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Rôle des femmes dans l'utilisation des produits issus des agroforêts à cacaoyers du centre de la Côte d'Ivoire

[Role of women in the use of products from cocoa agroforests in central Côte d'Ivoire]

Affia Sonmia Francia Kossonou[1-2], Kanga Justin Kouassi[1], Yao Bertin Kouakou[1], Venance-Pâques Gniayou Kouadio[1-3], Kouassi Bruno Kpangui[2-4], and Constant Yves Adou Yao[2-5-6]

[1]UFR Agroforestry, University Jean Lorougnon Guédé, Daloa, Côte d'Ivoire

[2]BioValSE research team, UPR Botany, UFR Biosciences, Félix Houphouët- Boigny University, Abidjan, Côte d'Ivoire

[3]UFR Biological Sciences, Peleforo Gon Coulibaly University, Korhogo, Côte d'Ivoire

[4]UFR Environnement, Jean Lorougnon Guédé University, Daloa, Côte d'Ivoire

[5]Swiss Center for Scientific Research (CSRS) - Abidjan, Côte d'Ivoire

[6]UFR Biosciences, Félix Houphouet-Boigny University, Abidjan, Côte d'Ivoire

ABSTRACT: Semi-structured interviews were conducted with 268 women in the Sous-préfecture of Kokumbo in central Côte d'Ivoire, in order to provide information on the role of women in the gathering, processing and marketing of products from species associated with cocoa trees in agroforestry systems. These interviews were coupled with direct observations alongside the women involved. The data collected was analyzed using descriptive statistics. The results of the investigations indicated that the majority of women (74.25%) of age to collect products from cocoa agroforests are between 16 and 50 years old. Over 65% of the women were illiterate, and 31.34% were heads of cocoa farms. The majority (41.05%) of women surveyed are actively involved in harvesting the associated products. Product processing in the study area is carried out entirely by women (100%). Processed products enable women to make better use of their produce. Also, it is during the lean season that the products bring in the most profit. Harvested produce is used primarily for household food consumption, with the surplus sold on the market. Income from the sale of cocoa products contributes to improving household living conditions, and also to the financial empowerment of women, while preserving the forest. The domestication of certain associated products should be envisaged by the women in order to have them available all year round for household consumption and eventual commercialization.

KEYWORDS: Women, Involvement, Uses, Associated species, Cocoa agroforests, Côte d'Ivoire.

RESUME: Dans l'optique de renseigner le rôle des femmes dans la cueillette, la transformation et de la commercialisation des produits issus des espèces associées aux cacaoyers des systèmes agroforestiers dans le Centre de la Côte d'Ivoire, des entretiens semi-structurés ont été menés auprès de 268 femmes de la Sous-préfecture de Kokumbo. Ces entretiens ont été couplé à des observations directes aux côtés des actrices. Les données recueillies ont été analysées à l'aide de statistiques descriptives. Les résultats des investigations ont indiqué que la majorité des femmes (74,25 %) en âge de collecter les produits issus des agroforêts à cacaoyers, ont entre 16 et 50 ans. Plus de 65 % des femmes sont analphabètes et 31,34 % sont chefs d'une exploitation cacaoyère. La majorité (41,05 %) des femmes interrogées participent activement à la récolte des produits

associés. La transformation des produits dans la zone d'étude est assurée par les femmes dans la totalité (100 %). Les produits transformés permettent aux femmes de tirer un meilleur profit de leur produit. Aussi, c'est lors des périodes de soudure que les produits rapportent le plus de bénénfices. Les produits récoltés sont destinés premièrement à la consommation alimentaire du ménage et le surplus est commercialisé. Les revenus issus de la vente des produits issus des cacaoyères contribuent à l'amélioration des conditions de vie des ménages et aussi à l'autonomisation financière des femmes tout en preservant la forêt. La domestication de certains produits associées doit être envisagée par les femmes afin d'en disposer toute l'année pour la consommation du ménage et de leur commercialisation éventuelle.

MOTS-CLEFS: Femmes, Implication, Usages, Espèces associées, Agroforêts à cacaoyers, Côte d'Ivoire.

1 INTRODUCTION

The main challenge facing global agriculture is to feed an ever-growing human population and provide energy and biomaterials while preserving natural resources [1], [2], [3], [4]. In the current context, notably the food crisis, climate change and the reduction in land available for agriculture, agroforestry systems appear to be a viable alternative in line with the Millennium Development Goals for combating world poverty [5]. Of all agroforestry systems, those based on the cocoa tree (*Theobroma cacao* L.) are of particular interest, as cocoa cultivation is generally considered to be a determining factor in deforestation in the tropics [6]. Cocoa agroforests are found in Asia, Latin America and Africa. Those best described in the literature are found in Indonesia [7], Mexico [8] and Brazil, where they are called cabrucas [9], as well as in Ghana [10], Nigeria [11], Cameroon [12], [13] and Côte d'Ivoire [14], [15]. Cocoa trees are the main component of these systems and are associated with other woody tree species that male and female farmers value and use according to their needs and knowledge of the environment.

Women possess extensive indigenous knowledge of the medicinal, nutritional, spiritual and economic uses of a wide range of non-timber forest products [16]. This knowledge has been passed down through generations from mothers to daughters. From their daily work, rural women have acquired close knowledge of their immediate environment, including the use of plants.

To achieve the goal of biodiversity conservation, a socially equitable system that promotes gender equality and empowers women needs to be established in rural areas living in cocoa production zones [17]. Women's participation in income management is increasingly seen as a means of achieving more sustainable development [18]. The efficient use of products from species associated with cocoa trees in cocoa-producing areas saves forest resources [19]. Conservation of forest biodiversity will be a mirage if the natural resources required by women in cocoa-producing areas cannot be met outside the boundaries [17]. In today's context, where forests are increasingly rare and the few that remain are protected by law due to their massive destruction for agriculture, agroforestry systems appear to be privileged places for supplying peasant populations [17].

Cocoa agroforests can meet women's natural resource needs. No women's empowerment initiative can be undertaken without knowing the role of women in the harvesting, processing and marketing of products, as well as the use of their income after sale. This study was therefore carried out to provide scientific knowledge on women's involvement in the use of products from species associated with cocoa trees in the forest-savanna transition zone in central Côte d'Ivoire. The aim was to describe the socio-economic characteristics of women involved in agroforestry. To determine the proportion of women involved in the exploitation of products from species associated with cocoa trees. Secondly, to determine how the products are used, how they are processed and how they are marketed after processing. Finally, to list the expenses incurred by women in their households, using the profits from the sale of their products from cocoa-based agroforestry systems in the study area.

2 METHODOLOGY

2.1 STUDY SITE

The study was conducted in the Toumodi department in central Côte d'Ivoire. The studies were carried out in five (5) villages hosting cocoa-based agroforestry systems identified by [14]. These were: Niamkey-Konankro, Langossou, N'Dakro, Bonikro and Kimoukro (Figure 1). The interest of the study area lies in the fact that it is part of one of the former large production areas commonly known as the cocoa loops (boucle du Centre-ouest) in Côte d'Ivoire. It is also an ecological zone of forest-savanna transition, where cocoa farming is carried out in the form of agroforests to cope with unfavorable environmental conditions. There are 3 types of agroforestry system [14]: simple FAS, complex FAS and young complex FAS (mixed). The relief of the study

area, consisting of low plateaus and a low-lying system of ripples and hills, belongs to "the Baoulé chain" [15]. This system known as “la chaîne baoulé” stretches from Mount Kokumbo in the southwest to Fétékro in the northeast. Altitudes range from 100 m to 550 m, and the main peaks include Kokumbo-Boka (505 m) and Orumbo-Boka (527 m). The equatorial climate is characterized by two seasons. The rainy season begins in February and ends in October, and the dry season runs from November to January. Average annual rainfall is 1176 mm, while annual temperatures vary between 26.5°C and 28°C [19].

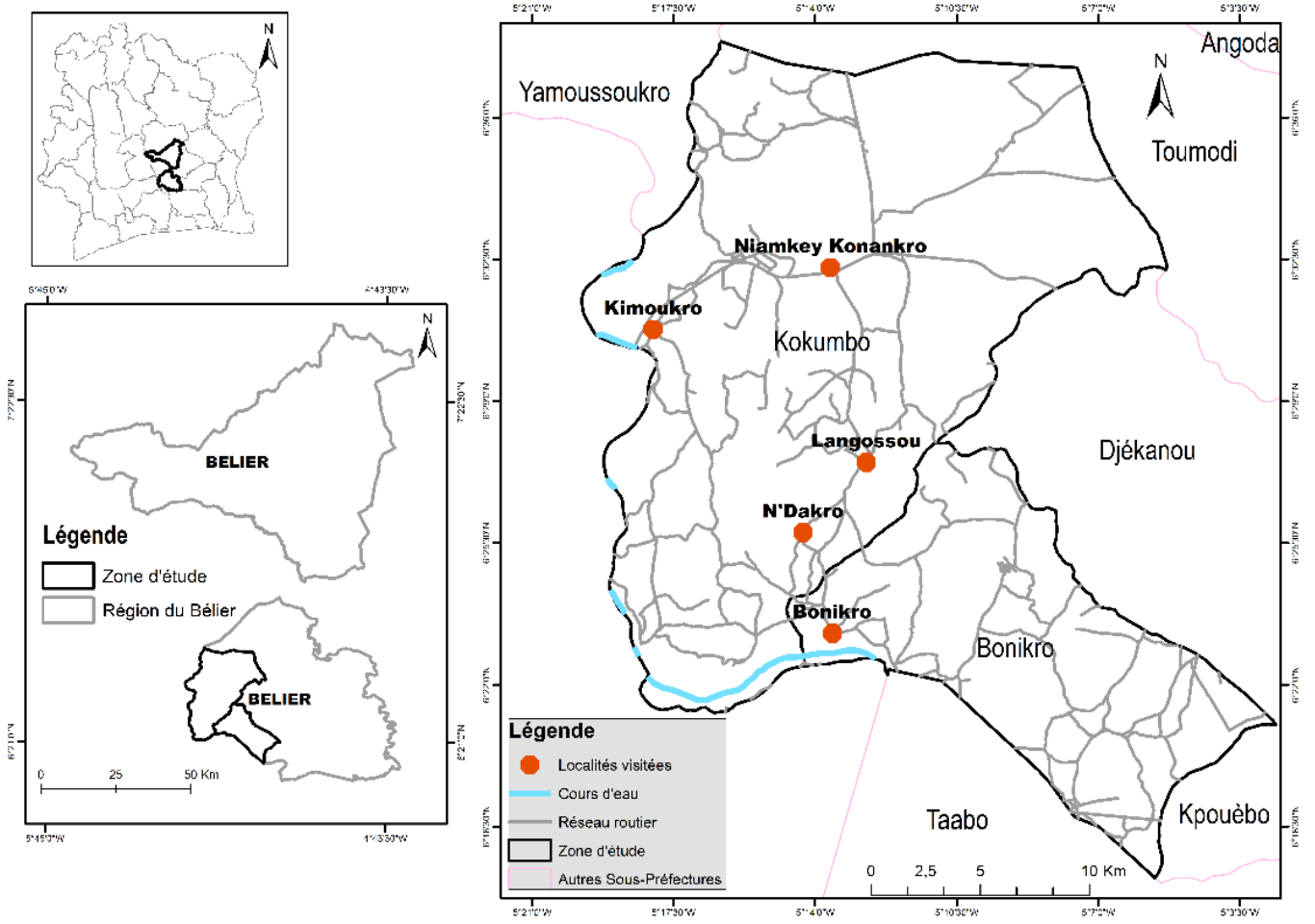

Fig. 1. Location of the study area

The zone’s climate and rainfall provide the minimum conditions for the development of cocoa production. According to Guillaumet and Adjonohoun (1971), the vegetation consists of a mosaic of Guinean savannahs and semi-deciduous dense rainforests with *Celtis spp* (Ulmaceae) and *Triplochiton scleroxylon* (Malvaceae). All these species, participate in the good development of cocoa trees by circumventing the natural conditions of this area which are considered unfavorable to cocoa cultivation (Kpangui et al., 2015).

2.2 DATA COLLECTION

Data for the study were obtained from two sources: semi-structured interviews and direct observation alongside actresses. The interviews consisted of questioning women involved in cocoa agroforestry in the localities visited, using a questionnaire that focused essentially on their socio-demographic profile, their role in harvesting, processing and marketing the products, and the use of their income after sale. However, the direct observations consisted of accompanying the interviewed women in their daily lives and in the places where the harvested products were processed (the kitchens). The aim of these observations was firstly to verify information on the activities carried out by these women on the cocoa farms in relation to the harvesting of the products. It was also an opportunity for us to verify the plant species associated with cocoa trees cited by the women during the interviews. Secondly, the observations enabled us to assist women in harvesting agricultural products associated

with cocoa trees, processing them (preparation of attiéké, cakes, doughnuts, drying products, etc.) at the preparation sites, and preserving and selling the harvested products at the markets. A total of 268 women working in cocoa agroforests in central Côte d'Ivoire were sampled for the study.

2.3 DATA ANALYSIS

Descriptive statistics were used to analyze the data. These included numbers, frequencies and percentages.

3 RESULTS

3.1 SOCIO-ECONOMIC CHARACTERISTICS OF RESPONDENTS

The socio-economic characteristics of respondents in the study area are presented in Table 1. A total of 268 women were interviewed in the five villages visited. Of all the women farmers interviewed during the study, 31.34% were female cocoa farm owners, and 68.66% were involved in cocoa farming through their husbands (bean farmer's wives). Nearly 85% of the women surveyed were married, compared with 15% who were single.

Most women (74.25%) involved in cocoa farming are young and under 50, while the remaining 25.75% are over 50. Thus, the proportion of women with schooling is 34.7% of all those surveyed, equivalent to 65.3% who are illiterate. Among women with schooling, those who said they had attended up to primary school were the most numerous (29.85%). Women with secondary education, on the other hand, are poorly represented, accounting for 4.85% of all educated women surveyed.

Tableau 1. Summary of information on women farmers in the Bélier

Variables	Description	% rate	Total
Level of education	No schooling	65.3	175
	Primary	29.85	80
	Secondary	4.85	13
Age groups	Under 50	74.25	199
	Over 50	25.75	69
Marital status	Married	84.33	226
	Single	15.67	42
Farm manager	Owner	31.34	84
	Non-owner	68.66	68,66

3.2 WOMEN'S PARTICIPATION IN DECISIONS TO CONSERVE OR INTRODUCE SPECIES INTO COCOA FARMS

The conservation or introduction of species into the cocoa farm depends on both men and women. However, the proportions differ according to the woman's status in relation to the cocoa plantation. If the woman is the head of the farm, 89.79% of her decisions as to which species to introduce and keep are made by her, with advice from her husband (7.18%) or friends and relatives (3.03%). When the wife is not the farm manager, it is her husband who controls the species to be combined, with a proportion of 91%. However, with her husband's permission, she may associate any food-producing species that can provide her with an income while covering the household's food requirements, at a rate of 6.1%. She also has the option of asking her husband to retain (2.90%) fruit species useful to her and the family.

3.3 COMPOSITION AND FLORISTIC DIVERSITY OF COCOA-BASED AGROFORESTRY SYSTEMS

The synthesis of survey data and direct observations yielded a list of 79 plant species in 67 genera and 31 families. The most represented genera are Solanum, Citrus and Cola. The Malvaceae (13 species), Solanaceae (7 species) and Fabaceae (6 species) families are the most diverse.

The majority of cocoa companion species are native to the Guinean-Congolese region (42%). They are followed by introduced species with a proportion of 29%.

Most of the species recorded are mesophanerophytes (32%), followed by microphanerophytes (28%). In terms of morphological types, trees dominate at 65%.

3.4 HARVESTING PRODUCTS FROM SPECIES ASSOCIATED WITH COCOA TREES IN THE STUDY AREA

Our investigations revealed that 41.05% of women were involved in harvesting products, compared with 58.95%, divided between their husbands (23.51%), children (20.52%), occasional harvesters known as "tréclés" (10.82%) in the study area, and labourers (4.1%). Figure 2 shows a woman collecting *Garcinia kola* (petit kola) fruits in her cocoa grove.

Women's involvement in collecting produce in the zone was mainly part-time (69.37%). On the other hand, 30.63% (Figure 3) are full-time collectors. What's more, 74.63% (Figure 4) of respondents collected from cocoa agroforests, 17% from fallow land and 8.37% from forests.

The transport of collected products from the fields to the village is mainly carried out by buyers (81.34%). They are followed by women and children at 42.54% and 22.39% respectively (Figure 5).

3.5 USE OF PRODUCTS FROM SPECIES ASSOCIATED WITH COCOA TREES IN THE STUDY AREA

Our surveys revealed that in the study area, women attribute 3 main functions to the products harvested from species associated with cocoa trees: self-consumption, sale and social use. Women are most interested in plant products collected for self-consumption, with a proportion of 53.32%. The sale of products is in second place with 45.18%. The function of least interest to the women interviewed is social (1.56%). The three species whose different parts are most used by women are listed in Table 2.

Fig. 2. Woman picking Garcinia kola fruit from her cocoa field in Niamkey-Konankro

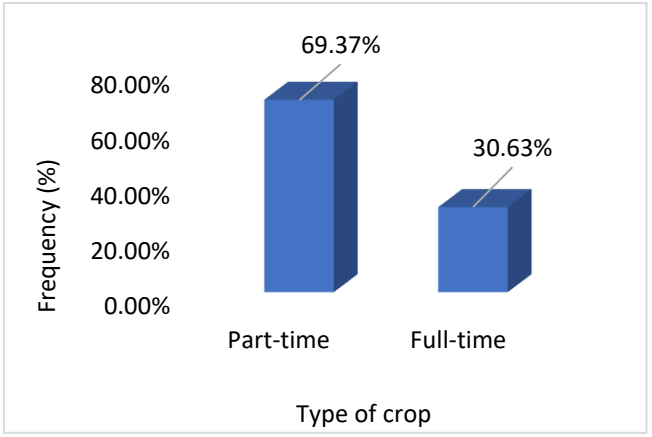

Fig. 3. Proportion of women's time spent collecting cocoa products

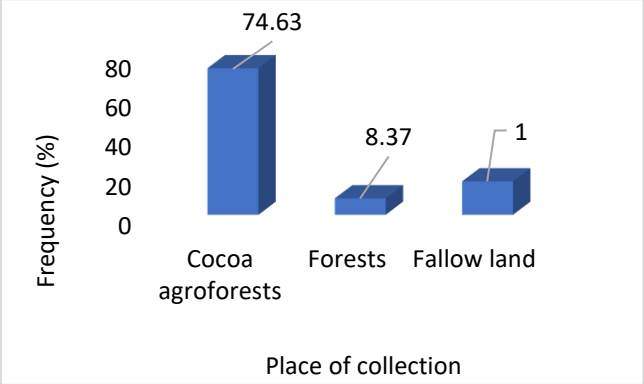

Fig. 4. Origin of products harvested by women in the study area

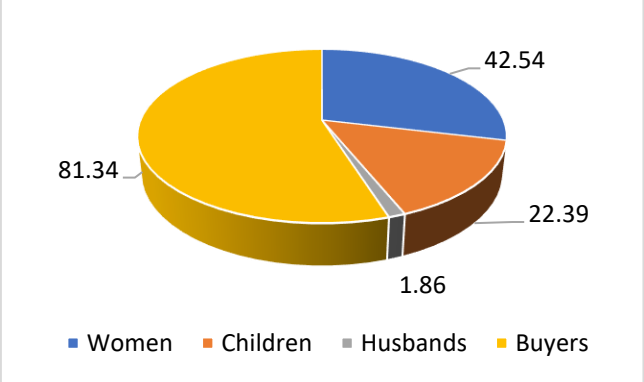

Fig. 5. People transporting products from species associated with harvested cocoa trees

Tableau 2. List of the top three (3) species whose different parts are most used by the women interviewed

Types of use	Scientific name	Plant parts used	Frequency of use
	Dioscorea spp.	Tuber	58.95 %
Food	*Musa paradisiaca*	Fruit	37.31 %
	Xanthosoma mafaffa	Tuber	29.85 %
	Musa paradisiaca	Fruit	25 %
Sales	*Persea americana*	Fruit	21 %
	Citrus sinensis	Fruit	12 %
	Musa paradisiaca	Fruit	16.55 %
Social	*Citrus sinensis*	Fruit	14.76 %
	Persea americana	Fruit	13.51 %

3.6 Processing And Marketing Of Harvested SAFC Products By Women In The Study Area

3.6.1 Product Processing

Interviews combined with direct observation show that women dominate this sector in its entirety, with a rate of 100%. They use rudimentary and archaic methods enabling them to add value to harvested products and market them at more profitable prices. *Manhiot esculenta* is the species whose product is mostly processed (into semolina commonly known as attiéké) by women in the study area (Figure 6).

Fig. 6. Preparation of attiéké (cassava semolina) by a woman in Bonikro

Next come *Musa paradisiaca, Dioscorea sp* and *Xanthossoma mafaffa,* which are served as foutou in restaurants and homes (Table 3). Aussu, dried young Ceiba pentandra leaves are ground into powder (commonly called namougou) for use as a sauce ingredient. And finally, *Abelmoschus esculentus* is dried and powdered (djumblé), sold on the market and used in sauces.

Tableau 3. Some products from cocoa agroforests processed by women

Scientific names	Vernacular names in baoulé	Processed products	Proportion (%)
Abelmoschus esculentus	Gbolou	Sauces, dried grains, powdered grains	31.72
Arachis hypogea	N'gatêh	Peanut paste, boiled seeds, roasted seeds, Sauce	41.04
Capsicum frutescens	Mankun n'	Dried fruit, spices	52.24
Carapa procera	Kodou	Soaps for personal hygiene	92.50
Ceiba pentandra	namougou	Sauce	3.73
Corchorus olitorius	Klalaa	Sauce	100
Elaeis guineensis	M'mé	Sauces, soaps, red oil	85.82
Dioscorea sp	Douo	''foutou'', grilled, boiled, braised	100
Garcinia kola	Petit kola	Dried almonds	20.52
Musa paradisiaca	Manda	''foutou'', grilled (alloco), boiled, braised, ''foufou''	80.22
Manhiot esculenta	Agba	''attiéké'', ''placali'', ''foutou'', ''cré-cré''	76.49
Xanthosoma mafaffa	Mankani	''foutou'', grilled, boiled, braised	69.03
Ricinodendron heudelotii	Akpi	Dried grains, spices, sauces	39.18
Zea mays	Ablé	Braised cob, boiled cob, dried grains, then wet and mashed ''cabatoh''	33.58

3.6.2 MARKETING PRODUCTS FROM SAFC

3.6.2.1 PROCESSED PRODUCTS

Products from species associated with cocoa trees are marketed mainly by women, and to a lesser extent by men. However, men only sell to wholesalers, while women sell to both retailers and wholesalers, commonly known as "logodougou". As production is unregulated, it is highly dependent on the seasons, with periods of great abundance, as well as periods of shortage when prices soar, leading the various players to store their production, which they can keep well in order to sell at better prices during the lean season.

Marketed products are mainly sold by number of organs or by heap (Figure 7), by box, bowl, bucket or bag.

This being the case, a 1000g box of dried okra (Figure 8) is sold at 3000 FCFA during the lean season, whereas the same box is sold at 1000-1500 FCFA during the production season. This is 2 to 3 times more expensive.

The 1000g box of akpi beans, which sells for 3000 FCFA during the production period, is 3 times more expensive than its initial price, and sells for 9000 FCFA or even 10000 FCFA during the lean season.

In the case of dried chillies, the same 1000g box fetches three times the price during the lean season. In fact, this quantity of pepper is sold at 500 FCFA during the period of abundance, whereas it is sold at 2000 FCFA during the period of shortage.

A bucket of eggplant (figure 9) sold at 500 FCFA in times of abundance increases to 4000 FCFA, a 7-fold gain. In order to have it available when it's hard to find, women dry their eggplant production to make a good and better profit.

Avocado is a highly commercialized product, with a bag of avocado that used to sell for 4000 FCFA rising to 8000 FCFA or even 12000 FCFA, i.e. 2 to 3 times more expensive than during the production period.

As for mandarin oranges, the price is multiplied by 4 during the lean season. This is also the case for plantains, whose price rises from 5000 FCFA to 18000 FCFA during the lean season.

Fig. 7. Heaps of "akpi" sold for 100 FCFA

Fig. 8. 1000g box of dried Abelmoschus esculentus (Okra) sold by Unprocessed products

Fig. 9. Bucket of Solanum melongena (eggplant) sold at 500FCFA during the production period

3.7 Main Expenses Incurred By Women With Income From Product Sales

Depending on their income from the sale of products from species associated with cocoa trees, wives share the family expenses with their husbands. The main expenses they incur are shown in table 4. After reinvestment in other, more lucrative activities, the top expenditure item is the purchase of condiments for food (76.12%). This is followed by children's school fees, which account for 48.13% of women's expenditure. Other expenses incurred by women include children's health care (44.77%), the purchase of agricultural inputs (33.58%) and, to a lesser extent, the purchase of clothing and footwear for children and themselves (5.60%). Also, 13.06% of women's other expenses are allocated to funerals, baptisms, weddings, the purchase of cell phones and communication credits, televisions and the supply of drinking water.

Tableau 4. Rates of women's main household expenditure after the sale of cocoa products

Main expense item	Frequency (%)
Food	76.12
Children's education	48.13
Health expenses	44.77
Purchase of inputs	33.58
Other	13.06
Clothing	5.60
Agricultural labor	4.85

4 Discussion

The results showed that most of the women involved in harvesting products from species associated with cocoa trees were young at 74.25% and under 50 years of age, while the remaining 25.75% were over 50. This result undoubtedly reveals the high productivity of women in the lower age bracket, which could be linked to vigor at this age. This concurs with the findings of [20], who reported high productivity in young rubber cones under the age of 18 46. On the other hand, the increasing age of women farmers imposes a constraint, because as their age increases, they have less capacity to contribute to field work. The high proportion of women under 50 involved in cocoa farming in the study area can be explained by the fact that it is when women are in this age bracket that they are economically more active [21]. In the study area, 65% of women involved in cocoa farming have never attended school. This low level of education among women could be explained by the reluctance of parents in previous decades to send young girls to school [22]. Indeed, for these parents, the woman's place is with her husband, in the household and for household activities. These findings are in line with those of [23] who, in his study in the Bahawalpur District of Pakistan, found that most respondents (66.7%) were illiterate, while 20% were at primary school and 10% at

baccalaureate level. Also, [24] found in their work in northern Jordan that 56.5% of rural women in the agricultural sector were illiterate. Our observations are also in line with those obtained by [25] in Ghana and Côte d'Ivoire. For this author, in the cocoa sector in Côte d'Ivoire, many women from rural communities have a low level of education. Nearly 85% of the women surveyed were married, compared with 15% who were single. This may be explained by the fact that women do not have easy access to land in the study area. Indeed, customary legislation does not allow women to inherit or have access to land. As a result, they are allocated a plot of land by their spouse or a family member on request, and participate as laborers on the family farm. However, these activities do not give them much financial autonomy. These results are in line with those of [19], who asserts that in the absence of a spouse, women only continue to cultivate the land with his or her agreement or that of his or her family. In the event of widowhood, they retain or leave the land on the decision of the family council. They have no control over this decision, which is motivated by their own status in the family, by the presence of children, particularly male children, by remarriage to another family member, by land availability, and so on.

The high percentage of women involved in the collection of products from species associated with cocoa trees is in line with reports by [16] and [26] that NTFP collection was dominated by women. This was also shown by the work of [27] during her work in cocoa crops in the Kokumbo sub-prefecture.

Women owners of cocoa farms take part in the majority (89.79%) of decisions concerning the species associated with cocoa trees. In fact, women's contributions to household agricultural decisions are a function of their financial contribution to household farming activities. These same assertions were made by [28], who emphasized that women's financial contribution to agricultural activities increases their involvement in decision-making concerning the allocation of agricultural resources. Our work is therefore identical to that of [29] in their study of the determinants of women's contribution to agricultural decision-making in cocoa-based agroforestry households in Ekiti State, Nigeria.

Women's active participation (41.05%) in harvesting non-timber forest products (NTFPs) from cocoa agroforests. This high level of participation is due to the fact that they use agroforestry products to ensure food and nutritional security at household level. This result is in line with those of [30] in Benin, where 90% of women collect shea nuts and fruits. This is also the case in Cameroon, according to [31], who claim that women and children gather the leaves of *Gnetum africanum,* used as a vegetable. Indeed, the diversity of vegetable species in terms of their leaves, fruits or edible organs can be harvested for sale or to feed the family by serving as a vitamin source [32]. The high rate of part-time harvesting (69.37%) could be due to the seasonal production of the species. This is in line with [26] observation that income from non-timber forest products merely supplements household income and tends to empower women economically. The high offtake of products in cacaya agroforests (74.63%) would be due to the availability of products in these systems. Our work confirms that of [33], [34] and [35], who have shown that agroforestry systems can diversify production through the simultaneous or sequential integration of trees and other woody or herbaceous plants, or animals, on farms, with the aim of improving social, economic and environmental benefits. It is well recognized that agroforestry systems of all kinds can deliver significant economic, social and environmental benefits at local, national and even global levels. According to [36], at the local level, not only can subsistence farmers practicing agroforestry see their socio-economic conditions improve, but the whole community can also reap the benefits.

Self-consumption (53.32%) is the primary function taken into account by women. For them, the species associated with cocoa trees help to provide foodstuffs such as leaves, condiments, wine, fruit and edible mushrooms. Such observations are contrary to those obtained by [37], [38] and [39]. For the latter, self-consumption would be ranked second to selling, which they favor. In addition, [27], working in the same study area as us, states that plants for food use rank third among the species used by the populations. This rank of self-consumption may be due to the fact that these authors had interviewed more men than women, as men's perception of these species differs from that of women. Furthermore, our results are in line with those of [40], who in their work on the diversification to be adopted for sustainable cocoa production in the implementation of the V4C project ranked the food use of species associated with cocoa trees in first place with rates of 49.2% and 51.38% respectively. The highly representative value attributed in this case to the sales function (45.18%), expresses the strategy of the actresses to diversify sources of income and even to live easily. Indeed, women farmers told us during the survey that their main objective in setting up cocoa farms was to earn money through the sale of dried beans. Following the drastic fall in the purchase price of merchantable cocoa to farmers, the introduction of fruit trees very quickly helped to increase incomes. Our work corroborates that of [41] on the cocoa crisis and producer strategies in the Meadji sub-prefecture in south-west Côte d'Ivoire.

The dominance of women in the processing (100%) of harvested products is due to the fact that they are the ones who best possess and master the know-how required to process agricultural products. These observations are similar to those of [42], who worked in Burkina Faso on the role and participation of women in the in situ conservation of agrobiodiversity. In the course of their work, these authors showed that women (95%) dominate the agricultural product processing sector. Also, this

result is also supported by that of [41] who in her work asserted that the marketing of most products from species associated with cocoa trees is carried out by women in southwest Côte d'Ivoire.

5 CONCLUSION

Women in Central Côte d'Ivoire are involved in the collection of products from species associated with cocoa trees, as this activity enables them to contribute to the improvement of their households' living conditions and, at the same time, to their financial empowerment. In central Côte d'Ivoire, mainly in the Toumodi Department, this study was undertaken to assess the role played by women in the processing and use of products from species associated with cocoa trees. The various surveys, statistical processing and analyses revealed that of the 268 women interviewed, 31.34% owned a cocoa farm, 84.33% were married and 74.25% were at least 50 years old. In the area, 34.7% of the women surveyed had attended school. In addition, the results of surveys coupled with direct observations in the plantations and itinerant surveys enabled us to identify a total of 79 plant species, divided into 67 genera and 31 families. The results also showed that women play an active role in harvesting the products, and are the ones who have the skills to process and sell them. Harvested produce is mainly used to feed the household, while the surplus is sold. Women benefit more from selling during the lean season. Income from the marketing of raw or processed products from cocoa agroforests enables women to contribute to their household expenses. In particular, they are able to pay for their children's schooling and health care, and improve their household's living conditions in terms of food and social conditions. Better organization of the marketing of their products could contribute to the autonomy of the women in this area and considerably improve the living conditions of their households. To this end, the Conseil Café Cacao should consider the domestication and free distribution of companion species of cocoa trees, which would be more profitable for women, so that they are available all year round to boost their incomes.

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