

**A Policy Analysis of Rural Development Schemes
in Algeria: From Agrarian Reform to
Knowledge Based Development**

*Abdelkader Nouibat,
Université of M'Sila*

Abstract

This paper tries to look and the different developmental schemes implemented by the Algerian government and their impact on the developmental processes of the agricultural sector. The methodology used is policy analysis. Policy analysis can be defined as "determining which of various alternative policies will most achieve a given set of goals in light of the relations between the policies and the goals" However, policy analysis can be divided into two major fields. Analysis of policy is analytical and descriptive

ملخص :

لقد مرت سياسة تنمية القطاع الزراعي في الجزائر بعدة مراحل، أولها مرحلة الإصلاح الزراعي وثانيها مرحلة الثورة الزراعية وأخيرا مع بداية القرن الجديد مشروع تنمية القطاع الزراعي القائم على اقتصاد المعرفة . سنحاول في هذه الورقة تحليل أسباب اختيار كل من هذه السياسات في أحقاب زمنية معينة، وسبب إخفاق السياسيتين الأوليتين وذلك باستعمال منهج تحليل السياسات، وهو منهج وصفي أي يصف السياسات كما طبقت من طرف الحكومة ثم تحليلها ، ثم عرض النتائج المرجوة من هذه السياسات وتحليلها بأخذ بعين الاعتبار مدخلات هذه السياسات.

I. Introduction

The Algerian agriculture sector was known to satisfy almost all of the country's food requirements before independence. Whereas the country produced almost all of its grain needs at independence, this rate was only twenty five percent in the late 1980s. Before the development of hydrocarbons sector, the agricultural one accounted for sixty three percent of export revenues. But the importance of

agriculture lost ground steadily as the oil and gas became the driving force of the economy and the government's development strategies favoured heavy industries over agriculture-related projects. Similarly, agricultural employment dropped from forty percent of the total labor force in the 1960s to twenty four percent in 1990s. The percentage of gross domestic product (GDP) provided by agriculture in 1990 was estimated to be between seven to eleven percent; it was clear that agriculture's impact on the economy had declined appreciably since independence. But why had the various developmental schemes failed to develop this vital sector despite multiple government efforts towards it? This paper tries to look and the different developmental schemes implemented by the Algerian government and their impact on the developmental processes of the agricultural sector. The methodology used is policy analysis. Policy analysis can be defined as "determining which of various alternative policies will most achieve a given set of goals in light of the relations between the policies and the goals" However, policy analysis can be divided into two major fields. Analysis of policy is analytical and descriptive -- i.e., it attempts to explain policies and their development. Analysis for policy is prescriptive -- i.e., it is involved with formulating policies and proposals (e.g., to improve social welfare). The area of interest and the purpose of analysis determine what type of analysis is conducted" (Nagel, Stuart S. (ed.), 1999: 11). Since the attempt of this paper is to explain rural development schemes and their impact on the development of the agricultural sector in particular and on the national economy in general, the analytical and descriptive model is used to explain the reasons behind choosing certain agricultural policies at certain developmental stages of the Algerian economy.

II. The Agrarian Reform

The agrarian reform launched in Algeria had its origins in the directives of the Agrarian Charter (1971). It embodied two explicit goals. First, the reform intended to reduce land tenure inequalities that officially were viewed as the main cause of rural poverty and the inability of the rural population to take part in Algeria's economic development. Second, this reform intended to provide the country with food security. An agriculture census conducted in 1964-1965 revealed a clear inequality in land holdings in the private sector: 16.500 landowners owned more than 50 hectares each; 147.000 had holdings between 10 and 50 hectares; and 423.300 had holdings of less than 10 hectares, which were considered too small to be viable unless irrigated. Among all landowners approximately 34.100 fell in the "absentee" category. Meanwhile, 500.000 peasants were entirely landless and worked on others' holdings. To achieve equality, land was distributed to the landless fellah and owners of poor land. The newly distributed land would come from two sources: publicly owned land and expropriations of private holdings. Holdings from absentees (34.00 hectares) and large privately owned lands (25.500 hectares) were taken over by the government. This process took place in a political framework called "the Agrarian Revolution" (Ait-Amara et al1990, p.3)

The agrarian revolution was to proceed in three phases. The first phase started in 1972; public, tribal and religious foundation lands were distributed among landless peasants. The second phase began in 1973 and involved expropriating and distributing absentee holdings. The third phase, to be launched in 1975, would nationalize fifteen million hectares of pastureland; sheep and goats would be expropriated from absentees or large stock raisers and redistributed to herd less shepherds. The latter phase, however, was never

implemented. By 1980, the first two phases came to their final stage, over 1, 3 million hectares had been distributed to 98.000 beneficiaries. Land was distributed on permanent basis with no right to resale. The government required beneficiaries to join production cooperatives and to work the land in common. Individual allotments were sized to guarantee a net yearly income of at least 3.750 dinars, which was the minimum wage (Swearingen 1992, p.124). Although the immediate two objectives of agrarian revolution scheme were to distribute land and secure the availability of food, its main purpose was to integrate the agricultural sector into the industrial sector. This integration process was seen to take place through the reproduction of a growing labour force at a much higher rate of growth of food crops than the rate of population growth, and through the integration of the agricultural sector into an upstream “industrial complex “ in order to avoid technological dependence. These objectives appeared to be realistic. The country is well endowed with natural resources to supply steel and engineering, as well as agro-chemical industries, with raw materials. Finally, intensification of production techniques and an appropriate redistribution of land and income would maintain a rate of rural out-migration compatible with the rate of economic, particularly industrial, growth and hence with the rate of job creation in those sectors (Ait-Amara et al,1990, 4).

A. The reproduction of growing labor force and production

Prior to 1962, the Algerian economy in the exportation of wine, produced on the littoral fertile lands. However, after independence the goal to industrialize the economy led the government to carry out a program use land to producing other types of crops for domestic consumption. Vineyards area fell from 500,000 hectares in 1962 to 233.000 hectares in 1975, a reduction of 53.4%. Also between 1972

and 1977, the food, beverages and tobacco had fell in volume from 900.000 to 580.000 metric tons and in current value from 664 million dinars to 550 million dinars. In 1970, agricultural commodities contributed 20.5% and hydrocarbons 70.5% of export receipts, in 1978 the percentages were 2.45% and 96% respectively. Clearly, a drastic reduction in wine's place in the economy and exports was necessary; but why it was replaced by oil, is not clear (Aït-Amara et al, 1990, p.4). The result was a drastic decrease in agricultural production as table 1 shows.

Table 1: Agricultural production and yield

Production in 1000 tons (1960)	Production in 1000 (1969)	Annual % Growth rate in Production (1960-1970)	Yield per hectare in 100kg (1960)	Yield per hectare in 100kg (1969)
2.417,8	1.852, 4	-2,6	7,7	6,1
843,5	1.326,2	-0,5	7,8	6,0
1.055,2	466,4	-4,0	7,2	6,3

Source: Kara, Mustafa. Problems of Development Financing in Algeria , University of Pittsburgh: Unpublished Dissertation, 1978, p. 21

The reallocation of productive forces was not to be done at the expense of the growth of production. But, during the 1970s, there was a decline in production as these date show: on the base 1974-76= 100, the production index was 97 in 1982, after being 109 in 1980 and 102 in 1981. Per capita index went from 93 in 1978 to 80 in 1981 and 88 in

1982. The indices of foodstuff production moved even more negatively, the index for 1982 being 77 (Ait-Amara et al, 1990, p. 4).

B. The industrialization of the agricultural sector

Although the French colonizers left Algeria with relatively good infrastructure, Algeria's could not be described as nearly as industrialized in the early 1960s if the oil sector were excluded. Table 2 below shows the evolution in the sartorial structure of the GDP during 1963-66.

Table 2: Structure of GDP, 1963-1966 (Millions of Algerian Dinars)

Sector	1963	1964	1965	1966
Agriculture	2.730	2.295	2.300	1.600
Mining & electricity	340	275	400	400
Construction & public works	550	540	2.600	2.600
Manufacturing excluding hydrocarbons	4.450	4.230	5.300	4.600
Hydrocarbons	2.810	2.265	2.100	2.700
Transport & services	1.575	1.590	5.400	5.700
Commerce	2.835	2.900	---	---
Total GDP excluding hydrocarbons	8.860	8.810	11.000	10.300
Total GDP including hydrocarbons	11.040	11.075	13.100	11300

Source: Bennoune, Mahfoud. The Making of Contemporary Algeria. 1830-1987. Cambridge University Press, 1988, p. 103

In spite of the clear decline in the share of the agricultural sector in GDP, physical accumulation, notably through mechanization was considerable as Ait-Amara and Founou-Tchuigoua reveal. Between 1970 and 1978 the quantity of agricultural machinery increased considerably. Over these eight years, the quantity of tractors and harvesting, ploughing and transport equipment increased by 3.17, 2.76, 2.18, and 3.85 times respectively. In 1979-81, with 43.000 tractors, Algeria was the leading mechanized country in Africa (after South Africa) and well ahead of Tunisia (34,000) and Egypt (25.000) (Ait- Amara et al, 1990, p. 4).

C. The “Agricultural Revolution”

The French settlers owned over two million hectares of agricultural land in the country; 95% of their holdings averaged over 100 hectares. These lands were confiscated by the people and formed the socialist sector also known as the “self-managed sector”. In the early 1970s the agrarian revolution made it possible to take 400,000 hectares from Algerian private ownership. The workers in the self-managed sector as well as the agrarian revolution sector were in fact state employees as the allocation of the product and the means of production were carried out by the state and not by the workers. In other words, the vast agricultural sector owned by the state was dependent upon it for the means of production. But, its demand for mechanized equipment is greater than the private sector's. In 1978, for example, the figures for the state sector were; tractors (32.443); equipment for harvesting (29.594); for transport (19.056), and for other purposes (22.997). Those for the private sector were: (10.053);

(54); (20.135); (10.103) and (15), respectively (Ait Amara et al, 1990, p. 45).

D. “The Agricultural Revolution” a failed revolution

Why did agrarian reform fail to meet the population’s food needs despite the implementation of the agrarian revolution scheme? In light of some of the studies conducted on the subject—Ait-Amara (1990), Anderson (1985), Bedrani (1982), Benachenhou (1980), Bennoune (1988), Bourenane (1987), Brahim (1991), Pfifer (1985), Sutton (1982), and Swearnigen (1992) --The major factors that seemed to contribute to the failure of the land reform and subsequent food crisis of the 1980s and early 1990s may be summarized as follows: (1) inadequate funding for agricultural development, (2) peasant resistance to the reform, (3) the flawed character of the agrarian reform, and (4) neglect of the private agricultural sector.

1. Inadequate funding of agricultural development

Despite the political and ideological importance of the agricultural sector in post-colonial Algeria, and despite the government’s commitment to achieve self-sufficiency in food production, agriculture continued to suffer from shortage of funding. In all the national development plans, the agricultural sector was allocated only a minor portion of total development funds, except in the initial three-year plan 1967-69 where it stood at 25,8 %, but dropped to 14,8 % in the 1970-73 plan and to 11% in the 1974-79 plan, and dropped again to 5.2% in 1984-84 plan. (Hamidi, 1986, p.15)

During the 1985-89 Plan, agriculture was allocated 5.5 % of the total development funds, of which 7.5% was allocated for water projects such as dam construction. The water stock of these dams was

to be used for land irrigation; however, according to the Ministry of Planning and Land Management (1985), a substantial amount of this water was used to meet the needs of the urban population and industrial production (Swearingen, 1992, p.139).

The shortage of agricultural development produced inadequacies mainly in agricultural experimentation and support systems. Agricultural training services were at minimal levels (Swearingen, 1992, p.139). The consumption of commercial fertilizers is an important indicator of their effects on yields. But in Algeria, per capita consumption was unstable during the 1970s, with a very marked downward trend for phosphate and nitrogenous fertilizers. For the years 1972-74 the consumption, in metric tons per inhabitant was: Nitrogenous fertilizers (7.82), phosphates (6.75); potash (5.53); and insecticides (0.23). For the years 1979-81, consumption was (8.10); (5.53); (3.01); and (0.25), respectively. Salaries of workers in the state agricultural sector were very low (minimum legal wage), generating low morale and necessitating the workers to search for other activities to support their families. By 1977, the employed rural population represented only 53.5% of the total employed population, whereas in 1966 it stood at 58.23% of male employment was in agriculture, a percentage that fell to 31% in 1977. In the rural areas, agricultural activity occupied only 50% of the population. Rural processing industry was still embryonic since it employed only 7% of this population as against 16% in construction and public works and 10% in administration and services. The failure to create more agriculture jobs through mechanization has led to a very rapid reduction in the rural agricultural population, but the growth of industrial employment has been insufficient to absorb all the working age population. Emigration remains one solution to the problem of rural unemployment. According to the 1955 French census, the total economically active Algerian population in France was 308.575,

representing 13% of the employed population in Algeria, this latter being estimated at 2.336,972 in 1977. (Ait –Amara et al, 1990, 6-7).

The shortage of funds in the agricultural sector also led to a deterioration of the machinery due to a lack of spare parts; funding for importing spare parts was limited. In 1980, for example, 1.300 of the country's 6.100 combine harvesters were out-of-commission (Economic Intelligence Unit, 1982, p.1). Out-Dated machinery had direct effect on food productivity. Each year, due to broken agricultural machinery, significant acreage of agricultural land was not used in production. Bennoune (1988) stated that importing food stuffs grew more than five times during 1966-77 and was one of the outcomes of the shortage of agricultural machinery in the country as the following table shows.

Table 3: Annual Average Imports and Exports of Foodstuffs : 1967-77 (Millions of Algerians Dinars)

	1966	1967-70	1970-73	1974-77
Imports (value)	731	731	925	4.049
Index (base 67/69)	100	127	554
Exports (value)	931	717	736	612
Index (base)	100	103	85

Source: Bennoune (1988): 216.

The shortage of funding for public agricultural sector also prevented building adequate storage facilities for cereals. Braun stated that much of Algeria's cereals were stored under improper conditions or even were stockpiled in the open, which produced major crop losses; the average loss was estimated at 20% during 1966-77

(Braun, 1983, p. 40). On the other hand, shortage of funding for the private agricultural sector was worse because of two government policies: (1) the pricing policy, which set producer price below competitive levels; and (2) a lack of credit to small farmers. These two factors played a major role in fostering food shortages. The Algerian government long maintained a tight control over producer prices. From the mid-1960s until the 1970s, prices paid to farmers for wheat, barley, and other staple food crops were far below market prices. According to Cleaver these prices were only one-fifth to one-half of they would have been without the government's price-fixing. As noted earlier, the government's primary motive behind the policy was to provide inexpensive food to workers in the industrial sector whose salaries were kept low in order to maintain low industrial costs. Nevertheless, low prices of agricultural products created a vicious cycle; they discouraged the production of cereals and other controlled staple foods. Small farmers tended to grow only enough food for their own consumption; meanwhile, they were earning supplementary incomes from other means outside their farms. By contrast, more prosperous farmers invested in production of higher-value speculative crops rather than cereals and other basic crops. Either way, artificially low agricultural product prices led to food shortage. (Cleaver, 1982, p.5)

2. Peasant Resistance to Agrarian Reform

Algeria's peasants have been disenchanted with the government's agricultural policies since the first stages of the agrarian reform. The highly inefficient nature of the government's dirigisme (gap between socialist rhetoric and reality) and the gradual impoverishment of the countryside due to the sharp differences in wages between industrial and agricultural sectors led to peasants resisting the government's agrarian policies.

Wages in the agricultural sector clearly were lower than in the industrial sector. Table 4 summarizes the evolution of the minimum wage for one eight-hour working day between 1963 and 1978. Thus despite a presidential decree in 1974, called for a uniform minimum wage for all sectors in the economy, the difference in the wages sharply increased.

Table 4: Minimum Wages: 19763-1978 (Figures in Algerian Dinars)

Sector	1963	68/71	72/73	74/75	76	77	78
Agricultural	7.54	8.0	9.80	12.25	15.30	20.00	28.00
Non-agricultural	10.86	...	13.84	16.64	19.20	25.28	33.70
Difference	3.32	...	4.04	4.39	3.90	5.28	5.68

Source: Bennoune (1988): 209, Ministry of Agrarian Revolution, l'Evolution de l'Agriculture (Alger, MIRA, 1980).

The disenchantment of land laborers in the public sector easily can be seen in the massive land abandonment by young workers. By the end of the 1970s only a residual labor force remained on the farms. The 1972-73 agricultural censuses revealed that 32.9 % of the workers of this sector were more than 59 years old, compared to 23.6 % in 1968. However, in some the situation was worse. In the Mitidja, the proportion of permanent workers over 60 years of age increased from 15 % in 1971 to 39 % in 1973 (Bennoune 1988: 110).

3. Structural Weaknesses in the Agrarian Reform

Algeria's land reform was not as extensive as was commonly believed. Table 4 presents a summary of that "disappeared" during the courses of developing the agricultural sector: over 204 million

hectares were not accounted for between 1962 and 1975. The disappearing land is a land that either was erased illegally from the land records or that through unethical or illegal means vanished from the actual land fund. Most of the disappearing land is owned or controlled by large/or absentee landowners and would have been subject to expropriation during the agrarian revolution (Swearingen, 1992, p.142)

Table 4: Algeria's "Disappearing Lands" : 1962-1975

Self-managed Sector 1962-65 (hectares)	Public Land 1974-75 (hectares)	Private Sector 1962-75 (hectares)	Total (hectares)
400.000	1.400.000	650.000	2.450.000

Sources: Pfeifer (1985: 250); (Swearingen 1992: 143)

Large and/or absentee landowners managed to retain approximately a third of Algeria's useful land. The amount of land that eluded the agrarian reform was nearly twice as the amount of land appropriated by the government. Through not all this land could have been expropriated, most could have been. Using the rule-of-thumb that ten hectares of dry land are needed to support a peasant family in Algeria, an estimated 150.00 to 200.000 additional landless peasant families could have been given viable holdings (Swearingen, 1992, p.144).

In Algeria, as in other developing countries, land held by large/or absentee landowners is usually farmed only if weather and economic conditions are favourable. These landowners' primary pursuits are elsewhere; they rely on sharecroppers and tenant farmers to work their lands. Furthermore, most of this land is left fallow each

year. During the land reform, fallow areas increased by 10%. If most of the 204 million hectares had been used successfully, the food crisis that followed during the 1980s and 1990s could have been prevented at least partially. The flawed nature of the country's land reform was one of the main reasons for the food insecurity.

4. Neglect of the Private sector

According to the Ministry of Agriculture's 1968 census, 6 million hectares of the arable land were owned privately in Algeria. Empirical research conducted by the Secretary of States for Planning during the 1970's established that private agriculture was characterized by two main forms of production: (1) the domestic form, defined by the use of family labor to produce for immediate family consumption, and (2) the merchant family form, defined by utilizing family labor to produce for the market. In the latter form, wage labor and mechanization were utilized. The family units in the domestic form of production varied between 10 to 50 hectares; the merchant family form was more than 50 hectares; the country's last national agricultural census, in 1973, revealed that approximately 80% of the holdings in the private sector under 10 hectares. In the North African environment, such holdings are too small to be viable unless irrigated. Since the early 1970's, demographic pressures and fragmentation have increased the number of nonviable holdings. As a result, the private sector is the main source of the country's rural-urban migration (Swearingen, 1992, pp.144-145).

E. Government Response to Failing Agrarian Revolution

By 1978, following the completion of the Second Plan (1974-77), it became clear that the government had abandoned the agrarian

revolution scheme. As “discontent was growing in the countryside, urban consumers were complaining about the empty shelves, and food imports had reached alarming high levels” (Swearingen 1992, p.128). The reconstruction of the public agricultural sector was debated by the FLN Party’s Economic Commission. It was resolved that both self-managed agricultural domains and the agrarian revolution cooperatives would merge to create 3.429 state farms called Domaines Agricoles Socialistes--DAS (socialist agricultural domains) which roughly were of equal size and comprised a total of 2.830.000 hectares. An additional 700.000 hectares from the agrarian revolution lands were privatized and distributed either to individual cooperative members or to former owners (Hamidi, 1986), p. 26).

The new agricultural reform did not elaborate on how physical and economic linkages would be enhanced between the newly established DAS, however food security has been sought as the primary goal. The second goal was to relieve the government of the inefficient state agricultural sector’s heavy financial burden that had increased approximately 13% per year throughout the 1970’s. By 1980, the deficit had grown to an annual total of approximately two billion dinars (Chaabouni, 1988, p. 129). Reform in the state sector was a major element of the program designed to liberalize and partially privatize the entire Algerian economy. The main goal of the program was to make the national economy more efficient and less of a drain on the national treasury. “It reflected disenchantment with the dubious results of Algeria’s prior heavy-handed bureaucratic centralization (Swearingen, 1992, p.129). During the Fifth Party Congress on 19-22 December 1983, a comprehensive long-term agricultural development plan began to emerge. The congress subsequently passed a resolution demanding that agriculture and water development receive to priority in future development plans.

1) Action Program:

In June 1984, the Ministry of Agriculture formulated the Programme d'Action pour l'Intensification de la Production Agricole (PAIPA), in order to intensify agricultural production. It was immediately adopted within the 1985-89 development plan, which allocated 30 billion dinars to agriculture development and 4 billion dinars to constructing irrigation systems. PAIPA represented Algeria's agricultural agenda for the 1980's. The agenda had three major thrusts:

a). Increase the cultivated area. The government believed that by the year 2000, up to two million hectares of new land could be used for production. Productive new land was surveyed from the government's homesteading program and from increasing use of arable land left fallow each year. The two million hectare figure would represent an increase of about 70% over the amount of land cultivated annually in Algeria in 1990 (Swearingen, 1992, p. 134).

b). Increase agricultural yields. The government attempted to increase crop yields through agricultural mechanization, introduction of high-yield seeds, and better cultivation techniques; means included expanding agricultural research, extending agricultural services, and training. The 1985-89 plan called for purchasing from abroad 45.400 tractors and 40600 combine-harvesters. Some US \$670 billion was allocated to purchase agricultural machinery in the 1985-89 Plan (Swearingen, 1992, p. 134).

c). Mobilize water resources for irrigation. Approximately 350.000 hectares of land were under perennial irrigation in 1984. Government plans called for irrigating an additional 60.000 hectares by the 2000. As the new reform began, 29 dams were in operation to build and 18 were in various stages of construction. The government also planned

to build 500 small diversion dams in perennial streams and to check dams on slopes and at small water streams (Faure, 1987, p. 15).

2). Pricing policy

From 1962 to 1974, producer prices for basic food crops remained almost completely unchanged despite increasing production costs. Subsequently, the government modestly began to raise prices. However, until about 1980, producer prices remained too low either to provide viable farm incomes or to encourage production (Badrani , 1982, p.148). In the early 1980's as the government began to become fully cognizant of the negative effects of its pricing policy on agricultural production, a new policy was established under "la verite des prix" (truth in pricing). Produce prices gradually were raised to bring them into alignment with prices that would prevail under free-market conditions. For example, producer prices for cereals were raised by 20% in 1985 and by 10% more in 1987. The goal behind the country policy was to stimulate agricultural production and help the country to achieve food security.

3). Irrigation Projects

In the early 1990s, at least 22 percent of the population lived in rural areas and depended on agriculture as a means of livelihood. But a number of natural factors beyond the government's control have had a negative impact on Algerian agriculture, among them unreliable rainfall patterns, floods, and drought. The country's arable land is limited to less than 3 percent of its total area-- about 7.5 million hectares. Another 12 percent of Algeria's total area is suitable only for forestry and grazing. Because 40 to 50 percent of the cultivable land is usually left fallow in any one season, only about 1.7 percent of the total area (about 4.2 million hectares) is actually cultivated; more than

half of the cultivable area, 2.7 million hectares, is used for grains alone. In addition, only one-tenth of the cultivable land receives adequate rainfall. In 1989 the government, finally recognizing that irrigation projects were essential to allow more intensive cultivation and substitution of higher-yielding vegetables for grains, provided more than 1.8 billion cubic meters of water by irrigation to increase agricultural production.

The results of the action program, pricing policy, and irrigation projects led to a clear improvement in the development of agricultural sector during from the mid-1980s to the mid-1990s as it can be seen from the index of the evolution of agricultural production in the following table.

Table 5: Agricultural Production: Annual Evolution of Indexes (1986-1996)

Index	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
	83.3	96.1	85	98	90.6	111.4	122.1	100.5	96.1	110.9	135.4

Source: Office National des Statistiques, Alger : O.N.S., 2008

III. Knowledge Based Rural Development

Algeria entered the new millennium with positive economic developments. Starting from a position of extreme vulnerability in the early 1990s—low oil prices, unsustainable foreign debt servicing...etc-, GDP has grown by 3 per cent a year, on average, from 1999 to 2002, with similar performance from the non-hydrocarbon, non-agricultural sector. Macroeconomic imbalances have been turned into

sizable surpluses by 2001 and inflation has fallen from a high of 20 percent in 1994 to 1.4 percent in 2002. Reserves—US\$23.1 billion at end 2002—reached their highest levels since independence in 1962 and are equivalent now to the country's stock of foreign debt. In this context, the government has articulated a comprehensive national development agenda focused on reforms to sustain growth, generate employment, and reduce poverty and vulnerability. 70% of Algeria's poor live in rural areas and more than half of the rural population is poor. The rise in poverty is strongly linked to unemployment. Lack of income, however, is only one dimension of poverty. Lack of opportunity, empowerment and access to social services also contribute to deepening income poverty (World Bank, 2003, p.1). Facing the problems of the rural poor, the Ministry of Agriculture's mandate was expanded to include rural development. In 2002, a National Agricultural and Rural Development Plan (PNDAR) was developed to strengthen the country's food security, restore ecological balances and improve the living conditions of the rural population, which included more than half of the country's poor.

With regard to environmental protection and resource conservation, a national land-use planning scheme (SNAT) was developed in 2004. It comprises several sector-based action plans covering the entire national territory. The SNAT is responsible for making sure the development projects are coherent with the territories that are to benefit from them, and for supervising their implementation in accordance with environmental impact studies. And regarding technical and vocational skills development, the Technical and Vocational Education and Training (TVET) was developed to upgrade the skills of the rural population (OECD, 2008, p. 3).

A. The National Agricultural and Development Plan

PNDAR is directed at integrated, balanced and sustainable rural development in the various territories (Mitija, high plateaus and desert) in terms of their distinctive characteristics. The main instrument for implementing the plan takes the form of rural development partnership projects (PPDR) based on a participatory approach and intended to create the conditions for the emergence of modern agriculture and income-generating activities, as well as to address the social aspects of the fight against rural unemployment, poverty, the paucity of human capital and the problem of precarious housing. Since 2003, the plan has in fact made it possible to open 23 471 kilometres of tracks and access routes, and to install 5 260 kilometres of electric power lines. By the end of 2005, no fewer than 1.146 PPDRs had been funded and 660 launched, to the benefit of 67 568 rural households. Nearly 240 projects have been delivered, and 9 200 others are scheduled for the next few years, involving nearly 6 million persons, directly or indirectly (OECD, 2008, p.4).

Considering that the put a lot of efforts in developing the agricultural sector in during the past few years the gross agricultural production growth stayed stagnant at 2% per annum in the 2004-2007 period except for 2006, as table 6 shows.

Table 6: Gross Agricultural Production Growth 2004-2007

	2004	2005	2006	2007
Gross agricultural production growth %	5.1	2.0	3.5	2.0

Source: The Economist Intelligence Units, London: EIU, 2006, p.12

In terms of job creation the latest statistics available from the National Statistics Office is not encouraging as table 6 shows.

Table 6: Employment and Unemployment figures: Oct-Dec 1987

Unemployment Rate	Urban	Rural
Unemployment Rate	14.2%	13.3%

Source: National Office of Statistics: Alger: ONS, 2007, p.1.

Algeria's food import bill jumped 50% to reach \$4.5 billion in 2007 compared to \$3 billion in 2006. The figures applied to imports of grain, sugar, milk, coffee, edible oil and dried vegetables. The Memri Economic Report, Algeria's Food Import Bill Increased by Fifty Percent, Memeri 1/17/2008, P.1

B. Technical and Vocational Education

In order to launch its program of Knowledge Based Rural Development the government of Algeria established technical and vocational facilities and training institutions. These institutions offered courses that lead to qualifications and diplomas covering a wide range of specialised fields, with different types and levels of qualification. At the beginning of 2006, there were 884 facilities totalling a capacity of 210 000 for residential training, plus nearly 200 000 for apprenticeship training, 21 000 for distance education and 24 000 for night school. The total number of trainees increased by 3.6 per cent in 2006, with 40 per cent newly registered students. To that may be added 66 000 training positions offered by 70 public institutions that fall into other branches of training, as well as 528 private institutions offering vocational training. The total number of trainees in these institutions comes to nearly 20 000. In 2006, 54 or so new facilities were delivered that offer an additional capacity of nearly

11 000 in residential training. This sector also offers a capacity of nearly 35 000 in boarding schools throughout the national territory, and provides training to 720 foreign trainees from Africa and the Arab world, 260 of whom were newly registered students in 2006/07 (OECD, 2008, p. 13).

The TVET system showed that there was a relative loss of prestige for vocational training tracks, the stagnation in the classification of the fields of study and a high concentration of trainees in a small number of branches. The sector suffers from the low level of the training provided and from inadequate internal and external outputs. Although the number of graduates in the sector has increased annually on average by nearly 5.6 per cent since 2000, the attrition rate remains high (14.4 per cent in 2005). Moreover, the integration rate for graduates from other sectors is only about 15 %. The root causes of these factors are teachers' low qualification level - only 27 % of them are specialised vocational education teachers (PSEP) – and the deterioration in the student-teacher ratio due to a lack of teachers (40 per cent of positions are filled by temporary staff). The reform which was begun in 2006 is attempting to alleviate this situation in order, on the one hand, to improve the system's internal and external outputs and train young people who have dropped out of the general education system, and on the other, to ensure a better correspondence between training and employment. The sector's priorities are to provide the training of qualified manpower through residential and apprenticeship training, as well as its "maintenance" by means of continuing education (retraining, advanced training and refresher courses). The main objectives hinge upon: *i*) the re-establishment of the original purpose of vocational training through the revival of traditional craft trades and the development of manuals, particularly in agriculture and construction; *ii*) the introduction and promotion of occupations created by the new knowledge-based economy; *iii*) the

funding of training and advanced training fort the sector’s human resources, especially the teachers; and iv) the diversification of funding sources. The sector has also developed new training courses on new information and communication technology (NICT) (OECD, 2008, 14).

IV. Conclusion

We tried in this paper to analysis the policies that led to the development of the agricultural sector in Algeria since independence. The analyses showed that the agrarian reform in the country let to the elaboration of a scheme officially was known as “the agrarian revolution.” It was mainly based on the expropriation of large land owners and absentees to form a “land fund” from which landless fellahs own, without a right a sell, a piece of land for cultivation. However, the Algerian fellah with the agricultural worker on the socialist domains’ lands were simply government employees who ended up leaving the land, especially the fellahs who belonged to agrarian revolution scheme, because of several factors of which was the inadequate funding of the agricultural development and the fellahs resistance to the agrarian reform. The government had responded to the failing reform of the 1960s and 1970s by launching a new scheme for agricultural development by encouraging the agricultural private sector in the 1980s and by abandoning price control policy of agricultural products. The outcome of the “second land reform” of the 1980’s did not fair better than precedent one, as food shortages and produce price escalation led to an economic crisis that led the government to abandon the socialistic path to development all together. With coming of the new millennium the government had a new vision to economic development in general and agriculture development in particular—the establishment of the market system and the rational use of resources. The knowledge based

agriculture development programs that emphasised the development of land—considered environmental challenges—, irrigation systems, and the development of the human factor became *sin qua non* for agricultural development to reach food security in Algeria.

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