

Potentials and Perils on Periurban Agriculture in a West African Coastal Region

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Abstract

This paper deals with changes in agriculture in a periurban area on the coastal region in West Africa. Cities are growing rapidly and we analyse how farmers in periurban areas adjust to the increasing demand of new consumption markets. In the South of Benin, periurban areas are densely populated and farm size is about 0,5-1 ha per worker. Patterns of diachronic changes can be observed spatially in comparing three situations. These case studies reveal trends towards unsustainable intensification of land use. Actual practices for gathering firewood supplying urban markets also worsen depletion of soils and natural vegetation. This reinforces young farmers in their search for exit options. But those options are also rather risky.

West Africa's Periurban Agriculture

Africa is seen as mainly rural. In fact, cities are growing rapidly. In West Africa, the majority of the population already lives in towns and trends predict that 270 million people will settle in urban areas in 2020 against 160 million in rural areas (Snerch, 1994). Apart from a few cities in the Sahel, most of the urban areas are concentrated on the west coast.

Right in the middle of the west coast, Benin is an example of these trends. In the South of Benin, the high population density in rural areas on formerly fertile „terres de barre“ is still increasing and farm sizes are dropping under a level insuring a food crop production sufficient for family consumption. Migration rates into cities in Benin and other countries in the region (Nigeria, Gabun, etc.) are high. Until recently, the central and the northern parts of the country were seen as an untapped and endless pool of unused savannas. Migrations and new settlements of farmers from the poor overcrowded rural areas in the South as well as from the subsahelian upper-west combined with the introduction and rapid extension of cotton changed this pattern thoroughly. Cropped areas only reached 13% of available land in the northern part and 25% of the southern in 1990 but they will reach respectively 25% and 50% in 2005 (MEHU, 1993). On the top of it, cow herds are moving from the sahelian region to the south. Competition for land is getting higher everyday and conflicts are arising between farmers and herders.

In this paper, we will focus on the southern part of the country, a rural area today, a periurban area tomorrow. An increase in urban population also means an increase in the demand for food crops and other agricultural products. This should be a favourable context for intensification of agriculture and specialization of small farms which are near these markets. How did these small farms develop in the past and which strategies are set up by farmers for the near future?

Case Studies for Eliciting Typical Dynamics of Changes in Rural Areas

This contribution relies on a six years of field research. First, the dynamics in cropping systems and practices were studied in interviewing a large number of farmer groups all over one of the southern Province, drawing maps of the cropping systems and relating spatial diversity and changes over time. Changes in cropping and farming systems were then studied extensively during comprehensive research in two villages (Feil, 1994; Floquet, 1994). During a second phase, relying on the typology of small regions in southern Benin, six villages were selected along a gradient of land use intensity and degradation on both ferrallitic soils („terres de barre“) and basement complex and on-going adoption processes of intensifying practices are analysed. Three of these villages are located in non-cotton areas at respectively 25, 60 and 150 km from Cotonou, the capital of the country and a giant regional market concerning the whole coastal area.

The main topic of the latter on-going research program is the development of agroforestry systems and other fertility management practices in collaboration with farmers and to the monitoring of adoption processes. Extensive on-farm activities give an opportunity to farmers for testing technologies of their choice and for evaluating them together with the help of researchers. But in order to assess the potential impact of these technologies, we study how these farming practices fit in farming systems and in the farmers' strategies now and in a near future. That is the reason why an exploratory investigation based on informal research methods (RRA or MARP⁵⁵-like) was conducted by a six person research team during 10 days in each village. Transects with farmers gave an opportunity for joint analysis of actual land use and changes over time. Wealth ranking methods let local people elicit their own criteria of wealth and identify the main factors and processes generating wealth and poverty. Men and women representing the different types defined during this ranking were interviewed on their life histories and on their own perspectives for the future. Findings were discussed in public. Finally, a formal survey was conducted on income, assets, food consumption and land use practices by 20 men and 20 women in each village. This paper relies on these case studies⁵⁶, each of which can be seen as typical for a development stage in a general process. We begin with the case in a less degraded environment, where farming systems relying on agriculture still can be found, we go on with the case in an overused environment and end with the worrying processes in periurban areas.

Rural Areas Today, Periurban Areas Tomorrow

In the village located 60 km from Cotonou, a village named Hayakpa, farm size average still reaches 4,9 ha, farm median size, 3,2 ha. The last forests were cut after the second world war and bush fallow rotational systems still exist. Agriculture remains the main activity and contributes to 58% of male income. Cropping systems are based on maize and cassava. Processing activities of locally produced cassava also make a major contribution to farm income. Larger farmers invest in palms as well as in fruit and wood tree plantations. Firewood is becoming an important commodity.

⁵⁵ RRA: „Rapid or Relaxed Rural Appraisal“ and MARP „Méthode accélérée de recherche participative“ refer to exploratory investigation approaches based on qualitative and interactive interview and discussion methods, immediate processing of information inside of the team or even by villagers themselves and iterative loops of information analysis, new questions and investigation.

⁵⁶ These case studies are extensively discussed in Floquet A. et R.L. Mongbo, 1998.

This village is typical for the region in the South which still has some agricultural potential. Average yearly male income (including the value of food crops for consumption) was about 240,000 FCFA in 1995. The food situation is not too bad compared to other areas. The period in which consumption of staple food is reduced does not exceed 3 months for the 25% poorest kitchens and their consumption per adult equivalent drops from 0,4 kg daily intake of maize to 0,33 kg. Cassava plays a great role in insuring sufficient energy supply. Standards of living are rather low (Median value for daily expenses for soup, soap, light is 18 FCFA per capita).

Within the last generation, farmers had to cope with a strong decrease in land availability and soil productivity. Different strategies were then developed. Some successful, mostly elder farmers invested in land purchases and plantations. Many farmers introduced new cropping patterns in order to intensify their land use. Most of the young boys did not see chances of building a future on farms that have to be shared among a large number of brothers and looked for exit options. Few succeeded. Let us have a more detailed picture of these processes.

In the years after the Independence, larger estates of people who had been powerful during the pre-colonial and colonial times were ruined. Prices for oil palm products went down and these farmers could not make use of compulsory labour for tending their plantations anymore. They sold part of their land. Locally successful farmers and migrants coming from overused areas took their chances and purchased land. The last remote areas were cleared by migrants or autochthonous people moving around. Land renting forms also appeared, first as a means for landowners to solve urgent problems. All these processes may have allowed for a redistribution of land from elder large farmers to farmers with a high labour capacity. Land that had not been used formerly was put into cultivation and small plantations were installed instead of the large estates. Women also engaged in agricultural production on their own⁵⁷. Nowadays, in Hayakpa, 25% of the farmers still use more than 5 hectares. Plantations have changed a lot over time: palm oil and kernel markets as well as coffee markets collapsed in the sixties and seventies, and farmers reoriented these plantations towards palm wine and brandy⁵⁸, fruit trees, and later on, teak for poles. These strategies have been rather successful. People described locally as wealthy are those farmers who could inherit or buy a few hectares and accumulate assets in the form of trees.

Trees play a major function in the local economy. While they grow, they become an asset that can then be mobilized in time of crisis: palms or teak poles can be sold and fruit trees can be pawned. In the life cycle, they require labour when farmers have a lot of children as a labour force and bring an income when farmers are too old for cultivating seasonal crops. Men succeed in accumulating some assets over a life cycle. Median value of capital reached 419,000 FCFA in 1995, part of it being land, but trees make up the main part of the remainder. Trees also create waged labour opportunities for young people. For example, palms are mainly tapped by young men who get one third of the wine or a part of the brandy.

Yet, most of the farmers cannot rely on plantations for making a living anymore. They have to grow seasonal crops for the market as well as for family consumption. In the sixties and

⁵⁷ After the second world war, major changes in domestic activities occurred: motored mills spread all over the region, as well as water tanks and pumps. Women engaged in productive and income generating activities (PFEIFFER, 1986; FEIL, 1994).

⁵⁸ In this region, rainfall is suboptimal for oil palms. It is not possible to tap wine from their flowers and palms have to be cut.

seventies, cropping systems were based on maize, the major staple food, and the region played a role in the supply of urban markets. Maize yields decreased over time. A striking point is that farmers then did not adopt fertilizers although integrated development projects organized input supply and extension. Intensification patterns relied on endogenous innovations, taken over from neighbouring areas and readjusted locally, and they still do (Floquet, 1995). Our village has been learning from villages in the western province specialized in cassava. Cassava density in maize fields increases as maize yields decrease. Pure cassava stands play the role of an annual or biannual fallow. In 1995, according to our quantitative survey, return to land for maize was 33,000 FCFA/ha in the first rainy season, 36,000 FCFA/ha in the second season and 33,000 FCFA/ha for cassava after processing into gari. If cassava does not bring a very high return to land, it contributes at least to its stabilization. Return to labour brought by maize did not reach 250 FCFA per day in the first rainy season because of erratic rainfalls. Cassava is then much more predictable and its labour demand can be better distributed over time than for maize. Other villages planted vegetables on ridges as an option, tomatoes or chillies especially, as well as groundnut for fresh consumption or sweet potatoes also on ridges. These high return crops paid for the costs of this labour demanding soil preparation and the following food crops took profit out of the yield increases permitted by ridging. Unfortunately, even if at the same time farmers abandon fire clearing and learn how to manage crop residues, these changes in cropping systems bring a higher extraction of nutrients out of the soil and are not particularly sustainable. But they bring a higher return to land and labour.

Expanding urban markets created opportunities for these new crops but very few young boys looked further in this direction. They looked towards urban areas as a place for getting non agricultural jobs, not as a place to market new products. Even their fathers and mothers encouraged them and much money has been put in tuition and apprenticeship costs. Sons are many and apprenticeship costs are high in cities where there is no food and no shelter for free. Most of the boys cannot even complete their training and after months or years of small hazardous jobs in the cities, they come back to the village. Those who complete their training are not much better off. Cities are overcrowded with tailors, drivers, tires vulcanizers, and even electricians and solderers. As soon as they marry and have children, they cannot feed them in towns and come back. Even though, right now, young boys still try their chance at an exit option, seeing no other way out. Young men back to the village crop fields if they get some and try mainly to hire themselves on fields, cultivating, gathering firewood from clearings, tapping palms, transporting products to the roads or to the markets.

Women mostly crop small fields (average female farm size is about 0,66 ha) but these fields play a major function in order to get a start capital for petty trade and processing activities. There is little if any investment in training for girls. If they move to the cities as young girls, they perform domestic tasks for food and shelter and the experience is in most cases negative. Later on, they do not look for working opportunities outside of the village. Many of them are engaged in marketing activities and could quickly adjust to new demand in urban markets. Unfortunately, women's ability to accumulate capital and start income raising activities is low. Especially in these families where young men have erratic incomes, women often use their liquidities for looking after the children. Women also do not have land on their own for planting trees. They would really like to be able to prepare for the days when they are old but very few succeed in purchasing land. Median value of women yearly income, including production for own consumption, was 71,000 FCFA in 1995, and median value of capital, 22,000 FCFA. Vulnerability of women facing crisis is extremely high.

If elder farmers' strategies can be seen as rather successful, the outcome of younger men and women strategies are much more unpredictable. The lack of locally anchored strategies by young men on one hand, unsustainable cropping systems on the other hand lead to impoverishment of both people and soils. Women alone cannot eliminate out these trends. Both processes have already been observed in our two other sites and whether farmers in the now rural, soon periurban areas will also go this way is a major issue.

Mining the Soil as a Perspective

Consequences of a mining agriculture over decades can be observed in the furthest village. The region around the historical city of Abomey has been put into cultivation for about three hundred years. In the thirties, observers reported that bush fallows had vanished up to 30 km around the city and farmers were performing permanent cropping (Herskovitz, 1938). The cropping system was based on the alternating of cereals and legumes on ridges.

Nowadays, farmers cannot grow maize on their fields anymore except on compounds fertilized with wastes. Sorghum and cowpeas can hardly be cultivated because of *Striga* sp., a parasitic weed. Groundnut remains as a sole crop and performs rather poorly. Farm size is very low, 1,8 ha on average in Adingnigon. Women only seldom get a plot.

In such an impoverished environment, farmers live on resources produced outside the area (Mongbo et Floquet, 1995). People still living on the plateau d'Abomey rely on processing products they buy in other regions and at retail prices. Most of the people migrate towards other rural areas. Migration is an ancient tradition. Formerly a lot of people went south. Nowadays, many of them, men and women, migrate seasonally towards cotton areas in order to work as hired labourers. As soon as they get the opportunity, they settle there and crop on their own. But they maintain strong relationships with their family in Abomey. They travel back annually for ceremonies and bring food for elder relatives (FIDESPRA, 1997). They invest much of their savings there, unfortunately mainly in housing and little in income generating activities.

Even if local people develop strategies that keep their region alive through regular transfer of resources, the way the region has deteriorated is striking. On agriculturally mined soils over decades, soil fertility is very difficult to restore. Planted fallows and green manure hardly grow on these soils which would now require the expensive addition of nutrients, partly in organic form, before they recover and produce again at a normal level. But impoverished farmers are by no means able to invest resources over years for getting a better income later and migrants do not think of it (Roesch, 1992). The agronomic difficulties and the economic costs of restoring depleted soils in this region should be a warning to other farmers and policy makers. It is much easier to prevent than to cure.

Maize-Motorbike-Land for Sale-Exit Option, Rotational Patterns in Periurban Areas

Hèvié is one of these villages located on the southern fringe of the Allada plateau along a small lagoon, at about 25 km from Cotonou. Walking across the village area gives the striking

view of new large buildings all around the hamlets owned by the allochthonous urban dwellers, and rather poor ones inside for the autochthonous population. Fields are very small, already impoverished and invaded by *Imperata cylindrica*, a very noxious weed, and they are rather badly tended. Most of them have already been sold to employees or market women from the cities. Even the slope descending to the lagoon is not used for growing vegetables, by the few allochthonous farmers. Such a disinterest in using natural resources while markets are so near had to raise our interest.

Desengagement from agriculture has historical roots. First, people living in this areas are descendants from the first population settling in the region. They had plenty of land and land had little economic value. Farmers did not develop land appropriation strategies. Second, as markets collapsed in the sixties and in the seventies, responses to the same shock were very different in periurban areas like Hèvié and in rural areas like Hayakpa⁵⁹. These events coincided with the oil boom in Nigeria, the large labour demand it raised and the illusions it created. Men migrated massively and did not really expect to come back to the village. Remaining farmers tapped wine out of their oil palms but did not plant palms again. The future was elsewhere. In the beginning of the eighties, context and policies had changed in Nigeria. Migrants came back.

Migrants came back and found an environment rather unfavourable for agricultural production. Prices for agricultural products had been stagnating over the two decades but costs had not. Soils were getting poorer. After having expected another way of life, disillusionment was high. Most of them tried out any opportunity that might provide an escape from agriculture. First, they tried to continue performing their former activities. Many of them were bricklayers. More recently, while Cotonou has expanded, a lot of them try to drive a taxi-motorbike, working for investors or selling a plot to buy one. These attempts are not really successful if one considers that 40% of the men in the village have off-farm activities but that these activities only contribute to 13.7% of the average income. Agriculture still contributes to 41% of male income but is considered as an activity for self consumption and is performed with rather extensive cropping practices. Buying staple food would be a risky choice when monetary income sources are unpredictable. Part of the soils are already depleted to a point that maize cannot be cultivated anymore. Legumes take over.

In the period when men came back from Nigeria, the demand for acadja shrubs on the lagoons increased rapidly. Acadja are branches from shrubs that are stuck in shallow lagoons to provide fish with plankton and shelter. This also deliniates an area where only the acadja owner is allowed to fish. Acadja shrubs decay within a year and have to be replaced. Collecting acadjas in fallow became a major source of income for young men and later on also for women. Recurrent harvests in fallows as soon as shrubs coppice deplete them. Some species disappear, grasses invade the fields. Soils need much more time to regenerate and after clearing, yields remain low. The whole process contributed to rapid depletion of soils.

Nowadays, fallows producing acadja are rented out. It is still a very profitable activity: average return to land for an average five year old fallow is 197,000 FCFA out of which 77,000 FCFA/ha renting costs have to be deducted (in 1995). This should be compared to the return to land brought by maize production, 30,000 FCFA /ha in average during the first season 1995 and 34,000 FCFA during the second one. Acadja still contributes to 20% of

⁵⁹ Other case studies in Houeto and Atotinga had given similar findings (Feil, 1994; Floquet, 1994).

women's income but these women now have to look for fallows further from the village boundaries. They know that they will soon have to find another activity. Picking large tree leaves for wrapping food stuffs, collecting spontaneous vegetable and herbs sold as medicine are also widely practiced. Elder women and men facing crisis often enter fallows and cut green wood they dry and sell for survival. Unfortunately, people collecting fallow products are different from those owning the land and no efforts have been made for developing sustainable collecting practices.

Average income for men may not differ from the average income in Hayakpa but the dispersion is much larger in Hèvié. Rich people are richer and poor people, poorer. The 25% poorest farmers earn less than 100,000 FCFA per year (income in 1995). Wealth relied on land sale that - as local people say- „did not just solve problems“ but the income from which was invested in a mill, a motorbike or spent on a house. According to the local definition of wealth, land sale is nothing but a normal way of getting rich. Worse, much of the local conflicts are solved by the local institutions in such a way that farmers have to sell land in order to settle the matter.

Farmers also accumulated much fewer assets than in Hayakpa. Median value of farm capital is 116,000 FCFA against 420,000 FCFA in Hayakpa. People still having high total capital value are land owners. While looking for opportunities out of agriculture, farmers did not plant nor tend palms. When facing a sudden crisis, they cannot solve it except by selling the last fields they have. In a hamlet which we investigated intensively, about 90% of the land had already been sold. Local people often still cultivate on the fields they had sold because new owners could then better keep control of the boundaries of their properties. But these rights will not last forever.

This village is going to disappear and will turn into a suburb of Cotonou with some farming in the interstices. But the process just spreads further from Cotonou. Demand for land is high and poverty is deep. A certain culture develops among villagers which transform very risky choices into normal events. It is a sad sight when the farmer goes to the market and exchanges a field for a motorbike. „Never mind, the yields became too low“. He exchanges the motorbike for a bike and a cutlass. „Never mind, the motor did not run anymore“. Both break. „Never mind, there was no more fallow to cut and no field to crop anyway“.

High Demand for Products from a Periurban Agriculture, Low Adjustment for a Sustainable Supply

Actually, the South of Benin is not able to produce staple food crops anymore in quantities that exceed the rural demand. Maize, yam and increasingly cassava for urban markets are now produced in cotton areas in the northern part of the country. There, cotton and maize cropped areas evolved simultaneously as farmers got access to credit for inputs, extended their cultivated areas and hired seasonal labour from poorer regions.

Farmers in the South could not compete and could not even produce real surpluses as they lacked access to credit and valuable technologies that might compensate decreases in farm sizes and yields. Integrated development programs had set up a marketing system for supplying farmers with fertilizers in the seventies but fertilizer use remained very low. As

already discussed, farmers mainly relied on endogenous intensification patterns based on reduction of fallow, mixed cropping, ridging, making fallow more productive by planting palms for wine, etc. (Floquet, 1994). And they relied on soil mining. Experts evaluated the yearly depletion of soils in the western region Mono at 8300 FCFA/ha, 10% of the average income (Van der Pol et al., 1993). Farmers in the South did not benefit from a commodity with fixed prices, a secure market, or credit for input and sound technologies. Moreover, the economic environment they had to cope with was rather unfavourable for an intensification based on a mobilization of farmers' own savings. Although the demographic growth rate was higher than food crop production in the seventies and the eighties, food crop prices decreased during this period. On the other hand, technologies developed for intensified land use were not very convincing. Maize composites which could have had a good response to fertilization were susceptible to pests and could not be stored. Recommendations on fertilization were ill-worked out and farmers dropped the technology after suffering some losses. The situation in the future might get increasingly tense as it is much more difficult to use fertilizer with a high return and a low risk on degraded soils than on rich ones.

Yet, the extension of a urban consumption market should be an opportunity for periurban rural areas. If the northern part of Benin can supply urban areas with the major staple food crops, there still are specific opportunities for the southern part, like supplying urban markets with vegetables, fruits, herbs, fish from fish ponds, poultry, green maize, fresh groundnuts among others. These markets are already supplied by farmers and urban producers but this sector could be much more developed and enhanced.

Farmers also depleted fallow products. As described above, the demand for firewood increased. Poor farmers, women and landless farmers had no firewood from clearing fallowed land. They went into growing bush fallows and cut green wood, overusing these fallows. Root stocks of bushes died and the composition of vegetation completely changed, fallows were invaded by herbaceous, grasses and especially *Imperata cylindrica*. Acadjas have also been an important reason for fallow depletion. The current demand for firewood for urban consumption is about five millions tons and 16 millions bundles of acadjas yearly leave agricultural land for lagoons. The level of the demand is much higher than the level of a sustainable gathering of fallow products. In our case study in periurban areas, collectors already have to look for other income generating activities and these gathering activities just spread a little further from Cotonou. They already reach the central region where savannas are turned into charcoal at a wide scale. Projections for 2005 predict a potential supply in natural fallows in the South which falls to zero and overuse in the central region, where vegetation is much more susceptible to degradation (MEHU, 1993).

Firewood production could be a profitable cash crop. Technologies are already known by scientists but have hardly been made available to farmers. While we tested with farmers planting fallows based on fast growing multipurpose species producing firewood, restoring soil fertility and spreading a thick mulch to protect crops against dry spells, we became convinced that this might be a feasible and profitable alternative. This is just one option out of a range of possibilities that promote a more intensive as well as sustainable agriculture. But will these technologies spread fast enough to offset the fallow and soil depletion processes?

Impoverished farmers are not just depleting soils and fallows. They also sell their land. The demand for land by the urban population is very high. Land is needed for building housings. Land is needed for having a plantation that generates an income complementing low pensions.

Land is also seen as the most secure form of savings after the banking system went bankrupt in the late eighties. Better-off farmers with strategies based on agriculture and plantation might resist the temptation: they accumulate in palms, teaks, fruit trees as assets they can harvest but also to sell or pawn in bad times. On the contrary, heirs of large families inherit little land and cannot plant many perennials⁶⁰. Moreover, many farmers who would have been able to plant trees were just looking for opportunities out of agriculture, moving to towns in good times and looking for shelter and food in the village in bad ones. Those farmers are vulnerable and have no savings they can mobilize. Land sale solves any kind of crisis and is turned into motorbikes, housings and other short-lived assets. The process reaches proportions which are difficult to evaluate. New urban landowners might be interested in firewood production but which opportunities remain for the landless?

A Plea for a Development Policy in the Agricultural Sector

If current trends are not reversed, urban markets will grow further but many natural and human resources that should feed city residents in periurban areas will have been destroyed. Can we rely on urban landowners to fill the gap? Of course, there are some examples of successful emergent farmers leaving towns with liquidities, access to credit and information, acquiring skills their farms require. Many of them enter the export sector, especially pineapple. Producing for the local markets and making a profit out of it might not be so easy. Emergent farmers have to obtain much higher productivity than rural farmers in order to cover their hired labour costs. Most of the „qualified but jobless“ young people who tried their chances, entered the agricultural sector with much less capital and information and then abandoned it.

The general trend remains the exit option. But what about all the people coming to town. One could think that the informal sector absorbs them smoothly but the real consequence is job sharing and a decrease in productivity per capita and then in income. Finally, many people go back to the villages without perspectives except survival.

Will policy makers take up the challenge? Little emphasis has been put on agricultural development in the last decades, except in cotton regions where donors pushed cotton production up. In the South, banks massively financed the import-export sector, mainly for reexport towards Nigeria (Igue et Soule, 1992). The state got a share of it through taxes. On the contrary, the banking system in the agricultural sector only reached a few farmers and finally went bankrupt in the late eighties. It is reviving again but slowly. Poor farmers are difficult to reach. In parallel, there were only few successes in technology development although few crops were concerned. The challenge now is to develop adequate technologies for a much larger range of products and for soil fertility management on more depleted soils. But technologies alone will not be enough to enter the „vicious circle“. Following Tovo (1995) who pleaded for synergy, we suggest that a mix is required that combines training for young people in skills that can be developed in rural areas, technology generation in close collaboration with farmers, savings and credit activities, secure and low price input supply, and sound extension advising farmers on markets and revenues as well as on technical issues.

⁶⁰ Women bring up about six children, which means that three heirs share the father's farm in monogamous families and many more in polygamous ones. Farm sizes decrease rapidly.

Integrated rural development agencies had already been given such a mandate in the late seventies and the eighties. Many factors explain its failure: low food prices, migrational trends towards Nigeria, obligation for farmers to enter a farming group before they receive access to services, and bureaucratic trends in the agency are some of them (Floquet et al., 1996). Nowadays, decentralized NGOs and farmers' organisations will perform better and will they be backed up by policy makers so that farmers in the South also gain from devaluation and structural adjustment?

References

- Feil P., 1994. Endogene Neuerungsverbreitung als Teil soziokulturellen Wandels. Eine Analyse der kleinbäuerlichen Lebenswelt in zwei Dörfern in Südbenin. *Kommunikation und Beratung* (2). Weikersheim, Margraf Verlag, 274 p.
- Fidespra, 1997. Quelles opportunités pour une autopromotion dans des agrosystèmes dégradés. *Diagnostics dans quatre villages du plateau d'Abomey*. Cotonou, UNB, ronéot.
- Floquet A. et R.L. Mongbo, in press. Des paysans en mal d'alternatives. Degradation des terres, restructuration de l'espace agraire et urbanisation au bas Bénin. Weikersheim, Margraf Verlag.
- Floquet A., Lühe N.v., Preuss H., 1996. Paysans, chercheurs et vulgarisateurs au sud du Bénin: le trio déconnecté. *Studien zur ländlichen Entwicklung* (54). Münster, Lit Verlag, 160 p.
- Floquet A., 1995. L'agriculture durable au sud du Bénin: la contribution des innovations autochtones des paysans du département de l'Atlantique. In: *A la recherche de l'agriculture durable au Bénin*. TON P. et L.J. de HAAN (ed.). *Amsterdamse social-geografische Studies* (49), s. 65-74.
- Floquet A., 1994: Dynamique de l'intensification des exploitations au sud du Bénin et innovations endogènes. Un défi pour la recherche agronomique. *Dissertation*. Stuttgart, University of Hohenheim, 411 p.
- Igue J.O. et B.G. Soulé, 1992. L'état-entrepot au Bénin. Commerce informel ou solution à la crise. Paris, Karthala, 210 p.
- Ministère de l'environnement de l'habitat et de l'urbanisme, 1993. *Plan d'Action Environnemental du Bénin*. Cotonou, 107p.
- Mongbo R.L. et A. Floquet, 1995. Enjeux fonciers, pauvreté et stratégies de survie sur terres de barre au Bénin. Cotonou, *Projet Bénino-Allemand « Assistance Conseil en matière de Politique Sociale »*, 77 p.
- Neef A., Heidhues F. et J.-M. Mewou, 1994. Le marché de la terre. Son fonctionnement et ses conflits. *Working Paper Series 7*. Université de Hohenheim. 20p.
- Pfeiffer V., 1986. Développement d'un système agraire sur brûlis par le passé et perspectives de transition vers un système de culture permanente. Le cas de la province de l'Atlantique, RP Bénin. Paris, IEDES, thèse de III cycle, 374p.
- Roesch M., 1992. Surplus agricoles et stratégies de production chez les exploitants agricoles de la Province du Zou. Thèse de doctorat de la Faculté de droit, sciences économiques et gestion de l'Université de Montpellier, 291p. & annexes.
- Snrech S., 1994. Pour préparer l'avenir de l'Afrique de l'Ouest: Une vision à l'horizon 2020. Synthèse de l'étude des perspectives à long terme en Afrique de l'Ouest (WALPTS). SAH/D(94)\$§). Abidjan, OCDE-BAD/CINERGIE, 65p.
- Tovo M., 1995. Réduire la pauvreté au Bénin, Vers une stratégie d'action. Rapport préparé pour la Banque Mondiale. Cotonou, CEDA, 338p.

Van der Pol F., Gogan A.C. et G. Dagbenombakin, 1993. L'épuisement des sols et sa valeur économique dans le département du Mono. Cotonou, Direction de la Recherche Agronomique, 80 p.