From agricultural investment to agricultural productivity

– the case of Algeria –

(Intervention in the international seminar entitled: Rural Development in Algeria: Reality and Prospects)

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Abstract:
The aim of this study is to assess the impact of agricultural investment plans in Algeria on productivity and food security, with a particular focus on structural reforms, strategic projects, and financing mechanisms such as R'FIG and ETTAHADI. The methodology used consists of a descriptive and analytical analysis based on a review of the literature and statistical data from official websites (MADR, FAO, ONS). The results indicate a remarkable increase in the value of agricultural products (+31% from 2021 to 2022), an increase in cereal yields, and an increase in usable agricultural land (+3.6% over ten years from 2013 to 2023).

Keywords : agriculture, productivity, food security, Algeria, subsidized financing.

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I- Introduction:

The sharp rise in commodity prices, which caused the global food crisis of 2007–2008, revealed the fragility of agricultural and food systems, particularly those in developing countries that are heavily dependent on imports. Algeria, which is highly exposed to these external shocks, has gradually become aware of the need to strengthen its food sovereignty.

Faced with chronic dependence on food imports, estimated at around US$11,194 million in the first quarter of 2024 (Trading Economics, 2025), Algeria has undertaken major structural reforms to secure its supply, support domestic production, and promote self-sufficiency.

In 2022-2023, the government invested nearly 200 billion dinars (Al24news) to stimulate agriculture, regulate production, and support strategic sectors. These actions have produced concrete results: the value of agricultural production rose from 3.5 trillion dinars in 2021 to 4.55 trillion dinars in 2022 (Al24news), this represents an increase of 31%. Grain yields, particularly wheat, have improved considerably, with the aim of doubling productivity in the short term, from 20 to 40 quintals per hectare, and even increasing it to 60 quintals in the irrigated areas of the Sahara.

In Algeria, investment in the agricultural sector is now regarded as a key part of public policies, in response to the growing challenges of food security. The State has spent considerable sums over many years on modernizing the sector with the aim of raising performance and encouraging diversification of production. In addition to the 200 billion dinars spent in 2022-2023, the government has established incentive measures, including the granting of subsidized loans, support for agricultural inputs and the enhancement of access to agricultural land.

In addition, Algeria focuses on large projects, and of particular interest is the development of the desert agriculture based on localized irrigation, the adoption of modern farming techniques, and the development of yet unexploited land.

Problem:

Can agricultural investment stimulate agricultural productivity in Algeria and address food security challenges?

Secondary questions:

1. Do strategic projects in Saharan areas play an important role in promoting these areas?
2. How effective are subsidized loans such as R'FIG and ETTAHADI, as well as subsidies for agricultural equipment, on agricultural yields in Algeria?

Hypotheses:

• H1: Strategic projects implemented in Saharan areas will contribute significantly to increasing agricultural yields.

• H2: Schemes such as R'FIG and ETTAHADI, as well as subsidies for agricultural equipment, have a direct and positive impact on agricultural productivity.

Importance of the research:

This study is strategically important for analyzing and evaluating the efficiency of agricultural investment instruments deployed in Algeria in an environment of food price volatility and tensions in the global market. It provides an opportunity to interpret the extent to which these investments, including strategic projects in the Sahara, subsidized loans, and

equipment subsidies, contribute to greater intensification of agricultural performance and a decline in reliance on imports.

Research methodology:

This study is based on a descriptive and analytical methodology combining a documentary analysis of official references such as the Ministry of Agriculture and Rural Development (MADR), the Food and Agriculture Organization of the United Nations (FAO), and a statistical study on agricultural production, cultivated areas, and financing granted, with the aim of assessing the influence of government policies on productivity.

Literature review:

1- Study by Philippe ADAIR & Messaoud LAZEREG & Amel BOUZID & Sid Ahmed FERROUKHI,

ALGERIAN AGRICULTURE: THE LEGACY OF THE PAST AND CONTEMPORARY CHALLENGES, Les Cahiers du Cread -Vol. 38 - No. 03, Algeria, 2022

The article aims to assess the impact of reforms and various public policies relating to land tenure, employment, financing methods, crop yields, and the agricultural price and market system. It poses the following question:

Does current agricultural policy promote sustainable growth and resilience to climate change?

The study led to the following conclusions: Between 1962 and 1990, political choices hampered agricultural development in Algeria. However, since the 1990s, agricultural policies have gradually matured and been adjusted. Agriculture must also address the challenges of food sovereignty, climate change, sustainable intensification, and new eating habits.

2- Study by Dr. Azzedine DRAOU and Dr. Hosni BAALI, THE ROLE OF MODERN TECHNOLOGIES IN SUPPORTING SUSTAINABLE AGRICULTURAL DEVELOPMENT - PROSPECTIVE ANALYTICAL STUDY ON THE SITUATION IN ALGERIA - 1st International Seminar on Technological Innovations for Sustainable Agriculture, Abdelhafid Bou Souf University Center – Mila, Algeria, October 24-25, 2025.

This study aims to highlight the main challenges hindering sustainable agricultural development in Algeria, as well as to present digital and modern technologies as a strategic option to support this development.

The study reached several important conclusions, notably that Algeria has enormous natural resources that enable it to develop the agricultural sector and achieve sustainable development. In addition, this sector is likely to undergo a digital transformation, which would eliminate the various difficulties related to production and export, as well as streamline bureaucratic procedures in the field of agricultural investment.

3- Study by BEDRANI Slimane. “9. AGRICULTURE AND RURAL AREAS DURING THE PERIOD 1990-2000.” WHERE IS ALGERIA HEADED?, edited by Ahmed MAHIOU and JEAN-ROBERT Henry, Institute for Research and Studies on the Arab and Muslim Worlds, Karthala Publishing, 2001.

This article analyzes the effects of the 1990s on agriculture and rural areas in Algeria, showing that despite instability and structural adjustment measures, agriculture's

contribution to GDP remained stable (12-15%), agricultural employment remained significant but productivity tended to decline, and areas for improvement lay in low yields, dependence on public aid, and institutional and land constraints that hampered investment and sustainable rural development.

Structural framework of the study:

In order to provide answers to the main issue and the secondary questions raised above, we will address the subject in the following order:

1- Definition and conceptual framework of agricultural investment;
2- Current state of agricultural investment in Algeria;
3- Impact of agricultural investment on productivity in Algeria.

1- Definition and conceptual framework of agricultural investment

1-1- Definition of agricultural investment:

Definition 1:

Agricultural investment consists of all financial and material resources dedicated to developing the assets of the agricultural sector in order to improve the production, productivity, and sustainability of farms. This includes, in particular, the purchase of land, machinery, and buildings, as well as the introduction of innovative technologies ((FAO), 2024).

Definition 2:

According to the World Bank, agricultural investment refers to the funds and resources mobilized for the acquisition, maintenance, and development of infrastructure, equipment, and capacity in the agricultural sector, with the aim of increasing productivity and supporting sustainable economic growth (World Bank, 2020).

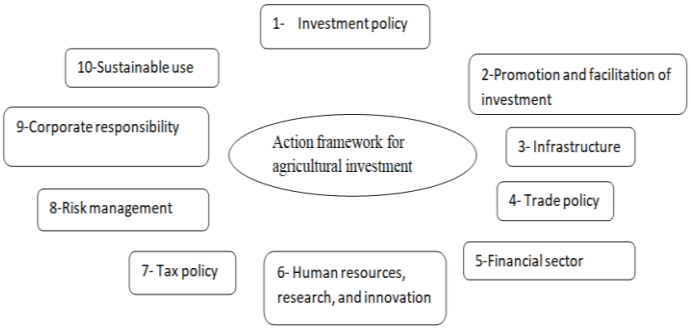
Agricultural investment refers to the allocation of financial resources to the agricultural sector to improve its productivity and sustainability. This includes assets such as land purchases, the acquisition of modern machinery, and the implementation of innovative technologies to increase yields. Investing in agriculture promotes food security, economic growth, and rural development.

1-2- The Agricultural Investment Framework:

The Agricultural Investment Framework (AIF) is designed to help countries assess and design policies to attract private investment in agriculture in order to ensure steady economic growth and sustainable development. To channel private investment into the agricultural sector, a wide range of supply-side measures and sector-specific public goods are needed. A coherent framework is essential to make the investment climate attractive to all investors, whether domestic or foreign, large or small. The flexible CAIA raises questions and provides guidance in ten areas of action, inviting consideration by governments seeking to create an attractive climate for investors and increase the development benefits of agricultural investment.

This tool can be useful in encouraging a wide range of actors to invest in agriculture, namely smallholders, small and medium-sized enterprises, medium-sized farms, cooperatives and local or foreign private companies, multinationals, and state-owned enterprises. It should be noted that not all investors necessarily have the same needs and that increasing small domestic investments requires specific measures.

Figure No. 01: Structure of the framework for action for agricultural investment



Source: OECD, Framework for Action on Agricultural Investment, 2014

2- Current status of agricultural investment in Algeria:

This section presents the reality of agricultural investment in Algeria and its impact on productivity.

2-1- Strategic agricultural projects:

Let's start by defining strategic projects as follow:

2-1-1- Definition of a strategic project:

Strategic projects are those that aim to ensure food security and reduce imports, in addition to creating real development hubs in the various agricultural sectors in the southern wilayas only (Executive Decree No. 24-55 of 11 Rajab 1445, 2024).

2-1-2- Information on strategic agricultural projects:

The mechanism for strategic agricultural projects, regulated by Executive Decree No. 24-55 of January 23, 2024, provides for the exceptional allocation of plots of land from the private domain of the State in concession to develop key sectors ensuring food security and reducing reliance on imports, exclusively in the southern wilayas. These projects concern in particular cereal crops, fodder crops, oilseeds, sugar beet, dairy and meat farming, cotton, and seed multiplication, with minimum areas of 10,000 ha (or 2,000 ha for seed multiplication). The procedure requires the submission of an application to the Ministry of Agriculture for classification, then to the Office for the Development of Industrial Agriculture in Saharan Lands. Three projects have recently been selected: TAFADIS SPA (20,000 ha in Ouargla and Touggourt for cereals, beetroot, and sunflowers), BF Al Djazair SPA (36,000 ha in Timimoun for cereals and legumes) and BALADNA El Djazair SPA (117,000 ha in Adrar for cereals, fodder, cattle breeding, and dairy and meat production) (MADR, 2025).

2-2- Support measures for agricultural populations:

Global hunger crises, including that of 2007-2008, highlighted the strong link between food security, national security, and sovereignty. In response, the Algerian State strengthened the agricultural sector through the 2008 Agricultural Orientation Law and the President's strategic vision to turn agriculture into a growth driver, reduce vulnerabilities, and involve

both public and private stakeholders. This policy was implemented by redirecting support toward strategic sectors (cereals, milk, meat, dry vegetables), improving collection systems, streamlining input assistance, enhancing seed and plant production, targeting investments, stabilizing farmers' incomes, regulating markets, promoting sustainable rural development, and supporting small farmers. The goal is to foster a safe and attractive environment for farms, develop regulatory tools, support priority sectors, and boost the capacity of public enterprises, offices, and cooperatives (MADR, 2025).

2-2-1- Support for the purchase of agricultural machinery, equipment, and fertilizers:

In this context, we distinguish between:

A- Support for the purchase of locally manufactured agricultural machinery and equipment:

Funding for the purchase of ancillary equipment (soil preparation, sowing, treatment, fertilization, forage harvesting, specialized equipment) covers 30% of the price including tax for an individual purchase and 40% for a collective purchase. The application, to be submitted to the relevant agricultural subdivision, must specify the nature and amount of support, and be accompanied by the farmer's card or proof of operator status, as well as an official document for agricultural enterprises. The file is then forwarded to the provincial agricultural services department, which makes a decision within eight days (Fund National Agricultural Development, 2018).

B- Support for the purchase and use of fertilizers:

Support for the purchase and use of fertilizers provides assistance equal to 20% of the reference price, calculated according to the type of crop and the area. The application, submitted to the agricultural subdivision, gives rise to an authorization, and the purchase is made exclusively from operators approved by the Ministry of Energy and contracted with the DSA. The documents to be provided include the application for support, the farm information sheet issued by the provincial chamber of agriculture, and the farmer's card (Decision No. 414, 2014).

C- Support for the purchase and use of fertilizers:

The support scheme for the purchase and use of fertilizers provides aid equivalent to 20% of the reference price. The application, accompanied by the farm's identification form and the farmer's card, is submitted to the agricultural subdivision, which issues the authorization. The purchase must be made from operators approved by the Ministry of Energy and contracted with the DSA, who issue the invoice and delivery note (Decision No. 414, 2014).

D- Granting of subsidized agricultural loans :

With regard to subsidized agricultural loans for farmers in Algeria, there are two types of loans: ETTADI loans & R'FIG campaign loans

- **ETTAHADI credit:**

The "ETTAHADI" investment credit is intended for farmers, livestock breeders, agricultural businesses, cooperatives, pilot farms, and land concessionaires to finance agricultural production, processing, and development projects. The application process begins at the agricultural subdivision (report, review by the wilaya technical committee, issuance of a validation certificate in the event of a favorable opinion), then continues at the

BADR, which has three months to make a decision. Eligible actions cover five main areas (Ministry of Agriculture & Rural Development & and Fisheries, 2020):

- ❖ agricultural irrigation (water mobilization and storage, pumping, drainage, networks, equipment),
- ❖ means of production (inputs, equipment, livestock, renewable energy, tractors, harvesters, greenhouses, etc.),
- ❖ storage, processing, packaging, and marketing infrastructure,
- ❖ artisanal production related to agriculture (mats, tanning, distilling, forestry processing, etc.),
- ❖ preservation and development of plant and animal genetic resources (nurseries, seeds, conservation).

➢ **R'FIG seasonal credit:**

The R'FIG seasonal credit, granted by the BADR, covers the seasonal needs of the agricultural sector. After submitting the application to the agency, the credit committee deliberates and, if approved, an agreement is signed. The review period is 15 days for field crops and 30 days for other sectors. This financing covers, in particular, the purchase of agricultural inputs (seeds, fertilizers, plant protection products), feed and veterinary products for livestock, the acquisition of products to be stored as part of the regulation system, the stocking or restocking of livestock and beehives, the performance of agricultural work (plowing, sowing, harvesting and threshing), and the purchase of packaging for agricultural and agri-food products (Ministry of Agriculture & Rural Development & and Fisheries, 2020).

2-3- Planned investments:

A- New agricultural financing mechanism:

The Ministry of Agriculture has set up a new financing mechanism to facilitate the implementation of agricultural projects, in partnership with the Association of Banks and Financial Institutions. It involves all public banks, including BADR, BNA, CPA, BDL, CNEP-Banque, and BEA. The interest on the loans will be fully covered by the ministry, enabling farmers and agricultural investors to create, modernize, or develop their farms, enhance production, and store, package, and export agricultural products. The financing ceilings are set at DZD 100 million for individual projects and DZD 200 million for collective projects (INVEST, 2025).

B- Objectives and areas covered:

This program aims to stimulate agricultural investment, improve productivity, and strengthen the competitiveness of farms. The loans cover the creation and equipping of agricultural or livestock farms, the modernization of facilities, the processing and promotion of agricultural and animal products, as well as storage, preservation, packaging, and export. It is complemented by other initiatives such as the R'fig program (low-interest loans for young farmers) and the Ettahadi program (support for agricultural SMEs to encourage innovation) (BUSINESS France, 2025).

C- Mobilization of public banks:

An agreement between the Ministries of Finance and Agriculture extends agricultural financing to five public banks, in addition to the BADR, in order to increase the sector's financing capacity. This mechanism makes it possible to finance the acquisition of equipment, storage and processing infrastructure, as well as the installation of irrigation systems and boreholes. Loans range from a few million to over 40 billion centimes, with favorable terms. The goal is to strengthen food security by increasing production, modernizing agricultural practices, and achieving self-sufficiency (Observ Algérie, 2025).

3- Impact of agricultural investment on productivity in Algeria:

3-1- Change in usable agricultural area (UAA) in millions of hectares

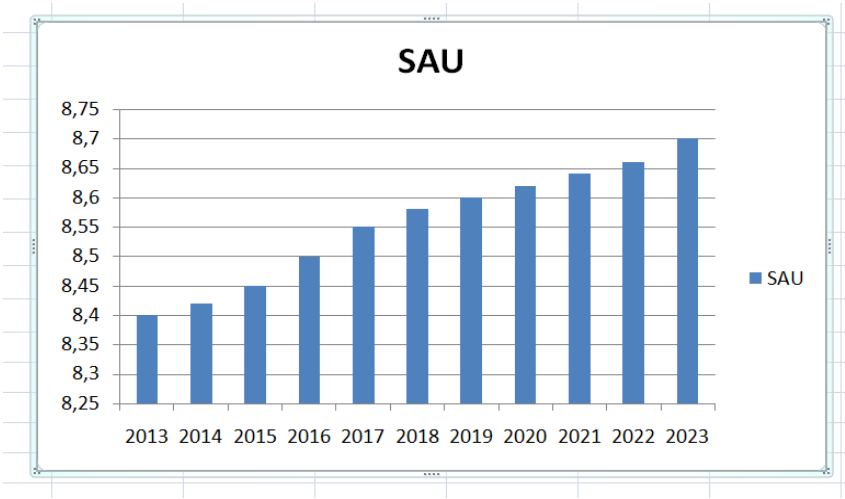
Table No. 01: Change in usable agricultural area (UAA) in millions of hectares

Year	UAA (millions ha)	Source
2013	8,40	FAOSTAT / ONS
2014	8,42	FAOSTAT
2015	8,45	FAOSTAT
2016	8,50	ONS
2017	8,55	ONS
2018	8,58	FAOSTAT
2019	8,60	FAOSTAT
2020	8,62	Ministry of Agriculture
2021	8,64	Ministry of Agriculture
2022	8,66	ONS / FAO
2023	8,70	Ministry of Agriculture

Source: compiled by the researchers based on data from the ONS, FAO, and MADR.

Before commenting on the table above, we will translate it into a Figure to clearly illustrate the evolution of agricultural land use over time.

Figure No. 02: Evolution of usable agricultural land (UAL) in millions of hectares



Source: compiled by the researchers

In Algeria, the usable agricultural area (UAA) has grown steadily but moderately over the past ten years.

In 2013, it covered approximately 8.40 million hectares and reached 8.70 million hectares in 2023, an increase of approximately 300,000 hectares (+3.6%).

This change can be explained by the gradual development of new land, particularly in the south, as well as the development of irrigation and agricultural development programs.
However, UAA remains limited by significant natural constraints, such as the arid climate and the poor quality of some soils.
In summary, the trend is positive: the amount of arable land is increasing, but at a pace that remains constrained by the country's environmental conditions.

3-2- Distribution of investments by type (2024)

In 2024, the agricultural sector in Algeria received significant financial support. The Bank of Agriculture and Rural Development (BADR) granted a total of 221 billion Algerian dinars (DA) to finance various agricultural investment projects (MAGHREB MERGENT, 2025).
Although the exact distribution of these funds by type of investment—agricultural equipment, storage infrastructure, agri-food processing, irrigation systems—is not published in detail, it is known that these sectors remain a priority. The BADR and the Ministry of Agriculture and Rural Development are focusing on modernizing equipment, improving storage infrastructure, developing agri-food processing, and optimizing irrigation systems (Algeria Invest, 2025).
This budget represents an increase of around 7% compared to 2023, reflecting positive momentum in agricultural sector financing and a continued commitment to supporting the productivity and resilience of Algerian farms (MAGHREB MERGENT, 2025).

Conclusion:

Agricultural financing is a cornerstone of economic development and food security in the Algerian region. The year 2024 was marked by a remarkable declaration of resources, highlighting the importance attached to this essential sector.

Algeria has invested in agricultural development in the southern and highland regions, prioritizing local irrigation and the integration of renewable energy into agricultural systems. The 2023-2028 Strategic Plan for Cereal Production envisages the rational development of Saharan lands, with the ambitious goal of bringing one million hectares of irrigated land into service by the end of 2025. These efforts aim to transform these vast underutilized areas into intensive production zones capable of meeting the country's needs and enabling exports in the medium term.

Research findings:

In 2024, the Bank for Agriculture and Rural Development (BADR) deployed 221 billion Algerian dinars (DA) to finance various projects in the agricultural sector. Although there is no detailed breakdown by type of investment—agricultural equipment, storage infrastructure, agri-food industry, irrigation systems—it is clear that these sectors remain among the priorities.

This funding primarily concerns the modernization of equipment, the upgrading of storage infrastructure, the development of the agri-food sector, and the optimization of the irrigation network. This fundraising represents an increase of around 7% compared to 2023, confirming a positive trend in favor of financing in this area.

Discussion of secondary questions:

Based on these results, we can now discuss the secondary questions posed at the beginning of the article:

• Investment targets vital infrastructure and equipment with the aim of improving agricultural productivity. Priority is given to projects that contribute to the modernization, processing, and preservation of agricultural products.

• The increase in funding demonstrates a desire to strengthen the resilience of farms in the face of economic and climate challenges.

Suggestion:

• Develop a more specific breakdown by type of investment to enable better monitoring of the impact of funding.

• Promote constant and clear monitoring of funded projects in order to assess their effectiveness and identify areas that require additional assistance.

• Create educational programs for farmers so that they can make better use of modern equipment and new infrastructure.

• Increase investment in sustainable irrigation systems to optimize water resource use.

In short, the financial support provided by the Algerian government, especially in 2024, demonstrates a strong commitment by the government and the BADR to modernize Algerian agriculture, improve its productivity, and strengthen national food security.

References:

(FAO), F. a. (2024). *Investissements dans l'agriculture.* FAO.

Al24news. (s.d.). Consulté le 08 10, 2025, sur https://al24news.dz/fr/lalgerie-releve-le-defi-de-la-securite-alimentaire

Algeria Invest. (2025, 04 10). Consulté le 07 2025, 10, sur https://www.algeriainvest.com/premium-news/badr-plus-de-200-milliards-de-da-destines-a-linvestissement-en-2024?utm_source=chatgpt.com

BUSINESS France. (2025, 04 22). Consulté le 07 2025, 10, sur https://www.teamfrance-export.fr/infos-sectorielles/37166/37166-soutien-renforce-pour-les-agriculteurs-algeriens-grace-a-un-nouveau-programme-de-financement

Decision No. 414. (2014, May 22). Decision No. 414. Algerian legislator.

Executive Decree No. 24-55 of 11 Rajab 1445. (2024). Algies: Algerian legislator.

Fund National Agricultural Development. (2018, January 24). setting out the eligibility conditions and payment terms for subsidies under the Decision No. 77. *Decision No. 77* . Algies: National Agricultural Development Fund.

INVEST, A. (2025, 03 12). *Algeria INVEST*. Consulté le 07 17, 2025, sur https://algeriainvest.com/AlgeriaIC/public/fr/premium-news/soutien-aux-agriculteurs-lancement-dun-nouveau-mecanisme-de-financement

MADR. (2025). Consulté le 07 20, 2025, sur https://odas.madr.gov.dz/les-projets-agricoles-a-caractere-strategique/

MADR. (2025). Consulté le 07 20, 2025, sur https://fr.madr.gov.dz/agriculture/controle-et-developpement-de-la-production-agricole/mesures-de-soutien-aux-populations-agricoles/

MAGHREB MERGENT. (2025, 04 10). Consulté le 07 12, 2025, sur https://maghrebemergent.news/fr/221-milliards-de-da-dinvestissements-badr-en-2024-le-sud-et-les-hauts-plateaux-grands-gagnants/#utm_source=chatgpt.com

Ministry of Agriculture & Rural Development & and Fisheries. (2020, 12 13). Agreement on the "ETTAHADI" Investment Loan between MADR and BADR. Ministry of Agriculture, Rural Development, and Fisheries.

Observ Algérie. (2025, 02 15). Consulté le 07 10, 2025, sur https://observalgerie.com/2025/02/15/economie/lalgerie-mobilise-5-banques-financer-agriculture/

Trading Economics. (2025, 08 12). *Trading Economics*. Récupéré sur https://fr.tradingeconomics.com/algeria/imports

World Bank. (2020). *Agricultural Investment and Productivity.* World Bank.