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

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Abstract

The lowlandsare full oftremendouspotential for agriculture thanks to the fertility of the soil and the permanence of water. In the areas of Zadiaho and Bassehoua, the populationclear and cultivate the lowlands. This surveyaims to analyze the development of the lowlands of theselocalities. To reachthis objective, we are usingdocumentaryresearch on the use of lowlands. Differentbibliographic sources are consulted : generalwork, theses, dissertations, articles and websites. 150 farmersselected by the reasonedchoicemethodwereinterviewed. In addition, weused direct observation to immerseourselves in the reality on the ground and interviews to collect information fromtraditionalauthorities. The results of the analyzesshowedthat the farmers are mainlyivorian (69.33%) and dominated by men (63%). A large proportion of illiterates (59.33%) and cohabitation (60%). The mostusedlabor force isthe family (72%). 50% of the population surveyedisagedbetween [30-40[years. Households of [5-10[people dominate the study area. The lowlandfarmers all use traditionalequipments and the creation of the farmisdonewiththeirownfunds (97%). 62% of farmers have access to land throughrental. However, 92% of respondentsdenounce the lack of supervision. To overcome the variousconstraints, operatorsdevisestrategies.

Keywords : lowland, region, development, Zadiaho, Bassehoa

Introduction

Côte d'Ivoire benefitsfrom favorable conditions for agricultural activities. Sinceitsindependence, it has focuseditsdevelopment on agriculture. Facedwith an ever-growing population, the challenge of foodsecurityisbecoming a problem for its leaders. Indeed, in 2009, investigations by the Ministry of Agriculture, the WFP and the FAO in the countrysiderevealedthat 12.6% of rural households are foodinsecure, including 2.5% and 10.1% respectively in a situation of severe and moderatefoodinsecurity. These figures, compared to the rural population, show thatthis situation would affect approximately 1,269,549 peoples, including 232,602 people experiencingseverefoodinsecurity (FAO, 2010, p.2). Political and administrative authorities must findfoodresources in quality and quantity to feedthis population. Facedwiththese challenges, the lowland has greatagronomicpotentialwhichmakesit a strategic agricultural site, capable of providing palliatives to the pressure on the plateau lands. Their water retentioncapacitieswithvery fertile and humidsoilssometimesthroughout the year, the occupation and use of the soil of the lowlandsfillswithoutrisk of deceiving us, the agricultural lossesespecially in periods of drought. The lowlandswiththeirnaturalwealth are the subject of increasedinterest 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 glacis landscapestronglydissected by valleys. Thus, numerouslowlandsfill the space and constitute areas favorable to agricultural development. Without the help of state authorities, farmersdevelop and cultivate the lowlands. The valorizationthatfarmersmake of theirlowlandsis not the direct consequence of the potential of the environment, but the fruit of their production strategies, in givenagroecological and economiccontexts (D. Ph. Lavigne et

al, 1996, p.148). Variouscrops are grownthere : cash crops (oil palm, rubber), foodcrops (rice and corn) and marketgardening (tomatoes, eggplant). This renewedinterestis due to the soilfertility of theseagrosystems 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 Bassehouaareas ? This question raises a certain number of questions which are as follows :

- What are the means of production in the lowlands ?

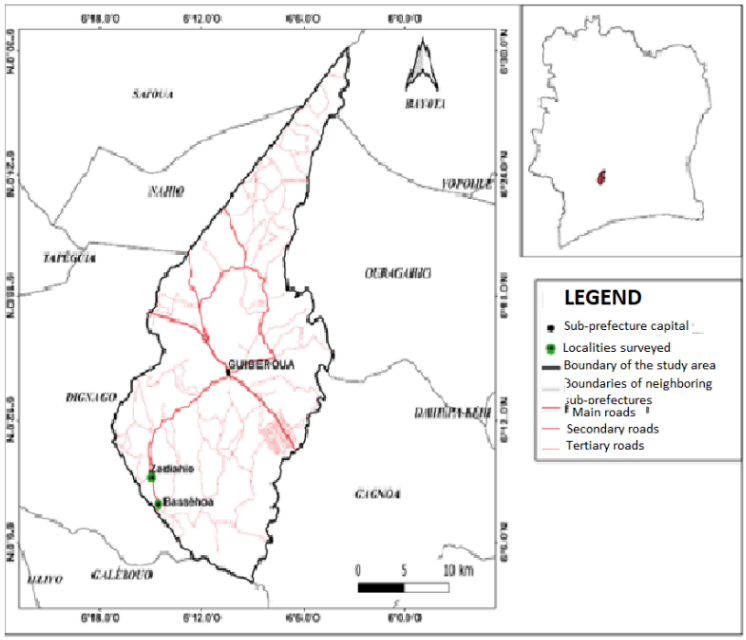
- What are the agricultural production systems of the lowlands ?

- What are the famingconstraints and adaptation strategiesdeveloped by local people ?

1-Presentation of the study area

The studytakes place in the sub-prefecture of Guiberoua (Goh region). Locatedbetween latitudes 6°06'0" and 6°30' 0" North and longitudes 6°0'0" and 6°18'0" West, the sub-prefecture of Guiberouaissurrounded 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 lowlandsstudied are those of the Zadiaho and Bassehouaregion. The studies area benefitsfrom a Guinean-type transitionalclimaticregime, characterized by a rainyseasonfrom April to June whereitreachesits maximum precipitationwith 198.9 mm of rain. The second from August to Octoberreachesitspeak of precipitationwith 222 mm of rain. The short dry seasonfrom July to September and the long dry seasonfromNovember to March. The averagetemperature of the area varies between 25°C and 28°C (MEMPD.2015.p12)

The soilis of a hydromorphic type, littleevolved in places and present in the thalweg of the valley in ourstudy area. It issometimessaturatedwith water and alsoclayey but relativelyrich. Wecan also observe the presence of ferraliticsoils

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 leftbank, the Davo, 225km long, takesits source in the Marahouéregion at around 300m altitude. It flows in the north-south direction with an averageslope of 1.1% (MEMPD. 2015. p12)

Thesedifferentfactorscontribute to the development of vegetation. Swampforestscharacterize the lowlands of the study site. The regionis part of the forest zone withsoil favorable to food and industrialcrops.

the population of the sub-prefecture of Guiberouaisestimated at 40,944 inhabitants (RGPH, 2021). It is made up of indigenous people from the Bété ethnie group, foreignersfromotherregions of Côte d'Ivoire and from the ECOWAS region (Malian, Burkinabe, Guinean).

2. Methods and treatment

2.1. Data

Data collection techniques combine documentaryresearch and fieldsurveys. Theyallow the acquisition of qualitative and quantitative data. Documentaryresearchiscarried out fromgeneralworks, theses, dissertations, articles and by consulting websites. The researchfocused on information relating to the use of lowlands. This information issupplemented by field data through direct observation allowing an understanding of fieldrealities, questionnaire surveysamongfarmers and interviews with land managers. Focus groups are carried out with groups of operators to learn about theiractivities in the lowlands. The representative sampling of the population to besurveyedwasdevelopedusing the method of reasonedchoicedefiningrules in the selection of localities to besurveyed and people to beinterviewed. Thus, depending on the level of the number of farmersusing a lowlandagrosystem, the localities of Zadiho and Bassehouawerechosen. 150 farmerswereinterviewedbased on criteriabased on domicile in these villages and being a lowlandfarmer.

2.2. Data processing

The data collectedwasmanuallyanalyzed and thenprocessedusing Word 2016, Excel 2016, Qgis 2.5 software. The resultsobtainedweretranslatedinto tables and graphs using the Excel spreadsheet. The World 2016 software allowedtextprocessing and information entry.

3.Results

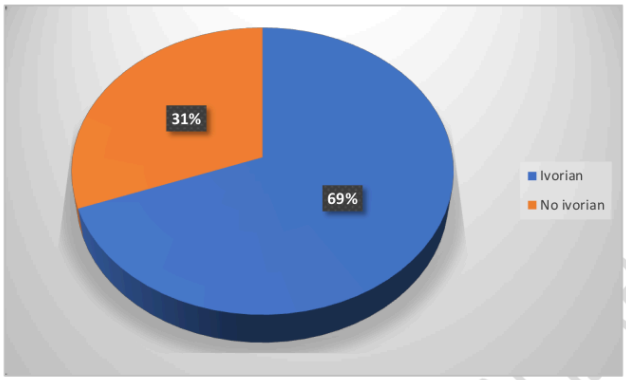
3.1. Characteristics of the production system

3.1.1. Socio-demographic profile of lowlandfarmers

- OperatorsmainlyIvorian

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

Figure 2 : distribution of operatorsaccording to nationality



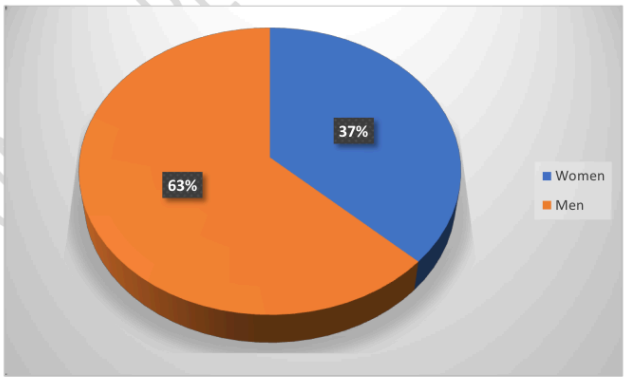
Source : Our 2024 surveys

Observation of Figure 2 reveals 30.67% of operators of non-Ivoriannationality and 69.33% of Ivoriannationality. This non-Ivorian population is made up of inhabitants of the ECOWAS region (Malians, Burkinabés). The ivorians are mainly Bété, Gouro, Senoufo and Yacouba.

- Farmersdominated by men

Male farmersdominate the Bassehoa and Zadiaholowlands (figure 3). In fact, 63% of farmers are male. This genderdisparityis cultural. In the sexual distribution of tasks, men concentrate on heavywork (rice cultivation and perennialcrops). On the other hand, women focus on lessdifficultwork, whichdoes not requirephysicalstrength. They are thusfound in marketgardening, sowingactivities and others. This explainstheir proportion of 37%.

Figure 3 : Distribution of operators by gender

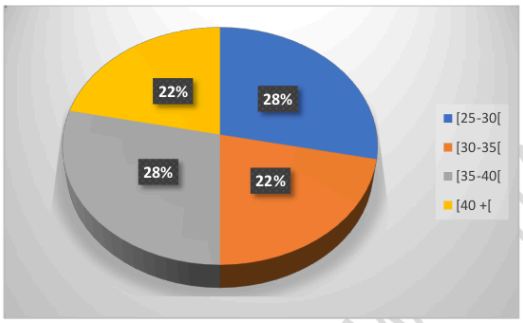


Source : Our 2024 surveys

- 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



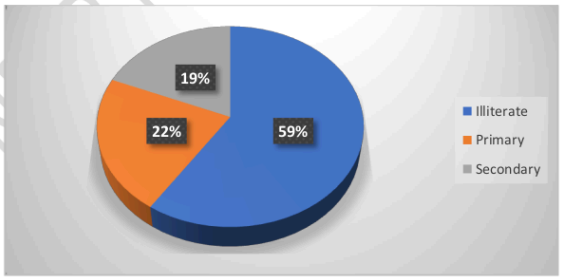
Source : Our 2024 surveys

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

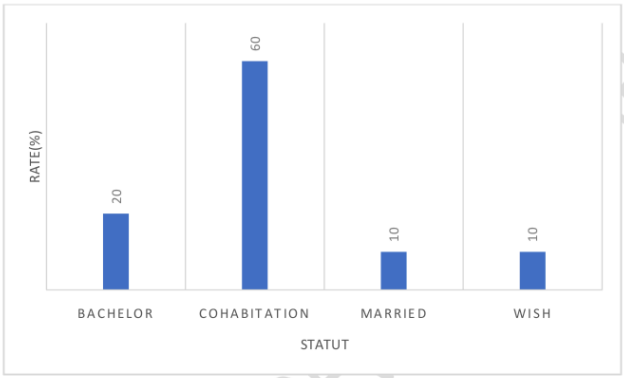
It appearsfrom the observation of Figure 5 that 59.33% of farmers are illiterate. This significant segment of illiteratesis an obstacle to the implementation of technological innovations,makingit

possible to improveyields and thereforeincreasetheirincome. 22% of the operatorssurveyed have a primarylevel and 18.67% have a secondarylevel.

- Marital status of operatorsdominated by cohabitation

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

Figure 6 : Distribution of operatorsaccording to marital status

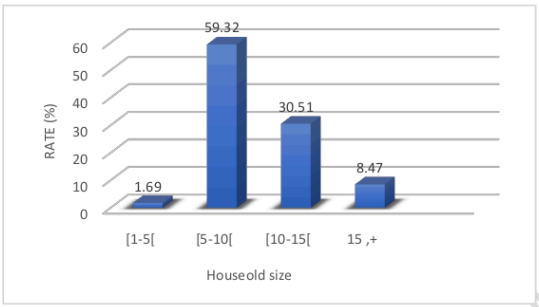


Source : Our 2024 surveys

Figure 6 highlights a high proportion of cohabitation (60%). Indeed, in rural areas, marriageis a familyaffair. Thus, the consent of the families of the bride and groom isenough for a wedding to becelebrated. Traditionalmarriageismostpopular in rural areas although couples often go before the registrar to consecratetheirmarriageaccording to the standards of the laws of the republic. Wethen have 10% married people compared to 20% single people and 10% widows.

However, wecan note that the size of the household can influence the resources for developinglowlands. Thus, in ourstudy sites, it varies from one household to another (figure 7)

Figure 7 : Distribution by household size



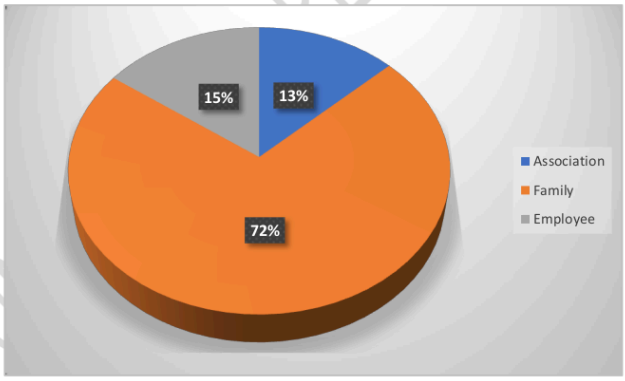
Source : Our 2024 surveys

Figure 7 revealsthathouseholds of [5-10[dominate the study area. Theyconstitute 59.32% of the operatorsmadeup 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 extendedfamily. On the other hand, 1.69% of farmers have a household of [1-5[person.

- Type of labor

In agricultural production, labour iscarried out by familymembers, in association and employees (figure 8).

Figure 8 : Distribution according to type of labor



Source : Our 2024 surveys

Observation of Figure 8 revealsthat the mostusedlabor force isthe familymembers(72%). It ismaindly made up of the head of household (the couple, children and familymembers). This laborischeaper. On the other hand, the head of the household can request help from people outside the family. They uses employees or association who are paid. The association is a group of people whooffer agricultural services to thosewhorequestthem in return for a sum of

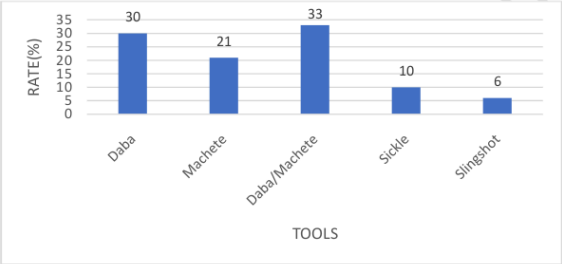
money. 13% of the operatorssurveyed use them. Only 16.66% of respondents are members of an association. 15% of operators use employees.

3.1.2. Material and financialresources

- The materialsused by famers

The lowlandfarmers all use traditionalequipments (figure 9) such as daba, matchet, stone thrower and sickles. Economicconstraints are a barrier to theiraccess to modern equipment. In addition, they do not have the necessary expertise to carry out agricultural workwith modern tools. This worstequipmentnegatively impacts the production of farmers in the study area.

Figure 9 : Distribution of tools for developinglowlands



Source : Our 2024 surveys

It appearsfromexamination of Figure 9 thatmachete-daba areused the most (33%). In fact, thesetools are used in almost all jobs. They areaffordable. The daba (photo 1) isused in marketgardening, ricegrowing and the planting of perennialcrops. 30% of respondents use it. 21% of operators use machetes. 10% use the sickle to cutrice. 6% of operatorshuntbirdsusingslingshots. Thesedifferenttools are rudimentary and ineffective in obtainingquantity and quality production.

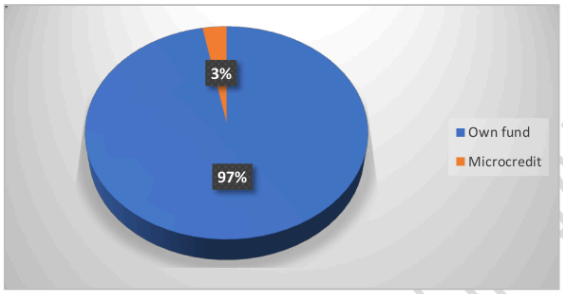
Photo1 :Dabas

Cliché photo : Seidou COULIBALY,2024

- Financial resources

In the creation and maintenance of lowlandactivities, operatorsresort to financialresources. These are observed by ownfunds and micro credit (figure 10).

Figure 10 : Distribution of operatorsaccording to the method of financinglowlandactivities



Source : Our 2024 surveys

It appearsfrom the observation of this figure 10 that 97% of operatorscreate and maintaintheiroperations in the lowlandsthemselves. Only 3% have access to microcredit structures. We are in a rural environment and the populations do not have enoughfinancialresources to finance theiractivities. Use of financing structures isquite rare. They must onlyrely on theirownfunds. The poverty of the population in thisenvironmentdoes not allowhugeinvestments in theiractivities. Financing structures to grantloansrequireguaranteesthatoperatorscannotfulfil. This lack of financing has a negative impact on the size and yield of farms.

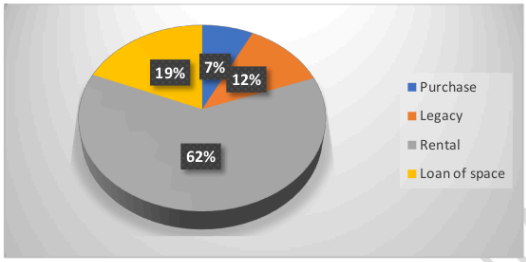
3.2. Cultivation practices in the lowlands

3.2.1. Modes of access to land and cropspracticed in the lowlands

- Modes of access to lowland land

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

Figure 11 : Distribution of farmersaccording to the mode of access to lowland land



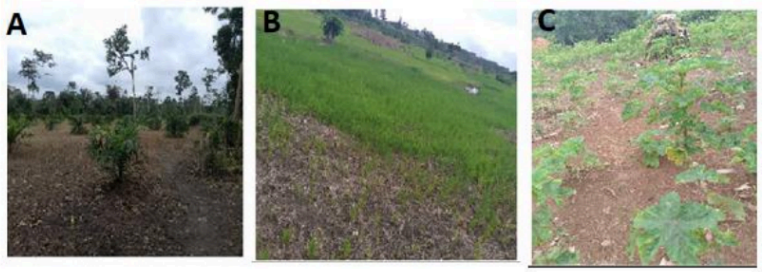
Source : Our 2024 surveys

Figure 11 revealsthat 62% of farmers have access to land throughrental. In fact, the indigenous population rent out theirlowland lands. A contractbinds the owner of the land(landlord) to the personwhodevelopsit (tenant). Paymentis 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 contractwhichiscarried out free of charge for a specificperiod of time. This type of acquisition isgenerallydonebetween natives as a precautionarymeasure. By lending land to a third party, must be sure that the landwillreturnedit to the ownerin case of need. These are services that close relatives or friendsprovide to eachother. 12% have access to land throughinheritance. The beteinherits a patrilineal system. It is the son whoinheritsfrom the father. 7.33% of farmers have access to lowland land by purchase. This low rate islinked to the scarcity of plateau lands and the lowlands are the onlyspaceswhere populations can practice theiractivities. Theyrefused tosellthem.

- Cropsgrown in the lowlands

Differentcrops are grown in the lowlands :perennialcrops, marketgardening and foodcrops (plate 1). Perennialcropsconsist of rubber cultivation and palm treecultivation. Food crops are mainlyrice and corn. The marketgardencropsare :tomatoes and eggplants.

Plate 1 : A palm tree plantation B: Rice fieldC:Eggplantfield



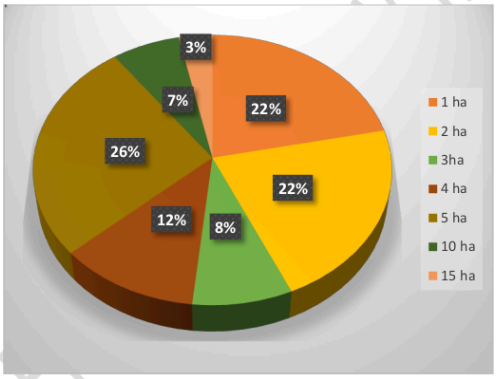
Cliché photo : Seidou COULIBALY,2024

These are plant crops for food use. The spaceisdominated by rice, corn and oil palm (78% of farmers). 10% of farmersgrowrice, eggplant and tomatoes. 5% of farmersgrowtomatoes, corn and rice. 5% of farmers have palm treeplantations, compared to 2% whogrowrice and rubber. This graph highlights rice production. Indeed, itis the staplefood of the indigenous population and holds a special place in the diet of the Ivorian population. Thus, each of the respondentsproducesrice. They claim thatitisused for consumption and marketing. Palmtreeand rubber are cash cropsallowingfarmers to have other sources of income. Vegetablecrops (eggplant and tomato) are cultivatedmuch more by women. Maizegrows in the rainyseason and iscultivated in the highlands by both men and women.

- Size of lowland plots

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

Figure 12 : Distribution of farmersaccording to plot size



Source : Our 2024 surveys

Observation of the figure 12 shows thatthey are between 1ha and 15ha. The spaceisdominated by 5ha plots which include 26% of farmers. 22% of farmers have plots of 2ha. This percentage isalsoobservedamongfarmerswith 1ha. 12% of farmers have plots of 4ha compared to 8% who have plots of 4ha. 10ha plots are observedin 7% of farmers. On the other hand, those of 15ha correspond to 3% of operators.

3.2.2. Farming techniques for developinglowlands

Differentfarming techniques are implemented in the development of lowlands :

- In soilpreparation the following techniques are used by farmers :weeding, collecting, burning, planking, mounding and sowing.

Whencreating the field, itisnecessary to removeweedsusing the daba sothat the plant developshealthily. This action isweeding. The collection willmakeit possible to group the weeds and participate in theirburningwithfire. Thesedifferentoperationsprepare the nursery where the sowingwilltake 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 operatorssurveyed engage in theseactivities. 13% practice Weeding/Collection/Plant/Nursery/Mound/Sowingactivities. 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 BassehoaB:Transplantingrice plants in Zadiaho

Cliché photo:Seidou COULIBALY,2024

- In field maintenance

It involvesdifferentactivities:fertilizerspreading, weeding and monitoring.

Fertilizerspreadingallowsuniform distribution of fertilizing substances on cultivated plants. Fertilizationprovides the nutrientsnecessary for the growth of the plant. NPK chemicalfertilizercontainsthree main nutrients:nitrogen;phosphorus and potassium. Each of theseelementsplay a specificrole in plant growth. As for urea, itplaysalmost the samerole as NPK. 98% of farmers use thesechemicalfertilizers

Weedinginvolvesremovingweeds and improving the soil. It contributes to the smooth running vegetative cycle of the plant.

Crop monitoring is the regular observation of crops to preventtheir destruction.

To varyingdegrees, thesedifferentoperations are carried out by the operators of ourstudy site. 95% of the farmerssurveyed practice Monitoring/Spreading/Fertilizercompared to 2% and 3% respectively for Weeding/Spreading/Fertilizer and Spreading/Fertilizer. The practice of Monitoring/Spreading/Fertilizerconsiderablyimproves plant productivity.

- Harvesting techniques

Harvestinginvolvesdifferentactivities :sicklecutting, drying, threshing, hulling, winnowing and others

Photo 2 : Threshing paddy in Bassehoa

Cliché photo : Seidou COULIBALY,2024

Harvestingactivities are dominated by Threshing Drying WinnowingHullingactivities. 28% of operators practice theseoperations. These are the mainactivitiesduringharvest. Threshingdrying WinnowingHulling,Others,concerns 23% of farmers. Wecan note 20% of operators in Threshing Drying Winnowingoperations. 10% of farmers practice Threshing Drying WinnowingOthersHulling. 3% of farmers in Threshing Drying HullingWinnowingOthers and 2% in the respective activities of ThreshingHullingWinnowing Drying, Threshing Drying OthersWinnowingHulling, HullingWinnowing Drying Threshing, Drying ThreshingWinnowing, Drying WinnowingHulling, Drying WinnowingHullingThreshing, WinnowingHullingOthers Drying Threshing, Winnowing Drying Threshing and others.

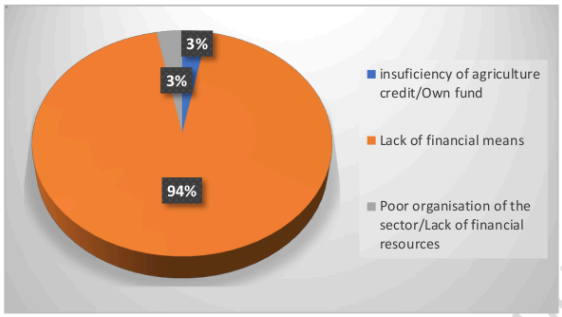
3.3. Constraints for developinglowlands and adaptation strategies

3.3.1. Farmers'constraints

The figure highlights the difficultiesfaced by farmers in developinglowland plots.

- Financialconstraints

Figure 13 : Distribution of farmersaccording to financialconstraints



Source : Our 2024 surveys

94% of operatorssurveyedhighlighted a lack of financialresources (ownfund). Indeed, the exploitation of lowlandsrequiressignificantfinancialresources. thecost of cleaning the plot increasedfrom 18,000 F CFA to 35,000 F CFA per hectare. To fertilize one hectare, the farmer must have 5 bags of fertilizerdividedinto 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 remunerationincreasedfrom 1,500 F CFA to 2,000 F CFA per day. The producersmostvulnerable to theseconstraints are smallfarmerswho have low agricultural income. The rural population ispoor. 3% expresses the insufficiency of agricultural credit/Lack of resources (ownfunds) and 3% notes the poororganization of the sector/Lack of resources.

- At the production level

The difficultiesrevolvearound 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 producersisprovided by a state structure : ANADER. Their main objective in the development of lowlandsis to strengthen the technical and methodologicalskills of operators. Their absence deprivesoperators of certain skills.

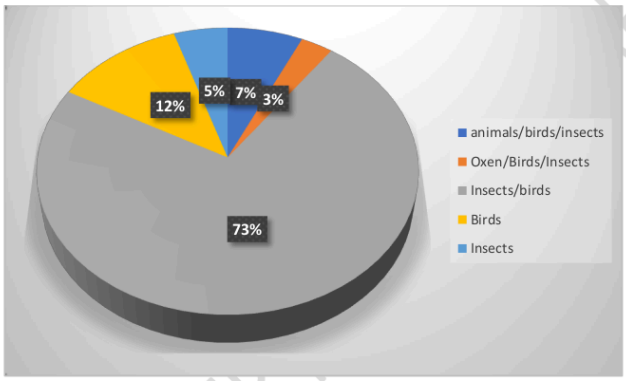
The consequence of this situation isdetrimental to productivity. 8% of farmersthinkthat the change in the agricultural calendar impacts production. Indeed, withclimatevariability, farmers are unable to properlyschedule the dates of different agricultural activities. Which has an impact on production. The figure alsopresentsotherconstraints on the use of lowlands. 60% of operatorsdenounce the lack of equipment/land problems. The scarcity of agricultural land leads to land conflicts. Combinedwith the lack of materials, this has a huge impact on production. 35% mention the lack of materials. Farmers are thenconfined to traditional agriculture usingarchaicequipmentresulting in lowproductivity. 3% mentions an insufficientworkforce. Lowlandworkrequiresphysical endurance. Whichis not attractive to the population. 2% highlights land issues.

- At the plant level

The presence of animals and insectsisharmful to the development of plants(figure14).

73% of farmerssaythatbirds and insects pose threats to plants. Unlike 12% whobelievethatbirds destroy plants. 7% of farmerspresentanimals, birds and insects as plant destroyers. On the other hand, 5% thinkthey are insects and 3% attributethem to cattle, birds and insects.

Figure 14 : Distribution of farmersaccording to nuisance to plants



Source : Our 2024 surveys

3.3.2. Coping strategies

- Agricultural calendar

The development of the agricultural calendartakingintoaccountclimaticvariability. Thus, in the sub-prefecture of Guiberoua, the sowing dates previouslyfixed and known in the cropcalendar are nowpartlydetermined by whether or not the rainsfall. Furthermore, when the rains are late, extra work and the use of earliervarieties are the responsesthat come intoplay to try to make up for the delay in sowing. But theseresponsesrequireadditionallabor and the varietiesused are frequentlyless productive and/or quitedemanding in terms of soilfertility. In addition, facedwith the high risk of delaying the first rains, someproducers have decided not to change sowing dates. In doingso, they practice dry sowing in order to save time whenstarting the crop. Certainly, these practices are veryriskygiven the uncertainty over the start of the rainyseason. Rice farmers use short-term cycles. They practice up to tworice cultivation cycles with the exception of some of them. The first ricegrowing cycle beginsfrom April and ends in July. However, itevolves in verycomplex water conditions compared to the second cycle fromOctober to February. Concerningmarketgardening, two types of marketgardening are perceived. This isseasonalmarketgardeningwhichextendsfrom April to July and off-seasonmarketgardeningfromSeptember to December. During the off-season,

marketgardeningispoorlydeveloped due to the unavailability of water. On the other hand, in the rainyseason, all portions of land on the slopesexperiencefairlysignificantanthropization.

- The use of improvedseedvarieties

Species sensitive to droughtgiveway to othersthat are more resistant. Slow and continuousgrowingcropssuch as tubers (cassava, yam) are thereforepreferred to critical stage cropssuch as corn, in order to limit the risk of zeroharvest. In ricegrowing, the majority of respondents use improvedseeds. Whenseedis not available, farmers use part of previousharvests. The main varieties of ricegrown by ourrespondents are Chineserice, parawane and Marcelline rice. Thus, 63.76% of ricefarmerscultivate the Chinesericevariety on their plots compared to 26.7% of Marcelline and 10.07% of parawanerice.

- The association of cultures

The traditionalmethod of combiningcrops in the lowlandsdoes not differfromthatfound in all forest areas of the country. The field investigation showedthat over the years, vegetableswhichwereplantedalonewereintegratedintocrop associations.

This technique givesrise to complex combinations consideredveryinteresting in terms of nutritionalcomplementarity, in the spreading of crops and ground cover. Thus, on theseslopes, wegenerallyencountermarketgardeningspecies and otherfoodcrops in associations. The objective is to limitriskswhilecontributing to foodsafety. This cultural strategyallows maximum coverage of the spacewhichreducesérosions and weeding.

- The grouping of operatorsinto associations

Groupingtogetherinto an association is a palliative to the lack of labor. In its objective, the association advocatesmutualaidbetweenitsmembers. 50% of the operatorssurveyedsaidtheybelong to an association. In oursurveyed areas different associations have emerged : "The Brave Men of Zadiahio", "Andouho", "The FightingWomen of Zadiahio," "TogetherWe Are Strong", "The Brave Men of Bassehoa and The Brave Women of Bassehoa. These associations participate in the economic and social development of itsmembers.

4. Discussion

The lowlandscontribute to the economic and social development of populations and localities. Indeed, theyoffernatural assets (climate, soil, vegetation) favorable to agricultural development. Theirdevelopmentrequires production factors. Thus, the socio-demographic profile in the areas of Zadiahio and Bassehoaischaracterized by a dominance of Ivorians. This resultcorroboratesthose of A. M. Koffi-Didia and K. L. Konan in the lowlands of Gagnoa (2012). However, this population of the lowlandsispredominantly male. This observation isshared by certain authors (Zidago (2014. p.67) and Kambou (2008, p.64)). However, Iwikotan et al (2011.p.35) affirm in a studycarried out in the lowlands of Gankpétin,Gomé, Odo-Otchérè and Yaoui in the department of Collines in the center of Benin a strongfemalepresenceTheseremarks are reinforced by O. A. Daoudou (2012.p43) in the valorization of the lowlands of the district of Offewherehe notes. that the operators of the lowlands are mainlywomen (55%) Morever, the illiteracy of the operatorsis 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) emphasizesthatlowlands 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. Thesefindings 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%).

Constraints are disparaged byFarmers :However, farmers are developingstrategies to overcomethesedifficulties :adjusting the agricultural calendar, usingimprovedseedvarieties, combiningcrops and groupingfarmersinto associations.

Betterunderstanding the logic of valorization of lowlands by farmersennables us to understand the social, economic and technicaldeterminantsused by the populations.

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