

DEVELOPING LOWLANDS IN THE REGION OF BASSEHOUE AND ZADIAHO (CENTRAL-WEST OF THE CÔTE D'IVOIRE)

Abstract

The lowlands are full of tremendous potential for agriculture thanks to the fertility of the soil and the permanence of water. In the areas of Zadiaho and Bassehoua, the population clears and cultivates the lowlands. This survey aims to analyze the development of the lowlands of these localities. To reach this objective, we are using documentary research on the use of lowlands. Different bibliographic sources are consulted : general work, theses, dissertations, articles and websites. 150 farmers selected by the reasoned choice method were interviewed. In addition, we used direct observation to immerse ourselves in the reality on the ground and interviews to collect information from traditional authorities. The results of the analysis showed that the farmers are mainly Ivorian (69.33%) and dominated by men (63%). A large proportion of illiterates (59.33%) and cohabitation (60%). The most used labor force is the family (72%). 50% of the population surveyed is aged between [30-40] years. Households of [5-10] people dominate the study area. The lowland farmers all use traditional equipments and the creation of the farm is done with their own funds (97%). 62% of farmers have access to land through rental. However, 92% of respondents denounce the lack of supervision. To overcome the various constraints, operators devise strategies.

Keywords : lowland, region, development, Zadiaho, Bassehoua

Introduction

Côte d'Ivoire benefits from favorable conditions for agricultural activities. Since its independence, it has focused its development on agriculture. Faced with an ever-growing population, the challenge of food security is becoming a problem for its leaders. Indeed, in 2009, investigations by the Ministry of Agriculture, the WFP and the FAO in the country side revealed that 12.6% of rural households are food insecure, including 2.5% and 10.1% respectively in a situation of severe and moderate food insecurity. These figures, compared to the rural population, show that this situation would affect approximately 1,269,549 people, including 232,602 people experiencing severe food insecurity (FAO, 2010, p.2). Political and administrative authorities must find food resources in quality and quantity to feed this population. Faced with these challenges, the lowland has great agronomic potential which makes it a strategic agricultural site, capable of providing palliatives to the pressure on the plateau lands. Their water retention capacities with very fertile and humid soils sometimes throughout the year, the occupation and use of the soil of the lowlands fill without risk of deceiving us, the agricultural losses especially in periods of drought. The lowlands with their natural wealth are the subject of increased interest in certain regions (Lavigne and Boucher, 1996 cited by O. O. Daoudou, 2012, p.8). The villages of Zadiaho and Bassehoua in the sub-prefecture of Guiberoua (Goh region) are located in a glacial landscape strongly dissected by valleys. Thus, numerous lowlands fill the space and constitute areas favorable to agricultural development. Without the help of state authorities, farmers develop and cultivate the lowlands. The valorization that farmers make of their lowlands is not the direct consequence of the potential of the environment, but the fruit of their production strategies, in given agroecological and economic contexts (D. Ph. Lavigne et

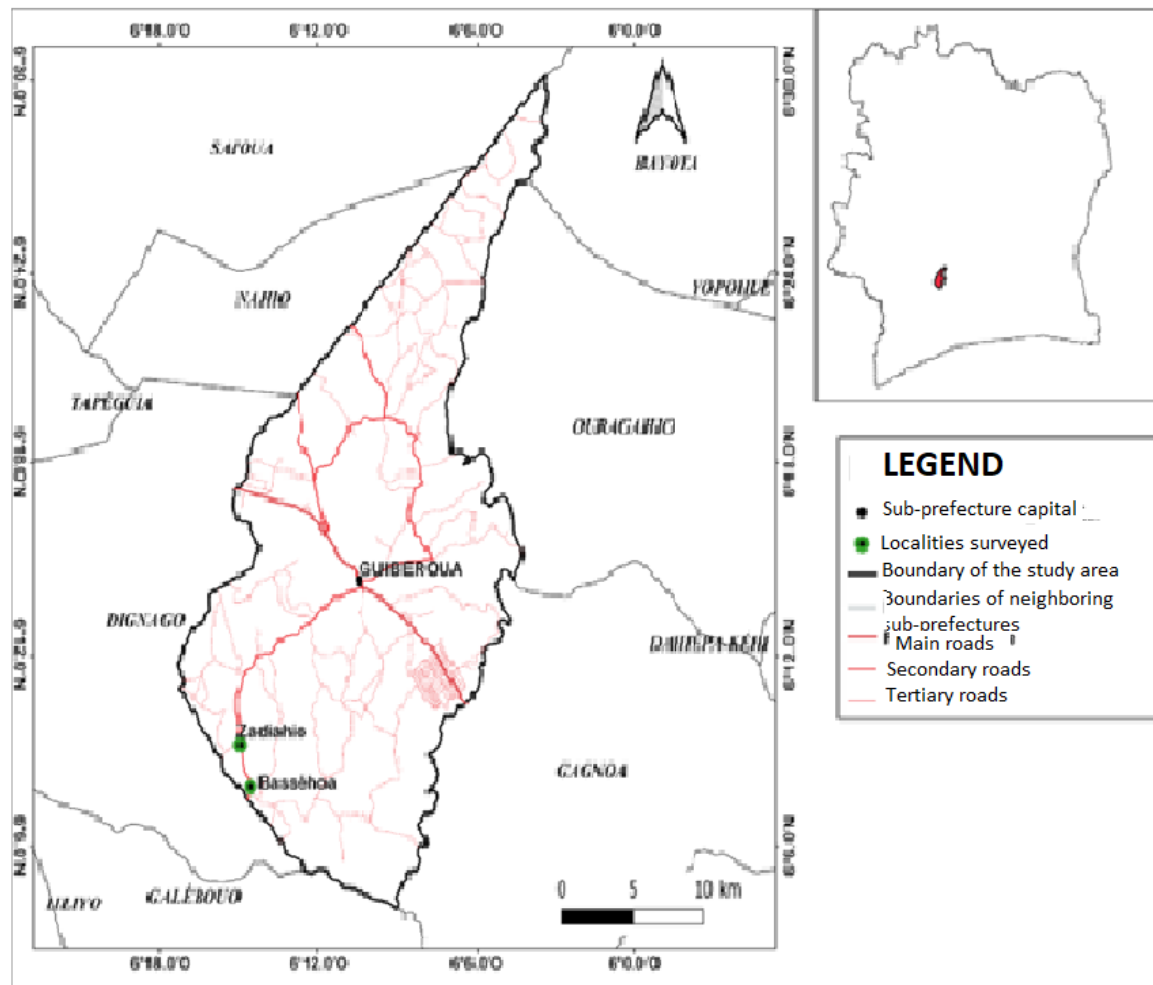
al, 1996, p.148). Various crops are grown there : cash crops (oil palm, rubber), food crops (rice and corn) and market gardening (tomatoes, eggplant). This renewed interest is due to the soil fertility of these agro systems as well as the better water conditions offered by these areas despite the global warming situation for the introduction of new speculations (M. Gibigayé cited by A. A. Iwikotan, et al, 2016, p.60). So what are the factors of agricultural productivity in the lowlands of the Zadiaho and Bassehoua areas ? This question raises a certain number of questions which are as follows :

- What are the means of production in the lowlands ?
- What are the agricultural production systems of the lowlands ?
- What are the farming constraints and adaptation strategies developed by local people ?

1-Presentation of the study area

The study takes place in the sub-prefecture of Guiberoua (Goh region). Located between latitudes 6°06'0" and 6°30' 0" North and longitudes 6°0'0" and 6°18'0" West, the sub-prefecture of Guiberoua is surrounded to the North by the sub-prefectures of Saioua and Bayota, to the South by the sub-prefecture of Galebouo, to the West by the sub-prefectures of Nahio and Degnago and to the East by the sub-prefectures of Gagnoa and Ouragahio (figure 1).

Figure 1 : Location map of the sub-prefecture of Guiberoua



Source : BNETD, 2018 Design - Production S. COULIBALY, 2024

The lowlands studied are those of the Zadiaho and Bassehoua region. The study area benefits from a Guinean-type transitional climatic regime, characterized by a rainy season from April to June where it reaches its maximum precipitation with 198.9 mm of rain. The second from August to October reaches its peak of precipitation with 222 mm of rain. The short dry season from July to September and the long dry season from November to March. The average temperature of the area varies between 25°C and 28°C (MEMPD.2015.p12)

The soils are of a hydromorphic type, little evolved in places and present in the thalweg of the valley in our study area. It is sometimes saturated with water and also clayey but relatively rich. We can also observe the presence of ferrallitic soils

It is an area drained by more than 80% by surface water (permanent or seasonal) and groundwater. The main river is the Davo. The last tributary of the Sassandra on the left bank, the Davo, 225 km long, takes its source in the Marahoué region at around 300m altitude. It flows in the north-south direction with an average slope of 1.1% (MEMPD. 2015. p12)

These different factors contribute to the development of vegetation. Swamp forests characterize the lowlands of the study site. The region is part of the forest zone with soil favorable to food and industrial crops.

the population of the sub-prefecture of Guiberouais estimated at 40,944 inhabitants (RGPH, 2021). It is made up of indigenous people from the Bété ethnic group, foreigners from other regions of Côte d'Ivoire and from the ECOWAS region (Malian, Burkina Faso, Guinean).

2. Methods and treatment

2.1. Data

Data collection techniques combine documentary research and field surveys. They allow the acquisition of qualitative and quantitative data. Documentary research is carried out from general works, theses, dissertations, articles and by consulting websites. The research focused on information relating to the use of lowlands. This information is supplemented by field data through direct observation allowing an understanding of field realities, questionnaire surveys among farmers and interviews with land managers. Focus groups are carried out with groups of operators to learn about their activities in the lowlands. The representative sampling of the population to be surveyed was developed using the method of reasoned choice defining rules in the selection of localities to be surveyed and people to be interviewed. Thus, depending on the level of the number of farmers using a lowland agro-system, the localities of Zadiho and Bassehoua were chosen. 150 farmers were interviewed based on criteria based on domicile in these villages and being a lowland farmer.

2.2. Data processing

The data collected was manually analyzed and then processed using Word 2016, Excel 2016, Qgis 2.5 software. The results obtained were translated into tables and graphs using the Excel spreadsheet. The World 2016 software allowed text processing and information entry.

3. Results

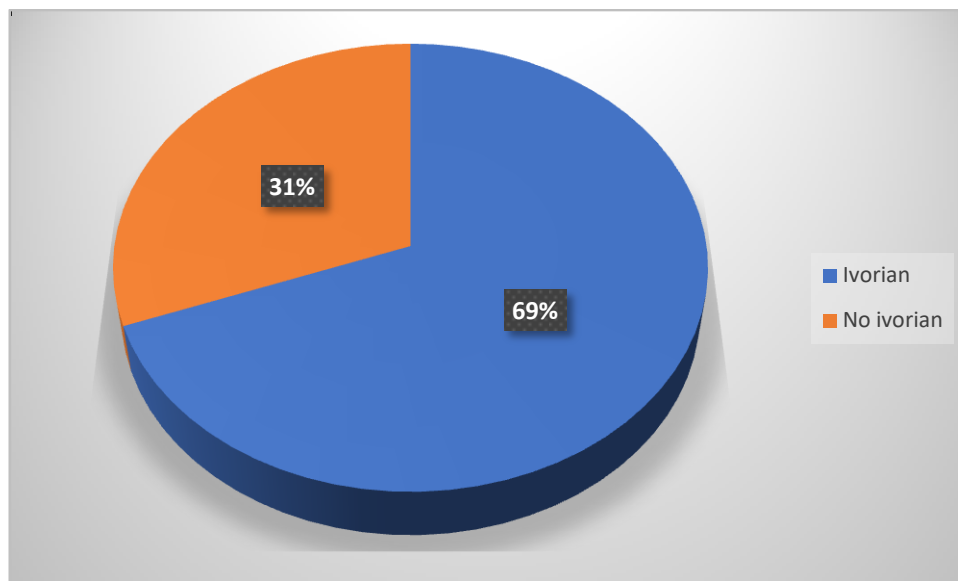
3.1. Characteristics of the production system

3.1.1. Socio-demographic profile of lowland farmers

- Operators mainly Ivorian

Our surveys reveal two types of operators in the lowlands: Ivorians and non-nationals. (Figure 2).

Figure 2 : distribution of operators according to nationality



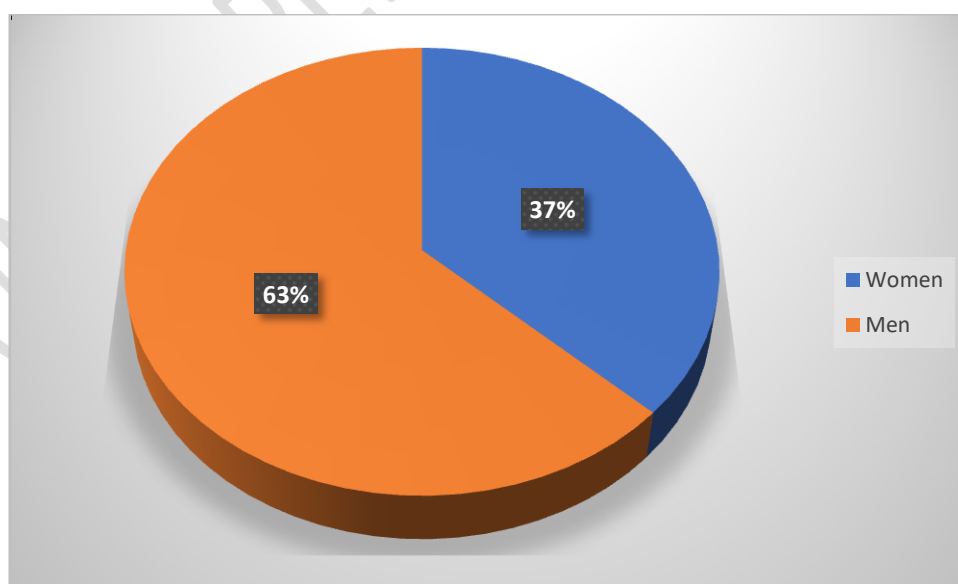
Source : Our 2024 surveys

Observation of Figure 2 reveals 30.67% of operators of non-Ivorian nationality and 69.33% of Ivorian nationality. This non-Ivorian population is made up of inhabitants of the ECOWAS region (Mali, Burkina Faso). The Ivorians are mainly Bété, Gouro, Senoufo and Yacouba.

- Farmers dominated by men

Male farmers dominate the Basseho and Zadih lowlands (figure 3). In fact, 63% of farmers are male. This gender disparity is cultural. In the sexual distribution of tasks, men concentrate on heavy work (rice cultivation and perennial crops). On the other hand, women focus on less difficult work, which does not require physical strength. They are thus found in market gardening, sowing activities and others. This explains their proportion of 37%.

Figure 3 : Distribution of operators by gender

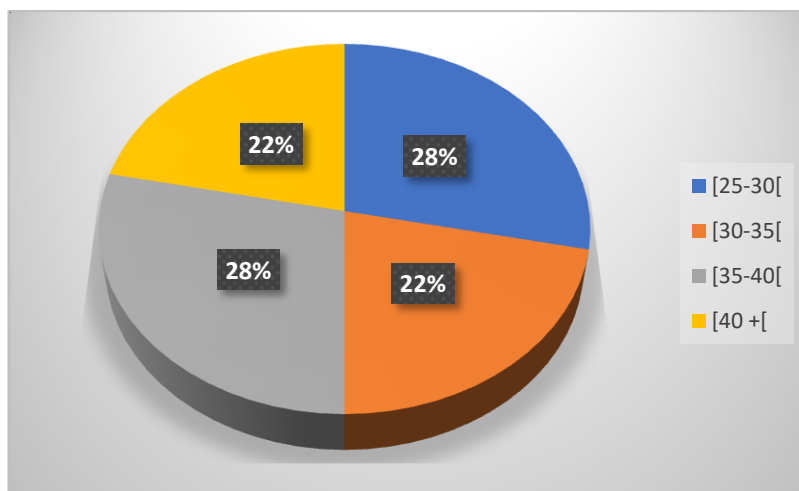


Source : Our 2024 surveys

- Distribution of famersaccording to age groups

To betterunderstand the demographics of ourfarmers, weanalyzed the distribution by age group (figure 4). The age groups are : [25-30[, [30-35[, [35-40[and [40+ [

Figure4 : Distribution of operators by age group



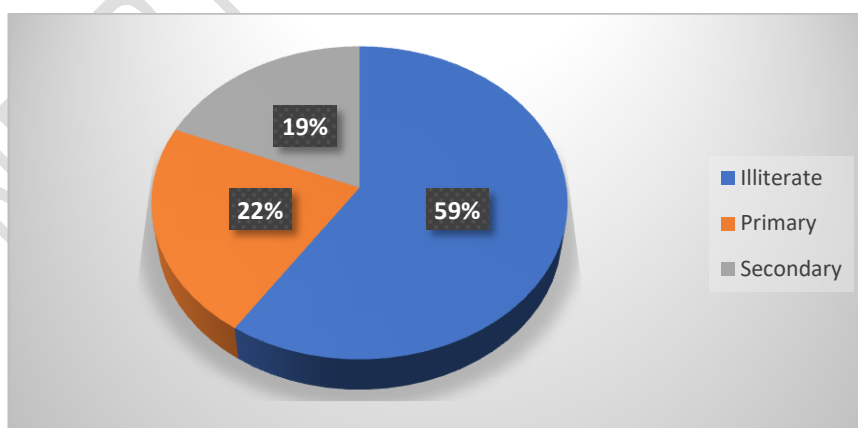
Source : Our 2024 surveys

The analysis of Figure 4 shows that 50% of the farmers have an agebetween [25 and 35 [. It constitutes the labor force. 28% are agedbetween [35-40[and 22% between [40 and+ [. This graph allows us to affirmthat the shallows are mainlyoccupied by able-bodied people capable of exploiting the space.

- Distribution of operatorsaccording to level of education

The operators are made up of illiterate people and operatorswithprimary and secondarylevel (Figure 5)

Figure 5 Distribution of farmersaccording to level of education



Source : Our 2024 surveys

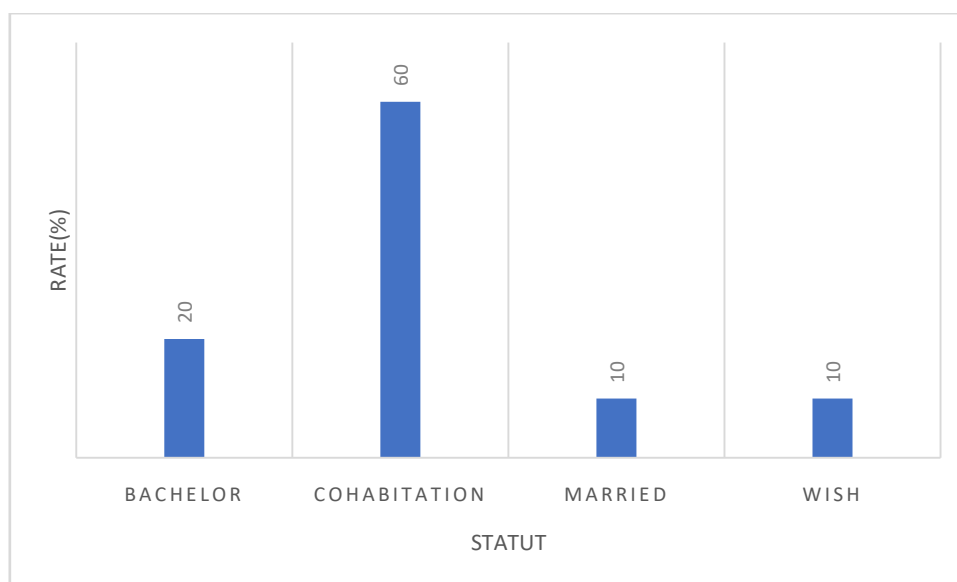
It appearsfrom the observation of Figure 5 that 59.33% of farmers are illiterate. This significant segment of illiteratesis an obstacle to the implementation of technological innovations,makingit

possible to improve yields and therefore increase their income. 22% of the operators surveyed have a primary level and 18.67% have a secondary level.

- Marital status of operators dominated by cohabitation

Lowland farmers have a diverse marital status (figure 6) : single, married, widowed and cohabiting.

Figure 6 : Distribution of operators according to marital status

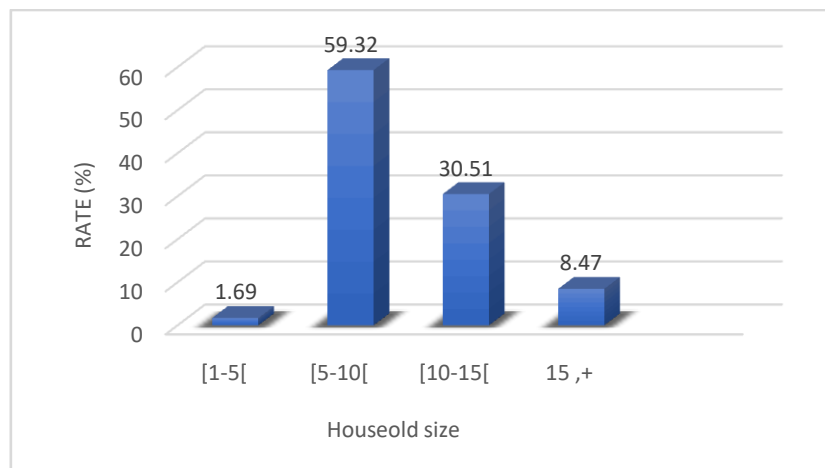


Source : Our 2024 surveys

Figure 6 highlights a high proportion of cohabitation (60%). Indeed, in rural areas, marriage is a family affair. Thus, the consent of the families of the bride and groom is enough for a wedding to be celebrated. Traditional marriage is most popular in rural areas although couples often go before the registrar to consecrate their marriage according to the standards of the laws of the republic. We then have 10% married people compared to 20% single people and 10% widows.

However, we can note that the size of the household can influence the resources for developing lowlands. Thus, in our study sites, it varies from one household to another (figure 7)

Figure 7 : Distribution by household size



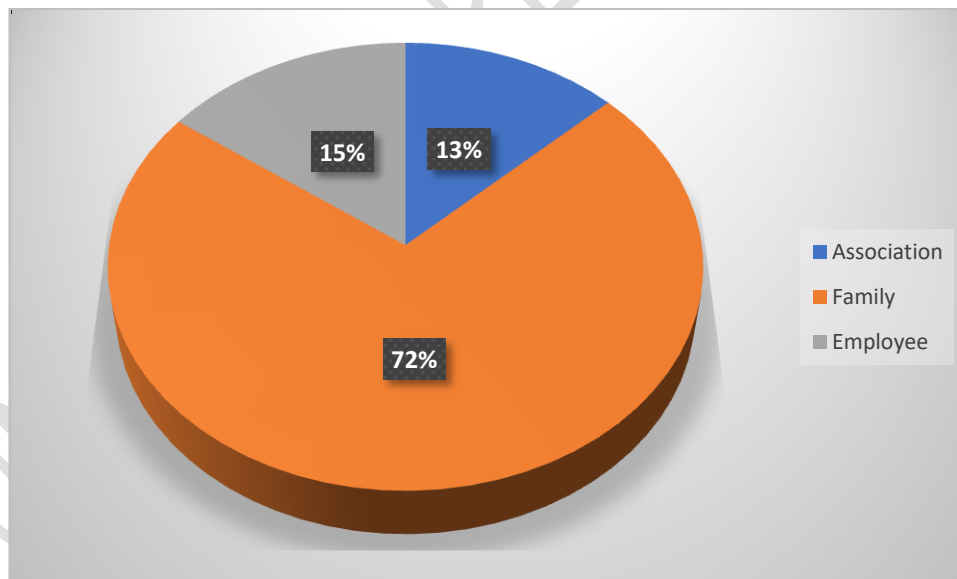
Source : Our 2024 surveys

Figure 7 reveals that households of [5-10[dominate the study area. They constitute 59.32% of the operators made up of young couples. Households of [10-15[represent 30.51% of farmers. 8.47% of operators are made up of 15 or more people. It is a reflection of the extended family. On the other hand, 1.69% of farmers have a household of [1-5[person.

- Type of labor

In agricultural production, labour is carried out by family members, in association and employees (figure 8).

Figure 8 : Distribution according to type of labor



Source : Our 2024 surveys

Observation of Figure 8 reveals that the most used labor force is the family members (72%). It is mainly made up of the head of household (the couple, children and family members). This labor is cheaper. On the other hand, the head of the household can request help from people outside the family. They use employees or association who are paid. The association is a group of people who offer agricultural services to those who request them in return for a sum of

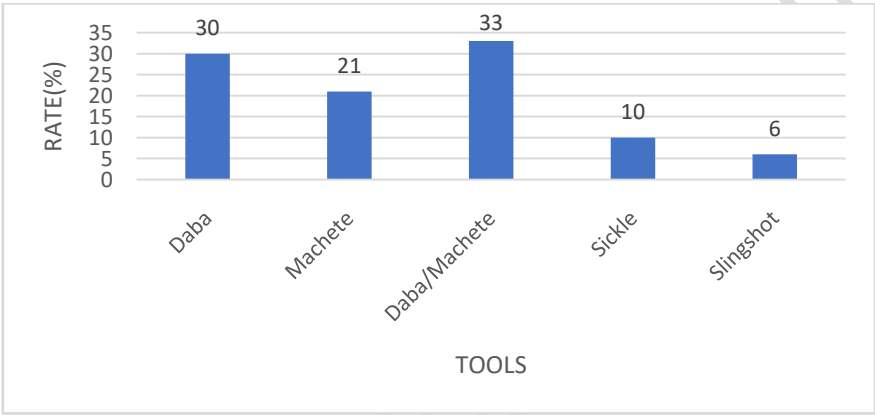
money. 13% of the operators surveyed use them. Only 16.66% of respondents are members of an association. 15% of operators use employees.

3.1.2. Material and financial resources

- The materials used by farmers

The lowland farmers all use traditional equipments (figure 9) such as daba, machete, stone thrower and sickles. Economic constraints are a barrier to their access to modern equipment. In addition, they do not have the necessary expertise to carry out agricultural work with modern tools. This worst equipment negatively impacts the production of farmers in the study area.

Figure 9 : Distribution of tools for developing lowlands



Source : Our 2024 surveys

It appears from examination of Figure 9 that machete-daba are used the most (33%). In fact, these tools are used in almost all jobs. They are affordable. The daba (photo 1) is used in market gardening, rice growing and the planting of perennial crops. 30% of respondents use it. 21% of operators use machetes. 10% use the sickle to cut rice. 6% of operators hunt birds using slingshots. These different tools are rudimentary and ineffective in obtaining quantity and quality production.

Photo1 : Dabas

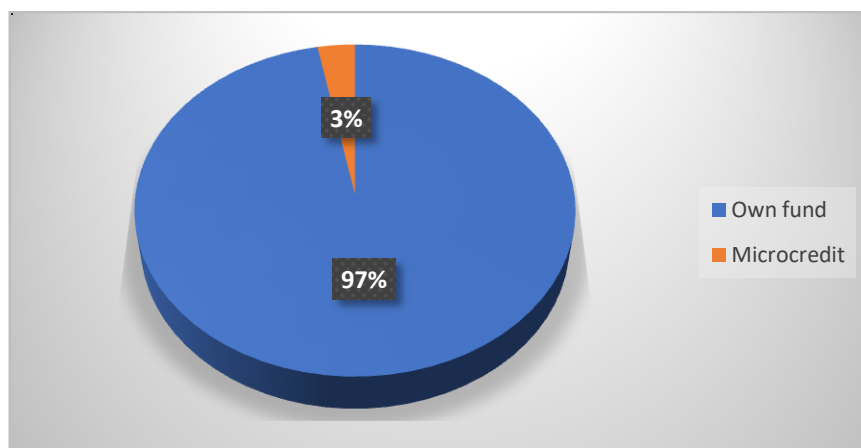


Cliché photo : Seidou COULIBALY, 2024

- Financial resources

In the creation and maintenance of lowland activities, operators resort to financial resources. These are observed by own funds and micro credit (figure 10).

Figure 10 : Distribution of operators according to the method of financing lowland activities



Source : Our 2024 surveys

It appears from the observation of this figure 10 that 97% of operators create and maintain their operations in the lowlands themselves. Only 3% have access to microcredit structures. We are in a rural environment and the populations do not have enough financial resources to finance their activities. Use of financing structures is quite rare. They must only rely on their own funds. The poverty of the population in this environment does not allow huge investments in their activities. Financing structures to grant loans require guarantees that operators cannot fulfil. This lack of financing has a negative impact on the size and yield of farms.

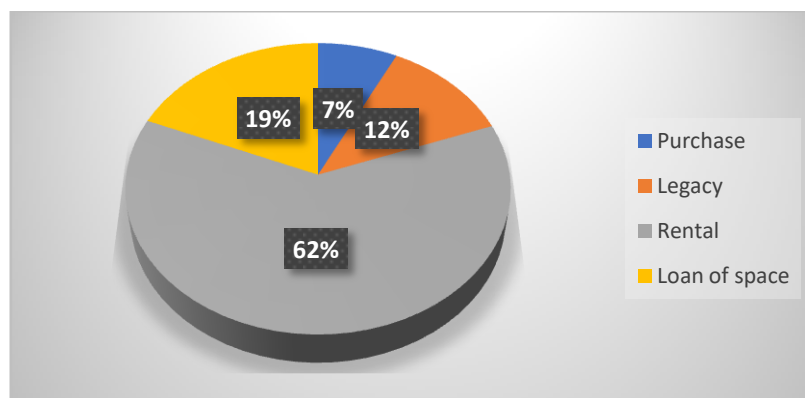
3.2. Cultivation practices in the lowlands

3.2.1. Modes of access to land and crops practiced in the lowlands

- Modes of access to lowland land

Inheritance, rental, purchase and loan are the main means of acquiring lowland land (Figure 11).

Figure 11 : Distribution of farmers according to the mode of access to lowland land



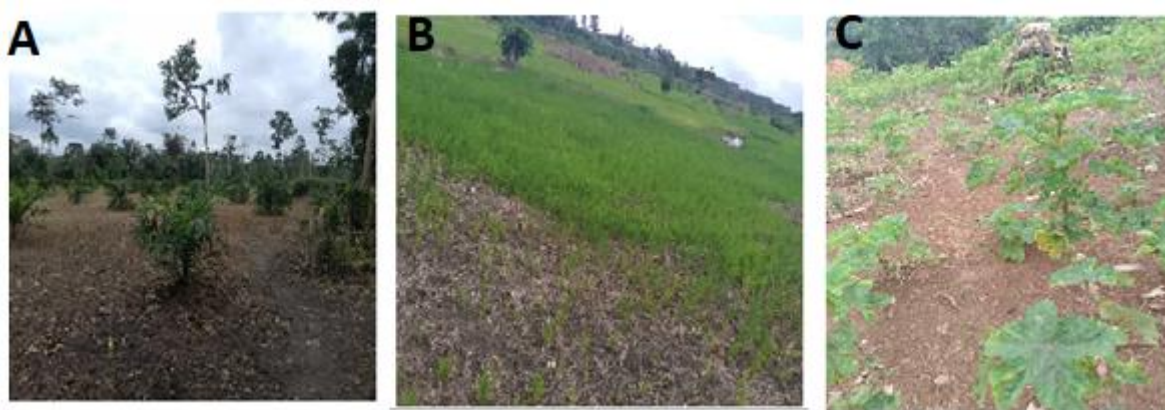
Source : Our 2024 surveys

Figure 11 reveals that 62% of farmers have access to land through rental. In fact, the indigenous population rent out their lowland lands. A contract binds the owner of the land (landlord) to the person who develops it (tenant). Payment is made in cash or in kind at the end of the harvest. 18.67% of farmers have access to land by loan. It is a contract which is carried out free of charge for a specific period of time. This type of acquisition is generally done between natives as a precautionary measure. By lending land to a third party, must be sure that the land will be returned to the owner in case of need. These are services that close relatives or friends provide to each other. 12% have access to land through inheritance. The beté inherits a patrilineal system. It is the son who inherits from the father. 7.33% of farmers have access to lowland land by purchase. This low rate is linked to the scarcity of plateau lands and the lowlands are the only spaces where populations can practice their activities. They refused to sell them.

- Crops grown in the lowlands

Different crops are grown in the lowlands : perennial crops, market gardening and food crops (plate 1). Perennial crops consist of rubber cultivation and palm tree cultivation. Food crops are mainly rice and corn. The market garden crops are : tomatoes and eggplants.

Plate 1 : A palm tree plantation B: Rice field C: Eggplant field



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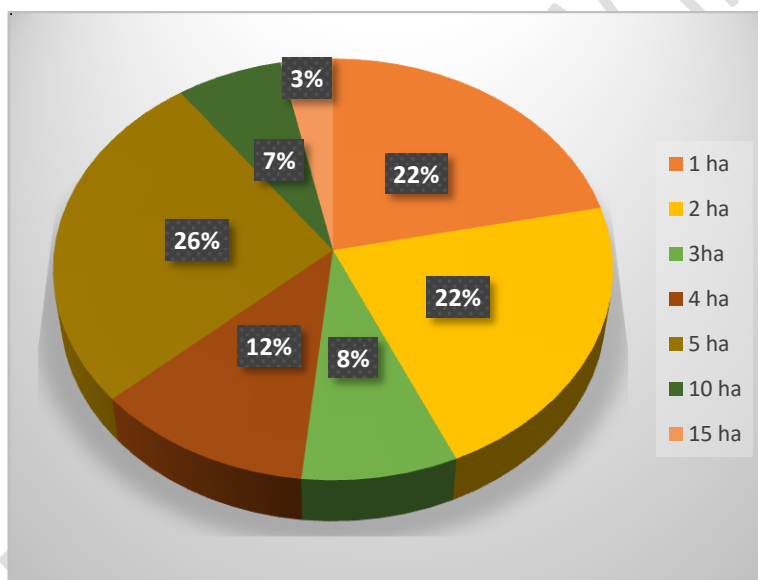
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266 These are plant crops for food use. The space is dominated by rice, corn and oil palm (78% of
267 farmers). 10% of farmers grow rice, eggplant and tomatoes. 5% of farmers grow tomatoes, corn
268 and rice. 5% of farmers have palm tree plantations, compared to 2% who grow rice and rubber.
269 This graph highlights rice production. Indeed, it is the staple food of the indigenous population
270 and holds a special place in the diet of the Ivorian population. Thus, each of the
271 respondents produces rice. They claim that it is used for consumption and marketing.
272 Palm tree and rubber are cash crops allowing farmers to have other sources of income.
273 Vegetable crops (eggplant and tomato) are cultivated much more by women. Maize grows in the
274 rainy season and is cultivated in the highlands by both men and women.

275 - Size of lowland plots

276 The size of lowland patches varies in space (figure 12)

277 Figure 12 : Distribution of farmers according to plot size



278

279 Source : Our 2024 surveys

280 Observation of the figure 12 shows that they are between 1ha and 15ha. The space is dominated
281 by 5ha plots which include 26% of farmers. 22% of farmers have plots of 2ha. This
282 percentage is also observed among farmers with 1ha. 12% of farmers have plots of 4ha compared
283 to 8% who have plots of 3ha. 10ha plots are observed in 7% of farmers. On the other hand,
284 those of 15ha correspond to 3% of operators.

285

286 3.2.2. Farming techniques for developing lowlands

287 Different farming techniques are implemented in the development of lowlands :

288 - In soil preparation the following techniques are used by farmers : weeding, collecting,
289 burning, planking, mounding and sowing.

When creating the field, it is necessary to remove weeds using the daba so that the plant develops healthily. This action is weeding. The collection will make it possible to group the weeds and participate in their burning with fire. These different operations prepare the nursery where the sowing will take place.

However, mounds or planks can be made for tuber plants. The most cited activities are Weeding/Collection/Burning/Plant/Nursery/Sowing. 56% of the operators surveyed engage in these activities. 13% practice Weeding/Collection/Plant/Nursery/Mound/Sowing activities. While 7% respectively carry out the activities of Weeding/Nursery/Sowing and Weeding/Collecting/Nursery/Burning/hilling. 3% respectively in the activities of Weeding/Sowing and Mounding/Burning/Nursery/Sowing/Weeding. 2% respectively in the Butte and Semis activities.

Plate 2 : A:Sowing corn in Basseho B:Transplanting rice plants in Zadioho



Cliché photo:Seidou COULIBALY,2024

- In field maintenance

It involves different activities: fertilizers spreading, weeding and monitoring.

Fertilizers spreading allows uniform distribution of fertilizing substances on cultivated plants. Fertilization provides the nutrients necessary for the growth of the plant. NPK chemical fertilizer contains three main nutrients: nitrogen; phosphorus and potassium. Each of these elements play a specific role in plant growth. As for urea, it plays almost the same role as NPK. 98% of farmers use these chemical fertilizers

Weeding involves removing weeds and improving the soil. It contributes to the smooth running vegetative cycle of the plant.

Crop monitoring is the regular observation of crops to prevent their destruction.

To varying degrees, these different operations are carried out by the operators of our study site. 95% of the farmers surveyed practice Monitoring/Spreading/Fertilizer compared to 2% and 3% respectively for Weeding/Spreading/Fertilizer and Spreading/Fertilizer. The practice of Monitoring/Spreading/Fertilizer considerably improves plant productivity.

- Harvesting techniques

Harvesting involves different activities : sickle cutting, drying, threshing, hulling, winnowing and others

Photo 2 : Threshing paddy in Bassehoa



Cliché photo : Seidou COULIBALY, 2024

Harvesting activities are dominated by Threshing Drying Winnowing Hulling activities. 28% of operators practice these operations. These are the main activities during harvest. Threshing drying Winnowing Hulling, Others, concerns 23% of farmers. We can note 20% of operators in Threshing Drying Winnowing operations. 10% of farmers practice Threshing Drying Winnowing Others Hulling. 3% of farmers in Threshing Drying Hulling Winnowing Others and 2% in the respective activities of Threshing Hulling Winnowing Drying, Threshing Drying Others Winnowing Hulling, Hulling Winnowing Drying Threshing, Drying Threshing Winnowing, Drying Winnowing Hulling, Drying Winnowing Hulling Threshing, Winnowing Hulling Others Drying Threshing, Winnowing Drying Threshing and others.

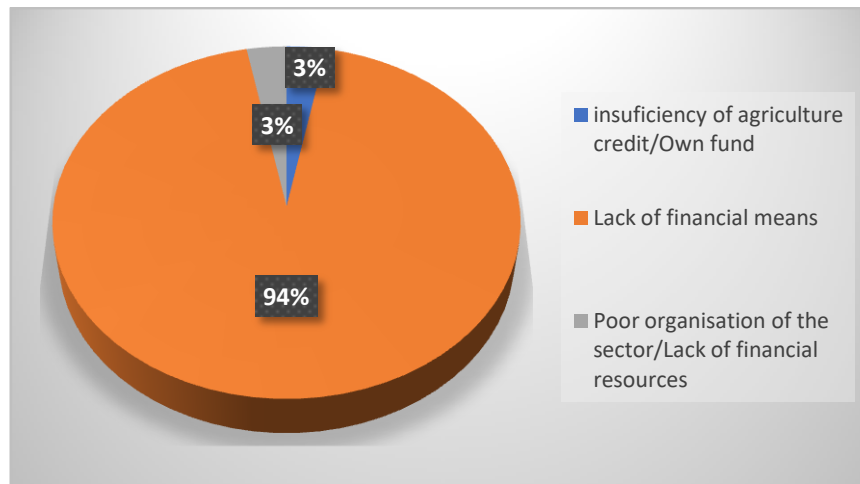
3.3. Constraints for developing lowlands and adaptation strategies

3.3.1. Farmers' constraints

The figure highlights the difficulties faced by farmers in developing lowland plots.

- Financial constraints

Figure 13 : Distribution of farmers according to financial constraints



Source : Our 2024 surveys

94% of operators surveyed highlighted a lack of financial resources (own fund). Indeed, the exploitation of lowlands requires significant financial resources. The cost of cleaning the plot increased from 18,000 F CFA to 35,000 F CFA per hectare. To fertilize one hectare, the farmer must have 5 bags of fertilizer divided into 2 bags of Urea and 3 bags of NPK. The unit price of a 50-kilogram bag varies between 20,000 F CFA and 25,000 F CFA. Labor remuneration increased from 1,500 F CFA to 2,000 F CFA per day. The producers most vulnerable to these constraints are small farmers who have low agricultural income. The rural population is poor. 3% expresses the insufficiency of agricultural credit/Lack of resources (own funds) and 3% notes the poor organization of the sector/Lack of resources.

- At the production level

The difficulties revolve around the lack of technical supervision and the modification of the agricultural calendar

Almost all operators (92%) denounce a lack of supervision. In Côte d'Ivoire, support/advice for producers is provided by a state structure : ANADER. Their main objective in the development of lowlands is to strengthen the technical and methodological skills of operators. Their absence deprives operators of certain skills.

The consequence of this situation is detrimental to productivity. 8% of farmers think that the change in the agricultural calendar impacts production. Indeed, with climate variability, farmers are unable to properly schedule the dates of different agricultural activities. Which has an impact on production. The figure also presents other constraints on the use of lowlands. 60% of operators denounce the lack of equipment/land problems. The scarcity of agricultural land leads to land conflicts. Combined with the lack of materials, this has a huge impact on production. 35% mention the lack of materials. Farmers are then confined to traditional agriculture using archaic equipment resulting in low productivity. 3% mentions an insufficient workforce. Lowland work requires physical endurance. Which is not attractive to the population. 2% highlights land issues.

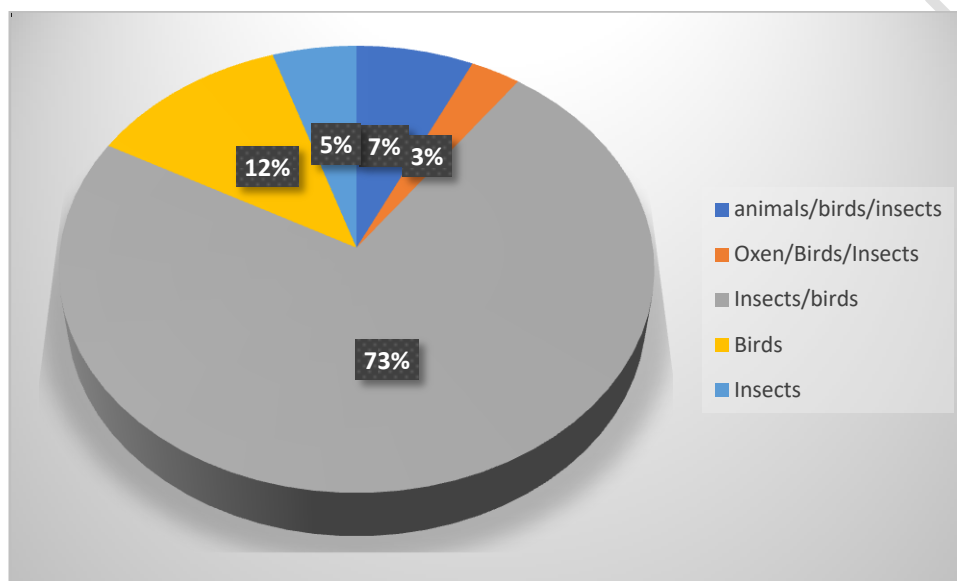
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377 - At the plant level

378 The presence of animals and insects is harmful to the development of plants (figure 14).

379 73% of farmers say that birds and insects pose threats to plants. Unlike 12%
380 who believe that birds destroy plants. 7% of farmers present animals, birds and insects as plant
381 destroyers. On the other hand, 5% think they are insects and 3% attribute them to cattle, birds
382 and insects.

383 Figure 14 : Distribution of farmers according to nuisance to plants



Source : Our 2024 surveys

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385

386 3.3.2. Coping strategies

387 - Agricultural calendar

388 The development of the agricultural calendar taking into account climatic variability. Thus, in the
389 sub-prefecture of Guiberoua, the sowing dates previously fixed and known in the crop calendar
390 are now partly determined by whether or not the rains fall. Furthermore, when the rains are late,
391 extra work and the use of earlier varieties are the responses that come into play to try to make
392 up for the delay in sowing. But these responses require additional labor and the varieties used are
393 frequently less productive and/or quite demanding in terms of soil fertility. In addition,
394 faced with the high risk of delaying the first rains, some producers have decided not to change
395 sowing dates. In doing so, they practice dry sowing in order to save time when starting the
396 crop. Certainly, these practices are very risky given the uncertainty over the start of the
397 rainy season. Rice farmers use short-term cycles. They practice up to two cultivation
398 cycles with the exception of some of them. The first rice growing cycle begins from April and
399 ends in July. However, it involves very complex water conditions compared to the second
400 cycle from October to February. Concerning market gardening, two types of market gardening
401 are perceived. This is seasonal market gardening which extends from April to July and off-
402 season market gardening from September to December. During the off-season,

market gardening is poorly developed due to the unavailability of water. On the other hand, in the rainy season, all portions of land on the slopes experience fairly significant anthropization.

- The use of improved seed varieties

Species sensitive to drought give way to others that are more resistant. Slow and continuous growing crops such as tubers (cassava, yam) are therefore preferred to critical stage crops such as corn, in order to limit the risk of zero harvest. In rice growing, the majority of respondents use improved seeds. When seed is not available, farmers use part of previous harvests. The main varieties of rice grown by our respondents are Chinese rice, parawane and Marcelline rice. Thus, 63.76% of rice farmers cultivate the Chinese rice variety on their plots compared to 26.7% of Marcelline and 10.07% of parawane rice.

- The association of cultures

The traditional method of combining crops in the lowlands does not differ from that found in all forest areas of the country. The field investigation showed that over the years, vegetables which were planted alone were integrated into crop associations.

This technique gives rise to complex combinations considered very interesting in terms of nutritional complementarity, in the spreading of crops and ground cover. Thus, on these slopes, we generally encounter market gardening species and other food crops in associations. The objective is to limit risks while contributing to food safety. This cultural strategy allows maximum coverage of the space which reduces erosion and weeding.

- The grouping of operators into associations

Grouping together into an association is a palliative to the lack of labor. In its objective, the association advocates mutual aid between its members. 50% of the operators surveyed said they belong to an association. In our surveyed areas different associations have emerged: "The Brave Men of Zadihio", "Andouho", "The Fighting Women of Zadihio", "Together We Are Strong", "The Brave Men of Bassehoa and The Brave Women of Bassehoa. These associations participate in the economic and social development of its members.

4. Discussion

The lowlands contribute to the economic and social development of populations and localities. Indeed, they offer natural assets (climate, soil, vegetation) favorable to agricultural development. Their development requires production factors. Thus, the socio-demographic profile in the areas of Zadihio and Bassehoa is characterized by a dominance of Ivorians. This result corroborates those of A. M. Koffi-Didia and K. L. Konan in the lowlands of Gagnoa (2012). However, this population of the lowlands is predominantly male. This observation is shared by certain authors (Zidago (2014. p.67) and Kambou (2008, p.64)). However, Iwikotan et al (2011.p.35) affirm in a study carried out in the lowlands of Gankpétin, Gomé, Odo-Otchère and Yaoui in the department of Collines in the center of Benin a strong female presence. These remarks are reinforced by O. A. Daoudou (2012.p43) in the valorization of the lowlands of the district of Offe where he notes that the operators of the lowlands are mainly women (55%) Moreover, the illiteracy of the operators is an obstacle to

innovative practices (Toulmin C. and Guèye B. (2003. p.10), Salifou S. (2019.p379). 59.33% of operators are illiterate. 50% of operators are between 25 and 35 yearsold important in the context of the development of the lowlands. Unlike the studies by M. M.Dama - Balima (2009.p211) and Y.F. Diabaté. (2024) which highlight an aging of operatorswhoseage range isbetween [40 years and + [. In the valorization of the bottomland, the agricultural material. Used by farmersistraditional, whathas a negative impact on productivity. However, O. A. Daoudou (2012. p.35) points out that as part of the Agricultural Equipment Promotion Program, Dani and Gobé benefitedfromtractorsgranted to farmers in the municipality of Savè. This contributes to the modernization of cultural practices. In financingactivities, operatorsworkwiththeirownfunds (92%). To grantcredit, financing structures requireguaranteesthatoperatorscannotprovide (K. Serikpa. 2023. p. 56).

With the scarcity of plateau land, agricultural activities are movingtowards the lowlands.

A. Kindjnou (2013. P57) emphasizes thatlowlands are agrosystemswherewecan find fertile land and better water conditions for the introduction of new crops (arboriculture, marketgardening, ricegrowing). The lowlands are multi-use spaces, wherefarmers practice, in complementarity or in competitionwithother uses (fishing, gathering, grazing, brick making, etc.), cultivation systems. diversified (arboriculture, marketgardening, tubers, ground or floodedrice) (D. P.Lavigne-. 1998. p77). In Zadiahio and Bassehoa the differentcropspracticedare :perennialcrops (oilpalms and rubbertrees), marketgardeningcrops (tomatoes, eggplants) and foodcrops. Agricultural products are used for consumption and marketing. Thus, the exploitation of lowlandsallowsfarmers to diversify not onlycrops but alsotheir sources of income (ADRAO, 2005 cited by O.A. Daoudou, 2012, p.15).

The creation of the fieldinvolvesdifferentsteps :soilpreparation, maintenance of the plot and harvest. However, as G. Festana (2004 p. 100) observes, workisguided by a sexual division of activities. Man, helped by theyoldest sons, areresponsible for preparing the fields :felling, burning, plowing and sowing. Women are responsible for most of the weeding and harvestingwhilechildren are responsible for monitoring the field for parasiticanimals. Furthermore, these populations are facedwith certain financial and production difficulties. These findings are alsonoted by M. E. Depieu et al. (2017, p. 90)in Gagnoa. To overcometheseconstraints, adaptation strategies are implemented, including the adjustment of the agricultural calendar, the use of improvedseeds, the association of crops and the grouping of farmersinto associations. Conclusion

The lowlandsarousegreatinterestamong populations. Theyensurefoodsecuritythroughfoodcrops (rice, corn) and vegetablecrops (tomatoes, eggplants). It isalso a source of incomethanks to the marketing of cash crops (palm oil, rubbertrees), foodcrops and marketgardening. The development of theselowlandsisbased on a heterogeneous population made up of indigenous and non-native people. Famersisdominated by nationals (60.33%), men (60%), agedbetween 35 and 40 years (28%), illiterates (59.33%), cohabitation (60. %), households of [5-10[people and familylabor (72%). The toolsusedare essentiallytraditional. The financing of the plot'sactivitiesisdonefromownfunds (92%). Weeding/Collecting/Burning/Planking/Nursery/Sowingactivitiesdominate (56% of farmers). 95% of the farmerssurveyed practice Monitoring/Spreading/Fertilizer. Harvestingactivities are dominated by Threshing Drying WinnowingShellingactivities (28%). The spaceisdominated by rice, corn and palmtree (78%). The method of access to land isgenerallyrental (62%).

488 Constraints are disparaged by Farmers :However, farmers are developing strategies to
489 overcome these difficulties :adjusting the agricultural calendar, using improved seed varieties,
490 combining crops and grouping farmers into associations.

491 Better understanding the logic of valorization of lowlands by farmers enables us to understand
492 the social, economic and technical determinants used by the populations.

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