

Investment agricultural bank credit: An analysis of differentiation on the Algerian market

قرض الاستثمار الفلاحي: تحليل مفاضلة في السوق الجزائري

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Abstract:

This study aims to analyze the quantitative impact of agricultural subsidies and the classic ones granted by banks in Algeria, and to test the benefits granted to farmers in Algeria, the method used is the development of several scenarios, aiming at the change of amounts, rates and duration, to measure a such impact. This study showed that even with the application of the most favorable interest rate subsidy possible for investment credits, the benefits related to ETTAHADI credit remain more advantageous than for credits below 100 MDZD. With a proposal to trigger a reflection on the possibility of supporting the farmer more. While taking advantage of the long experience of BADR in terms of reflexes developed with regard to this sector.

Keywords: *Financing; Interest Rate; Credit Amount; Duration; Algeria.*

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Introduction:

Agricultural financing is a specific banking segment in terms of project characteristics, duration, as well as the interest rates applied, a risky niche from a micro point of view, but contributes to the achievement of food security at the macro level.

The Algerian banking system is very diversified in terms of banks operating on the market, which currently has 21 banks. Agricultural benefits are found within BADR BANK through a subsidized investment credit, capped at 100 MDZD, beyond this amount, the banking subsidy transforms into the classic form. In this context, it should be noted that an agreement was recently signed between the Ministry of Agriculture and public banks, but the implementing texts have not yet been established. According to this vision, this article came to study the following problem: what is the behavior of Algerian banks in relation to the agricultural sector?

As for literature review, (Akerkar , 2015) Announces that Algeria must design its own agricultural policy by freeing itself from external and internal allegiances. A policy that must be built with all the representative forces of the rural world. According to (Daoudi & Bedrani , Le Financement Informel Des Exploitations Agricoles En Algérie : Un Essai De Caractérisation Des Principales Pratiques, 2008), the analysis of the functioning of informal financing practices could be a source of inspiration for technical and institutional innovations that would help unlock the development of agricultural credit. In relation to Agricultural Value Chain Finance, (Villalba et al., 2023) introduce six propositions that highlight the key factors in the development and longevity of financing systems: the AVCF ecosystem, how AVCF systems emerge, social capital and value chain interactions, culture and characteristics of the value chain, market risk, and reducing transaction costs. According to (GUEMMAZ, 2021), the banking study of an agricultural or industrial investment file is carried out in the same way in terms of form. The differences are implicit, arising from external legal factors linked to the texts in force in Algeria, and internal technical factors linked to the sectoral nature of the project.

This study aims to measure the quantitative impact of agricultural subsidies and traditional subsidies, and to obviously test the benefits granted to farmers in Algeria. The research gap compared to other previous studies lies in the location of agricultural projects that exceed 100 MDZD in terms of investment credit subsidies. A significant amount, but significant projects can be presented that exceed this threshold.

The method used in this paper is the development and analysis of several financing situations, several probabilities were exposed namely: a bank market credit lower and higher than 100,000,000 and a BADR credit lower and higher than 100,000,000 DZD. After carrying out these calculations, we will compare the weight of the debt service for each credit granted.

Interest rates applied by banks on traditional investment loans vary in Algeria from one bank to another, but there is a ceiling set by the Bank of Algeria(Banque d'Algérie, 2025). The rate set on the simulations relating to this study is 6%, this is only a hypothesis to simplify the comparison between the subsidy of the loans.

To answer the question raised in this study, we propose the following areas:

- Bank financing;
- Obstacles to access to bank loan;

- Banking and agriculture in Algeria:
- Medium-term investment;
- Long-term investment.

I- Bank financing:

Bank financing is a very broad field, made up of specific banking techniques, financing study methods, and guarantee to be required in the event of a favorable financing agreement.

I-1-Technical specifications:

Financing is considered as all the monetary resources needed to have an asset or to implement an activity. The method of financing a business depends on what needs to be financed, especially since the types of financing are numerous and very varied. In the case of a new business, financing is a key issue since it must provide itself with the financial means essential to its proper functioning, to the start of its activity and even to its development; we can distinguish between the contributions provided by the partners/shareholders, the equity, and the financial means made available by third parties. Also, it is possible to split them into two main sources: internal financing methods and external financing (Azzaoui , 2016, p. 73).

To remedy temporary capital shortages, the company can seek help from its banker, who can offer it loans in line with the needs expressed. However, given that these loans are directly linked to the operating cycle, they cannot exceed the duration of the same cycle. In this sense, the banker offers a range of loans intended to ease the temporary cash flow problems encountered by the company and ensure the smooth running of its operating cycle. These operating loans, also called "low balance sheet financing loans"(Tari & Attari , 2018, p. 37).

I-2-Financial analysis:

Financial analysis can be defined as a set of methods and tools using financial and economic information intended to assess the financial situation of the company and to make a judgment on its performance. The information concerned is mainly formed from the accounting documents that companies are obliged to establish and publish. These documents called financial statements are composed of a balance sheet, an income statement and an appendix. The ratio method is widely used by bankers and financial managers of companies. It applies not only to the examination of the balance sheet to assess the structure of assets and debt, but also to the study of the income statement in order to analyze operations and profitability. A ratio is a relationship between two significant quantities (Mohammed Benahmed & Ghrissi , 2019, p. 688).

I.3-Bank warranties:

The requirement for guarantee directly affecting the assets of Small and medium-sized enterprises is considered one of the main obstacles to SME financing. Banks often require Small and medium-sized enterprises seeking financing to provide mortgages on property or pledges as security, including land, buildings that can be used to repay the loan, or personal sureties. In fact, more than 78% of Small and medium-sized enterprises say that their bankers required guarantee in their approach to obtaining bank financing. The presentation of guarantee seems to be the criterion that most determines obtaining a favorable financing decision (Beztouh & Achouche , 2018, p. 27).

II-Obstacles to access to bank loan:

Despite the important place occupied by Algerian Small and medium-sized enterprises and their contribution to development and growth, this category of companies suffers from problems relating to its financing, particularly banking, given that the bank remains the main source of financing for Small and medium-sized enterprises in Algeria (Hadji & Lebig, 2021, p. 500). Bank loans constitute the main source of external financing for a small business, but almost systematic obstacles must be noted (Azzaoui , 2016, pp. 73-74):

II-1-Information asymmetry:

This is a general problem for any external financing, whether for large or small companies, whether it is debt or equity financing. However, there is not enough and organized information on Small and medium-sized enterprises, as for large companies, because Small and medium-sized enterprises are not generally listed on the stock exchange, among other reasons. This means that the banker does not have enough information to assess the real financial situation of the SME, and therefore, to be able to decide on the granting of loans. Also, in many cases, the manager of the SME conceals financial and commercial information and does not give the banker a true image of his company. Thus, an SME often suffers from a lack of credibility in the eyes of the banker.

II-2-Lack of warranties:

Unlike large companies that are better equipped to overcome the problem of information asymmetry through collateral, small companies are often undercapitalized, and therefore generally do not hold sufficient collateral to offer to their banker. Banks avoid taking excessive risks when distributing funds. This concern is of course heightened when it comes to Small and medium-sized enterprises. To protect themselves against this supposedly high risk, banks require real guarantee that almost all of these Small and medium-sized enterprises are unable to offer. This represents psychological pressure on the company and naturally excludes them from bank financing (Hadji & Lebig, 2021, p. 486).

II-3-Often family businesses:

The asymmetry of information is all the more remarkable since the small business is often family-run. Also, this can result in a problem of clearly defining responsibilities and tasks within the SME. These problems make the repayment capacity of the business difficult to estimate.

II-4-The high cost of loan for the bank:

The financial institution bears fixed transaction costs related to information collection, loan assessment and monitoring, that are relatively high compared to the size of the loans requested by Small and medium-sized enterprises. These fixed costs may be even higher for Small and medium-sized enterprises that are insufficiently transparent and the quality of the financial information they are prepared to provide to the financial institution is limited.

II-5-Internal problems:

The problems are also rooted in the companies themselves, the lack of financial information, the unbalanced financial structure, the centralized and personalized organization, the lack of transparency, as well as the unreliability of the accounting documents that companies present to banks (Hadji & Lebig, 2021, p. 486).

III-Banking and agriculture in Algeria:

In developing countries farmers often have limited access to financial services and face high loan risks and lack of collateral (Villalba et al., 2023, p. 2). Agriculture is a strategic sector, aiming at achieving food security in countries, the banking relationship with agriculture will be addressed in the following:

III-1- Agricultural financing in Algeria:

The financing needs of farmers are determined by the types of agricultural speculations and the ways in which they are conducted (Daoudi & Bedrani , *Le Financement Informel Des Exploitations Agricoles En Algérie : Un Essai De Caractérisation Des Principales Pratiques*, 2008, p. 14). The prospects of the agricultural sector in Algeria lie in the search for the interests of the main actors, which boils down to an understanding and consensus between the objectives of the State and those of agricultural professionals, because by properly situating the situation, the achievement of a goal and objective of a partner cannot and should not be achieved unless the other partner achieves its objectives, and taking just the case of food security, this objective is decisive, not only for the State through social peace and food balance, but also for farmers through a reorientation towards other more advantageous and profitable crops, and which can even have repercussions on the State (CHAIB , 2012, pp. 20-21). For a long time, the agricultural world has suffered from the absence of an appropriate financing system adapted to its specificities. The increasingly heavy indebtedness of producers and the almost non-existence of operating credits and investment credits, after the autonomy and adoption of the Bank of Agriculture and Rural Development of the operating mode of traditional banks, lead to the emergence of informal financing and the diversion of farmers from their natural vocation. The CNMA has set up multiple insurance contracts (insurance for agricultural equipment, fire, livestock, date palms, greenhouses, hail, etc.) that farmers subscribe to in order to facilitate their access to credits and bank loans (Akerkar , 2015, p. 21).

III-2- Informal financing of agriculture:

In Algeria, in the agricultural and rural sector, informal financing is not practiced through transactions dedicated to money trading per se. In Algeria, there are no tontines or money guards that drain savings and distribute credits. Most informal financing practices in agriculture are carried out within the framework of versatile economic transactions and where the exchange of financial resources is only a clause underlying the exchange of a specific good or service. Informal financing practice is any transaction that allows farmers to mobilize a factor of production, in money or in kind, from a third party (Daoudi & Bedrani , *Le Financement Informel Des Exploitations Agricoles En Algérie : Un Essai De Caractérisation Des Principales Pratiques*, 2008, p. 13). The non-institutional forms of financing of agricultural activities that have been identified are: Self-financing, Borrowing from individuals, Sale of standing crops before harvest maturity, Supplier credit, Different types of associations with production sharing (Daoudi & Bedrani , *Le Financement Non Institutionnel Dans L'agriculture : Quelques Resultats D'une Enquête Rapide*, 2002, p. 79).

III-3- Agricultural financing market:

For a long time, agricultural credit was closely linked to the status of state banks, particularly the BADR, a bank specializing in agricultural financing. The latter was content to make available to public farmers; the private sector was excluded from the financial resources advanced by the Public Treasury, the sole lender of funds. But it was Law 90/10 of April 14, 1990 on money and credit that

provided the decisive impetus towards a management of credit in general and agricultural credit in particular that was more in line with the market economy. It introduced the use by banks of traditional prudential rules and gave them the right to seize the assets of farms unable to honor their commitment to repay the credits granted. It seems that, in the new context of openness and competition, the BADR shows greater interest in traders, artisans, and industrialists than in farmers deemed to be insolvent (BOUKELLA, 2000, pp. 10-11).

III-4- Interest rates on investment loans:

The Algerian legislature has established that the rate and duration of the subsidy are set at 3% for investments made in the Highlands and Southern regions and 2% for investments made in other wilayas. The duration of the subsidy, as well as the percentage of the profit margin, is set at 5 years for loans and contracts of more than 7 years and 3 years for loans and contracts of 7 years or less (Art 44, Ordonnance n° 21-07, 2021).

As a summary, the duration of the subsidy support is set at 5 years for credits over 7 years and 3 years for credits equal to or less than 7 years, and the subsidy rate varies between 2% and 3% depending on the activity and the region where the investment is located (GUEMMAZ, 2021, p. 173). On this paper we will adopt a subsidy rate of 3%, the maximum, in order to have a homogeneous comparison with the agricultural sector which benefits from a more advantageous subsidy than the industrial sector, for credits less than 100 MDZD.

As for the measures to improve agricultural investment credits, they are presented as follows (Badrbanque, 2025): Interest rate: From 01 to 05 years: 0%; From 06 to 07 years: 1%; From 08 to 09 years: 3%; From the 10th year: interest paid by the promoter; Personal contribution: varying between 10% and 20% of the cost of the project; Amount loaned: from 1,000,000 DZD up to 100,000,000 DZD; Repayment period: up to 15 years.

IV- Medium-term investment:

Based on the texts governing the subsidies for investment credits in Algeria, several scenarios can arise, as specified in the methods level of this paper.

IV-1-Classic Medium-Term Investment:

The first scenario we will discuss is a medium-term loan, with incentives for a conventional investment project, with the following characteristics:

- Amount: 50,000,000.00 DZD;
- Rate: 6%;
- Bonus: 3%;
- Duration: 5 years.

Table n°1. Classic investment credit of 50000000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	50 000 000,00	-	1 500 000,00	1 500 000,00
2	50 000 000,00	-	1 500 000,00	1 500 000,00
3	50 000 000,00	16 666 666,67	1 500 000,00	18 166 666,67
4	33 333 333,33	16 666 666,67	2 000 000,00	18 666 666,67
5	16 666 666,67	16 666 666,67	1 000 000,00	17 666 666,67

Source: prepared by the author based on a financing simulation

The second scenario is a medium-term loan, with incentives similar to a traditional investment project, with the following characteristics:

- Amount: 500,000,000.00DZD;
- Rate: 6%;
- Bonus: 3%;
- Duration: 5 years.

Table n°2. Classic investment credit of 500000000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	500 000 000,00	-	15 000 000,00	15 000 000,00
2	500 000 000,00	-	15 000 000,00	15 000 000,00
3	500 000 000,00	166 666 666,67	15 000 000,00	181 666 666,67
4	333 333 333,33	166 666 666,67	20 000 000,00	186 666 666,67
5	166 666 666,67	166 666 666,67	10 000 000,00	176 666 666,67

Source: prepared by the author based on a financing simulation

IV-2- Medium-Term Agricultural Investment:

The third scenario is a medium-term loan, with subsidies for an agricultural investment project, with the following characteristics:

- Amount: 50,000,000.00 DZD;
- Interest rate: 0%;
- Duration: 5 years.

Table n°3. Agricultural investment credit of 50 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	50 000 000,00	-	-	-
2	50 000 000,00	-	-	-
3	50 000 000,00	16 666 666,67	-	16 666 666,67
4	33 333 333,33	16 666 666,67	-	16 666 666,67
5	16 666 666,67	16 666 666,67	-	16 666 666,67

Source: prepared by the author based on a financing simulation

The fourth scenario is a medium-term loan with subsidies for an agricultural investment project amounting to 500,000,000.00 DZD, with the following characteristics:

- Amount: 100,000,000.00DZD;
- Interest rate: 0%;
- Duration: 5 years.

Table n°4. Agricultural investment credit of 100 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	100 000 000,00	-	-	-
2	100 000 000,00	-	-	-
3	100 000 000,00	33 333 333,33	-	33 333 333,33
4	66 666 666,67	33 333 333,33	-	33 333 333,33
5	33 333 333,33	33 333 333,33	-	33 333 333,33

Source: prepared by the author based on a financing simulation

The loan amount of 500,000,000.00 DZD cannot be granted under the ETTAHADI loan benefits, as the latter is capped at 100,000,000.00 DZD. Therefore, the remaining portion will be granted under the conditions of a classic loan, as follows:

- Amount: 400,000,000.00 DZD;
- Rate: 6%;
- Bonus: 3%;
- Duration: 5 years.

Table n°5. Classic investment credit of 400 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	400 000 000,00	-	12 000 000,00	12 000 000,00
2	400 000 000,00	-	12 000 000,00	12 000 000,00
3	400 000 000,00	133 333 333,33	12 000 000,00	145 333 333,33
4	266 666 666,67	133 333 333,33	16 000 000,00	149 333 333,33
5	133 333 333,33	133 333 333,33	8 000 000,00	141 333 333,33

Source: prepared by the author based on a financing simulation

In the above, we have dealt with several cases of classic and agricultural investment credits, with the modification of the credit amount from 50 MDZD to 500 MDZD, i.e. lower and higher than 100 MDZD, for a fixed period of 5 years.

V- Long-term investment:

In what follows, we will work with the same logic, but with a new variation: the financing term, now increased to 10 years.

V-1- Classic Long-Term Investment:

The scenario we are going to discuss is a long-term loan, with the incentives of a traditional investment project, with the following characteristics:

- Amount: 50,000,000.00 DZD;
- Rate: 6%;
- Bonus: 3%;

- Duration: 10 years.

Table n°6. Classic long-term investment credit 50 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	50 000 000,00	-	1 500 000,00	1 500 000,00
2	50 000 000,00	-	1 500 000,00	1 500 000,00
3	50 000 000,00	6 250 000,00	1 500 000,00	7 750 000,00
4	43 750 000,00	6 250 000,00	1 312 500,00	7 562 500,00
5	37 500 000,00	6 250 000,00	1 125 000,00	7 375 000,00
6	31 250 000,00	6 250 000,00	1 875 000,00	8 125 000,00
7	25 000 000,00	6 250 000,00	1 500 000,00	7 750 000,00
8	18 750 000,00	6 250 000,00	1 125 000,00	7 375 000,00
9	12 500 000,00	6 250 000,00	750 000,00	7 000 000,00
10	6 250 000,00	6 250 000,00	375 000,00	6 625 000,00

Source: prepared by the author based on a financing simulation

The following debt amortization schedule is for a long-term loan with subsidy benefits for a typical investment project, with the following characteristics:

- Amount: 500,000,000.00 DZD;
- Rate: 6%;
- Subsidy: 3%;
- Duration: 10 years.

Table n°7. Classic investment credit of 500 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	500 000 000,00	-	15 000 000,00	15 000 000,00
2	500 000 000,00	-	15 000 000,00	15 000 000,00
3	500 000 000,00	62 500 000,00	15 000 000,00	77 500 000,00
4	437 500 000,00	62 500 000,00	13 125 000,00	75 625 000,00
5	375 000 000,00	62 500 000,00	11 250 000,00	73 750 000,00
6	312 500 000,00	62 500 000,00	18 750 000,00	81 250 000,00
7	250 000 000,00	62 500 000,00	15 000 000,00	77 500 000,00
8	187 500 000,00	62 500 000,00	11 250 000,00	73 750 000,00
9	125 000 000,00	62 500 000,00	7 500 000,00	70 000 000,00
10	62 500 000,00	62 500 000,00	3 750 000,00	66 250 000,00

Source: prepared by the author based on a financing simulation

V-2- Long-Term Agricultural Investment:

The following table shows a long-term loan, with subsidies, for an agricultural investment project, with the following characteristics:

- Amount: 50,000,000.00 DZD;
- Interest rate no. 1: 0%;
- Interest rate no. 2: 1%;
- Interest rate no. 3: 3%;

- Duration: 10 years.

Table n°8. Long-term agricultural investment credit 50 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	50 000 000,00	-	-	-
2	50 000 000,00	-	-	-
3	50 000 000,00	6 250 000,00	-	6 250 000,00
4	43 750 000,00	6 250 000,00	-	6 250 000,00
5	37 500 000,00	6 250 000,00	-	6 250 000,00
6	31 250 000,00	6 250 000,00	312 500,00	6 562 500,00
7	25 000 000,00	6 250 000,00	250 000,00	6 500 000,00
8	18 750 000,00	6 250 000,00	562 500,00	6 812 500,00
9	12 500 000,00	6 250 000,00	375 000,00	6 625 000,00
10	6 250 000,00	6 250 000,00	375 000,00	6 625 000,00

Source: prepared by the author based on a financing simulation

The following amortization schedule is for a long-term loan with subsidy for an agricultural investment project in the amount of 500,000,000.00 DZD, with the following characteristics:

- Amount: 100,000,000.00 DZD;
- Interest rate no. 1: 0%;
- Interest rate no. 2: 1%;
- Interest rate no. 3: 3%;
- Term: 10 years.

Table n°9. Long-term agricultural investment credit of 100 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	100 000 000,00	-	-	-
2	100 000 000,00	-	-	-
3	100 000 000,00	12 500 000,00	-	12 500 000,00
4	87 500 000,00	12 500 000,00	-	12 500 000,00
5	75 000 000,00	12 500 000,00	-	12 500 000,00
6	62 500 000,00	12 500 000,00	625 000,00	13 125 000,00
7	50 000 000,00	12 500 000,00	500 000,00	13 000 000,00
8	37 500 000,00	12 500 000,00	1 125 000,00	13 625 000,00
9	25 000 000,00	12 500 000,00	750 000,00	13 250 000,00
10	12 500 000,00	12 500 000,00	750 000,00	13 250 000,00

Source: prepared by the author based on a financing simulation

As previously stated, the loan amount of 500,000,000.00 DZD cannot be granted under the ETTAHADI loan benefits since the latter is capped at 100,000,000.00 DZD, so the remaining portion will be granted under the conditions of a conventional loan, as follows:

- Amount: 400,000,000.00 DZD;
- Rate: 6%;
- Bonus: 3%;
- Duration: 10 years.

Table n°10. Long-term classic investment credit of 400 000 000 DZD

Year	Remaining	Principal	Interest	Amount to Pay
1	400 000 000,00	-	12 000 000,00	12 000 000,00
2	400 000 000,00	-	12 000 000,00	12 000 000,00
3	400 000 000,00	50 000 000,00	12 000 000,00	62 000 000,00
4	350 000 000,00	50 000 000,00	10 500 000,00	60 500 000,00
5	300 000 000,00	50 000 000,00	9 000 000,00	59 000 000,00
6	250 000 000,00	50 000 000,00	15 000 000,00	65 000 000,00
7	200 000 000,00	50 000 000,00	12 000 000,00	62 000 000,00
8	150 000 000,00	50 000 000,00	9 000 000,00	59 000 000,00
9	100 000 000,00	50 000 000,00	6 000 000,00	56 000 000,00
10	50 000 000,00	50 000 000,00	3 000 000,00	53 000 000,00

Source: prepared by the author based on a financing simulation

VI- Results and discussion:

In the above, we have discussed several cases of conventional and agricultural investment loans, with the loan amount being modified from 50 MDZD to 500 MDZD, i.e., less than or greater than 100 MDZD, for a duration ranging from 5 to 10 years.

Based on calculating the bank interest amounts for each amortization table prepared, in relation to the loan amount granted, we have developed the following table, which represents the debt service burden of bank credit.

Table n°11. Debt service weight to bank credit

	Classic medium-term credit	BADR agricultural medium-term credit	Classic long-term credit	BADR agricultural long-term credit
Less than 100 000 000 DZD	15%	0%	25%	4%
Greater than 100 000 000 DZD	15%	12%	25%	21%

Source: prepared by the author on the basis of previous amortization tables

Even with the application of the most favorable interest rate subsidy possible for investment loans, the benefits associated with the ETTAHADI loan remain more advantageous for loans under 100 million DZD. However, this is no longer the case for loans over 100 million DZD, since the subsidized interest rate on agricultural loans is no longer applicable after the 100 million DZD threshold.

Conclusion:

Algeria places crucial importance on the agricultural sector, and public banks are directing their resources toward this risky but strategic segment aimed at achieving the country's food security. A new Turkish foreign bank has just been approved to operate in the market. This further reorganization of the market is expected to boost the figures for the banking-agriculture relationship in Algeria.

Agriculture is a strategic sector, but sensitive to several variables, particularly climate-related ones, a risk considered systemic by professionals in this field. The role of financial institutions in general, and lenders in particular, is challenging given the uncertainty surrounding the repayment of borrowed funds. Farmers' financial situation is fragile, and repayment terms are long. Bankers must pay very close attention to this segment.

This study proposes training bank employees in Algeria in agricultural financing, a specific segment that differs from other sectors of activity. A comprehensive study of agricultural financing needs is essential to spark reflection on the possibility of further supporting aquafarmers in their daily activities, while also drawing on BADR's extensive experience in developing reflexes in this sector.

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