

The impact of public credit guarantee schemes on food security in Algeria: a multiple-case study

دور هيئات ضمان قروض الاستثمار في تحقيق الأمن الغذائي في الجزائر: دراسة حالات متعددة

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Abstract: Algerian government has acknowledged the importance of insuring its food security and has launched several actions to ensure a minimum level of it. Among those actions stand the credit guarantee schemes that help SMEs to be created and thrive including those that have a direct impact on food availability. This paper aims to examine the impact of these public organisms on improving food security in Algeria by using the analytical descriptive method. The research confirms the positive impact of both schemes on promoting entrepreneurship and SMEs especially those active in agriculture and food industry sector.

Key words: Food security, Guarantee fund, SMEs.

Résumé : Le gouvernement algérien a reconnu l'importance d'assurer sa sécurité alimentaire et a lancé plusieurs actions pour en assurer, parmi lesquelles les fonds de garanties visant à aider la création et le développement des PME, y compris celles qui sont dans des secteurs ayant un impact direct sur la disponibilité alimentaire. Cette recherche vise à examiner l'impact de ces organismes publics sur la sécurité alimentaire en Algérie en utilisant la méthode descriptive analytique. Les résultats soulignent l'impact positif de ces organismes sur la promotion de l'entrepreneuriat et les PME notamment ceux activant dans le secteur agriculture et agroalimentaire.

Mots clés : Sécurité alimentaire, Fonds de garanties, PME.

ملخص: لقد أدركت الحكومة الجزائرية أهمية ضمان أمنها الغذائي وأطلقت العديد من الإجراءات لضمان ذلك، بما في ذلك إنشاء صناديق الضمان التي تهدف إلى مساعدة الشركات الصغيرة والمتوسطة على النشوء والازدهار، بما فيها الذين يعملون في القطاعات التي لها تأثير مباشر على توفير الغذاء. يهدف هذا البحث إلى دراسة تأثير هذه الهيئات العامة على الأمن الغذائي في الجزائر باستخدام المنهج الوصفي التحليلي. تسلط النتائج الضوء على الأثر الإيجابي لهذه المنظمات على تعزيز ريادة الأعمال والشركات الصغيرة والمتوسطة، ولا سيما تلك النشطة في قطاع الزراعة والأغذية الزراعية.

الكلمات المفتاحية: الأمن الغذائي، صندوق ضمان القروض، المؤسسات الصغيرة والمتوسطة.

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I- Introduction :

Ensuring food security is a pressing global issue that has evolved over the last thirty years and which concerns all the countries. According to the Food and Agriculture Organization (FAO), a country that ensures its food security is a country where all its citizens, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. **(FAO, 2006, p. 1)**. This widely accepted definition points to four dimensions of food security: Food availability, Food access, Utilization and Stability. **(UNCTAD, 2017, p. 4)**. The issue of food security has become even more prominent after the latest circumstances in the world such as the economic crisis, the Covid-19 pandemic and the Ukrainian conflict.

Algerian government has acknowledged that food security is a rather urgent and complicated issue which requires a serious and objective thinking and actions that touch all levels: production, consumption, prices, State, international trade and others. In this context, several actions has been taken by the government to ensure a minimum level of food security; actions such as the encouragement of intelligent agriculture, Saharan agriculture, the seed bank and other actions with the main aim to ensure food security for all population.

Therefore, Algerian government has defined a proactive policy through of which it has ensured to guarantee food security in the country. This proactive policy is based on two pillars: the first is guaranteeing the accessibility of basic food (bread, milk, sugar and oil); the second is promoting the national production of agricultural products through the implementation of various agricultural policies since the independence. Although this policy has succeeded in promoting food industry, which represents half the industrial GDP, **(Bessaoud, 2019, p. 07)**, the demand for consumer products still greatly exceeds production which causes a significant deficit on cereals, milk, sugar and oil.

To encounter that situation, Algerian government has moved to importation and promoting businesses with a direct or indirect impact on food availability and accessibility. Those businesses are mainly the small and medium enterprises that play a key role in making nutritious and food available, accessible and affordable by investing in different sectors such as agriculture, fishing, aquaculture, livestock farming and food industry. However, SMEs in Algeria face many challenges, in particular, access to financing that represents their main problem because financial institutions are usually reluctant to extend uncollateralized credit to SMEs, even at high interest rates. To alleviate this constraint, Algerian government has created two public organisms that provide guarantees on loans to SMEs by covering a share of the default risk of the loan: *Le Fonds de garantie frd Crédits à la PME* and *la Caisse de Garantie des Crédits d'investissements-PME*.

This paper **aims** to examine the impact of these two public organisms by answering the following question: **How and to what extent do the guarantee schemes contribute in ensuring food security in Algeria?**

To answer this question, the analytical descriptive **method** was used in a multiple-study case. This implies a firm, thorough and detailed examination of both organisms. The **data** are mainly extracted from reports, declarations, publications and official website.

In order to answer this question, one main **hypothesis** was put forward: both funds have a positive impact on promoting and developing SMEs that have a direct or indirect impact on food security especially those active in agriculture and food industry sector.

To answer this question, the **topic** was firstly studied in a theoretical framework that discusses mainly the most contributing sectors to food security in Algeria. Then, a multiple-case research was conducted on two public schemes by analyzing their role and impact on promoting SME's for food security.

The multiplicity of research relating to food security over the last decades shows the importance of this topic in the professional and scientific community. **Several studies** have dealt with it, such as:

- *BRAHIM M., Détermination d'une politique de sécurité alimentaire des ménages algériens dans la perspective d'adhésion à L'OMC, PHD thesis, University of Blida 1, 2018 :*

This study aims to assess food and nutritional security of Algerian households from a quantitative and qualitative point of view through their monetary expenditure allocated to the food item, taking the Socio-Professional Category as a variable parameter. Through a survey that was distributed all over Algeria, for 2830 households, concerning 163 food products, in the period 2010 and 2015, the study revealed that a combination of economic (income, prices, purchasing power, ...) and social (habits, tradition, customs ...) factors, impact food and nutritional situations of the participants. And while this thesis focuses on households in the first place, my research focuses rather on two public organisms.

- *CHERROU K., La sécurité alimentaire en Algérie : Enjeux et défis, a scientific article published in Revue Etudes Economiques, Volume:17, No: 01, 2023, pp. 970-982 :*

The purpose of this article is to analyze the reality of the problem of food security in Algeria, understand the challenges and constraints facing the agricultural sector in order to get out of the short term logic and get rid of food dependence that has become chronic by conducting a descriptive and analytical study. The results highlight the fact that the Algerian economy is highly sensitive to rising prices of agricultural products on international financial markets and is still struggling to put in place adequate, effective and sustainable strategies to support the development of an agricultural base and especially to meet the increasingly growing needs for basic products. My research continues this study by illustrating the role of two mechanisms put by the Algerian government to ensure food security.

I.1. SMEs' role in promoting food security

Small and midsize enterprises, by abbreviation SMEs, are businesses with relatively small amounts of revenues, assets, or a number of employees. **(OECD, 2000, p. 2)**. The thresholds of those criteria differ from one country to another, so each one has its own definition of what could be a small and midsize enterprise.

SMEs are considered to be the backbone of any economy. And although, they were the most negatively affected by Corona pandemic, some realized exceptional growth. Indeed, many SMEs had to close their doors temporarily or permanently because of the market failures and barriers in the business environment. However, several of SMEs has shown more resilience and more capacity of innovation surviving, in some cases thriving, in that tough period.

SMEs, as business units, not only play an important role in economy but also are essential for rural areas in terms of employment, food and nutritional security, and poverty alleviation. **(Ayyagari, Beck, & Demirguc-Kunt, 2007, p. 415)**. They play a key role in making nutritious and food available, accessible and affordable. **(Runde, Savory, & Staguhn, 2021, p. 8)**. That's why governments regularly offer incentives, including favorable tax treatment and better access to loans, to help keep SMEs in business. **(Runde, Savory, & Staguhn, 2021, p. 7)**. Indeed, in Arab economies, SMEs account for over 90% of all businesses and provide a major source of new job creation. This situation is related to the effort of Arab governments in increasing SMEs' access to finance. **(IMF, 2019, p. 9)**.

Thus, SMEs play a key role in how the nutrition landscape will evolve and in the transformation of food systems. Indeed, according to the FAO, SMEs have a direct impact on the whole chain production because they are closely linked to producers, familiar with local consumer tastes and preferences, engines in rural transformation, by means of job generation, and drivers of innovation that are located close to rural areas. **(FAO, 2018, p. 2)**. SMEs may active in different sectors with direct impact on food security such as agriculture, livestock farming, aquaculture and fishing, forests activities, and food industry:

- **Agriculture:** Agriculture sector is of capital importance for both economy and ensuring food security. Indeed, it enables increasing food's quantity and diversity, driving economic transformation, and providing the primary source of income for many of the world's poorest people. Numerous empirical studies across many countries over many years show that both agricultural development and economy-wide growth are needed to improve food security and nutrition, and that the former can reinforce the latter. **(CFS HLPE, 2016, p. 1)**.
- **Livestock farming:** Livestock sector is one of the fastest growing segments of the agricultural economy, mostly in developed and developing countries. In response of the increasing demand for meat and dairy products all over the world, SME's has found the opportunity to grow in this sector by answering the rising demand. Beside its role in developing economy, livestock sector is vital to food security. **(FAO, 2009, p. 32)**. Indeed, this sector is a mixed farming systems that

help raise whole-farm productivity and provide a steady stream of food and revenues for households.

- **Aquaculture and fishing:** Aquaculture and fishing are considered as a key global food production system, and sustainable management of its resources is central to achieving development that safeguards food security, livelihoods, and natural resources. (FAO, 2022, p. 157). Although both aquaculture and fishing are related to seafood, they denote different concepts. Indeed, while aquaculture refers to the purposeful cultivation and subsequent harvesting of both freshwater and marine aquatic plants and animals, fishing is the harvesting of already existing populations of fish and other aquatic animals. (STA.IE, 2019). In other words, aquaculture denotes the farming of aquatic organisms, which implies intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. So, both of aquaculture and fisheries play a direct role in insuring food's availability.

- **Forests activities:** By providing a wide range of food products, forests and trees make significant direct contributions to food security. Their nutritional function is crucial for both the populations who live by hunting and gathering, and the farmers who find in these products essential nutritional supplements. Indeed, the range of edible products offered by forests is very wide including seeds, leaves, fruits, roots, gums, fungi and wild. (Falconer & Arnold, 1996). Therefore, forests, tree-based agricultural and wild food are important for food security and nutrition while trees and forests are vital for their role in the provision of ecosystem services to agriculture. (Sunderland & al, 2013, p. 6).

- **Food industry:** According to the International Labour Organization, food industries cover “*a series of industrial activities directed at the processing, conversion, preparation, preservation and packaging of foodstuffs. The raw materials used are generally of vegetable or animal origin and produced by agriculture, farming, breeding and fishing*”. (ILO, 2011). Therefore, food industry in countries where agricultural production is remarkable constitutes an important branch which makes it possible to transform and convert surplus agricultural production into finished products. This makes it possible to absorb the surpluses of plant and animal production, which are available in seasons other than the production seasons and contribute to the elimination of the risks resulting from increased production.

I.2. Rundown of the main contributing sectors to food security in Algeria

Because of their characteristics, SMEs have the ability to invest in different sectors and, thus, contribute in assuring food security. Algeria makes no exception. Indeed, different dimensions of SMEs' activities that are related directly with food and nutrition work in Algeria.

- **Agriculture and livestock farming:** The steppe areas of Algeria are notorious for not only sheep and goat farming but also the cultivation of cereals. However, both sectors are in full mutation, as in all the countries of the Maghreb. Indeed, both of them have been modernized at an accelerated pace, with the

introduction of the truck, cisterns, or the introduction of more intensive farming techniques. Algerian government has settled, in its roadmap 2020-2024, to achieve the development of Saharan agriculture. To do so, it was created the Office for the Development of Industrial Agriculture in the Sahara (ODAS), which main role is to support of the project-holders in the country's South. (USDA & GAIN, 2021, p. 4).

The dairy cattle herd is expanding as a result of a policy of encouraging local production of raw milk in order to reduce import demand. The poultry industry which emerged in the 1970s is experiencing, thanks to the liberalization of imports of livestock inputs and feed, an increase in relation to the strong demand expressed by the domestic market. (Bessaoud & al, 2019, p. 19).

- **Aquaculture and fishing:** In Algeria, According to the FAO appreciation, in general, the natural situation of Algeria is very conducive to the development of the aquaculture sector. Marine aquaculture has favorable environmental conditions (water quality, depth, temperature, etc.). Similarly, for inland aquaculture, the country has significant natural water potential which is not exploited in an efficient and complete manner. It seems obvious that there is a growing interest of farmers in the development of aquaculture integrated into agriculture which can guarantee the diversification of local production and allow better management/exploitation of water. (FAO, 2018, p. iv).

- **Forests activities:** Unfortunately, Algeria is considered as one of the Mediterranean countries where the problem of forest fires is acute. If in absolute value the areas burned remain relatively low compared to other countries in the Mediterranean basin, the scarcity of forests and desertification mean that these fires have a particularly disastrous impact, knowing that Algeria has only 4.1 million hectares of forest, in other words an afforestation rate of less than 2%. Despite the forest fire prevention and control strategy, every year, thousands of hectares of forest are burned in Algeria. (Kabouya-Loucif, 2021, p. 3).

- **Food industry:** Algerian food industry sector was declared in 2019 to employ 1.6 million people, or 23% of the working population, which makes it the second largest industry in the country, after energy. Still, Algeria is the leading African importer of food, with 75% of its needs met by imports. The insufficiency of Algerian agricultural production, coupled with a massive and growing demand for agro food products, makes Algeria a structurally importing country, and putting more pressure on this type of industry in order to achieve the stated objectives, not only for the State in the context of trade balance and the preservation of social peace and the policy of subsidies and support for food products, but also for consumers who express concerns and fears at each resonance of crisis or rupture of stock at supply points, as was the case recently with sugar and coffee. (Chaib, 2022, pp. 54-55).

II– Methods and Materials:

As was stated above, the aim of this paper is to analyze the role of two funds that was established by Algerian government to alleviate the access to the

finance problem that faces all SMEs. The role of both funds, namely FGAR and FGA, is to provide guarantees on loans to borrowers by covering a share of the default risk. In order to evaluate the contribution of both funds, the descriptive analytical method was used in a multiple case research.

It is to be noted that the research is conducted according to the available data of both funds. For the FGAR, the data were more accessible, thus the study covers a big period that extends from the creation of the fund in 2004 till 2022, with a focus on the last four years. As for the FGA, the only data that were available cover the period of the last three years (2020, 2021, and 2022).

II-1. The role of credit guarantee schemes in ensuring SME's for food security

Algerian private sector in general and SMEs in particular, including those which active the alleviate food insecurity; face several challenges that affect their development. However, their major problem is obtaining the necessary financial resources to run their businesses. In order to alleviate this problem, Algerian government has created two organisms:

- **The SME credit guarantee fund**, by abbreviation FGAR, which was created by the executive decree No. 02-373 of 11/11/2002, in application of article 14 of the law No.01-18, 12-12-2001 related to SME's promotion. The Fund, with its legal personality and financial autonomy, is under the supervision of the Ministry of Industry.
- **The Investment Credit Guarantee Fund**, by abbreviation CGCI, which was created by the presidential decree No. 04 -134 of 19/04/2004 which aims to support the creation and development of the SMEs. It has an authorized share capital of 30 billion DA, subscribed up to 20 billion DA, held up to 60% by the Public Treasury and 40% by the Banks (BNA, BEA, CPA, BDL, BADR and CNEP Bank). In 2011, it was created a new branch, FGA, dedicated only to covering agricultural financing, and it will be the object of this study. In other words, the analysis will focus only on this branch excluding the other branches covered by this scheme.

Both guarantee funds play their core role by enabling SMEs, not only, to access to finance and to have a mediator between the entrepreneur and the bank to improve understanding and communication between the parties, but also, both enable them to supplement the risk assessment and provide financial management advice and support. As for banks, both funds enable them to share the credit risk; obtain a guarantee without additional costs, reduce the level of demand for collateral, have an external risk assessment and reduce the provisions amount.

In other words, both funds, FGAR and FGA, provide guarantees on loans to borrowers by covering a share of the default risk of the loan. In case of default by the borrower, the lender recovers the value of the guarantee. In case of a default, the lender usually is obliged to proceed with the collection of the loan and share the proceeds with the guarantor.

II-2. The impact of credit guarantee schemes on promoting SME's for food security

II-2-1 Diagnosis and analysis of FGAR's impact

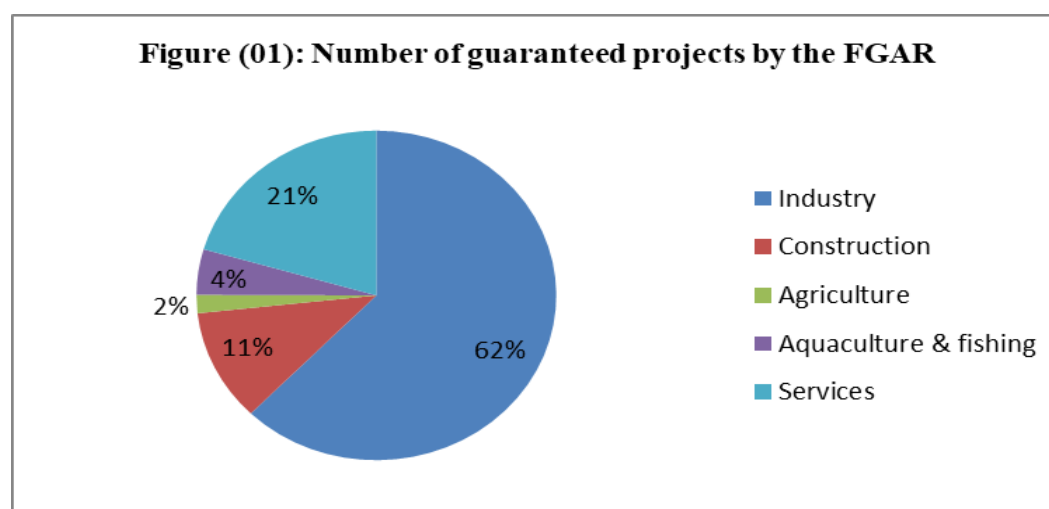
Since its foundation up to 31/12/2022, the FGAR has granted 3628 guarantees, totaling 130.617 million DZA. Of this total of pre-agreements, 1756 Guarantee certificates have been delivered, representing an overall commitment of 48.026 million DZA. Those guarantees were provided to SMEs in different sectors as shown in the table (01) below:

Table (01): Number of projects and guarantee amount provided among sectors

Sector	Number of projects	Guarantee amount
Industry	1986	81 371 927 596,97
Construction	665	14 330 906 955,65
Agriculture	50	2 335 971 888,80
Aquaculture & fishing	91	5 831 427 644,72
Services	836	26 747 274 273,53
Total	3628	130 617 508 359,67

Source: The table is compiled by the author on the basis of internal document.

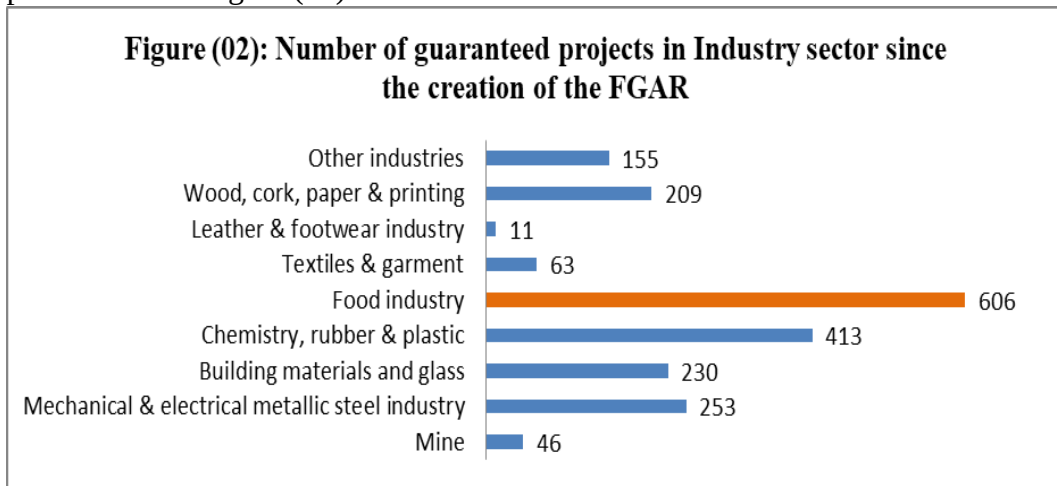
As shown in the table above, the guarantees provided by the FGAR cover different sectors. However, its activity is mainly directed to the industrial sector, where over than 60% of guarantees were granted. This situation makes perfectly sense since, the main goal of the Fund, according to the legal texts (the Executive Decree No. 02-373 of 11-11-2002), is to boost the industrial activities (and thus it's affiliation to the minister of industry). Yet, the role of the Fund extends to other sectors including those related to insuring food security in Algeria. The figure (01), illustrates clearly the distribution of the Fund intervention among sectors:



Source: The figure is compiled by the author on the basis of internal document.

The pie chart above shows the proportion of the guarantees provided among different sectors. The lower proportion was delivered to Agriculture sector

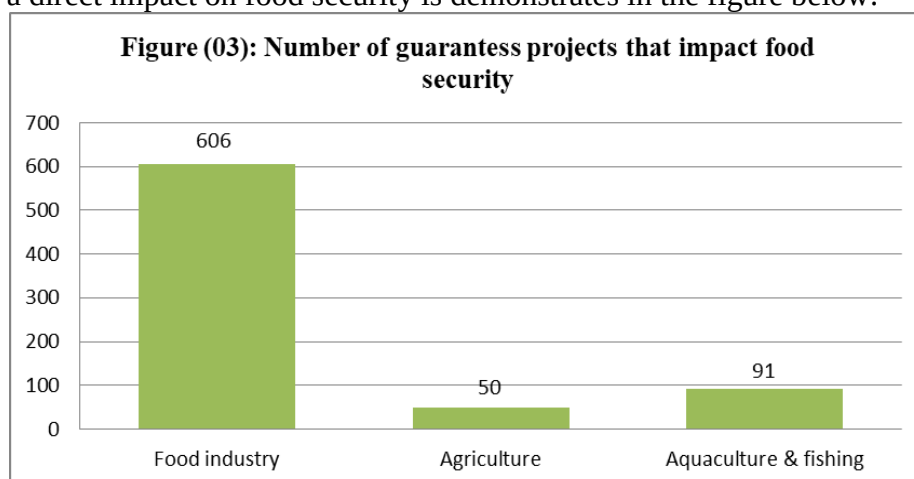
with just 2%. This proportion corresponds to 50 projects with a guarantee amount of 2.336 Million of DZD. The Aquaculture and fishing comes next with a low proportion of 4%. This rate is distributed among 91 projects with an amount of 5.831 Millions of DZD. This indicates the weak impact of the Fund on those two sectors. However, the higher proportion was registered in the industry sector. This sector contains several activities among of which, the food industry. The detail is provided in the figure (02) below:



Source: The figure is compiled by the author on the basis of internal document.

As shown in the bar chart above, the guarantees in the industrial sector were provided mainly to food industry where more than 600 projects were guaranteed by the fund since its creation, which corresponds to an amount of 25.095 Millions of DZD. Food industry represents 16.70% of the overall industrial sector, which according to the figure No.01 represents 62% of the projects guaranteed by the Fund.

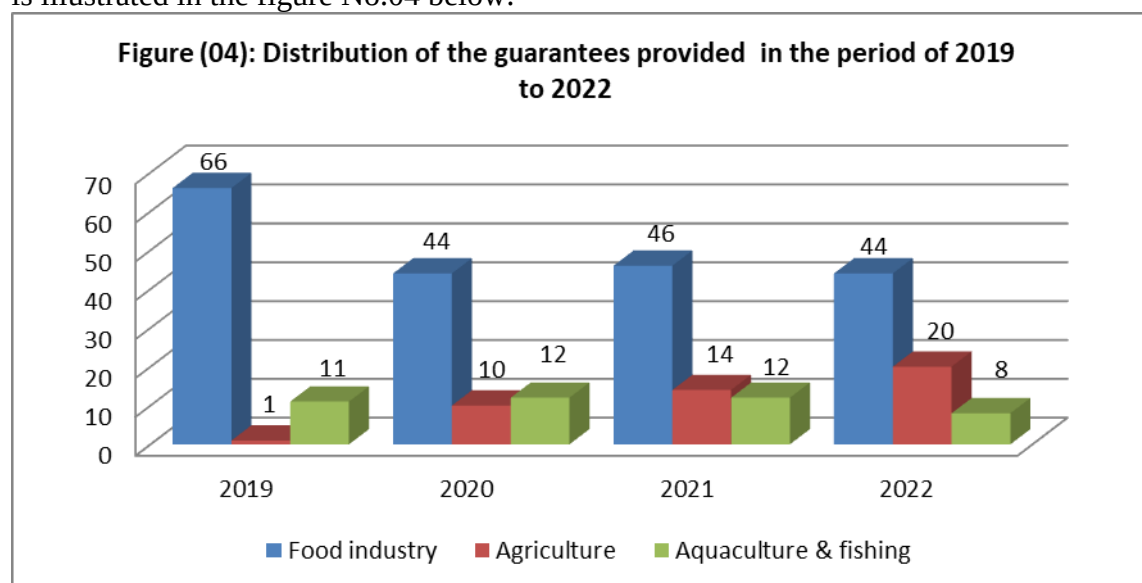
Thus, the implication of the Fund and its role in promoting SME's which have a direct impact on food security is demonstrates in the figure below:



Source: The figure is compiled by the author on the basis of internal document.

The bar chart above shows the number of projects that were guaranteed by the Fund since its creation in 2004 up to December 31st, 2022. The significant majority of guarantees were provided to food industry project with 606 projects. Next, comes the Aquaculture & fishing Industry where 91 projects were covered by the Fund in order to obtain the adequate finance from the banks. Finally, comes the Agriculture sector where just 50 projects benefited from the guarantee provided by the FGAR.

As for the evolution of the Fund intervention in the period 2019 to 2022, it is illustrated in the figure No.04 below:



Source: The figure is compiled by the author on the basis of internal document.

According to the bar chart above, we can clearly track the impact of the Fund on the three sectors that affect directly food security in the last four years. In this period, we can see the fluctuated evolution of the number of guaranteed projects in food industry to reach 44 projects in 2021. The decreased noted in 2020 is strictly related to the Covid-19 crisis that affected all the branches of the industrial sector.

As for the Agriculture sector, we can easily notice the weak impact of the fund in this sector prior to 2019 with a considerable increase in 2020, 2021, and 2022 despite the Covid crisis. This upward trend is expected to be maintained in the future due to the signature of convention between the Fund and the BNEDER (*Bureau National d'Etude pour le Développement Rural*). However, it is important to clarify that there is another fund (*Fonds de garantie agricole*) that was created in 2011, and provided in 2021 more than 12.300 guarantee to agriculture projects as will be clarified in the next point.

As for aquaculture & fishing sector, the number of guarantees provided to the projects in this sector has noted a relatively upward around 20 projects. However, in 2022, we note a decrease of 33% in the guaranteed projects and this is related to the fact that this sector requires heavy investments that are beyond of the majority of SMEs, beside the fact that is too risky.

II-2-1 Diagnosis and analysis of FGA's impact

The diagnosis of the impact of the FGA on the development of SMEs related to food security will cover 2020, 2021 and 2022. As stated before, the FGA is a branch of the CGCI dedicated to cover loans in agriculture sector. In difference to the FGAR, FGA is characterized with two features:

a- Contrary to the FGAR, the FGA covers not only medium & long-term loans (that are provided for 2 to 10 years), but also short-term loans (that are provided for short term, typically up to twelve months);

b- The guarantees of this fund are provided according to two schemes:

- Guarantee scheme with a direct relationship with the borrower: In this case, business owners ask the FGA directly for a guarantee. The fund studies their demands and when the guarantee is granted or approved, the borrower presents the guarantee authorization to the financial institution, which, in turn, grants the credit upon agreements or arrangements made with the guarantee institution;

- Guarantee scheme that does not have a direct relationship with the borrower. According to an established agreement where the FGA delegates to the financial institution the responsibility for the analysis and the decision to grant guarantees to their customers under certain conditions (e.g., business sector, type or size of the company, credit destination, etc.).

The impact of the FGA on the number of the projects realized thanks to the intervention of this fund is illustrated in the table below:

Table (02): Number of projects covered by the FGA and the correspondent amount of loans granted in the period 2020, 2021, 2022.

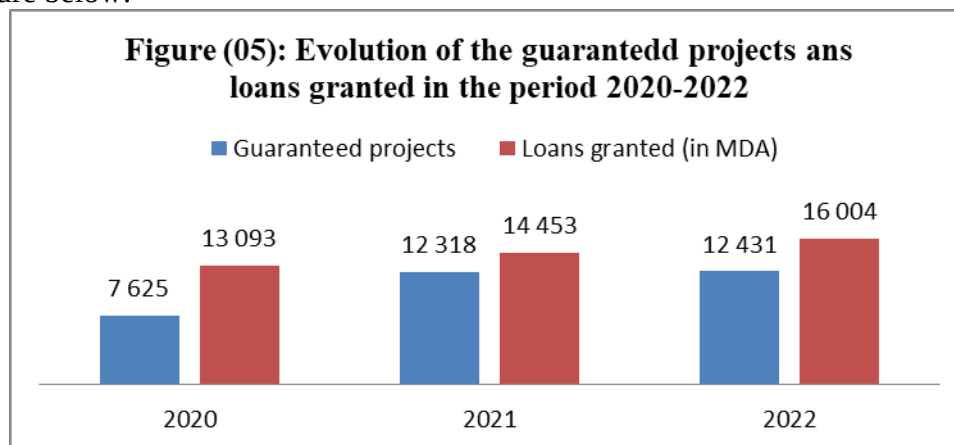
Type of loan		Number of projects			Loans granted		
		2020	2021	2022	2020	2021	2022
Short-term loans	Delegated projects	7 051	12 083	12 135	7 716	10 366	10 785
	Non-delegated projects	50	52	84	966	981	833
Total cash flow loans		7 101	12 135	12 219	8 682	11 347	11 618
Medium & long-term loans	Delegated projects	490	138	144	3 023	1 141	1 231
	Non-delegated projects	34	45	68	1 388	1 964	3 155
Total asset based loan		524	183	212	4 411	3 106	4 386
TOTAL		7 625	12 318	12 431	13 093	14 453	16 004

Source: The table is compiled by the author on the basis of the annual reports of 2020, 2021, and 2022.

As shown in the table above, for the last three years, the amount of projects that were guaranteed by the FGA totaled 32.374 projects covering total loans of 43.550 MDA. However, it is to be noted that delegated projects, for both types of loans, accounted for a far larger segment than non-delegated projects. Indeed, 99% of the projects covered were those delegated to the BADR bank. The type of loans is also a major determinant in the proportion of the guaranteed projects. It is noticed that the short-time loans, which are loans that should be

repayable within a year, comprised 97.2% of total projects covered in the last three years, while 2.8% of medium and long-term loans were covered.

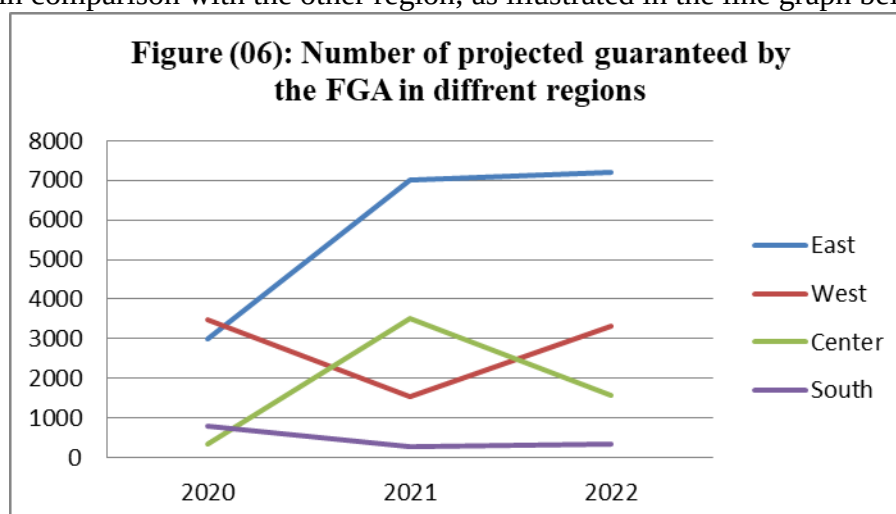
The global intervention of the FGA over the last years is illustrated in the figure below:



Source: The figure is compiled by the author on the basis of the annual reports of 2020, 2021 and 2022.

In the light of the bar chart above, the FGA's intervention in covering projects in the last three years has registered an upward trend, where the highest performance was achieved in 2022 which accounted almost 12.500 covered projects with over than 16.000 MDA loans granted. The noticeable growth in covering projects was registered in 2021 with an evolution rate of 61.5% in guaranteed projects. It is to be reminded that those projects are projects of SMEs that are active in agriculture sector that has a direct impact and considered a key in ensuring food security in any country.

A closer look to the distribution of the guaranteed projects all over Algeria in the last three years shows that projects in the east are highly covered by the fund in comparison with the other region, as illustrated in the line graph below:



Source: The figure is compiled by the author on the basis of the annual reports of 2020, 2021 and 2022.

Overall, the biggest proportion of guarantees was provided to projects that were hosted in the east of the country with an upward trend achieving more than 7000 projects in 2022. In west and south of Algeria, the number of projects that benefited from the FGA's guarantee to unlock finance has registered a fluctuated trend over the last three years with a decrease in 2021 and an increase in 2022. However, it is to be noted that the fluctuation in west regions was sharper and more prominent than the south. As for the center of the country, the numbers of projects covered by the fund has decreased sharply in 2022 moving from more than 3500 projects in 2021 to less than 1600 in 2022; a decrease rate of 55%. Nevertheless, this distribution doesn't, in any case, indicate that the FGA is more inclined to help investors and SME's in east region.

III- Results and discussion :

In the light of the data and analysis above, we can note that the impact of both funds is positive on promoting and developing SMEs that have a direct impact on food security especially those active in agriculture and food industry sector.

Also, it is to be noted that the scheme of intervention (delegated or not delegated) and the type of loans covered (asset based loans and cash flow loans) play a crucial role in the implication of the funds in helping SMEs realizing their projects by obtaining the necessary and adequate finance.

Indeed, the impact of the FGA is highly prominent because, not only it is dedicated only to agriculture projects, but also because it covers both types of risks and can be accorded directly with the business owners or indirectly between the banks and the business owners. Non delegated cash flow loans were highly dominated by the delegated ones by 99.57% in 2021 where non delegated asset based loans were highly dominated by the delegated ones by 7% in the same year.

IV- Conclusion:

Food security relates to the availability of food in a country and considered as a global concern. Algerian government has acknowledged the necessity of insuring food security of the country and launched several actions to ensure a minimum level of it. One of those actions is helping entrepreneurship and SMEs to be created and thrive including those that are in sectors with a direct impact on food availability such as agriculture, aquaculture, fishing, livestock farming, food industry... In this context, it created two funds in order to alleviate the access to finance problem that faces the SMEs due to their lack of collateral.

The study and analysis above has shown the positive impact of these two schemes on SMEs related to food security. Indeed, by helping SMEs investing in food industry, agriculture, aquaculture and fishing, and distribution, both funds - FGAR and FGA- play a crucial role in insuring and maintaining food security in Algeria.

However, the impact of both funds is still limited. Both schemes could intervene further in helping SMEs by advertising properly their products, extending their financial capacity to promote more SMEs, raising awareness

among investors, especially those in agriculture sector because usually they are farmers with limited knowledge in finance, and finally, both funds should enhance their intervention with SMEs that have direct or indirect impact especially the SMEs that are located in disadvantaged areas that require more infrastructures and suffer from the lack of food transportation.

Finally, this research has to be seen in light of a major limitation. It is a qualitative explorative research by nature and relies only on the specific cases that were studied. There are other Algerian public schemes that intervene as guarantors in financing SMEs that were not included in this research. Therefore, future empirical studies could be performed on large entities with wide range of access to data.

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