

Knowledge of local operators and senior technicians in the challenges of international markets on natural : case of the Sofia and Diana region-Madagascar

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ABSTRACT: This study examines the knowledge of technical capacities and the international market among forty regional operators (Sofia and Diana) and sixty senior technicians from Antsiranana University in Madagascar. The goal is to identify unknown natural products and its active ingredients, then we also examine their knowledge of accessing international markets in these products and finally, we want to know their sense of entrepreneurship and the reassuring competence of international buyers in these areas. The survey data was carried out with operators (Sofia and Diana) and senior technicians at Antsiranana University of Madagascar. And the Excel analysis shows that the senior technicians of the university have sufficient knowledge of the identification of natural products but for them, it is impossible to know its uses and they also do not have the knowledge of access to international markets. However, they have a motivation to enter new sectors, but if they do not have enough skills to reassure international buyers about these natural products. In the perspective, Madagascar will have to remove technical, human as well as cultural constraints which weaken the performance of agricultural markets will lead to a business improvement.

Keywords : *knowledge, technique, markets, natural, Madagascar.*

I. INTRODUCTION

Faced with many assets, Malagasy farmers are also under constraints, agricultural exports are very dependent on a few products (vanilla, shrimp, lychee and cloves) and on a few markets (Europe and the United States). Madagascar has a lot of wealth and potential in natural products, in particular in cosmetics, pharmaceuticals, food and agroecology. These sectors are even less developed and far from being efficient. The Malagasy State, by the oath (*velirano*) of President Rajoelina Andry, the Ministry of Industry, Trade and Handicrafts evoked that industrialization is the pivotal policy which will allow Madagascar to tend towards an emergence to strengthen the competitiveness of Malagasy companies and to promote foreign direct investments. He also mentioned the promotion of regional industrialization based on the specific potential of each district of the country, support for manufacturers in the diversification of activities [1]. The international markets require for Madagascar actions to strengthen the capacities of local actors must mobilize the various ministerial departments, research and universities, private operators and producer organizations [2].

The lack of market information does not favor the performance of agricultural sectors in Madagascar. Low productivity does not promote a marketable surplus. Road problems hamper relations between regions of Madagascar. The marketing channels are neither structured not efficient and always in a monopoly situation. Cumbersome administrative procedures and corruption dominate. This sector of agricultural markets encounters weak institutions and inconsistency in the application of rules and laws. According to the World Bank report [6] even if the coordination of actions between donors exists.

The size of the national market and especially its solvency are still insufficient. This naturally leads Madagascar to look for markets outside. However, the rules of the game of international trade, agreements (bilateral, multilateral, regional) condition access to international markets. Madagascar must be visionary and protect its farmers. Vorley *et al.* [4] have suggested that even small producers are at risk of being overwhelmed or failing to satisfy markets. Moreover, Gideon *et al.* [5] insisted the agrifood market systems, under the effects of

globalization, economic liberalization, and demographics keep changing. In addition, producers are exposed to increased risks associated with access, market uncertainty, price volatility and the risk of not being able to improve their performance [6]. In addition, according to farmers must also be concerned with timing and price, but not just produce [7]. And the Malagasy education system does not offer performance to local operators, which is still too theoretical.

The objective of this study is to understand the knowledge of the unknown natural products identification and its uses and the knowledge of the international market access. This study also aims to understand their entrepreneurial feelings and reassuring skills of international buyers in these areas. The research question is : “do the local regional players have sufficient technical knowledge and entrepreneurial cultures to promote these sectors alone?”.

II. METHODS

Regional operators and local senior technicians were questioned through a questionnaire, in particular on their knowledge of identifying the main assets and their uses and then their knowledge of access to international markets as well as their motivations to undertake, and their skills sufficient to reassure international buyers. The synthesis of all these databases are carried out.

2.1. Measure the knowledge of operators and senior technicians on natural products from vegetable raw materials (medicinal or aromatic plant, cosmetic).

This study is carried out in December 2021, we worked with 45 operators in Sofia and Diana region of Madagascar and 60 senior technicians from the University of Antsiranana-Madagascar (agronomy, chemists, biologists), without taking into account their age and year of study. We opted to use a directive questionnaire, with an open or closed response.

Thus, the suggested questions are of the type : (1) "The academic and scientific study of your university allows you to identify the active ingredients of a new unknown plant? Possible or impossible?, (2) "These identified active ingredients allow you to know the scientific utility?" Possible or impossible?, (3) "Do you know enough about the access to the international market in vegetable raw materials in the field of medicinal or aromatic or cosmetic plants?" Sufficient or insufficient?, (4) "Finally, do you have an entrepreneurial feeling and a competence that reassures buyers in the fields of medicinal or aromatic plants, cosmetics?" Motivated and incompetent or unmotivated?. All these questions of perception are of a subjective nature, which we will take into account in the discussions that we will propose. Limit, we only questioned similar actors in agri-food activities, with the agreement of the President of the Chamber of Commerce and Industry of each region, during an international meeting. However, we asked the questions directly to the actors present and answered us immediately.

2.2. Data analysis

The target population does not correspond to all the operators in Madagascar and engineers graduating from other universities who are already working in these sectors and elsewhere. The analysis was done by data entry and the data processing is carried out using Microsoft Excel software 2016.

III. RESULTS

3.1. Identification of active principle

Among the 95 % of senior technicians surveyed say they know how to identify the active ingredients of an unknown plant against 5% (Fig. 1).

3.2. Used scientific knowledge

The 96.67 % of the technicians of the University of Antsiranana-Madagascar questioned against 3.33 % answered impossible for the moment to know the scientific uses in an unknown plant (Fig. 2).

3.3. Knowledge of international market access

The 95.56 % of operators from two regions questioned replied that the technical and scientific knowledge of senior regional technicians does not yet allow them to ensure access to international markets in plant raw materials against 4.44 % (Fig. 3).

3.4. Motivation and competence

97.78 % of local operators in two regions surveyed are interested in doing business even though they do not yet have enough skills to reassure international buyers of these new sectors, compared with 2.22 % (Fig. 4).

4. FIGURES

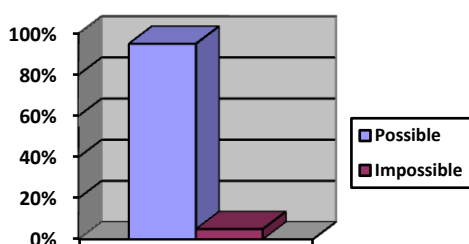


Figure 1. Identification of active principle

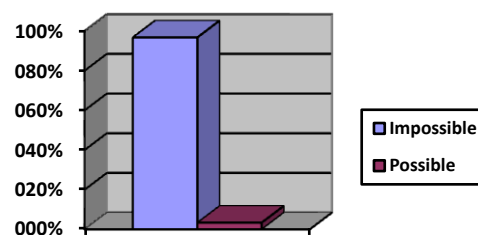


Figure 2. Used scientific knowledge

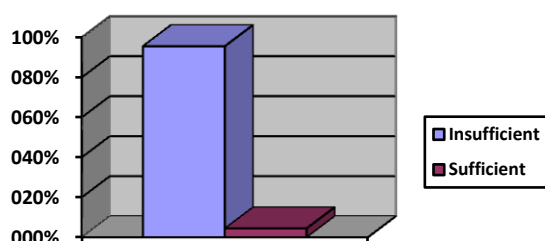


Figure 3. Knowledge of international market access

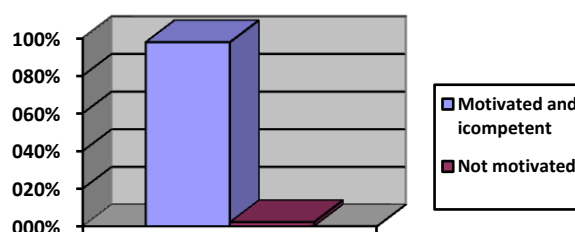


Figure 4. Motivation and competence

IV. DISCUSSION

The objective of this article is to understand the academic and scientific knowledge of Malagasy senior technicians in the regional university in the fields of medicinal or aromatic plants, cosmetics for the purpose of helping local operators. First, all senior technicians are able to identify the active ingredients of an unknown plant, but due to lack of practices, these technicians have not yet arrived at the uses of active ingredients for manufacturers. Yearbook Madagascar: Economic report [1] underlined that the virtues are known by the population but with a weak scientific basis. According to Petitjean [8] utility in the medical aspect requires even more complexity and limits its operations. Only a few laboratories such as the Natural Products laboratory and those of the Superior School of Agronomic Sciences of the University of Antananarivo and other private ones have the capacity to know active elements.

Cosmetics, health and food companies are increasingly turning to natural or naturally sourced ingredients. Consumers have their requirements, while the knowledge of senior regional technicians cannot, for the moment, help local Malagasy players to know the conditions for accessing international markets. Moreover, according to CIRAD-CITE-GRET [9;10], the knowledge of access to international markets in plant raw materials still remains a constraint for Malagasy players to promote these sectors. These areas, according to researchers among others, we need the use of specialists who understand and give certainty to identify the species studied. Madagascar has innumerable properties and Rajaonarivony [10], said that Madagascar differs from a rich and original flora nearly 12,000 species of vascular plants, of which 80 % are endemic and only less than 10 % of these species have highlighted an object of intensive research. In addition, production is declining, yet their quality is recognized worldwide. Our result seems to us promising in these sectors, because it shows us that Malagasy operators have a motivation to undertake in these even incompetent fields. It is therefore necessary to collaborate with pharmaceutical companies and research institutes in industrialized countries to develop international trade. Otherwise, rural communities, small and medium-sized enterprises can play a big role, profit from this trade and ensure the sustainable exploitation of natural resources. And Rabefahiry [9], the new promoters of small essential oil extraction companies are developing, the majority of which are engineers and researchers. However, it should be noted that the measures used in this article were constructed from indicators of feeling rather than from facts.

V. CONCLUSION

The main contribution of this article studies in local operators and senior technicians of the University of Antsirananana-Madagascar, the knowledge of identification of an active principle of an unknown plant and their practical capacities to give the scientific utilities of a plant. This study then assigns us to study the knowledge of access to international markets of local operators (on medicinal or aromatic plants, cosmetic) and their motivations to undertake and skills to reassure international buyers. In general, the theoretical, practical and cultural knowledge of regional operators and regional senior technicians are less solid in these areas. It is in this

perspective that Malagasy state policies, with Ministry of Industry, Trade and Handicrafts and scientific research and professional training as well as national and international private initiatives must strengthen the technical and human as well as cultural capacities of Malagasy actors to overcome their difficulties. Madagascar cannot absorb these products and naturally seeks international markets. Finally, this information will be very important to us during the prospective study to support Malagasy farmers for direct access to international markets.

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