

SHOULD FOREIGN AGRICULTURAL INVESTMENTS SOLVE FOOD DEPENDENCY ISSUE IN ALGERIA?

Dr. Midoun Ilyes *

الملخص

تعاين الجزائر من الانكشاف الغذائي، الناشئ أساسا عن ضعف مردودية الاستثمار المحلي في القطاع الزراعي، خاصة بعد تحول السياسات الاقتصادية نحو تشجيع الصناعات الثقيلة، و عليه تهدف هذه الورقة البحثية إلى إبراز أهمية الاستثمار الخارجي في ملئ فجوة الاستثمار الزراعي في الجزائر، فبعد التطرق إلى واقع القطاع الزراعي الجزائري من خلال عرض موجز للسياسات الزراعية، و إلقاء نظرة على أنماط الاستثمارات الزراعية الأجنبية و انعكاساتها المباشرة و غير المباشرة المتعلقة بالأمن الغذائي، و في المحور الأخير اتجاهات هذه الاستثمارات في الجزائر و أهم أسباب قلتها، تم التوصل إلى النتائج التالية، فشل السياسات الزراعية الجزائرية المتعاقبة في تأمين الأمن الغذائي، الاستثمار الزراعي الأجنبي المباشر أحسن أنماط الاستثمار الخارجي في الحد من التبعية الغذائية، ضعف مناخ الاستثمار في الجزائر سبب نفور الاستثمارات الزراعية الأجنبية المباشرة، فيما اختتمت الدراسة بمجموعة من التوصيات على رأسها: تحسين السياسات الاقتصادية المتعلقة بالاستثمار الزراعي، الشراكة مع المنظمات غير الحكومية، تحسين شراكة القطاعين العام و الخاص، ترويج مناخ الاستثمار، تطوير البنى التحتية، زيادة التنافسية و الحوكمة.

الكلمات الدالة: الزراعة، الاستثمارات الأجنبية المباشرة، الجزائر، الشركات متعددة الجنسيات، الأمن الغذائي

Abstract: Agriculture production in Algeria has decline sharply since the independence, due to several reasons, however, the main one is the weak of local investment as the economy has attempted to shift towards "heavy manufacturing". Therefore, Algeria's economy today has become heavily dependent on agriculture imports. Thus this researching paper attempts to study the importance of foreign investment to fill investment

agriculture gap in Algeria. Results indicate fail of agriculture Algerian policy in the medium-long term, poor Algerian investment climate as well. Furthermore, FDI is the best type for food security. The paper concludes with recommendations to foster agriculture investments that can lead to the food security in the country.

Key words: Agriculture, Foreign direct investment (FDI), Algeria, Tran national corporation (TNC), Food security.

JEL classification: F21, F23, Q11, Q18

* Maître de conférences B, Centre Universitaire D'Illizi.

1. Introduction

Food insecurity in Algeria is characterized by a high dependence on foreign markets, due to low yield of local food production. The growing needs of the population are increasing met by imports, particularly cereals, milk, sugar, and edible oils. Food availability in Algeria, estimated for the period 2000-2009 amounts to 3600 kcal. However, the self-sufficiency in basic foodstuffs is low. Thus, Algeria imports 75 % of its cereal needs and 60% of milk requirements and 30 % of the feed requirements, in addition to all of the sugar and oils food consumed¹.

Several constraints are the cause of this situation, the problem of low agricultural productivity, the failure of development programs, the harsh natural conditions, the water deficit and limited land resources. In fact, some region is more disadvantages than others in terms of productive resources, especially in the south.

Thus, and based on good experiences from developing African-Asian countries, which solved their food insecurity issue by foreign agricultural investments, through different types, we discuss in this paper whether this type of investments could solve the same issue on the Algerian case.

Agriculture investments by foreign investors can generate a wide range of benefits such as higher productivity, increased food availability, employment creation, poverty reduction, technology transfer and access to capital and markets, but there are also drawbacks.

Therefore, this study attempts to extend the literature by considering the following research question; what extent has FDI participation increased agricultural production and created value? To what degree has the value created in the host economy been retained domestically? And how has this retained value been distributed among various stakeholders, especially local farmers and the rural poor? In addition, against the backdrop of the current food crisis, what are the development implications of rising FDI in food crop production?

The remainder of this study is organized in six sections. The introduction is followed by three sections focusing on investment in agriculture sector; section 2 gives a brief overview of the agriculture sector in Algeria by policies and main causes of rising food imports. Section 3 makes a literature review of foreign direct investments in agricultural sector through the type of FDI participation in agricultural sector and its implications on food security. Section 4 is the analysis of FDI performance in Algeria agriculture Section 5 is for discussion the results. The study closes with some concluding remarks and policy implications.

2. The state of Algerian agriculture sector:

2.1 Brief history of Algerian Agriculture policy:

There are various agricultural policies have been implemented since the country's independence in 1962. The general purposes of these policies have been to enhance agricultural development and food security in the countryⁱⁱ.

- 2.1.1 **First period 1962-1970:** After Algerian independence was declared in 1962, most of the fertile farmland was abandoned by colonial farmers (roughly 2200 ha), who were replaced by wage labourers (some 2200 farmers). The farmland was amalgamated and converted into a vast 'self-managed sector' called 'Autogestion'. The self-managed sector followed the previous colonial agriculture model, which was based on mechanization and the use of chemical fertilizers. This sector ensured the exportation of agriculture products to international foreign markets (wine, citrus, vegetables, etc.) and its system of production was extensive. The 'Autogestion' sector underperformed, with a drop in productivity due to alack of worker incentives and excessive bureaucracy. The sector has since absorbed most of the available credit and operated at a loss, and it has become a state-run venture.
- 2.1.2 **Second period 1971-1979:** The government launched the agrarian revolution with another policy called 'agrarian reform cooperatives'. This policy was applied to expropriate large private holdings held in absentia and to redistribute the land to poor and

landless peasants. All means of production, investments and equipment were oriented too the 'socialist sector' under the agrarian revolution. The socialist sector was characterised by low productivity and low efficiency in land use due to the lack of incentives for farmers in the cooperative sector to increase production. Furthermore, the absence of institutional support such as extension, agricultural training, and technical innovations resulted in minimal improvement. During this period, the economic development system adopted in Algeria was centred in strong industrializationⁱⁱⁱ. Consequently, large investment had to be granted to this sector, Form, 1970 to 1977, 55% of the total public investments were centred in the field of industry, mining, energy and hydrocarbons, while agriculture received only 8% of the total (see Figure 1.).

2.1.3 **Third period 1980-1986:** The fragmentation of the agricultural sector into three sub-sectors, private, self-managed and agrarian revolution, has complicated the development of agriculture as whole, due to the absence of coherent agricultural policy. The government decided to prioritize the revitalization of the sector, after observing the increased Algerian dependency on agricultural imports (see Figure 1.) by supportive measures such as decreased control of the marketing network, increased producer prices, the provision of credit to both state and private sectors, and access to subsidized capital.

2.1.4 **Fourth period 1987-1999:** during this period, Algeria began taking major steps towards the economic transformation of the agricultural sector. The state farms were dismantled and transformed into collective state farms and individual state farms consisting of at least three individual farms. In 1990, the state resituated the national land of the agrarian revolution to its former owners^{iv}.

This actions were aimed to prepare the country for 'life after oil' (1985-89 plan). The plan allocated higher percentages of public

funds to the agricultural sector, especially water projects. Investment in such projects rose from 10% of the total budget in 1985 to 14.5 % in 1990. Another important step was the liberalization of agricultural markets. A 1988 decree allowed private farmers to purchase inputs from any suppliers they chose. As of April 1991, individuals and farm cooperatives could engage in wholesale trading in agricultural inputs, and they were authorized to import agriculture inputs.

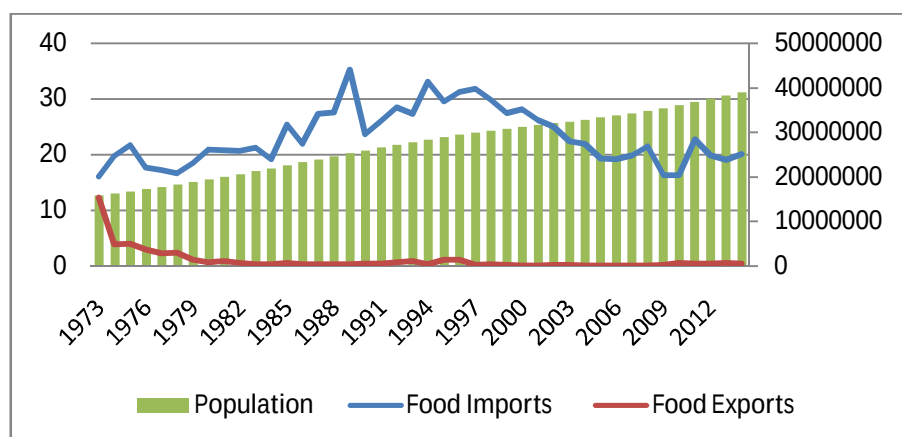
Another law, promulgated in 1991, deregulated land transactions and eliminated the municipalities' monopoly ownership of property reserves, making them available for public purchase. However, this restructuring event was followed by a series of measures intended to stabilize the economy and promote structural adjustment (supported by the IMF). Consequently, this period is characterized by a significant decrease in the volume of investments, low mechanization, a sharp reduction in the purchase of agricultural consumables (particularly fertilizers and pesticides).

- 2.1.5 **Fifth period: 2000-present:** during this period, the Algerian government launched the National Agricultural Development Program (PNDA). The PNDA evolved to improve the level of food security^v. In 2002 and became the National agricultural and rural development program (PNDAR). The new agricultural policy objectives included the development and modernization and productivity through substantial investments and the appropriate and sustainable use of natural resources. The PNDA was accompanied by supporting measures such as supervision, follow up, evaluation, and technical guidance from extension services. The PNDAR was designed to be a comprehensive and coherent response to the primary challenges and constraints of the natural, technical, organizational and institutional problems responsible for weakening the basics of national food security. Under the support plan for Economic Recovery (PSRE), \$1.7 billion during 2001-2004 and \$7.1 billion (under the Complementary Plan for Economic Growth

Support (PCSC) during 2005-2009 were allocated to the agricultural sector.

The PNDAR programs have yielded mixed results. Since the application of the PNDA, Algeria's agricultural sector has recorded significant growth of 6.5% on average, whereas the growth rate between 1990 and 2000 was only 4%. Nevertheless, until the early 1970s, the agricultural sector was an export sector to the extent that exports represented between 20% and 30% of total agricultural production. This trend was quickly reversed, and agricultural exports continue to fall. Currently, only 0.1% of agricultural production is exported. Consequently, the agricultural sector has become an import sector.

Figure 1. Trade in food products (1973-2013):



Source: based on World Bank data

base, <http://data.worldbank.org/country/algeria> (02/05/2016)

The import of agricultural products, particularly basic products such as wheat and milk, has consistently increased to satisfy the increasing demands of the population.

2.2 The causes of rising food imports:

The factors that led to the food crisis could be examined from both the supply and demand sides^{vi}.

2.2.1 The demand causes:

2.2.1.1 **Population size**: in the last three decades, Algeria has been the continent with the highest population growth rate, which suggests that Algeria's growing population is one the drivers of its food import increase. Algeria's young and growing population poses a serious challenge to food security, implying that in areas where local production is low, food will have to be imported to satisfy demand.

2.2.1.2 **Income effect**: One of the most important potential contributors to the increases in food consumption and imports is an increase in per capita income. Because many Algerian households spend large portions of their income on food, and because income elasticity for food consumption is relatively high for many consumers.

2.2.1.3 **Food prices and imports**: the quantity of food imported depends on current and expected international price levels, and in theory food imports increase when the international price falls or are expected to fall^{vii}.

2.2.2 **The supply causes**: Rising food imports imply that growth in domestic supply has been unable to match the increase in demand.

2.2.2.1 **Arable and agricultural land availability**: different parts of Algeria face different agricultural land availability issue. In fact, some regions are more disadvantaged than others in terms of productive resources^{viii}.

2.2.2.2 **Low yield and productivity**: Yield is neither a complete nor a perfect measure of total productivity, but it provides a broad insight into how Algeria's levels and growth of agricultural productivity, hence production, lag far behind those of the rest of the world, especially for main food staples such as cereals, vegetable oils, dairies and meat.

As the low of yields is one of the reasons why growth in production (both total and per worker) is weak, it is important to explain why productivity in general is low. The technical causes of low productivity in Algeria can be grouped into three broad categories: limited access to essential inputs and equipment, and negative supply shocks such as natural disease, inappropriate technology and barriers to adoption^{ix}.

2.2.2.3 Poor infrastructure and services: although, on the aggregate, the low level of productivity stands as the main cause of Algeria's weak domestic supply responses, there are also cases where domestic production is high but does not reach consumers because of the lack of infrastructure and deficient transportation equipment increase production and marketing costs that make local food products uncompetitive for both the domestic and export markets. Farmers are often forced to sell at low prices to the nearest buyers or be faced with the chance of losing their entire harvests, while food exporters struggle with the lack of appropriated storage and many days of delay at ports.

As rural infrastructures are degraded and access to local markets remains difficult for farmers, wholesalers (collectors) and transporters often make wide marketing margins at the expense of farmers. Many agricultural markets have become oligopolistic, where an increase in retail price (due for example to the reduction of price distortions) may not benefit producers. In this case, any increase in price will likely be retained by agents elsewhere in the marketing chain (middlemen, manufacturers, wholesalers. Food producers are often price takers, and when they perceive to increase production declines further^x.

3. Foreign direct investment in agricultural sector:

3.1 Type of FDI participation in agricultural sector: in the past, foreign farming investments were usually private, private investors bought land from private owners and that still continues somehow but very few. However, the majority of the new deals have been negotiated

by government. The acquirers are foreign regimes or where they are companies then they are supported by their governments^{xi}.

3.1.1 FDI: in the recent past, the direct involvement of TNCs in agriculture has been limited. This was less than 1% of total world FDI inflows. The low levels of FDI in agriculture may be partly explained by the regulated nature of the industry, restrictions on ownership of agricultural land by foreigners, and corporate strategies which favour control over the supply chain through upstream and downstream activities.

Inward FDI stock in agriculture was higher in developing countries than in developed countries over the period 2001-2007. This may reflect various factors, including the relative importance of agriculture in the economies of developed countries in general, the availability of land for cultivation and government policies. On the other hand, developed countries consistently receive more FDI in food processing than developing countries, suggesting that the majority of higher value added activities in agri-food supply chains are still concentrated in the former group^{xii}.

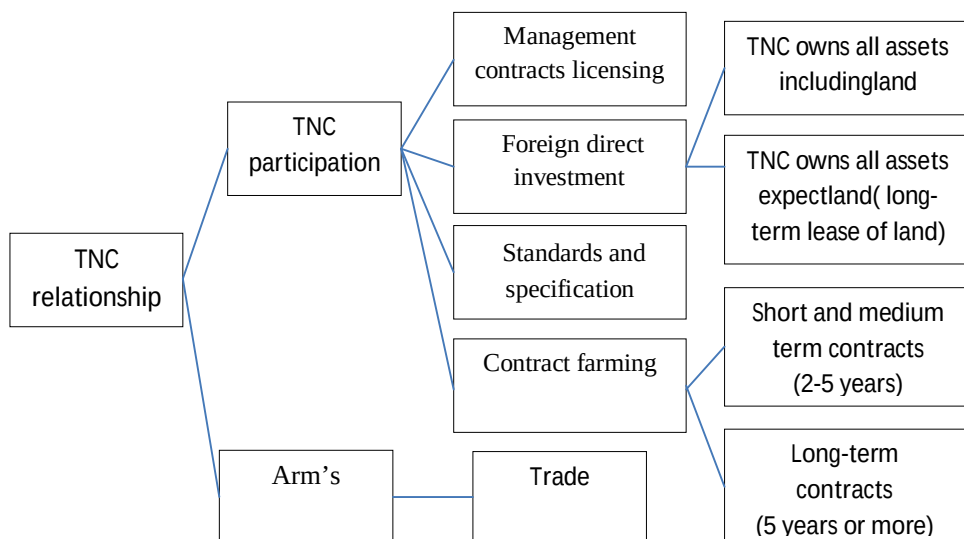
3.1.2 Contract farming: This is a significant alternative to FDI in terms of TNC participation in agriculture. The term contract farming is defined as an agreement between a farmer and purchaser established in advance of the growing season for a specific quantity, quality and the date of delivery of an agricultural output at a price or price formula fixed in advance. There are five models that can be adopted in CF arrangements, namely, nucleus, and informal, centralized, multipartite and intermediary model^{xiii}.

TNCs are engaged in this and other non-equity forms of participation in agricultural production in over 110 countries worldwide. In various developing economies, including more advanced and lower-income countries, the share of contract farming in total farming is high, and the intensity of TNC

involvement is important. For instance, in Brazil, 75% of poultry production and 35% of soya bean production is sourced, largely by TNCs, through contract farming, in Viet Nam the story is similar, with 90% of cotton and fresh milk, 50% of tea and 40% of rice being purchased through farming contracts, and Kenya, about 60% of tea and sugar are produced through this mode^{xiv}.

3.1.3 *Sovereign Wealth Funds:* SWFs have been around for decades, but since 2000 the number of SWFs has increased dramatically, the vast majority of SWFs are managed separately from the other funds within a given government. It is a discernable trend in today's markets that the SWFs are marking investments in the agriculture sector in the developing world and acquiring land is certainly one of the more conspicuous with rational often cited by these SWFs is 'food security'

China and Korea along with the Gulf States of Qatar, Saudi Arabia and the United Arab Emirates (UAE) appear to be emerging as key investors in these land purchase. According to the more reliable media reports, Congo, Ethiopia, Madagascar, Mozambique, Sudan and Tanzania are the principle partners of these land deal in Africa whereas in Asia, Cambodia, Indonesia, Laos, Pakistan, and the Philippines seem to be the countries selling or leasing large tracts of their 'private' subsidiaries or state owned enterprises 'SOEs'^{xv}.

Figure 2. Types of TNC participation in agricultural production

Source: *World Investment Report 2009, (2009), “transnational corporations, Agricultural production and development”, United Nations conference on trade and development, New York and Geneva, p 110.*

3.2 Implications of FDI for food security in host countries:

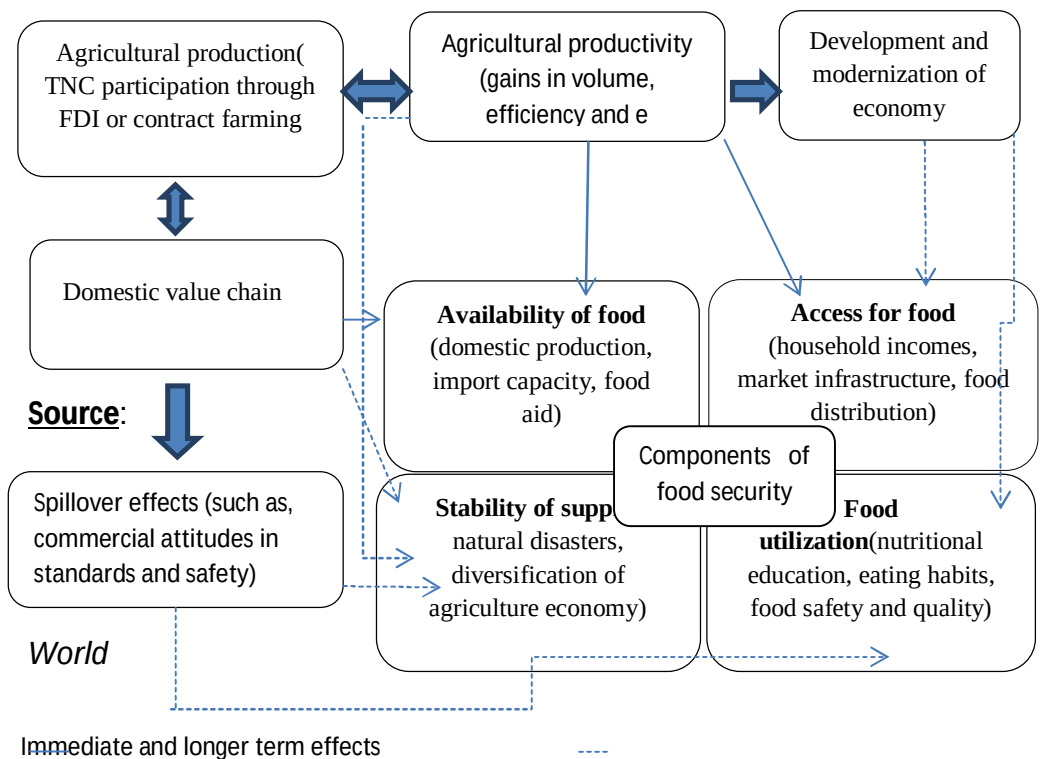
FDI in farming may have a positive effect on agricultural production and the host economy by providing financial resources, introducing new technologies, training workers, creating linkages with local input suppliers and encouraging the entry of other firms into the industry. Negative effects may result from TNC-run operations driving farmers out of business, for instance, with adverse consequences for employment through contract farming can affect domestic agriculture via different channels, among others by providing local farmers with inputs such as seeds and fertilizers, and linking them to the global marketplace through their international supply chains.

As a result, this section examines the positive and negative impacts of TNC participation on agriculture development in host developing

countries; however, the analysis focuses on the effects of their participation on food security.

The impact on food security can be highly variable, not lease in terms of the four dimensions (see figure 3). Hence, it is important for governments to be aware of the key types of impacts that occur so that they can design their policies appropriately, including establishing conditions under which food security could be enhanced.

Figure 3. The impact of FDI participation in agricultural production and food security:



Investment Report 2009, (2009), "transnational corporations, Agricultural production and development", United Nations conference on trade and development, New York and Geneva, p 160.

3.2.1 Availability of food: the foremost dimension of food security is the domestic availability of food crops and in this respect TNC

involvement in agricultural production is likely to increase the overall volume of production of certain crops. However, much of this production may be for exports, thereby reducing the volume of food supply available for domestic consumption.

Moreover, there is the danger that TNC involvement may adversely affect smallholders or other farms, either through direct competition in product markets, or through alternative uses for land, water and other resources. On the other hand, it can have a positive impact on the crops production (especially through contract farming) resulting from the transfer of agricultural technology, modern management techniques and knowledge of supply chain management can improve the capacity of local agricultural producers.

3.2.2 Access to food: as with food availability, the impact on access is mixed. It is possible improved productivity can lead to falling employment, lower household incomes for some farmers and a negative effect on the non-farm rural economy. However, inasmuch as TNCs largely export the crops they produce or contract out, they require infrastructure –whether established by the TNCs themselves or by the host government- connecting producing regions to ports. This helps improve access to food for urban areas and to rural areas as well if there is a shortage which can be resolved through imports on intra-country shipments.

3.2.3 Stability of supply: TNC involvement in farming and plantations is unlikely to have a direct impact on the stability of food supply. It is depending on government policies, the entry by agriculture-related TNCs, such as manufacturers and supermarkets, into the domestic value chain may lead to enhanced stability of supply. These companies have the ability and motivation to ensure stability of food supply for their customers. For instance, in times of shortage, they have both the distribution channels to import food and the financial means to pay for it.

3.2.4 *Food utilization:* Agribusiness TNCs can introduce higher quality and safety standards to host developing countries. Their involvement in agricultural production and the domestic value chain has a number of spill-overs to local farmers and other companies, such as those related to quality control, food standards and consumption patterns. However, by the same token, the food consumption patterns of developed-country populations- emulated in developing countries and sometimes induced by TNC entry into the local food chain ('fast food') can be very unhealthy, in contrast to traditional eating habits.

4. FDI participation in agricultural sector of Algeria:

According to the statistics of national agency of investment development (ANDI), by 2015 there were about 10 foreign agricultural projects, which at 1.48% is negligible vis-à-vis others sectors during the same period (see table 1). Even a lot of supporting and favour have been given to this sector, such as creation of an interest-free credit and exemption from VAT and other different taxes for first three years of activity. Although there is no available data on the exact amounts of FDI into the sector, or the type of projects (FDI, contract farming), and the propose of this project (local market or exports), however, these projects created 528 positions, which was less than 1 per cent, with the smallest amount 3117 million DZD compare to the other sectors.

Table 1. Distribution of FDI projects by sector in Algeria (2002-2015)

Business segment includes	Number of projects	%	Amount	%	JOB	%
Agriculture	10	1.48%	3117	0.13%	528	0.41%
BTPH	121	17.90%	98996	4.01%	21533	16.66%
Industries	386	57.10%	1681400	68.03%	71936	55.65%
Health	6	0.89%	13573	0.55%	2196	1.7%
Transport	21	3.11%	13172	0.53%	1723	1.33%
Tourism	11	1.63%	420657	17.02%	13128	10.16%
Services	120	17.75%	151335	6.12%	16710	12.93%
Telecomm	1	0.15%	89441	3.62%	1500	1.16%
Total	676	100%	2471691	100%	129254	100%

Source: National Agency of investment development (ANDI), investment appraisal for the years 2002-2015, March 2016.

In our view, several factors have been behind the shortage of FDI flows to the agriculture sector, which are; access and availability of water resources, and large scale farming, as well as land ownership. Since TNC's often invest in high value crops. Furthermore, there are constraints such as:

- Overregulation of agriculture has increased costs, price risks and uncertainty.
- Government interventions in labour, land, and credit markets.
- Inadequate infrastructure and services.
- Lack of transparency and consistency in foreign direct investment (FDI) policies, infrastructure bottlenecks and regulatory hurdles seems to

have taken a toll on Algeria's attractiveness as investment destination for foreign investors.

As a result, foreign investors do not find the agriculture sector of Algeria an attractive one. Hence, the share of agriculture in the total FDI in Algeria is negligible. As the data shows above the agriculture accounted for only about 0.8 per cent of the total FDI inflows into Algeria.

5. Results and discussion:

According to the above descriptive analytics study, several interesting findings could be summarized;

- **Fail of agriculture policy in the medium-longterm:** the several policy reforms that have been undertaken to improve the performance of agriculture have been limited and largely unsuccessful. The primary objective of the various policies was to achieve macroeconomic balance. The policies were characterized by a global, centralized and standardized approach associated with a proliferation of regulations that lacked continuity and efficiency.
- **FDI is the best type for food security** FDI can help fill the investment gap in agriculture in developing countries, which is crucial for increasing production capacity and output. However, it should be recognised that food security is not just about food supply: TNCs also have effects on food access, stability of supply and food utilization and, in the longer run, their impacts in these aspects of food security are likely to prove more important.

In the wake of the food crisis, the push for food security has become a major driver of new investment in agriculture (contract farming and sovereign wealth funds). Looking to host countries, the availability of underutilized agricultural land, increasingly coupled by the availability of water resources to irrigate the land, as well as more open policies towards land ownership and lease, have been the most important pull factors of investment in agriculture.

Nevertheless, governments need to be sensitive to the above-mentioned negative impacts of TNC involvement in their agriculture, with the aim of avoiding or minimizing them.

- **Poor Algerian investment climate:** foreign investors do not find the agriculture sector of Algeria an attractive target. There are many impediments, but the most important are; lack of good quality infrastructure services, lack of local partners were the main barriers to FDI and political uncertainty and administrative obstacles.

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