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Honey picking and beekeeping: providers of honey on the market of Uíge Municipality, in the North of Angola

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Abstract

This article has the basis of the sustainability of the honey picking associated with the modern practice of beekeeping, providing honey on the market of the municipality of Uige. Therefore, there was a question of making an inventory of these use practices and the honey sector. The interviews organized with the players in the sector made it possible to build a necessary database. On this, 98 actors were subject to the interview based on a semi-structured questionnaire. For variables, women dominate men at 58%, the age group of 20 to 30 dominate the universe of actors in number with 34%. Traditional picking is the most practiced technique compared to beekeeping. Consequently, wild honey is most present on the local market. It is sold at 3 750,00 Kz against 7 500,00 Kz of that of beekeeping, little practiced. Due to the enthusiasm of its sale, honey currently takes the status of a resource capable of contributing to the reduction of poverty, if beekeeping techniques are wide popularization to replenish the local honey market produced ecologically to the detriment of picking, destructive bees and their housing by fire.

Keywords: *Picking, beekeeping, honey*

Introduction

Honey is a viscous and sweet substance produced by bees after collecting the nectar of flowers, and having dragged it by their digestive enzymes (Bonte *et al*., 2011; Mundo Ecologia, 2009). Although it is a product of the forest, honey is not a direct derivative of a tree, but a manufacture carried out by a bee (Awono *et al.,* 2009), which makes it a product of animal and non- vegetal origin.

Honey is undoubtedly the most known product by all ancient civilizations (Silva *et al*., 2006); we know it and use it over the World (Broadbear, 2010). No one culture has missed honey, the energy and protein manna (Giorgi, 2018). It is in this global context that the population of Uige municipality, just like that of the surname province in general, uses honey as one of the food products consumed since the remote times.

Starting from its historical evolution and its socioeconomic context, honey has ceased to be only a product village self- consumption to orient itself towards the market (Vunda, 2021). Of this paradigm shift, Agromisa (2001), Mayasi and Mundu (1995), consider, on their part, that honey is a primary and secondary source of significant income. It is now belonging to the "Honey Industry" for its traceability that Bencharif and Rastoin (2007) and Fabre *et al.,* (1997) define as the set of implicating activities different economic players in the production, distribution and consumption of a product or service.

Honey is already arousing particular interest among many inhabitants of Uíge who wake up in picking as in the practice of beekeeping. Technically, if beekeeping is the art of rising bees, considering honey and other hive products (FAO, 2010), picking or hunting honey, consists in spotting bee colonies the day in large trees or between rocks, and harvesting the night after destructive by the colony of bees (Yédomonhan and Akoegnihou, 2009). All essentially dependent on ecological conditions favorable to bees for the manufacture of honey.

From an ecological point of view, the province of Uige has significant vegetable and animal biodiversity (Lautenschaläger and Neinhuis, 2014; Mawunu, 2016) whose remarkable presence of the subspecies of bees *Apis melifera adansonii* (IDF[1], 2020). These floristic and wildlife resources make this entity a reference for the production of honey, within which it is already part of the

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[1]IDF: Angola Forestry Development Institute

non-timber forest products (NTFP)[2] priority from the point of view of valorization (Vunda, 2021).

Unfortunately, there is very little information about the honey from "traditional know-how" of picking and the "modern practices" of beekeeping, supplied and sold in the Uíge municipal market, but and above all about the impact of these activities or techniques on the environment and local biodiversity.

This work therefore aims to make an inventory on the current situation of picking and beekeeping in the study area, the organization of the honey sector, economic evaluation of beekeeping and the track of sustainability in relation to its production in favor of development.

Material and working method

Material and study area

Within the framework of the realization of this work, the investigation material consisted of means of public transport (taxi) for the displacement within the municipality of Uíge, in particular in the rural communes of Luanga, Casseche and Cancungo. Also, within the city of Uige, the municipal chief town and capital of the province of the same name, of a questionnaire (support for maintenance), a notebook, a balance and a computer for encoding and processing information.

The municipality of Uíge is one of the twenty three (23) municipalities in the province of the same name, located north of Angola. It extends over an area of 2 500 Km² and is bounded to the north by the municipalities of Mucaba and Dongo, in the east by that of Negage, to the south by Dande-Quitexe and to the west by the municipality of Ambuila. (fig.1)

Fig.1: Uige municipality in the province of Uige, northern part of Angola

The Municipality is located at 7º 36´31" latitude and 15º 3´40" longitude, with a tropical climate Köppen Aw: tropical humid Savannah (Mindat, 2017). The population is mostly composed mostly of Bakongo ethnic with an estimation of 493.529 inhabitants (INE[3], 2014). The municipality has a tropical weather, an annual average temperature of 23ºC over the rainy season, 21ºC over the dry $season$; recognized as the rainiest area of Angola. In mountainous zones, rain can reach 1 300 to 1 600 mm a year (Lautenschläger and Neinhuis, 2014).

The province has a rich hydraulic potential made up of rivers: Lowe, Cuilo, Lucunga, Candombe, Kagige, Ndua, Lukixe, Loge, etc. (AMU[4], 2019). In Diniz and Aguiar (1998), views about vegetation, Cabinda on top, Uige is a second richest province in forests. We find there important forest areas made up of damp dense forests, conducive to the cultivation of Robusta coffee, forming mosaics of forest galleries with the savannah.

The presence of rivers, the abundant vegetation made up of countless honey plants, as well as the increased presence of bees, as said previously, constitute major assets for the practice of beekeeping in the province of Uige. This is what Michel (2009) supports, the many honey plants allow bees to produce good quality honey. Indeed, the bees "visit" the flowers of these plants. The proximity of a river, a source of water, or a fountain is essential for the life of the apiary. It will save long races with bees to obtain water. These are therefore the prerequisites of a prospecting aimed at the choice of the appropriate site for the installation of a beekeeping apiary.

Working Method

Field surveys and observation

The rural communes of Luanga, Casseche and Cancungo, including the urban municipality belonging to the city of Uige, which is the capital of the municipality and the capital of the surname province, were target of the activities linked to honey, in particular its marketing, its levy by gathering, just as its production by beekeeping in favor of the local market. Based on a sample of 98 players in the honey sector, which connects the pickers, beekeepers, traders and consumers, who are randomly taken in their world of operation.

The preparatory phase of these surveys based on the development of a questionnaire, the construction of actors: gender, age, activity and seniority in the honey sector. It was a question of organizing individual and direct interviews based on a semi-structured questionnaire to collect the necessary information with open questions. This approach has joined the argument of Scheilings (2017) which supports; the survey by questionnaire is a tool, which has many advantages for obtaining information. In addition, Bahouayila (2016) assumes, quality data essentially require a well- designed questionnaire and uniform procedures to fill it. Therefore, what was the questionnaire of this work.

[2]NTFP: Spontaneous products of plan and animal origin other than wood obtained or collected in forests, the case of honey

[3]INE: National Statistics Institute of Angola

[4]AMU: Municipal Administration of Uíge

Additional information on the surveys was collected from observation to find out the characteristics of honey, the quantities taken or produced according to the context, those put up for sale and available on the local market. Therefore observation is a technique that allows direct contact with the reality studied and specifically uses the senses of the observer (view and hearing) (Brenner and Jesus, 2008). Finally, the information collected was compiled for making the database before being processed and analyzed. As for time, the investigations extended over a period of six (6) months, ranging from October 2024 until April 2025.

Results and discussion

In this point, we describe the different results on the characterization of picking and beekeeping, in relation to produced honey and marketed in the municipality of Uige through the following sub-points. The profile of the actors of the honey sector (1), honey sector compared to the local market (2), the practice of beekeeping at the level of the municipality(3), the comparative approach between picking and beekeeping (4), use and quality of honey (5), beekeeping and its economic aspects (6) and traditional know-how and beekeeping in the face of sustainability (7).

Profile of actors in the honey sector

On all the surveys, 98 players in the essentially informal "honey sector" were interviewed in relation to the variables: gender, age, activity and seniority. Consequently, it appears that the majority of the actors are of female sex representing 58%. In this regard, Ingram *et al*., (2010), find that women tend to dominate men in number in the informal sector.

Table 1: Demographic profile of the actors (players) in the Honey sector

Variables	Sub-groups	Number
Gender	Female	57
	Male	41
Age	20-30	33
	31-40	26
	41-50	29
	51-60	10
	Over 60 years	
Activity	Honey pickers	20
	Beekeepers	2
	Traders	34
	Consumers	42
Seniority in the sector	≤ 5 years	16
	6-10 years	45
	11-15 years	22
	≥ 16 years	15

Source: Surveys (2024-2025)

The age group of 20 to 30 years constituted by young people remains the majority among the actors with 34%. Kabuayi (2014); Assué and Gnepehi (2023), consider that the informal sector is the gateway for young people in search of jobs. Consumers are the majority among the players with a frequency of 43%. Finally, the seniority group of 5 to 10 years is that of the majority of players within the sector with 46% of the frequency (Tab. 1).

The honey sector compared to the local market.

From the information collected, it appears that 100% of honey pickers or hunters argue that the levy of honey is done very early in the morning or night; in the bush, in the forest, in the fracture sites of the soil or cliffs. Generally during the dry season which is characterized by the rainy absence in the province of Uige. (Mid- May to mid-September). Therefore, they use fire and smoke at the time of levy to decimate bees before using honey rays. In addition, 85% of them have no knowledge of beekeeping. On the other hand, 15% have already heard of this modern practice without knowing the strings (technical).

The quantity taken by colony (nest) of wild bees depends on its size. Overall, it varies on average between 5 to 7 kg of honey according to 70% pickers, and 30% of in-between advance an average of 7 to 10 kg. In this context, Micoop (1993), also considers that honey production depends on the size of the colony; on the other hand, it can vary from a few grams to 7 or 8 kg.

From the point of view of the destination of honey taken, the city of Uige remains the target of all pickers (100%) for marketing with merchants. Below the table, representing the places of sale sites (markets and other public places), the quantity and the price of honey found on sale in the city of Uíge.

Honey is generally sold in public places in the city of Uige. Most of these places have Portuguese expression names. These are *Praça Grande municipal (*Large Municipal Market), *Praça de Candombe Velho (*market in the Old Candombe district), *Praça de Feira (*Fair market), arteries of the city and *Paragem de Luanda (*Reference stop and road traffic between Uige and Luanda, the capital of Angola). *Praca de Candombe Velho* and *Praça de Feira* Markets are subordinated to the *Praça Grande Municipal.* Honey sold in those public places also comes from other municipalities of the province such as Sacandica, Sanza-Pombo, Maquela, Milunga and Quimbele. In this regard, 100% of traders maintain that the great supply record of the local market is in favor of Quimbele. Sales are handled by stable retail traders and street vendors who sell honey directly and exclusively to consumers.

In terms of packaging and storage, the honey in question is packaged in recycling plastic bottles. In the point of sale of this type of honey 426 kg have been listed, sold at an average price of 3 750,00 Kz per kilogram, whose overall cost estimated at 1 597 500,00 Kz equivalent to US 1 747,00 $ US compared to the exchange rate of the National Bank of Angola (BNA) (Table 2).

Table 2: The Points of sale of honey in the city of Uige

Place of Sale	Type of merchant	Quantity (in Kg)	Unit value (in Kz)	Global value (in Kz)	Parity $-Kz (1$ US=913,66)
Praça Grande Municipal	Stable retailer[5]	135	3 750,00	506 250,00	554,00
Praça de Candombe Velho	Stable retailer	98	3 750,00	367 500,00	402,00
Praça de Feira	Stable retailer	89	3 750,00	333 750,00	365,00
City Arteries	Itinerant retailer	62	3 750,00	232 500,00	254,00
Paragem de Luanda	Itinerant retailer	42	3 750,00	157 500,00	172,00
Total		**426**		**1 597 500,00**	**1 747,00**

Sources: Surveys and National Bank of Angola (2024-2025)

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The Practice of beekeeping at the level of the municipality

The Surveys carried on the entire municipality of Uige, have listed two (2) beekeepers, working on behalf of the Mawete Company, in its tourist complex in the Juca village, located more or less six (6) kms from the city center of Uige. This beekeeping exploitation is the unique at the level of the municipality, which ensures the production of honey by driving an apiary of 51 hives of the operational "*Dadant*" type in the company concession (fig. 2).

Fig.2: The hives *Dadant*[6] in the apiary.

Of these hives, 41 were occupied by the bees during the 2024 beekeeping campaign and produced overall 650 kg of honey sold on site at the price of 7 500, 00Kz (US $ 8,00) per kg. On this, the average production is 16 kg per hive and if it is necessary to stick to the calculations the company has gained revenue of the order of (650 kg of honey x 7 500,00 Kz = 4 875 000,00 Kz equivalent 5 337,00 US $). The average production of 16 Kg of the beekeepers surveyed is not far from that advanced by Hoyou and Chevalier (2020) who consider that a *Dadant* hive produced on average 20 to 50 Kg of honey per year.

The comparative approach between picking and beekeeping.

It clearly appears that the amount of honey taken and delivered on the local market by the 20 pickers of hunters is 426 kg, while the beekeeping exploitation held by two (2) beekeepers provided 650 kg for the period considered. The sale prices also present a huge disparity since the beekeeping honey was sold at 7 500, 00 Kz (US $ 8,00) per kg, while that of picking was 3 750,00 Kz (US $ 4,00), or half of the price of beekeeping honey.

[5]Stable retailer: Trader carrying out an activity in a regular and habitual manner in a specific place (market)

[6]Dadant hive: Frame hive named after its inventor Charles Dadant (1817-1902).

Beekeeping allows better management of the bee livestock, while offering much more advantages to beekeepers in relation to the productivity of apiary products whose honey based on previously set objectives, an activity of a professionalizing nature in its exercise. This is what makes Seregen *et al.* (2001) and Rosset (1995) say, beekeeping is a profession and a science, demanding on the part of the one who gives himself prior knowledge. On the other hand, the picking or honey hunting, dependent on the discovery of wild bee nests before extracting the honey rays, remains an activity of an "unpredictable" or "uncertain" nature. From an operational point of view, beekeeping is the art of domestication, which is based on a real breeding of bee colonies (Vunda, 2021), picking, on the other hand, is focusing on the mobilization of traditional expertise of "honey hunting" or "looting of honey". In addition, the first technique is protective of biodiversity, the second, on the other hand, is less.

The picking honey is often sold next or together with non-timber forest products (NTFP) share vegetables, roots, fruits, tubers, buds, drug potions and various edible and／medicinal stems (Fig.3)

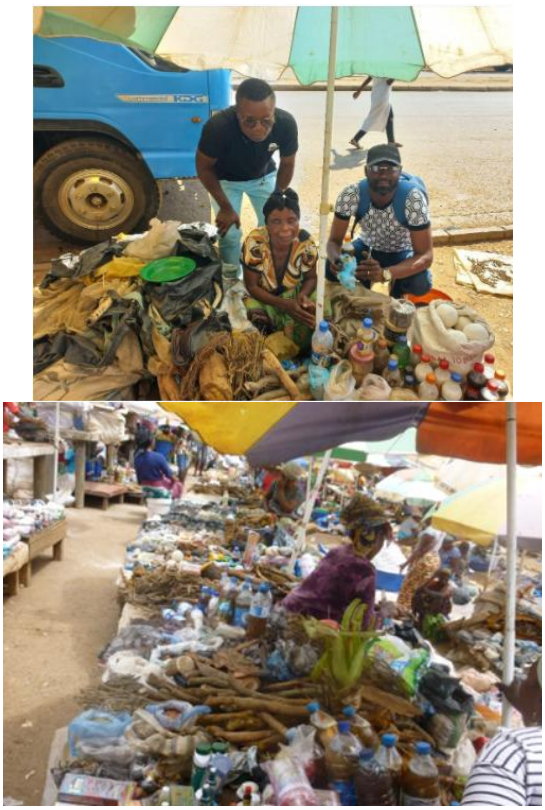

Fig.3: The honey sold together with non-timber forest products in the Uíge markets

In addition, it is said to note that generally the honey of the picking or wild honey taken after the destruction of the swarm of the bees, tend to become brown under the effects of the fire which burns the cells (fig.4(1), while the honey of the beekeeping depends completely on the properties of the biturated flowers or visited by the bees influencing the color of the honey that has not been altered (fig.4(2). The floral origin of honey is important because it determines its organoleptic properties (color, taste, texture). For example, rapeseed honey is rather light color (very pale yellow, see white) tends to crystalize very quickly (Jean- Proste *et al.,* 2005) (fig.4 (2).

(1)

(2)

Fig. 4: Honey picking (1) and that of beekeeping production (2).

The use and the quality of honey.

Honey is part of the cultural arsenal of the population of Uige since the oldest times in the same way as that of other Angolan provinces. This recent time, honey is experiencing a renewed interest in the region because of its multiple uses. As a result, 65% of consumers say they use honey as a food product rich in nutrients and 35% use it as a food product, but also and above all as a remedy for some diseases thanks to its broad spectrum therapeutic power. The cough, asthma, and the stomach ulcer, were the most cited diseases. Bradlear (2010) and WHO (2001) to paraphrase: only with hot tea mixture with honey and lemon helps to relieve sore throat and cough thanks to its calming effect. Regarding its nutritional richness, honey contains organic acids, amino acids, proteins, enzymes, invertase glucose, oxidase

glucose, amylases, etc. (Jean- Prost *et al.,* 2005). Therefore, it remains a product very popular with consumers of the municipality of Uige in relation to everyone`s perception. Unfortunately, the enormous deficit in number of honey producers (beekeepers) remains a real strangulation neck to bail out the local honey market in order to meet consumers demand sufficiently. This makes Lautenschläger and Lathan (2023) say, beekeeping is little popularized in the north of Angola.

The appreciation of the quality of honey is not necessarily scientifically verifiable according to considerations noted with the surveys. Rather, it depends on the perception that the consumers make of what they would like to be the quality of honey. To achieve this, 36% consider that good quality honey must be treated superficially, while keeping a few dead bees, alveoli residues and other solid bodies. 31% think, on the opposite, that it must be rid of all the residues and be of a strong concentration or heavy, 30% stick to well-filtered honey and moderately heavy, finally 3% of consumers condition quality only on the match test. It is a question of moistering the match rod by plunging it into the honey, then rubbing it on the box, once on the honey is supposed to be natural and of good quality. All of these criteria are almost entirely joined by those put forward by Awono *et al.,* (2009), who believe that some consumers in Kinshasa (DRC) prefer honey that has not undergone transformation. Others prefer to buy the filtered honey. The highest percentage is in favor of those who bet on non-filtered natural honey with dead bees and other debris. On contrary, Bradlear (2010), considers the presence of any other contaminant in honey (honey particles, dead bees, wood or dust bursts) reduces the quality of the honey. However, there is no unique international standard for honey quality.

In addition, consumers have not failed to denounce adultered or poor quality honey sometimes sold by crooked merchants to which they add sugars and other substances with the intention of increasing the quantity intended for marketing.

Beekeeping and its economic aspects

As said previously, the Mawete company apiary is the only beekeeping exploitation of the municipality of Uige. The realization of various economic calculations makes it possible to understand the evaluation of the profitability of the beaming 2024 campaign.

Remuneration of production factors

The company`s apical apiary in question is led by two (2) beekeepers and to produce honey, they combine production factors, land, capital, and labor. With that, this beekeeping exploitation has benefited from the land space free that it uses within the company concession. Its material capital consists of 44 Dadant hives, 2 smuggles, 2 protective outfits, 4 gloves, 2 pairs of boots, 2 honey filters, 2 maintenance brushes and 3 knives. Over time, this capital wears out and gradually loses its initial value. To amortize it, we have opted for linear damping in order to simplify the calculations. Table nº 3 below presents the situation of the amortization of beekeeping equipment.

Table 3: Amortization material used during the 2024 benchmark campaign

Material	Probable duration of use (year)	Acquisition prices (in Kz)	Annuity (in Kz)
Hives	5	2 420 000,00	484 000,00
Smuggles	5	140 000,00	28 000,00
Protection outfits	5	65 000,00	26 000,00
Gloves	3	6 000,00	2 000,00
Pairs of boots	3	9 000,00	3 000,00
Honey filters	3	72 000,00	24 000,00
Brushes	3	2 000,00	667,00
Knives	3	4 500,00	1 500,00
Total		**2 718 000,00**	**569 167,00**

Source: Surveys: (2024)

With regard to the work factor, the work force of the Mawete company apiary is made up only of beekeepers who benefit from salary linked to the indefinite employment contract (IEC). The Head beekeeper has an annual net salary of 90 000, 00Kz (US $ 99) and his assistant receives 65 000, 00 Kz (US $ 71). The activities of the beekeeping campaign have practically extended throughout the year. Apart from the installation of the hives and a few cases of transhumance, routine activities focused mainly on the apiary visits (beehive set), the maintenance of hive locations, inspections, trapping bees, harvesting honey, honey treatment, etc.

Table 4: Investment granted in labor for the 2024 benchmark campaign.

Type of labor	Monthly net salary (in Kz)	Working time (in month)	Total annual net salary (in Kz)
Head beekeeper	90 000,00	12	1 080 000,00
Assistant	65 000,00	12	780 000,00
Total			**1 860 000,00**

Source: Surveys (2024).

The marketing of honey.

The honey produced during the 2024 benchmark campaign was sold in the company concession which has a setting (bar, restaurant, hotel, swimming pool, farm, bench, fish, poultry and animal farm) frequented by several customers and visitors. The sale price per kilo was 7 500,00 Kz, representing double the price of honey from the picking as mentioned above.

Total production is 650 Kg of honey sold at 7 500,00 Kz per liter. The company has garnered revenue of 4 875 000, 00 Kz equivalent to US $ 5 337,00, amount that represents the turnover from beekeeping activity.

Regarding the sale, the company spent a few taxes valued at 36 000,00 Kz. Table 5 below gives an assessment of total costs for the beekeeping campaign.

Table 5. Evaluation of total costs

Labels	Amounts (in Kz)
A. Fixed Costs (FC) 1.Earth space 2.Amortation 3.Taxes	 0,00 569 167,00 36 000,00
Total	**605 167,00**
B. Variable costs (VC) 1.Workforce	 1 860 000,00
Total	**1 860 000,00**
Total costs (A+B)	**2 465 000,00**

Source: Surveys (2024-2025)

Table 5 determines the cost price of production. In fact, the cost price will necessarily include the total value of the circulating capital absorbed by production and part of the fixed capital, which corresponds to the time of the depreciation of the latter (Wautly and Duschesne, 1964).
The cost price is useful information for decision-making. It makes it possible to assess all the expenses to be made to sell a product or service to the company. It is also a fundamental tool for marketing which must know at what minimal price the company can sell its products and services (Dallaire and Jauron, 2010). Mathematically, it is calculated as follows:

CP = FC+VC/Q = TC/Q[7]

CP=2 465 167, 00 Kz/650 Kg = 3 793,00 Kz/Kg. This cost price represents the almost half of the sale price applied by the company Mawete on its agricultural honey which is 7 500,00 Kz.

Calculation of economic profitability.

An expense is profitable when it allows you to make a net profit. In other words, the profitability results from the difference between the turnover and the cost of production by incorporating total costs. To degasse profitability, honey revenues (turnover) must obviously be higher than the expenses incurred. Hence, the balance between the Recipes (R) (turnover) and the Expenses Incurred (E) carries out the calculation of the profit margin (PM). In this case, we will have:

PM = R - E PM = 4 875 000,00 Kz – 2 465 167,00 Kz = 2 409 833,00 Kz

It clearly appears that the beneficiary margin obtained of 2 409 833,00 Kz is interesting, dividing it to the production of 650 Kg of honey, it is uniformed at 3 707,00 Kz of profit per kilo of honey, or 2,02 times the sale price of honey (7 500,00/Kg) and there is therefore slightly 100%.

According to FAO (2003), there are two ways to study the profitability of beekeeping:

- The first consists in calculating the net income supplement or the increase in income, by subtracting the costs of the value of the revenue. This is what we dealt with for the calculation of the profit margin;
- The second aims to calculate the ratio/cost obtained by dividing the production increase in production by the recorded cost of the activity. Hence, the Ratio R= V/C[8].

If the value/cost or RVC ratio exceeds 1, the beekeeping activity is profitable. An RVC of 2 indicated a profit of 100%, and at 3, profitability appears excellent.
For the present case, calculate RVC, it is necessary to take into account the increase in income which is 4.875.000,00 Kz, as is the production cost (total costs) valued at 2 465 167,00 Kz. Consequently, the RVC is equal to (4 875 000,00 Kz / 2 465 167,00 Kz) or 1,97 rounds 2. This result leads us to consider that the 2024 campaign was profitable in the apiary of the Mawete Company. It is therefore necessary to say that each kwanza invested in beekeeping in more or less 2. The RVC is a profit of 100% in relation to the criteria of FAO (2003). In extrapolating, a beekeeper who there fore spends 100,00 Kz for the conduct of his beekeeping apiary, theoretically wins some 200,00 Kz at the end of each campaign. The RVC of 2 found by our calculations, goes in the same direction with that found by Matsop *et al.,* (2011) on traditional beekeeping and improved in the north and west of Cameroon which were acclaimed as profitable with an average value of their net profit ratio on the total cost of 1,168 and 1,193. These ratios, which are greater than1, clearly demonstrate that the beekeeping explanations were profitable according to the criteria put forward by FAO (2003).

Traditional Know-How and beekeeping in the face of sustainability

As said before, picking or honey hunting dominates the spheres of the municipality of Uige over its entire territorial extent compared to beekeeping, which is weakly presented there by a single operational beekeeping apiary. These two techniques meet the Micoop (1993) which supports, Africa coexist the simple picking of honey and beekeeping with traditional agricultural techniques, sometimes modern. The use of fire on the part of pickers or hunters to decimate the bees at the time of levy of honey, remains harmful and against the preservation of the environment and biodiversity.

[7]**CP**: Cost Price; **FC**: Fixed Costs; **VC**: Variable Costs; **TC**: Total Costs; **Q**: Quantity Produced; **VI**: Value of Incrrease; **CB**: Cost of Beekeeping.

[8]**V/C**: **V**: Value of the increase; **C**: Cost of beekeeping

This is what Bradbear (2010) maintains who considers that honey-hunting bees, causes forest, fire, and contributes to the depopulation of certain bee colonies and their habitat. Beyond this aspect, the recurring practice of bush fire for hunting wild animals during the dry season can only contribute more to the massacre of bee colonies within the municipality of Uige. The same is true of the destruction of certain species of honey plants whose flowers are visited by bees, either by pollination and/or for the manufacture of honey. According to (FAO, 2023), African forest resources dominate mainly due to fires.

The search of the easy gain in the sale of honey is the basis of the picker rush in the wild in search the wild bee nests, in no way, alluding to the preservation of the environment, biodiversity, brief of the sustainability of resources. From elsewhere, 100% of the pickers surveyed had no notion of sustainability compared to the harmfulness of their activity. Fayet (2020), defines sustainability as the combination of economic data between these three criteria in order to minimize risks, to maintain and even improve practices to guarantee the sustainability of activity in the future. In this context, beekeeping seems to be, among other things, floristic and fauna riches that the municipality of Uíge is full of.

The improvement or modernization of traditional picking expertise in favor of beekeeping can contribute to sustainability aimed at the production of honey efficiently and sustainable within the municipality. Hence, the need to popularize this modern practice so much ignored by the majority of actors in the honey sector, mainly cutters-chasers. In view of the growing interest of consumers investigated in honey consumption but also and above all of the rush on the local market, it is necessary to consider that honey takes the status of a potential capable of contributing to development, it will be necessary to be produced properly by beekeeping. FAO (2023) supports, beekeeping has the capacity to contribute to the achievement of the objectives of sustainable development, in particular the eradication of extreme hunger and poverty and the guarantee of environmental sustainability. The popularization of large-scale beekeeping at the level of the municipality of Uige, as in the entire province of the same name, will be of capital importance in order to offer farmers or rural source of significant income, outside of agricultural production.

Conclusion

Throughout this article, it has been dealt with the reality of picking and beekeeping, which provide the market of the municipality of Uige in honey by the essentially informal sector. It appears that the honey pickers largely compared to only two beekeepers working for the Company Mawete, owner of the only beekeeping by the municipality. This proves enough that the modern honey production activity (beekeeping) is ignored by almost all the inhabitants of the municipality. The traditional picking associated with tradition expertise locally, depend on occasion and uncertain honey samples, cannot guarantee the effectiveness of the honey sector in the face of a growing demand. This size issue has lasting solutions only by the massive beekeeping practice, which depends on the breeding of bee livestock.

The popularization of beekeeping techniques in agricultural environments in the municipality made it possible to replenish the Uige market into quality honey, but also and above all significant reduce the harms of picking, damaging bees with fire during honey picking for its multiple uses. It becomes for them a resource capable of inducing development in the context of the fight against poverty observed at the level of the region. In this context, the population of Uige is mostly agricultural, will also have a complementary activity, a significant source of income that Mayasi and Mundu (1995) qualify as an activity for all, without distinction of sex, not requiring large investments, nor large expenses of land, when we know that the African beekeeper builds everything he needs. He is not used to buying his equipment and hives (Vallières, 1987). It is about the production of beekeeping equipment with locally available resources and adaptable to the technical requirements of beekeeping.

To convince itself of the beekeeping advantages, the economic calculations made on behalf of the Mawete company´s apiary have shown that the 2024 campaign has been profitable, a profitability estimated at 100% of the beneficiary margin on the sale of honey. This implies that a beekeeper who invest a certain amount in the conduct of his apiary, he wins the double after the sale of his honey. Here again, we support the argument that beekeeping honey could change the daily life of the honey sector, due to its status of potential for development.

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