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AGRICULTURAL LAND OWNERSHIP AND THE CHALLENGES OF AGRICULTURAL INVESTMENT IN ALGERIA - THE CASE OF AIN-DEFLA PROVINCE -

الملكية الزراعية وإشكالية الاستثمار الزراعي في الجزائر – ولاية عين الدفلى انموذجا –

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ملخص:

نسعى من خلال هذه الورقة البحثية لإبراز مكانة ولاية عين الدفلى كقطب فلاحي رائد على المستوى الوطني، و إبراز دور الملكية الزراعية في تسهيل الحصول على الدعم والتمويل اللازم للاستثمار الزراعي، مع تقديم البدائل الممكنة. كما تسعى هذه الدراسة إلى إبراز المقوّمات الزراعية لولاية عين الدفلى ودورها كقطب فلاحي هام في الجزائر يساهم في الإنتاج الزراعي و تسليط الضوء على مشكلة مهمّة تواجه الفلاحين وهي مسألة الملكية الزراعية في إطار انجاز استثماراتهم الزراعية مع إبراز أهمية الملكية الزراعية في دفع الاستثمار الزراعي وزيادة الإنتاج لتحقيق الاكتفاء الذاتي.

الكلمات المفتاحية:

الاستثمار الزراعي؛ التمويل الفلاحي؛ الملكية الزراعية؛ معوّقات الاستثمار ؛ ولاية عين الدفلى.

Abstract:

Through this research paper, we therefore aim to highlight the province of Aïn Defla's status as a leading agricultural hub at the national level and to emphasise the role of agricultural land tenure in facilitating access to the support and funding necessary for agricultural investment, while presenting possible alternatives. This study also aims to highlight the agricultural potential of the province of Aïn Defla and its role as a major agricultural hub in Algeria, contributing to agricultural production, while shedding light on a significant problem facing farmers: the issue of agricultural land tenure in the context of their agricultural investments. It further emphasises the importance of agricultural land tenure in driving agricultural investment and increasing production to achieve self-sufficiency.

Keywords:

Agricultural land ownership; agricultural investment; barriers to investment; agricultural finance; Ain Defla Province.

1.Introduction

Land is considered the primary economic resource in the production process. Agricultural land ownership and the manner of its utilisation are vital and fundamental issues which, to a large extent, determine the development of peoples and influence their economic and social future, given the importance of agricultural land and its role in achieving development, food security and reducing the food gap. Furthermore, the lack of clarity regarding the legal framework for agricultural land belonging to the State's private estates is considered one of the main and most intractable problems facing the agricultural sector in Algeria, and has a negative impact on investment, particularly as this land represents the most fertile and highest-quality land in Algeria. It was seized by the French colonisers and granted to settlers for exploitation, as a result of successive land laws that have rendered the relationship between the land and the farmer ambiguous.

Investors in the agricultural sector face numerous problems, foremost among which is the issue of proving ownership. Rather than agricultural ownership serving as a driver and incentive for investment, we see that it has become an obstacle, whether it be private ownership marred by property disputes among heirs, or public ownership under a concession agreement, particularly as many farmers resort to leasing agricultural land on a customary basis; in most such cases, they are prevented from significantly expanding agricultural production, and are also unable to provide sufficient legal guarantees to financial institutions to secure the financial support that has become essential for modern agriculture, particularly as banks require registered contracts free from any land disputes to minimise lending risks and the likelihood of non-payment or late repayment. From this perspective, we pose the following questions:

How does agricultural land tenure affect agricultural investment in Algeria in general and in the province of Aïn Defla in particular? To what extent are agricultural land tenure laws appropriate and effective in supporting and encouraging agricultural investment ?

2. Research Methodology

In order to address the research question set out above, the descriptive-analytical approach was adopted due to its suitability for the subject matter and its ability to address its various dimensions. Description was used to clarify the various theoretical aspects relating to agricultural investment and land ownership, followed by an analysis of the various data obtained on the subject of the study in the applied aspect, including tables, maps using geographic information systems (GIS) and graphs.

3. The concept of agricultural investment

Agricultural investment is defined as 'the integration and utilisation of the factors of production available in agriculture (land, labour, capital) with a view to producing agricultural resources to meet consumers' needs and to achieve the best possible results (Gardi , 2011). It also refers to the development of agricultural production through the use of the necessary means to achieve the highest possible agricultural yield. Increasing land productivity is achieved by improving farming conditions in terms of selecting crops suited to the nature of the land, choosing seeds, controlling agricultural pests, and using the necessary machinery and equipment; it also includes the development of livestock and fisheries production". (Chabani , Ben Khalifa , 2017).

It follows from this that land is one of the factors of agricultural production and the most important of them; any agricultural crop, whether plant or animal, requires land for its growth and development. On this basis, agricultural property has assumed a central role in the investment process, as it is a category of real estate. Real estate ownership is defined as the property owner's authority over their property, which grants them the right to exploit, use and dispose of it, within the framework permitted by laws and regulations. It is classified into three types: state-owned property, private property and waqf property.

As a form of real estate, agricultural land falls into one of the categories mentioned above; Article 4 of the Land Orientation Law defines agricultural land as: 'Any land which, through human intervention, produces annually or over several years produce consumed by humans or animals, or used in industry either directly or after processing' (Maatallah & Chrikh, 2007). Agricultural land belonging to the State's private property has been subject to various pieces of legislation and laws, in line with the economic and political transformations that Algeria has undergone, which have had a direct impact on agricultural ownership and investment; this is what we shall address in the second section.

4. The importance of agricultural investment

The importance of agricultural investment lies in its role in boosting the country's economic growth rates, as increased agricultural investment raises production levels and productivity, thereby increasing the agricultural sector's contribution to gross national income. At the same time, employment rates rise through the creation of permanent or temporary jobs to alleviate unemployment, particularly in rural areas, against a backdrop of significant population growth and

the need to ensure a decent standard of living, and to reduce rural-urban migration, as the establishment of investment projects in these areas would prevent agricultural workers from migrating to cities in search of employment outside the agricultural sector, thereby encouraging them to remain in rural areas through a reverse migration from cities to the countryside.

5.The legal and legislative framework for agricultural land ownership in Algeria

The success of any investment project depends on a number of conditions and factors that ensure stability for both investments and investors, particularly in the agricultural sector, which is not generally considered attractive to investors. This is because, unlike other sectors, agricultural investment is subject to natural risks and obstacles, such as low financial returns, long capital turnover cycles in certain agricultural activities (AOAD, 2007).

Anyone following agricultural developments in Algeria will note the marked growth in agricultural investment after 1990, following the adoption of a policy of economic liberalisation, which opened the door to private and foreign investors, as well as the enactment of Investment Law No. 93-12 in 1993, which established the rules and legislation to encourage and support investment, and the establishment of the National Agency for the Development and Support of Investment (ANDI), as well as the creation of a number of funds to support the sector's development, the most important of which is the National Fund for Agricultural Development, which was transformed in 2000 into the National Fund for Agricultural Regulation and Development, and then in 2005 into the National Fund for Agricultural Investment Development (CESRTIC, 2016) Despite this progress, the levels of agricultural investment in Algeria remain low and fall far short of requirements, and the set targets, with the agricultural sector ranking third after services and hydrocarbons, having contributed 12.3 % of the value added to gross domestic product in 2016, an increase of 1.2 % compared with 1999 (MADRP, 2019.), This is due to a number of constraints and obstacles that prevent the creation of a favourable climate for agricultural investment, foremost among which is the issue of agricultural land ownership, given the problems and difficulties faced by investors—both local and foreign—in acquiring agricultural land to implement their investment projects, due to the lack of clarity in the legal framework governing agricultural land ownership, against a backdrop of instability in the agricultural land sector resulting from the

legislative policy pursued, beginning with the Restructuring Act 87-19, followed by the Land Use Act 90-25 and then the Concession Contracts Act 10-03.

Furthermore, the lack of documents proving ownership, which serve as collateral, also creates problems in securing bank loans, which would otherwise pave the way for further investment in agriculture (Gardi , 2011).

5.1 Law No. 87-19 on the Restructuring of Agricultural Land:

Law No. 87-19, enacted on 8 December 1987, concerning restructuring, under which socialist farms were converted into individual and collective agricultural holdings following the abandonment of the socialist approach, raised several issues relating to agricultural investment, chief among them being the small size of agricultural holdings or properties, which do not exceed 10 hectares in area; this prevents the introduction of large-scale farming techniques into agricultural investment with the aim of achieving self-sufficiency in strategic crops such as wheat.

5.2. Land Orientation Law 90-25:

Act No. 90-25 was enacted on 18 November 1990, setting out the land use planning framework to define the technical framework and legal regime governing immovable property, as well as the instruments of intervention available to the State, local authorities and public bodies. A close examination of the provisions of this Act reveals that it aims to achieve three fundamental objectives, namely:

- To protect agricultural land from encroachment resulting from urban and industrial expansion, by precisely defining land designated for agricultural use.

- Ensuring the utilisation of all agricultural land, as Article 48 of the Land Orientation Law considers the failure to effectively utilise agricultural land to be an abuse of rights, given the economic importance and social function associated with such land.

In this context, the actual, direct or indirect use of such land is an obligation incumbent upon every owner or holder of real property rights, and upon every natural or legal person who generally exercises possession thereof. For this reason, Articles 49 and 50 of this Act stipulate that any investor (landowner) who fails to demonstrate that they have actually utilised the land for two consecutive agricultural seasons—with a one-year extension—shall be required to offer the land for lease or sale if it is very fertile or fertile (Maatallah & Chrikh , 2007).

The enactment of this law, which provides for the possibility of selling or leasing public land, has heightened investors' doubts and concerns regarding the current system of permanent usufruct, particularly as the state has not specified the identity of the purchaser or the price at which private land may be sold, bearing in mind that investors are unable to purchase it due to their limited financial means (Ammari ,2013.).

5.3. Concession Law 10-03:

Following the failure to implement the Agricultural Investments Act (87-19) and the proliferation of bidding wars over agricultural land belonging to the State's private estate, Act No. 10-03, dated 15 August 2010, was enacted. This Act sets out the conditions and procedures for the use of agricultural land belonging to the State's private estate, in an attempt to reconcile the interests of the State—which does not wish to relinquish ownership of its land, a key tool for achieving self-sufficiency—with those of farmers seeking adequate guarantees for the use of the land and the removal of all obstacles.

This law also reflects the Algerian legislature's desire to standardise the management of the State's private property by extending the application of the concession to agricultural land (Bousebiat , 2022)

Among the merits of the Concession Law are certain provisions contained therein which could resolve, albeit partially, the issue of agricultural land, It authorises the concession holder or beneficiary to pledge the concession contract as collateral with financial or banking institutions to obtain the necessary funding for agricultural investment, whilst also allowing for partnerships with Algerian investors, thereby enhancing the effectiveness of agricultural investment. At the same time, the concession contract allows the State to collect financial returns in exchange for granting the land to investors during the term of the contract, which is set at 40 years, renewable, in the form of an annual royalty paid by the concessionaire to the State.

One criticism of the concession law is that it sets the duration of the concession contract at 40 years, renewable, which results in farmers becoming detached from the land, which they no longer regard as their own; consequently, they do not devote themselves to its cultivation or to increasing its productivity and yield. In this way, the law has exacerbated the land tenure problem rather than providing a viable solution to it. Furthermore, this law restricts partnerships to Algerian investors only, excluding foreigners, as stipulated in Article 21. It requires that a partner who is a

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natural person must be of Algerian nationality and subject to Algerian law, and that all shareholders in a legal person must be of Algerian nationality, This contradicts the Investment Law, which makes no distinction between domestic and foreign investors (Bousebiat , 2022). This is one of the fixed conditions that the World Trade Organisation (WTO)—which Algeria is seeking to join—does not tolerate; Algeria cannot stand in the way of foreign investors' desire to invest in the agricultural sector, as it has ratified the WTO regulations, which stipulate equality between domestic and foreign investors (Ammari ,2013).In addition to the above, investors in the agricultural sector face other problems and bureaucratic procedures that result in lengthy delays in acquiring agricultural land – which may exceed a year – leading investors to turn to other sectors or to informal activities such as land leasing.

6. Agricultural investment in the province of Aïn Defla

The province of Aïn Defla is situated in the north-central region of Algeria, 145 km west of Algiers and a 90-minute drive along the East-West highway, less than 300 km from Oran. The province of Aïn Defla covers a total area of 4,544.28 km², situated between longitudes 01° and 02° east and latitudes 35° and 36° north. It is bordered to the north by the province of Tipaza, to the north-east by the province of Blida, to the east by the province of Médéa, to the south by the province of Tissemsilt and to the west by the province of Chlef.

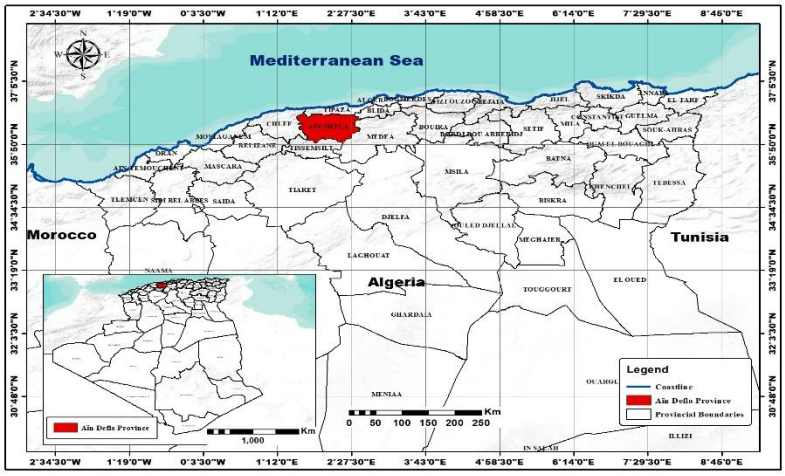


Figure 1. Location map of stady Area.

6.1. Agricultural investment opportunities in Ain Defla province:

The geographical location of the province of Aïn Defla has given it significant advantages in terms of agricultural production, owing to its proximity to markets and the size of the consumer market, given the high population density in the northern cities, as well as its proximity to Algeria's main marketing outlets, such as ports and airports, which facilitates transport and reduces production costs.

A. Agricultural area:

The province of Aïn Defla covers 235,611 hectares of agricultural land, accounting for 51.84 %(as shown in Table 1), This has enabled the province to rank highly in the production of certain agricultural crops at the national level; it ranks first in the production of potato seeds and also in the production of pears, third in the production of eggs and industrial tomatoes, and ranks in various positions for other crops.

Table 1: General land use in the province of Ain Defla for the 2024–2025 season

Total area	Forest area	Unproductive land	Agricultural land	Type of use
454428,04	126364	92452,8	235611	Area (hectares)
100	**27,8**	**20,34**	**51,84**	Percentage (%)

Source: Compiled by the author based on data from the Directorate of Agricultural Services (D.S.A.), Annual Report, December 2025.

In addition, forested areas account for a significant proportion of the province's total area—27.8%—spanning the Dahra-Zaccar mountain range in the north and the Ouarsenis mountain range in the south.

The general land use in the study area has highlighted its predominantly agricultural character, whilst the agricultural land use shown in Figure 1 provides us with a range of data:

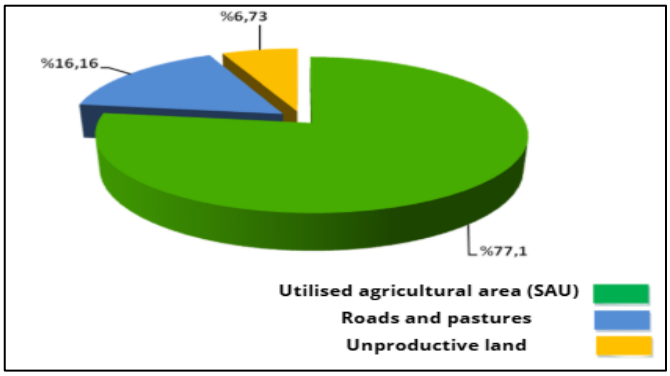


Figure 2. Agricultural land use in the province of Ain Defla

The total agricultural land in the province of Ain Defla (SAT) is divided into the following three categories:

* Utilised agricultural area (SAU): 181,676 hectares, representing 77.1% of the total agricultural area, up from 170,384 hectares in 1998, with an estimated increase of 11,292 hectares between 1998 and 2025. This area is used for the production of field crops, vegetables and fruit trees.

* The second category comprises roads and pastures: 38,352.2 hectares, or 16.27%, used for livestock rearing and as farm tracks.

* The third category consists of unproductive land, accounting for 6.61% (15,582.6 hectares).

B. Irrigated area:

The province has five major dams distributed across its territory (Ghrib, Deurdeur, Harreza, Oulad Mellouk and Sidi M'hamed Ben Taiba), with a total estimated storage capacity of 560 hm³, in addition to five minor dams and four water barriers (water quarries). These structures are used to supply the population with drinking water and for agricultural purposes.

Table 2 Development of irrigated land in the province of Ain Defla during the period 2001–2025

Irrigated area (hectares)	year	Irrigated area (hectares)	year	Irrigated area (hectares)	year
38660	2018	39160	2010	32340	2001
48163	2019	40865	2011	33000	2002
53820	2020	36700	2012	33000	2003
47285	2021	39457	2013	39000	2004
50000	2022	46000	2014	39000	2005
54018	2023	55000	2015	39400	2007
49621	2024	56000	2016	39600	2008
45046	2025	59000	2017	37260	2009

Source: Data from the Directorate of Agricultural Services (D.S.A,2025).

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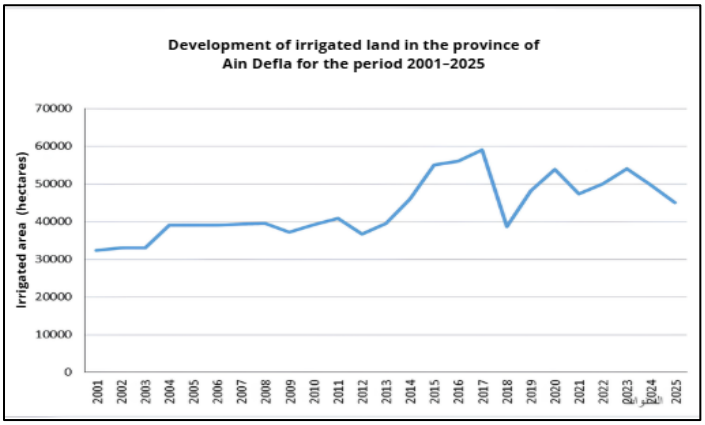


Figure 3. Trends in irrigated area in the province of Ain Defla for the period 2001–2025

The irrigated agricultural area in the province of Ain Defla for the agricultural season (2024–2025) was estimated at 45,046.24 hectares, representing 25% of the utilised agricultural area, whilst it stood at 59,000 hectares in the year (2017–2018), equivalent to 32 % of the utilised agricultural area, of which 75% was irrigated by sprinkler, 15% by drip irrigation and 10% by gravity flow irrigation.

C. Agricultural holdings:

The province covers a significant agricultural area estimated at 235,611 hectares, accounting for over 51% of the province's total area, divided between collective agricultural holdings (EAC), individual agricultural holdings (EAI), model farms (fermes pilotes) – which are operated under concession agreements (droit de concession) – and private holdings, as shown in Table 3:

Table 03: Status of agricultural holdings in the province of Aïn Defla (2025)

Area utilised (hectares)	Total area (hectares)	number	Agricultural holdings
38669	37681	1435	Collective Agricultural holdings (EAC)
5717	5736	858	individual Agricultural holdings (EAI)
5215	5406	6	Model Farms (F.P)
131154	186788	21745	Privates
180755	235611	24085	**Total**

Source: Compiled by the author based on data from the Directorate of Agricultural Services

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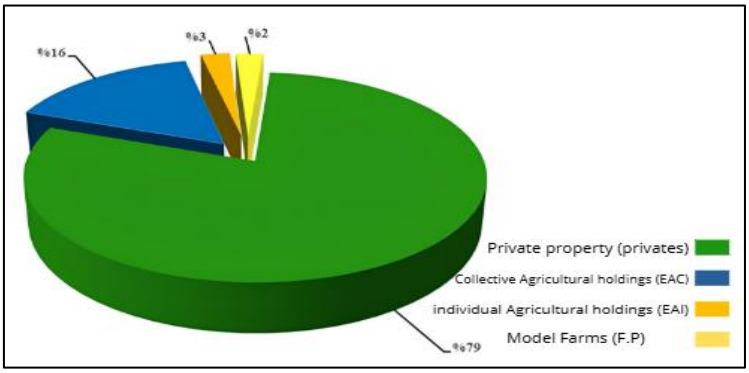


figure 4. Distribution of agricultural holdings by type of ownership (2025).

The above data reveal the dual structure of agricultural land ownership in the study area, which is divided into private agricultural holdings and public-sector agricultural holdings, with a disparity evident in the distribution of total agricultural holdings area and utilised area between the two sectors. Although private agricultural holdings dominate the ownership landscape, totalling 21,745 holdings, when compared in terms of total area and utilised area, they are characterised by fragmentation and smaller plot sizes relative to their public-sector counterparts, with the average area of privately-owned agricultural holdings ranging between 05 and 08 hectares per holding, which hinders the adoption of modern methods for agricultural expansion—which require vast areas and greater technical capabilities—and also constitutes an obstacle to obtaining bank loans due to insufficient legal guarantees resulting from the fragmentation of these lands and the ensuing disputes amongst heirs. This problem is reflected in the utilisation rate: of the total area of privately-owned agricultural holdings, estimated at 186,788 hectares, the utilised area amounts to 131,154 hectares, meaning that more than 55,000 hectares remain unused.

In contrast, agricultural holdings in the public sector—whether collective, individual or model farms—are less fragmented and dispersed than their counterparts in the private sector. For example, the average size of collective agricultural holdings (EAC) is 26 hectares, with a utilisation rate exceeding 100 %, which highlights another phenomenon: expansion through customary land leasing (37,681 hectares in total area, compared with 38,669 hectares of utilised area). These collective holdings, together with individual holdings and model farms, are small in size compared with private sector land—estimated at 186,788 hectares, or 79.28 %(spread across 21,745 private holdings), are characterised by their quality and productivity, which is several times higher than that of privately owned land; it is

these holdings that are relied upon, first and foremost, to develop the agricultural sector and increase production.

D. Agricultural labour:

According to Table 4, the agricultural workforce in the study area stood at 85,624 workers in 2020, representing 30%of the total working-age population. This proportion saw a significant increase compared with the year 2000, when the agricultural sector employed 71,234 workers; however, in recent years the agricultural workforce has declined, reaching 80,782 workers in the 2024–2025 farming season, for a number of reasons.

Despite this decline in agricultural employment, the agricultural sector ranks second in terms of labour employment after the services sector, which is evidence of a significant shift towards investment and employment in agriculture, and of the province's capacity to develop Algerian agriculture and contribute to achieving food self-sufficiency, at a time when the workforce in Algeria as a whole is witnessing an exodus and aversion to agricultural work in favour of non-agricultural sectors. We attribute this to the attractiveness of the province's agricultural sector to the workforce, given its potential and agricultural character.

Table 04: development of agricultural employment in the province of *Ain Defla* during the period (2000–2025)

Agricultural labour	The farming season	Agricultural labour	The farming season
83 116	2012-2011	**71 234**	2001-2000
81 706	2013-2012	**73 907**	2002-2001
86 000	2014-2013	**76 373**	2003-2002
88 094	2015-2014	**82 338**	2004-2003
87 074	2016-2015	**68 950**	2005-2004
86 200	2017-2016	**67482**	2006-2005
86 733	2018-2017	**86394**	2007-2006
87 300	2019-2018	**87 100**	2008-2007
85 624	2020- 2019	**81 779**	2009-2008
83200	2021-2020	**88 331**	2010-2009
80782	2025-2024	**88 600**	2011-2010

Source: Directorate of Agricultural, Report 2025.

If we compare the rate of employment in the agricultural sector in the province, estimated at 30.7 %, with the national employment rate in the same sector, estimated at 10 % (El-Mahi & Ouzal , 2018) we find it to be high. Agriculture in the province of Aïn Defla has managed to increase the size of the workforce since 2000, particularly following the stabilisation of the security situation and the return of many residents to rural areas to cultivate their land, coinciding with the implementation of the National Agricultural Development Plan in 2000. This rate has remained stable since the 2006–2007 agricultural season, which is a positive indicator of the sector's ability to retain the agricultural workforce, given that it is one of the most important factors in production and the driving force behind agricultural work, particularly given the limited wider use of advanced technology, reliance on the labour force in the agricultural sector has therefore been inevitable.

6.2. The province's contribution to national agricultural production:

The province of Ain Defla is considered one of the leading provinces in the field of agriculture and agricultural production with cereals (particularly wheat and barley), various vegetables – notably potatoes – pulses and fruit, where it ranks highly at the national level, as shown in Table 5:

Table 05: Agricultural produce in the province of Ain Defla (2025)

National ranking	Production volume (quintals)	Products
11	720000	Cereals
02	11295128	Various vegetables
02	3175600	Potatoes
03	1505716	Fruit trees
10	130037	Olives
18	19522000	Milk (litres)
31	7929	Milk collection (litres)
-	43250	Red meat
05	172276	White meat
-	300787	Eggs (unit)

Source: Directorate of Agricultural Services, Report 2025

Agricultural production in the province is diverse and encompasses a range of crops, but what is particularly evident is the region's leadership in crop production, where it ranks second nationally in vegetable production at 11,295,128 quintals, with potatoes being the main crop at 3,175,600 quintals, accounting for 28 % of total vegetable production. Next comes the production of fruit trees, totalling 1,505,716 quintals, led by olive production; the province also ranks highly nationally in this regard. Finally, there are the major crops, the production of which reached 720,000 quintals, marking a significant increase and rise compared with the previous two years (the province recorded cereal production of an estimated 562,609 quintals in 2024 and 247,003 quintals in 2023), this fluctuation is primarily attributable to climatic conditions, particularly rainfall levels, which necessitates the mobilisation of further infrastructure to expand the area under irrigation.

6.3. Mortgaging the concession right or title deed to secure loans:

In accordance with Article 12 of Law No. 10-03, the investor holding the concession right is authorised to create a mortgage on it, for the purpose of financing, modernising and re-equipping the agricultural holding, by obtaining investment and operating loans(Sbaihi,2015). Article (02), which clarifies the rights of the concessionaire, that the concessionaire has the right to mortgage the real estate right granted to them under the concession as security for loans they may obtain from lending institutions to finance their activities within the framework of the agricultural holding.

In light of the above, we set out below a model of the agricultural loans permitted by law, based on the agricultural property contract for private landowners and the agricultural concession contract for land forming part of the State's private property (public land), with the aim of financing investors' agricultural investments:

* The 'Challenge' Loan:

Agricultural financing in Algeria relies on several mechanisms, including direct support through banks and indirect support through various agencies and bodies that finance numerous sectors, such as the National Agency for the Promotion and Development of Investment and the National Agency for Youth Support and Employment. The Challenge Loan was selected for this study as it is one of the direct financing methods specifically designed to support agricultural investment, and because it is a loan earmarked for medium- and long-term investments, which makes it an incentive and a support for the expansion of agricultural investment.

The Challenge Loan is an investment loan granted for the establishment of new agricultural enterprises and the development of existing agricultural land, whether privately owned or state-owned, and carries a partially subsidised interest rate. It is

granted to natural or legal persons by the Bank for Agriculture and Rural Development (BADR), The government covers the interest in full on behalf of the farmer for the first five years of the loan term; the farmer pays 1 % of the interest from the sixth to the seventh year, and 3% from the eighth to the ninth year; thereafter, the subsidy is withdrawn completely and the farmer bears the full cost of the loan. (Ati ,2022),Obtaining an Agricultural Challenge Loan requires a set of conditions laid down by the authorities for investors wishing to finance their agricultural projects and investments. We consider these conditions to be complex and lengthy, and they constitute an obstacle to agricultural investment, particularly the issue of agricultural land ownership, which is linked to the requirement that the investor hold a title deed or a concession agreement. We therefore set out these conditions below:

- A written application for the loan and an original birth certificate.
- A certified true copy of the identity card and a copy of the farmer's card.
- A building permit for the structures to be constructed as part of the project .
- A permit from the irrigation authorities to drill wells, should this be necessary, together with the relevant invoices. (Guemdani & Gouini ,2021)
- A set of specifications certified by the National Office for Agricultural Land.
- Title deed or concession decision, together with a health certificate.
- A technical study of the project issued by a consultancy firm accredited by the National Office for Agricultural Land .

Once the application file has been compiled and submitted, a joint provincial committee meets in the presence of a representative from the bank, the head of the municipal sub-department and a representative of the Director of Agricultural Services, given that the Ministry of Agriculture covers the interest on the loan for the first five years. (Harkat, 2026)Based on the data obtained regarding investors benefiting from support and financing under the 'Challenge Loan' scheme for the years 2022, 2023 and 2024, we have compiled the following table to compare the number of accepted applications whose applicants actually received the loan, with the number of farmers in the study area, whether in the private or public sector, given that the Challenge Loan is intended for all investment projects in the agricultural sector (tree cultivation, poultry farming, cold stores, livestock farming, etc.) with the exception of industrial projects.

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Table 06: Number of investors benefiting from the Challenge Loan in the province of Ain Defla and the nature of their investments for the years (2024, 2023, 2022):

Investment amount (AD)	Nature of the investments	Municipality	Rejected files	Number of beneficiaries	year
42300000	*Purchase refrigeration equipment *Purchase of generators and transformers *Purchase of machinery for lifting goods and agricultural equipment *Planting of lemon trees	Arib el-Attaf, Khemis Miliana, Ben Allal	/	04	2022
485000000	* Purchasing dairy cows of purebred imported breeds. * Setting up animal feed production units * Procuring equipment for large-scale cold stores * Procuring wooden and plastic packaging crates.	Sidi Lakhdar, Ain Defla, Boumedfaa, Borj El Amir Khaled, DJlida, Arib, Tibarkanine, Rouina, Ain lechiakh	One file (Tiberkanin)	10	2023
139300000	* Drilling artesian wells and constructing reservoirs for water. * Purchasing agricultural equipment	Bourachid, El-Attaf, Rouina, El-Abadia, Bir Ouled Khelifa, Aïn el-Sultan,	One file (Boumedfaa)	08	2024

Source: Directorate of Agricultural Services Services (D.S.A, 2026)

Table 6 provides with crucial indicators regarding agricultural investment in the study area, which we summarise as follows:

-There is a variation in the number of beneficiaries of support through the Challenge Loan between 2022 and the following two years, 2023 and 2024, with the number of accepted applications doubling; this is evidence of the keen interest among agricultural investors in securing finance, which is a key factor in agricultural investment.

- A rise in the value of loans granted, which increased from 42.3 million DZD in 2022 to 485 million DZD in 2023, then to 139.3 million DZD in 2024. It should be noted that the loans granted in 2023 and 2024 included beneficiaries of loans for model farms affiliated with the public sector, as well as cooperatives and joint-stock companies, with individual loans exceeding 187 million DZD, such as the 'Bouhamidi' in Ain Lechiakh and one of the cooperatives in Borj el-Amir Khalid. This indicates that these institutions and investors' access to larger loans stems from their stable and legally sound status and the absence of property disputes, which facilitates the provision of collateral to the bank. In contrast, farmer-investors holding customary or unregistered contracts are denied this loan, an obstacle faced primarily by private investors, particularly those with limited capital.

- Investments benefiting from support under the 'Challenge Loan' scheme are concentrated in the central plains region of the province of Aïn Defla, where public land ownership is heavily concentrated, whether in the form of collective or individual agricultural holdings operated under concession contracts or model farms, in the municipalities of (Arib, El-Attaf, Khemis Miliana, Sidi Lakhdar, Ain Defla, DJlida, Rouina, Bourachid, el-Abadia and Bir Ouled Khalifa). These municipalities possess the province's most fertile, highest-quality and most productive land. In contrast, the remaining beneficiaries of the loan are located in municipalities where private ownership is particularly prevalent, to the north and south of the plain region, namely (Ben Allal, Boumedfaa, Burj El-Amir Khalid, Tibarkanin, Ain Lechiakh and Ain Al-Sultan).

- Support and funding through the 2022 Challenge Loan are focused on developing infrastructure for processing facilities and the preservation and refrigeration sector, as the authorities seek to overcome problems of agricultural crop spoilage – particularly of seasonal crops – and to counter price volatility in the national market. The strong emphasis on cold stores and storage facilities, particularly in the municipalities of 'Arib, El Attaf and Khemis Miliana, directly serves the province's extensive potato production sector, with a view to achieving abundance and price stability. This reflects the province's role as an agricultural hub contributing to food self-sufficiency.

- On the other hand, the data reveal difficulties imposed by the region's climatic conditions, with a significant proportion of loans directed towards securing water resources and agricultural electricity, through investment in drilling wells and utilising groundwater, constructing reservoirs to collect and store water, and installing drip irrigation systems, which reflects the obstacles faced by investors as a result of drought and erratic rainfall.

- Investors in municipalities in the east of the province, such as Sidi Lakhdar and Boumedfaa, have focused on channelling loans towards cattle breeding by acquiring imported purebred dairy cattle to support milk production, given the presence of the 'Arib' and 'waniss' dairies.

6.5. Low rate of access to loans:

Based on an analysis of the above data (Table No. (06) and Table No. (03) on the status of agricultural holdings in the province of Aïn Defla and the nature of ownership, it has been found that there has been a significant decline in the take-up rate of the 'Challenge' loan, despite the fact that the study area is a national leader in the agricultural sector, given its economic standing and the results achieved on the ground. out of a total of 2,299 public-sector agricultural holdings and 21,745 private-sector agricultural holdings, we find that the number of beneficiaries of the 'Challenge Loan' – considered one of the most important financing mechanisms in Algeria – did not exceed 24 beneficiaries over a full three-year period (2024, 2023, 2022). This figure reflects a significant decline in the level of support and indicates that most farmers are excluded from large loans due to their inability to provide legal guarantees in the absence of clear title deeds that are eligible for bank mortgages, particularly as such loans require borrowers to own large farms, the area of which generally exceeds 10 hectares.

7. Results and Discussion

Through this study, we have reached the following conclusions:

-Legal certainty and clarity regarding property rights are the main drivers of agricultural investment; farmers who hold strong legal title are more willing to take financial risks, thereby increasing the province's output at a national level, which validates the hypothesis put forward in the study.

-The low take-up rate of medium- and long-term financing loans (the 'Challenge Loan') in the province of Ain Defla, compared with the number of female and male agricultural investors.

-The effectiveness of measures to support agricultural investment and modernise production in the province of Ain Defla does not depend solely on the provision of cash flow (financing), but is closely linked to the flexibility of administrative procedures, the regularisation of agricultural land, and the streamlining of concession contracts to free them from bureaucracy, so that they can act as a catalyst to protect both the investor and the bank.

-The majority of investors in the study area focus their investments on seasonal and short-term ventures such as: potato production, whilst they are reluctant to engage in large-scale, long-term investments – or so-called 'structural' investments – such as fruit tree cultivation and food processing, due to the high risk associated with agricultural investment stemming from climatic conditions, natural disasters and the length of the financial cycle involved.

-The slowness of administrative procedures relating to the granting of concession contracts; despite more than fifteen years having passed since the law was enacted, many applications remain pending due to disputes between partner investors within the same venture.

8. *Conclusion*

There is a close relationship between agricultural land ownership and agricultural investment. To strengthen the capacity of Algerian agriculture to achieve self-sufficiency and food security, and to increase the competitiveness of Algerian agricultural products in global markets, it is essential to focus on and encourage agricultural investment, particularly from the private sector, by establishing a set of conditions, foremost among which is clarifying the legal relationship between the land and the farmer who works it, in order to boost productivity and achieve agricultural development. In light of this, we propose the following:

- The need to regularise agricultural land in the study area through a land survey, which will help to produce registered title deeds that are free from disputes.

- Streamlining the administrative procedures for obtaining bank loans and transforming land ownership into an effective financing tool rather than a stumbling block for investors, so that they are consistent with the proposed land leasing scheme, whereby a lease agreement, for example, would allow access to a loan or financing from banking institutions to implement investment projects, serving as collateral for the lending process.

- The need to expedite the process of settling concession contracts and clarifying land titles, in order to move forward with the implementation of public-private partnerships.

The issue of agricultural land ownership remains a pressing concern, regardless of the variety of legal forms of land use, given the limited financial resources of local investors and the absence of strict oversight. Transforming Algerian agriculture to match that of developed countries requires the injection of substantial funds for technology transfer and the adoption of mechanisation, which is why we consistently emphasise the importance of agricultural research and studies, as agriculture has become the primary alternative to fossil fuels.

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