

Appreciations and skills of local elected officials integrating small local farmers into the productive environmental policy

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ABSTRACT : This study aims to determine the appreciation of fruit trees, shrubs and plants transformed into organic matter among small Malagasy producers to enhance agricultural activity. Then, their findings on the productivity and effectiveness of popularized natural products are also necessary to understand their perceptions. Then, the study also shows their perceptions towards the behaviors (their sensitivity) and the skills of local elected officials, particularly in terms of skills in mobilization, control, and in seeking funding to support local populations in changing their behavior through the destruction of nature and biodiversity. Finally, their conviction and their attitude of independence are also studied to understand their feelings. This research was conducted in Andilantomoendry district, rural commune of Antanandava, district of Mandritsara since 2015 and the other is in Miadana district, rural commune of Ambodimadiro, district of Antsohihy, more precisely since 2018-2019, from the Sofia region, with a population of small farmers who were selected to ask their opinions on the values of fruit trees, shrubs and plants transformed into natural products to boost their agricultural activity. In addition, the respondents in this study were rural mayors, neighborhood chiefs, municipal councilors and small farmers, i.e. 30 and 100 participants. The data analysis technique in this study uses Excel analysis. The results of this research indicate that the trial experience has a clear evolution on the appreciation and behavior of small farmers and local elected officials to value natural products from local materials (fruit trees, shrubs and plants) for their agricultural activity despite a slight absence still of the conviction and dependence of local elected officials on chemical products.

Keywords : *membership, appreciation, competence, integration, population.*

I. INTRODUCTION

Almost everywhere in Madagascar, there is a wide variety of fruit trees and shrubs, as well as abundant and untapped plants. Most of the rural population of Madagascar does not plan to use them, may not even understand them, or even destroy them. Much of the agriculture is unproductive and technically low in soil consumption. Overall, according to the report of the Republic of Madagascar [1] of the Forest Landscape Restoration Program of Madagascar, soil fertility is present, crops are concentrated on rice and food crops lead to land abandonment. Many people cut down trees to make bricks. However, as agroforestry in France points out [2], for the development of agriculture, trees can provide biological fertility and also produce fruit and biomass, and serve as a refuge for biodiversity. The waste can be used as agricultural fertilizers, amendments and pesticides.

Madagascar removes 100,000 hectares of forest each year, and the annual trend is increasing [3]. This loss comes from different forms of stress (natural and man-made), including bushfires, savannah fires, forest fires, illegal logging and extraction of natural resources, charcoal and energy wood, cleaning, due to migration due to farmers and climate change (water scarcity, search for new land, etc.) [4].

In addition, Madagascar's assessment of natural resource valuations remains limited and complex. However, natural products are recyclable, cheaper, available or available locally. But the inhabitants remain

insensitive and undecided. Paradoxically, the local collective beliefs supported by the local political authorities continue to believe and practice, among other things, the ancestral "jorooragna" or a ritual to make it rain. It is undeniable that this ritual of sacrificing zebus imposes other social burdens on the local population.

The Malagasy must be very strict and severe, as Fisher and Tees [5] say that the control capacity of local authorities is imperative. According to Péan [6], the integrity and consideration of public services confuse the higher interest of the State with the interest of the individual, which leads to underdevelopment. Mobilizing local or national political authorities to promote and pursue other agricultural practices does not seem to have a positive impact on Madagascar's environmental problems. However, as Tree & Landscape [7] says, "active" agriculture models are possible based on the logic of life and the interaction between all the components of the ecosystem, it is enough to to work.

Lack of mobilization skills does not empower all actors to move the project forward and build strong relationships within the community. Moreover, many Malagasy politicians believe that good behavior remains symbolic and that, according to Emagna [8], senior officials betray their functions due to political pressure, dishonesty or incompetence. According to Gouffern, quoted in the book Emagna [8], good character or integrity in the management of public affairs must be a priority. Madagascar does not ensure equity and access to resources [4].

As argued by Fisher and Tees [5], if transparency is respected, the need for financing capacity allows elected officials to take responsibility and mobilize local populations. With all the administrative reforms (public finance, public procurement, agriculture, economic infrastructure, social sector, etc.), the executive needs competent and competitive personnel [9]. If the local authorities in Madagascar knew how to coordinate the management of public affairs, while respecting strong skills and good governance, the population would adhere to the development process [10].

The objective of this article is to understand the appreciations of Malagasy agricultural producers on the added values of fruit trees, shrubs and plants on the environmental and agricultural level. The hypothesis is whether Malagasy agriculture can participate in the field of conservation of biodiversity.

II. METHODS

The study was carried between 2018-2019, with a nurseryman and one hundred local populations, in the district of Andilantomoendry, rural commune of Antanandava, district of Mandritsara-Madagascar. Young plants were produced on the total surface of ten hectares, in the Miadana district, rural commune of Ambodimadiro, district of Antsohihy, more precisely between 2018-2019. After doing an experiment in the fermentation of natural products producing methane, we obtained two kinds of products (gas and waste). Indeed, we conducted our own scientific discovery in these two study areas to test with local populations. This experience was made only among selected producers, moreover, they are members of an onion production association and members of a nursery production center. In addition, we also recruited local elected officials from these two study areas to popularize the investigations, namely rural mayors, district presidents and municipal councillors; this type of organization and this for them means increasing power and building trust and sharing responsibilities and information between local elected officials and participants and/or the entire local population. A type of questionnaire, semi-directive, was presented to them at the experimental fields and at the town hall to get their answers on the subject.

The survey limits, this survey was carried out both as a first basis of results and also as a basis of sampling and assumptions for more detailed studies. Indeed, we have selected only these producers from these two areas, to detect their reaction and appreciation of our approaches.

The counting was carried out in three phases: data collection, data processing and analysis of the results. Data coding and quality control were performed using Excel spreadsheet software. This analysis already allows us to collect a certain number of observations.

III. RESULTS

The results of this study show that

3.1 Appreciation of fruit trees, shrubs and plants by small farmers.

58% out of 42% of agricultural producers are interested in fruit trees, shrubs and plants from an environmental point of view (Fig. 1).

3.2 Observation of the productivity and effectiveness of natural products.

In 2018, the production is 10.50 tons per hectare. It reached 12 tons in 2020, going through a production of 11 tons per hectare in 2019 (Fig.2).

3.3 Sensitivity of local elected representatives on the popularization of natural products.

76% out of 24% of local elected officials are not sensitive or exemplary for the popularization and promotion of natural plant products (Fig.3).

3.4 Competence in mobilization of local elected representatives.

82% out of 18% of local elected officials have the ability to mobilize in this area (Fig.4)

3.5 Competence in control of local elected representatives.

90% out of 10% of local elected officials do not have the capacity to control (Fig.5)

3.6 Competence in seeking funding for local elected representatives.

95% out of 5% of local elected officials do not have the skills to seek funding to develop and support local populations (Fig.6).

3.7 Conviction of local elected officials on the popularization of natural products.

90% out of 10% of local elected officials are convinced of the proposals for improving the field of agriculture and the environment (Fig.7)

3.8 Dependence on chemicals by local elected officials.

87% out of 13% of local elected officials want to depend on chemicals or only natural products (Fig.8)

4. FIGURES

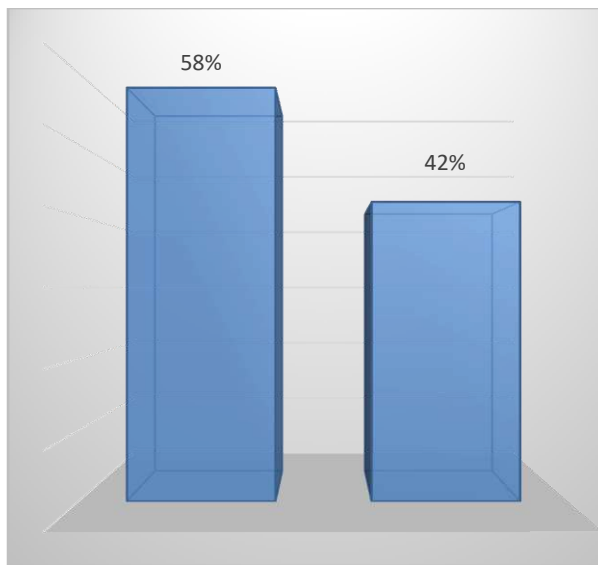


Figure 1. Appreciation of fruit trees, shrubs and plants by small farmers.

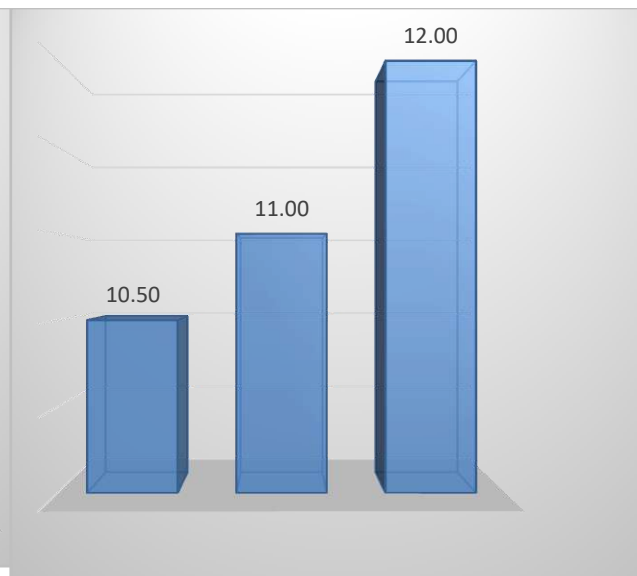


Figure 2. Observation of the productivity and effectiveness of natural products.

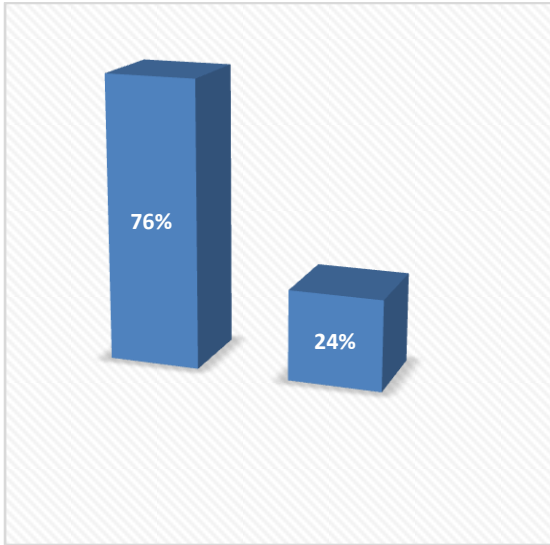


Figure 3. Sensitivity of local elected representatives on the popularization of natural products.

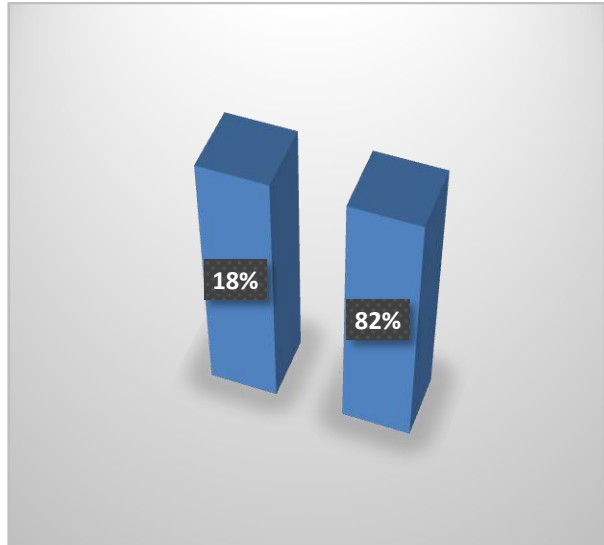


Figure 4. Competence in mobilization of local elected representatives

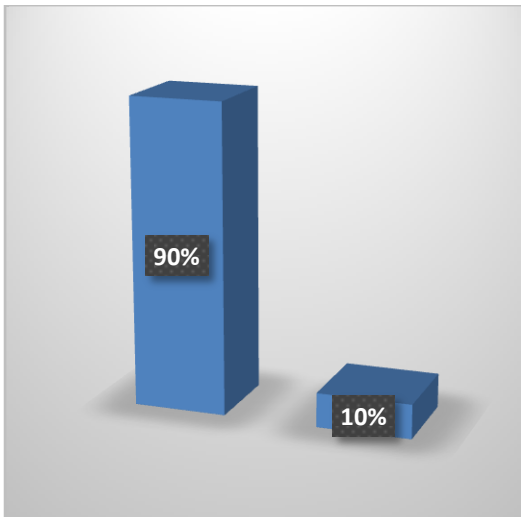


Figure 5. Competence in control of local elected representatives

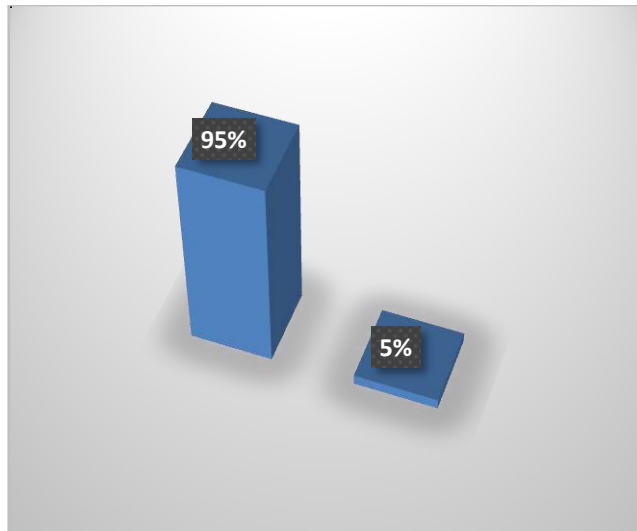


Figure 6. Competence in seeking funding for local elected representatives

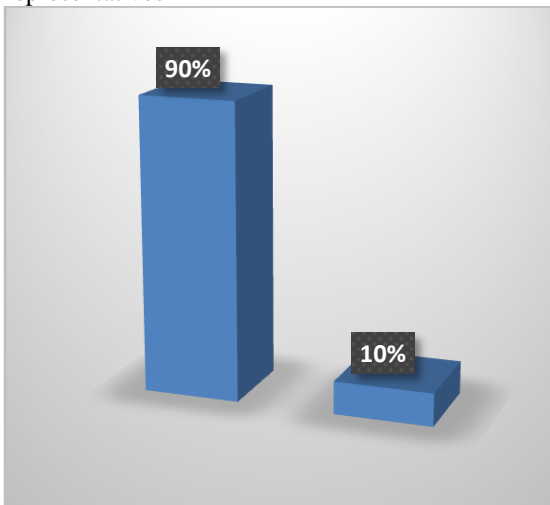


Figure 7. Conviction of local elected officials on the popularization of natural products

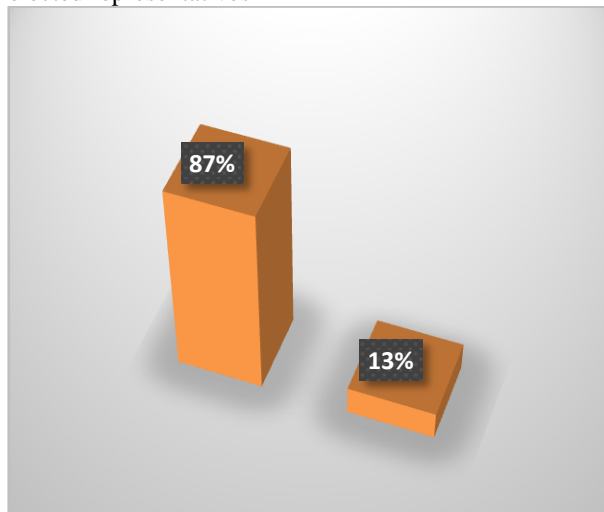


Figure 8. Dependence on chemicals by local elected officials

IV. DISCUSSION

The study aims to understand the appreciations of Malagasy agricultural producers on the added values of fruit trees, shrubs and plants from an environmental and agricultural point of view. This is how we have noticed that producers are beginning to take an interest in the development of fruit trees, shrubs and plants at the local level; in fact, they found a marked increase in their productivity and effectiveness in using natural products to treat a trial portion of their crop. Then, the perceptions of the local populations on the behaviors and competences of the local elected officials already they observed that the local elected officials are not completely sensitive nor exemplary to popularize the valorization of the vegetable products on the spot; moreover, they also do not have sufficient capacity to mobilize or control and seek funding to support local populations to sustain the action. According to Bidou et al. [10], local elected officials have their concerns, but not for the development of their territory; and they are content to be elected and to seek re-election. They only care about their job. As for the views of local elected officials, often local elected officials do not say that they are not interested in the proposed projects, but the conviction must be proven by actions and commitments. However, this conviction must be followed and revitalized among elected officials. Their motivation is limited to admiring the offer, but when it comes to stocks, they do not want to invest more, often being pessimistic. Sometimes they have a lack of initiative and always prefer to depend on or receive help [11].

V. CONCLUSION

The purpose of this article shows the conservation and enhancement of fruit trees and plants in Madagascar to enable Malagasy people to fight the massive destruction of the forest and global warming and climate change. As well as the Malagasy are called upon to optimize their visions, local authorities and the entire local population to use local resources as an asset in biodiversity and agricultural activity. Unfortunately, aesthetic poverty weighs on the behavior of the local population, including elected officials, towards their environments despite a clear progression in behavior. Natural products are abundant locally, but the appreciation remains to be sensitized, because the resurgence of illicit exploitations is very worrying. The acceleration of climate change brings new challenges for fruit trees and forests. Cultivation areas are being deserted and reservoirs of biodiversity, hydrology and carbon sinks are gradually disappearing.

New lines of research and ecological monitoring are appearing, and are being put in place to convince local elected officials and the entire local population to completely change their views of their environments and a new product, particularly in agricultural activity. It is time to change the dependence on chemicals, therefore, produce locally and with a little material and financial means, but also accessible to all. However, new knowledge and capacities in monitoring, mobilization and fundraising are needed in this area.

Transparency, ownership and proximity allowing a lasting and close relationship between politics and the local population. Hence the sensitivity, mobility and exemplary nature of local authorities must be shown in their leadership style.

To achieve this objective, the Ministry of the Environment and Sustainable Development with the decentralized local authorities and services concerned, with the local population must work on an integrated and inclusive approach aimed at empowering citizens and all elected officials, operators on protecting the environment through strengthening environmental education and increasing their income.

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