscape, more forest fires, etc. This climatic dimension is under-estimated by the public authorities (lack of studies and analyses, inadequate infrastructure such as agro-meteorological stations, etc.) and must be taken into account for any coherent food security strategy (Hamouchene and Minio-Paluello 2015).

In a nutshell, the agro-climatic conditions in Algeria play a major role/influence in the constitution of the agricultural territories and favor an extensive mode of agriculture. Till today, agricultural/agronomic techniques have not overcome these barriers. Saharan agriculture as a case of extractivist agriculture

The tendency of agricultural policies in the last 15 years was to intensify agriculture, relying on private investment by promoting an entrepreneurial model based on cash crops destined for export. This worrying pattern, similar to that witnessed in neighboring countries like Morocco and Tunisia, can be clearly seen in the Sahara, where entrepreneurs acquired large irrigated land parcels. This intensive use of land and water resources led some observers to describe this type of agriculture as being extractivist and mining-like, as it gives no regard to the exhaustion of water, the land, and their salinization (Benadjila 2017, Bessaoud 2016).

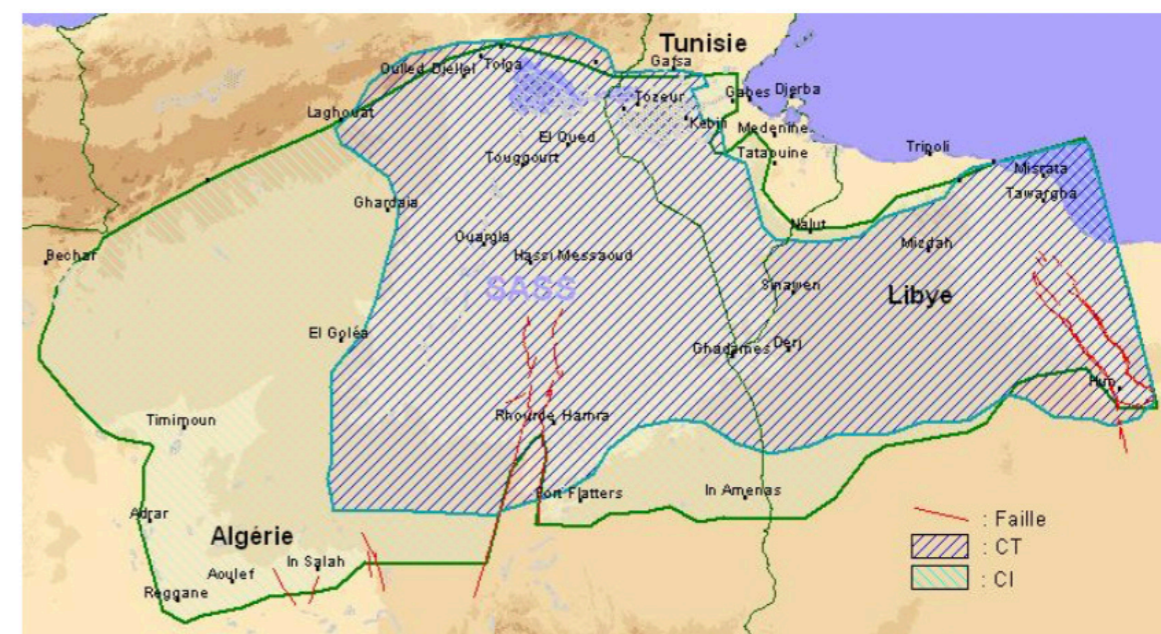
Such an absurd choice has already shown its dismal results in Adrar and Ouargla and clearly does not take account of any sustainability whatsoever. What matters at the end of the day is the development of an intensive capitalist agriculture in very extreme

climatic conditions in order to make profits at the expense of durability (Benadjila 2016). Similar failed experiences in Libya and Saudi Arabia are a strong testimony of the non-sustainability of such projects and should be a serious warning for Algerian decision-makers to refrain from taking such foolish choices that constitute a danger to the future of resources, nature and humans in those regions.

**The North Western Saharan Aquifer System (NWSAS)**

This system, shared between Algeria, Tunisia, and Libya, contains significant water reserves (around 31,000 billion cubic meters) that can only be partially exploited. These aquifers were formed over thousands of years and have very slow recharge rates. These waters cover a surface of more than 1 million km<sup>2</sup>, divided between two aquifer layers: Intercalary Continental (CI) and the Complex Terminal (CT). According to the Sahara and Sahel Observatory (SSO), between 1970 and 2000, there has been an intensification of the exploitation of water tables through drillings (some of which reaching depths of more than a 1000 meters) for agriculture, household, and industrial use, which passed from 0.6 to 2.5 billion cubic meters/year (OSS 2003).

**Figure 3.** The North Western Saharan Aquifer System (NWSAS) divided between Algeria, Tunisia and Libya. Source: <http://sass.oss-online.org/en/north-western-sahara-aquifer-system-%E93%80%2sass>



According to SSO, this intensive use of the NWSAS by the three countries has caused stress on the resource, increasing the risks of saltwater intrusion and salinization, loss of artesian pressure, the depletion of natural outlets and the lowering of the water table. At the current rate of use, the aquifers may disappear within 50 to 100 years compromising any chance for human settlement. In this context, the choice to extend irrigated surfaces in the Sahara seems irresponsible and dangerous.

**3. Some indicators around the agricultural sector in Algeria**

It is important to state from the outset that official statistics in Algeria are not very reliable. In a context of lack of transparency, inexistence of adequate surveying processes, and an environment of approximate and contradictory statistics that are used to hide the dismal reality of the agricultural sector, one should be extremely careful to not reproduce official propaganda. Unfortunately, it is not possible to completely ignore official statistics and reports. However, several other independent sources have been consulted, sometimes revealing a completely different picture. The absurdity and deception of certain statistics are debunked by some critical Algerian agronomists such as Sofiane Benadjila in enlightening analyses and comparisons with other countries (Benadjila 2017a).

## 1. Evolution of household consumption

Like other MENA countries, the Algerian population spends a much greater share of its income on food compared to high income Western economies. In USA, the average amount of income spent on food is only %6.8, whilst for countries like Tunisia, Egypt, Morocco, and Algeria, it is around %40 (AfDB 2012).

The most consumed products are cereal products (bread, semolina, flour, pasta, and rice) with %17.5 of total consumption, followed by fresh vegetables (%14.4) and red meats (%13.3). Annual consumption of cereals per inhabitant increased from 191.8 kg in 2003-1994 to 241.2 kg in 2013-2004 kg in 2016). Annual milk consumption per inhabitant passed from 34 liters in 1967-1968 to 61 liters in 1979-1980 and then more than doubled in 2015 reaching 134 liters. This makes Algeria the biggest consumer of milk and its derivatives in the Maghreb. When it comes to sugar, Algeria consumes 1.1 million tons per year, corresponding to 30 kg/inhabitant/year, way higher than the global average of 18 to 20 kg (Bessaoud 2016).

One trend worthy of note is the huge increase in the consumption of potatoes, which has become a kind of staple food in the Algerian diet (alongside cereals and milk). Consumption was recorded at 21.7 kg/inhabitant/year in 1967-1968. It went up to 34 kg in 1980-1979 and more than tripled by 2015 to reach 113 kg (Benadjila 2017b).

To sum up, food intake is estimated to be around 3,500 calories/day/inhabitant (similar to estimates in the developed West). Cereals and their derivatives represent %60 of the total caloric intake and %75 of the protein intake. Compared to the colonial period, the energy intake almost doubled. However, it must be recalled that the majority of these calories are imported (%75-70 according to Benadjila and %85-80 according to Chehat). As cereals are the main food staple in the country (and occupying around %80-75 of the useful agricultural surface), it constitutes a kind of barometer for food vulnerability (Benadjila 2017a, Chehat 2018).

In 2017, Algeria has been classified by the Global Hunger Index in the "Low risk" category and ranked 41 between 119 countries surveyed (GHI 2017). These general statistics always need some nuance by looking at the most marginalized groups in society. According to FAO data, between 2014

and %4.6, 2016 of the population (1.8 million) was under-nourished (FAO country profile). In 2012, the percentage of children under 5 years of age who were stunted was %11.7 and those affected by wasting was %4.1 (World Bank country profile).

## 2. Agriculture and the food industry in the national economy

Public spending in agriculture has increased dramatically in the last few years. For example, it represented %18.63 of agricultural GDP in 2013, almost three fold what it was in 1995. The increase relative to total expenditure was marginal in the same period (from %2.42 to %3.68). The share of agriculture in total public expenditure is inferior to other countries in the Maghreb (Bessaoud 2016).

In 2014, the agricultural GDP stood at %11.2 and went up to %12.3 in 2016. The agro-industrial GDP stabilized at %5.6 in 2014 (ONS online statistics). The sector's growth rate had an annual average of %6.3 between 2010 and 2016 and, thus, can be considered as the engine of economic growth for this period. In absolute terms, this dynamic of growth is dominated by the private sector; the public sector's contribution to the agricultural GDP in 2015 amounting to a mere %1.3, while it was more than %25 in the early 60s (Bessaoud 2016).

In 2015, the agricultural sector employed around 917,000 people, mostly male, at %82 %94 average for male employment in all sectors). Employment in the agricultural sector represents %8.7 of total employment. The sector provides around fifth of total employment in rural areas. Looking at the statistics for the 15 years from 2000, a tendency of the decreasing role of agriculture in providing employment can be noticed (more than %15 in the mid 2000s to %8.7 in 2015). (ONS online statistics).

## 3. Food imports and their coverage of national needs

The agricultural trade balance is around %1, which means that food exports cover a mere %1 of imports (Chehat 2018, Benadjila 2017a). This is not to say that we need to increase exports by 100 times to put this balance into equilibrium. However, this huge disparity shows how alarming is the food situation in Algeria, a country that imports most of its food. The agricultural trade balance of the country is amongst the lowest in North Africa (Omari 2012).

Algeria is one of the biggest consumers of cereals in the world; since the mid 2000s, it figures in the list of the six biggest importers of wheat globally, whose imports are superior to 5 million tons per year (Bessaoud 2016). It is in fact the third biggest importer of soft wheat and the biggest importer of hard wheat in the world (%50 of international trade). Provision with soft and hard wheat is primarily assured through imports for soft wheat at %78 (used for making bread) and for hard wheat at %45 (production of semolina). In 2017, with 200kg/inhabitant/year, Algeria was far ahead of the other two big importers of cereals: Egypt (126kg) and Indonesia (35kg). Imports of maize and barley for animal consumption were multiplied by 5.5 times between 2000 and 2014, reaching 976 million USD (Benadjila 2017a and 2017b).

When it comes to milk, %60 of consumption is imported, making Algeria the second biggest importer of milk powder in the world after China. %12 of red meats consumption is imported (white meat production is assured locally). Algeria exports sugar, which tops the list of agricultural exports (it is refined by Cevital Group at %72). Fresh vegetables are all produced locally, while for fruits, complementary imports are needed annually, mainly bananas and apples (ONS online statistics, Bessaoud 2016).

## 4. Some Recommendations to achieve food sovereignty in Algeria

Food sovereignty cannot be reduced to a simple discussion around agriculture. It is rather about the nature and performance of the whole economy. Similarly, it cannot be wed to the short-termism and the intensification of an export-led agriculture championed by agribusiness. In fact, it is closely associated to popular sovereignty, radical democracy, redistributive justice, and sustainability initiatives led by the peasantry and small-scale/family farmers and producers.

As any list, the one below is limited and does not claim to be exhaustive. It is a list of general priorities advocated by the author and others based on a political orientation that strives to be on the side of the marginalized and in active solidarity with the "wretched of the earth" in their quest for justice and an end to oppression and exploitation.

## 1. Focus on Peasant and family farming vs. Export-driven intensive agri-business

Small-scale and family farming dominates in Algeria, as %70 of land holdings are family and peasant in nature. There are hundreds of thousands working the land, engaging in various activities (including pasturing), and producing a wide range of good quality produce. Given their experience, they are endowed with a precious know-how in protecting their environment, safeguarding resources, and conserving local seeds.

However, the authorities, especially since the 1980s, have not been privileging this model of farming/agriculture. On the contrary, decision-makers have given their support to an entrepreneurial industrial agriculture that focuses on cash crops (usually for exports) and is intensive in its use of capital, inputs, land (large holdings), water, and other resources, making it unsustainable in the long run.

It is imperative and necessary to change this course of action by putting the peasantry and small-scale/family farmers at the heart of any agricultural development plan that is just, sovereign and sustainable. At the end of the analysis, we cannot develop agriculture without farmers. Recognizing this is of paramount importance!

## 2. A rupture with neoliberal policies and diversification of the economy

There is urgency in radically re-examining the whole economic strategy of the country. The development of agriculture will necessitate an end to a rentier neocolonial extractivist model of development. Diversification of the economy and a reconnection with industrialization will generate the needed technology, technical expertise, and equipment in order to modernize and address various challenges, rather than relying on imports and mimicking foreign models.

We need an agriculture that creates jobs by increasing production and improving yields in sustainable ways. However, this needs political will and to be reflected in public finances and investments that should benefit the majority of small farmers rather than big landowners and private agro-business.

### **3. Resolve the ambiguity and confusion around titles and access to land**

The existing laws are not adequate for the complex arrangements on the ground (divisions of EACs, letting, subletting, etc.). This needs to be done along the principle of “the land belongs to those who till it,” in order to value all the knowledge and dynamism brought by different sections that work in the sector. This also needs to take into account that measures and arrangements based on short-termism create precariousness, which does not encourage long-term productive investments or attachment to land.

Land status issues need to be resolved by integrating all those who are directly working the land and making a livelihood out of agriculture. However, attempts to privatize state land in favor of big entrepreneurs and capitalists must be ended and new regulations and laws should heed the danger of speculation, rentier practices, and ownership concentration, which can create a new class of parasitic owners only interested in increasing their wealth by dispossessing others and exploiting them as laborers.

### **4. Protection of the rare natural resources and ecosystems: Safeguarding of soils and water resources**

The soils are suffering from environmental degradation (erosion, desertification, etc.) affecting their fertility; resources are facing exhaustion (over-exploitation of underground water reserves) and salinization. There is growing pressure on these resources and their capacities for regeneration and renewal has reached a critical level, exercised by an intensive and extractivist use. In a context of climate change, the issue of safeguarding the soils and resources becomes of a critical importance. As has been shown above, Algeria is poor in water resources and, given its semi-arid to arid character, it becomes very crucial to have a strategy to sustain the existing water resources for the survival of future generations. The choice of an intensive large-scale agriculture in the Sahara that can threaten the groundwater reserves must be therefore immediately halted.

The authorities must have a solid and coherent environmental management policy that regulates

the activities of the agricultural sector and that will take into account environmental and climatic constraints in order to preserve the rare existing resources.

### **5. Dispel the illusions about becoming a big agricultural exporter**

We need to be realistic about the potential of Algerian agriculture. Surely, there are some areas where this can be the case, such as dates (Deglet Nour) and viticulture, but generally it is hard to see this replicated in other cultures. What becomes important when we consider this reality is the significance of prioritizing increasing production for the local market and improving productivity in order to reach relative self-sufficiency, especially in cereals, vegetables, milk, and meat, in addition to reducing the crippling dependency on international markets (imports) and reaching some equilibrium between local production and imports. This requires a serious ongoing investment in agriculture in order to modernize it and overcome various difficulties and constraints (low yields, technical problems, agro-climatic conditions, etc.). Agricultural models need to be re-adapted to the local conditions of North Africa by relying on existing agro-ecological knowledge, promoting agronomic research, and scientific innovation, and incorporating adaptation plans to climate change.

### **6. Initiate a public debate around food sovereignty at the level of civil society**

Civil society in Algeria is fragmented and atomized. Most of the trade unions, including in the agricultural sector, are co-opted by the establishment and do not really represent the interests of workers and peasants. Moreover, a significant majority of the organizations and associations active on the ground focus on a reductive conception of democratic and individual rights at the expense of collective socio-economic issues such as sovereignty on land, food, and other resources.

Questions of democracy, justice, and dignity cannot be dissociated from other important issues such as food sovereignty and it becomes very important to have an urgent debate on these issues together. This needs to involve the peasants and small-scale farmers themselves with other activists, trade unionists, and researchers.

## Bibliography

1. African Development Bank. AfDB Economic Brief. 2012. The Political Economy of Food Security in North Africa
2. Ait Amara, H. 2002. La transition de l'agriculture algérienne vers un régime de propriété individuelle et d'exploitation familiale. *Options Méditerranéennes* 37-127 : 36
3. Algerian Customs. Online statistics. <http://www.douane.gov.dz/>
4. Amin, S. 1970. *The Maghreb in the modern world*. Harmondsworth: Penguin.
5. Amin, S. 1990. *Delinking : towards a polycentric world*. London: Zed Books.
6. Bédrani, S. 1992. «Les Aspects socio-économiques et juridiques de la gestion des terres arides dans les pays méditerranéens», Alger, *Cahiers du Cread*, 32-31.
7. Bédrani, S. 2010. «Le tournant de 1987 : les conditions de mise en œuvre d'une réforme du secteur agricole.» In *La Mitidja 20 ans après. Réalités agricoles aux portes d'Alger*, edited by Imache A., Hartani T., Bouarfa S., Kuper M, -39 46. Alger : Ed Alpha.
8. Belalloufi, H. 2012. *La Démocratie en Algérie: réforme ou révolution?* Algiers: Lazhari Labter Editions/Les Editions Apic.
9. Benachenhou A. 1976. *Formation du sous-développement en Algérie*. Alger : Office des publications universitaires.
10. Benadjila, S. 2016. *L'Algérie entre le marteau de la sécurité alimentaire et l'enclume environnementale*. Accessed on August ,23 2018. <https://paysansdalgerie.wordpress.com/17/03/2016/lalgerie-entre-le-marteau-de-la-securite-alimentaire-et-lenclume-environnementale/>
11. Benadjila, S. 2017a. *Au XXe siècle, l'Algérie ne peut construire sa souveraineté alimentaire avec des modèles agricoles du XXe siècle*. Accessed on August 2018 ,23. <https://drive.google.com/file/d/0BxnwRPoFyUO0cEYzZHUzYzFHNWs/view>
12. Benadjila, S. 2017b. *Production céréalière 2016 2017 -. Qu'en est-il, par delà la supercherie des chiffres ?* Accessed on August 2018 ,23. [https://drive.google.com/file/d/1am7MDBw-HTeB\\_PTQrRsCphqSNJCtbaP/view](https://drive.google.com/file/d/1am7MDBw-HTeB_PTQrRsCphqSNJCtbaP/view)
13. Benbekhti, O. 2008. « Le développement rural en Algérie face à la mondialisation des flux agricoles ». In *L'Algérie face à la mondialisation*, 97-86. Dakar : Conseil pour le développement de la recherche en science sociale en Afrique.
14. Bendjaballah, S. (2001). *Gestion des ressources naturelles et modes de sécurisation in réforme agraire colonisation et coopératives agricoles-1/2001*
15. Bennoune, M. 1973. French counter-revolutionary doctrine and the Algerian peasantry. *Monthly Review*, Volume 25, N-43 7 60.
16. Bennoune, M. 1981. *Origins of the Algerian Proletariat*. Middle East Research and Information Project. Volume:11, MER94.
17. Bennoune, M. 1988. *The Making of Contemporary Algeria, 1987-1830: Colonial upheavals and post-independence development*. Cambridge : Cambridge University Press.
18. Bessaoud, O. 2008. « L'agriculture et la paysannerie en Algérie : Les grand handicaps ». In *Symposium : L'Algérie 50 ans après. Etat des Savoirs en Sciences Sociales et Humaines*, -359 384. Alger: Editions CRASC-ENAG
19. Bessaoud, O. 2013a. *La question foncière au Maghreb: La longue marche vers la privatisation*. Les Cahiers du CREAD, N103.
20. Bessaoud, O. 2013b. *Aux origines paysannes et rurales des bouleversements politiques en Afrique du Nord : L'exception algérienne*. Maghreb – Machrek, N 30-9 ,215.
21. Bessaoud, O. 2016. *La sécurité alimentaire en Algérie. Etude réalisée pour le Forum des Chefs d'Entreprise*, 19/07/2016, Algiers.
22. Berque, A. 1939. *Pour le paysan et l'artisan indigène. Note sur le paysannat indigène*. Alger : Éditions Minerve.
23. Bouarfa, Y. 2010. « Un beau jour, la décision d'arracher la vigne est tombée ». In *La Mitidja 20 ans après. Réalités agricoles aux portes d'Alger*, edited by Imache A., Hartani T., Bouarfa S., Kuper M, 36-34. Alger : Ed Alpha.
24. Bourdieu, P and Sayad, A. 1964. *Le déracinement: la crise de l'agriculture traditionnelle en Algérie*. Paris : Les Editions de Minuit.
25. Breisinger, C, Ecker, O, Al-Riffai, P, and Yu, B. 2012. *Beyond the Arab Awakening: Policies and Investments for Poverty Reduction and Food Security*. Washington DC: IFPRI Food Policy Report.
26. Chaulet C. 1997. «Agriculture familiale et modèles familiaux en Méditerranée Réflexion à partir du cas algérien». *Options Méditerranéennes, Série B / n1997 ,12° - Agricultures familiales et politiques agricoles en Méditerranée*
27. Chehat, F. 2018. *Rapport national sur la sécurité alimentaire*, July 2018.
28. Conseil National Economique et Social. 2004. *La configuration du foncier en Algérie : Une contrainte au développement économique*. Edition CNES.
29. Davis, D. 2007. *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa*. 1st ed. Athens: Ohio University Press.
30. El Kenz, A. 2009. *Ecrit d'Exile*. Alger: Casbah Editions.
31. Food and Agricultural Organisation (FAO) of the United Nations. *Algeria country profile. Country Indicators*. <http://www.fao.org/faostat/en/#country/4>
32. Fanon, F. 1961. *The Wretched of the Earth*. London: Penguin Books.
33. Gauthier, R. 1966. « Vocation socialiste et autogestion ouvrière ». In *Manière de Voir*, 121 (Feb 2012): Algérie 2012-1954, *Histoires et Espérances*, 17 -12.
34. Global Hunger Index (GHI). 2017. *The inequalities of hunger*. <http://www.globalhungerindex.org/pdf/en/2017.pdf>
35. Grain. 2016. *The global farmland grab in 2016: how big, how bad? Resilience*. Accessed on August 2018 ,23. <https://www.resilience.org/stories/13-07-2016/the-global-farm-land-grab-in-2016-how-big-how-bad/>
36. Hamouchene, H. and Minio-Paluello, M. 2015. *The Coming Revolution in North Africa: The Struggle for Climate Justice* (in Arabic and French). Ed. Platform, Environmental Justice North Africa, Rosa Luxemburg and Ritimo.
37. Hamouchene, H. and Rouabah, B. 2016. *The political economy of regime survival: Algeria in the context of the African and Arab uprisings*. *Review of African Political Economy*. Volume 43 - Issue 680-668 ,150.
38. Hammouchi, S. 2012. *Investissement privé du secteur agro-alimentaire dans l'agriculture : cas de Cevital-SPA en Algérie. Mémoire (Master 2 SOTERN)* : CIHEAM-IAMM, Montpellier (France).
39. International Food Policy Research Institute, IFPRI. 2010. *Food Security and Economic Development in the Middle East and North Africa: Current State and Future Perspectives*. Washington DC: IFPRI.
40. IFPRI. 2018. *Agriculture and economic transformation in the Middle East and North Africa: A Review of the Past with Lessons for the Future*. Washington DC: IFPRI.
41. Imache A., Hartani T., Bouarfa S., Kuper M., (2010). *La Mitidja 20 ans après. Réalités agricoles aux portes d'Alger*. Alger: Ed Alpha.
42. Lacheraf, M. 1965. *Algérie, nation et société*. 2nd ed. Algiers : Casbah-Editions.
43. Marx, K. 1976. *Capital*, vol. 1. London: Penguin 38-637
44. Milliot, L. 1911. *L'association agricole chez les musulmans du Maghreb*. Paris : Edit. Arthur Rousseau.
45. MADR. Ministère de l'agriculture et du développement rural. 2008. *Etat des lieux et résultats*.
46. MADR. 2010. *Présentation de la politique de Renouveau Agricole et Rural en Algérie et du programme quinquennal 2014-2010*.
47. MADR. *Statistiques agricoles. Directions des statistiques agricoles et des systèmes d'informations*. <http://www.minagri.dz/>
48. Nemouchi H. 2011. « Pratiques sociales et problèmes fonciers en Algérie ». In *Options méditerranéennes, « Régulation foncière et protection des terres agricoles en Méditerranée »*, Série B 66, CIHEAM : 148-127.
49. Office National des Statistiques (ONS). 2011. *Enquête sur les dépenses de consommation et le niveau de vie des ménages 2011, Dépenses des ménages en alimentation et boissons en 2011. Collections Statistiques n. 195, Série S*.
50. ONS. Online statistics : <http://www.ons.dz/Statistiques-Economique-.html>
51. Omari, C et al., « L'agriculture algérienne face aux défis alimentaires. Trajectoire historique et perspectives ». In *Revue Tiers Monde* 2/2012 (n141-123 : (210°.
52. Observatoire du Sahara et du Sahel (OSS). 2003. *Système aquifère du Sahara septentrional. Gestion commune d'un bassin transfrontière. Rapport de synthèse*.
53. Rebah, A. 2011. *Économie Algérienne: Le Développement National Contrarié*. Algeria: INAS Editions
54. Stratfor Worldview. 2016. *Algeria: A Desert Nation Fighting to Maintain Water Supplies*. Accessed on August 2018 ,23. <https://worldview.stratfor.com/article/algeria-desert-nation-fighting-maintain-water-supplies>
55. Tlemçani, R. 1999. *Etat, bazar et globalisation – L'aventure de l'infatigable en Algérie*. Algiers : les Ed. El Hikma, cop.
56. World Bank. 1995. *Algeria: Growth, Employment and Poverty Reduction*. Washington DC: The World Bank.
57. World Bank, FAO and IFAD. 2009. *Improving food security in Arab Countries*. Accessed on August 2018 ,23. <http://siteresources.worldbank.org/INTMENA/Resources/FoodSecfinal.pdf>
58. World Bank. *Algeria Country Profile*. <https://data.worldbank.org/indicator/SH.STA.STNT.ZS?locations=DZ&view=chart>