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The Office du Niger: an Agropole project for food security in Mali?

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Food security is nowadays more than ever a priority in agricultural policies in many African countries. Because it is considered by the WAEMU (West African Economic and Monetary Union), as “the rice bowl” of West Africa, the irrigated area of the Office du Niger in Mali is at the heart of regional economic and political issues. In this context, agricultural development programs are multiplying in order to lead the “new green revolution” backed by international organizations and donors and supported by a number of foundations. These are generally managed by mainly foreign private investors and benefit from land allocations on a large-scale. The development of this agribusiness is considered as a type of land and water resource grabbing. It raises questions with regards to its role in securing the population’s food supply and the future of small family farms. The role of small farming in food security was recently reaffirmed during the “International Year of Family Farming” (2014).

Office du Niger, family, agriculture development

L’Office du Niger : un projet agropole pour la sécurité alimentaire au Mali ?

La sécurité alimentaire constitue plus que jamais une priorité dans les politiques agricoles de nombreux pays d'Afrique. Considéré par l’UEMOA (Union Economique et Monétaire de l'Afrique de l'Ouest) comme " le grenier à riz" Z de l’Afrique de l’Ouest, la zone irriguée de l'Office du Niger au Mali, se trouve de ce fait au cœur d'enjeux économiques et politiques régionaux. Dans ce contexte, des programmes d'aménagement à vocation agricole se multiplient de façon à mener " la nouvelle révolution verte " prônée par les organismes internationaux et les bailleurs de fonds et soutenue par un certain nombre de fondations. Menés par des investisseurs privés, pour certains étrangers, ils bénéficient d'attributions foncières à grande échelle. Interprété comme une forme d'accaparement des ressources en terre et en eau, le développement de cet agrobusiness pose question quant à sa vocation à sécuriser l'approvisionnement alimentaire des populations et quant à l'avenir des agricultures familiales dont le rôle en matière de sécurité alimentaire a été réaffirmé à l'occasion de " l'Année Internationale des Agricultures Familiales " (2014).

Office du Niger, agriculture, famille, politique agricole

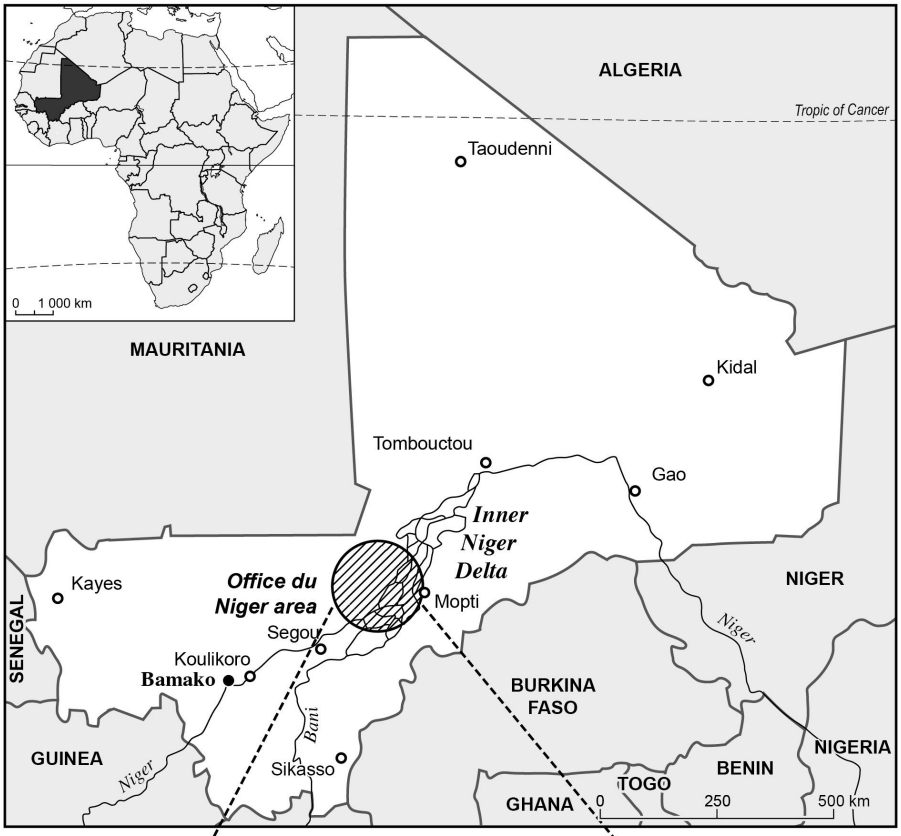
Introduction

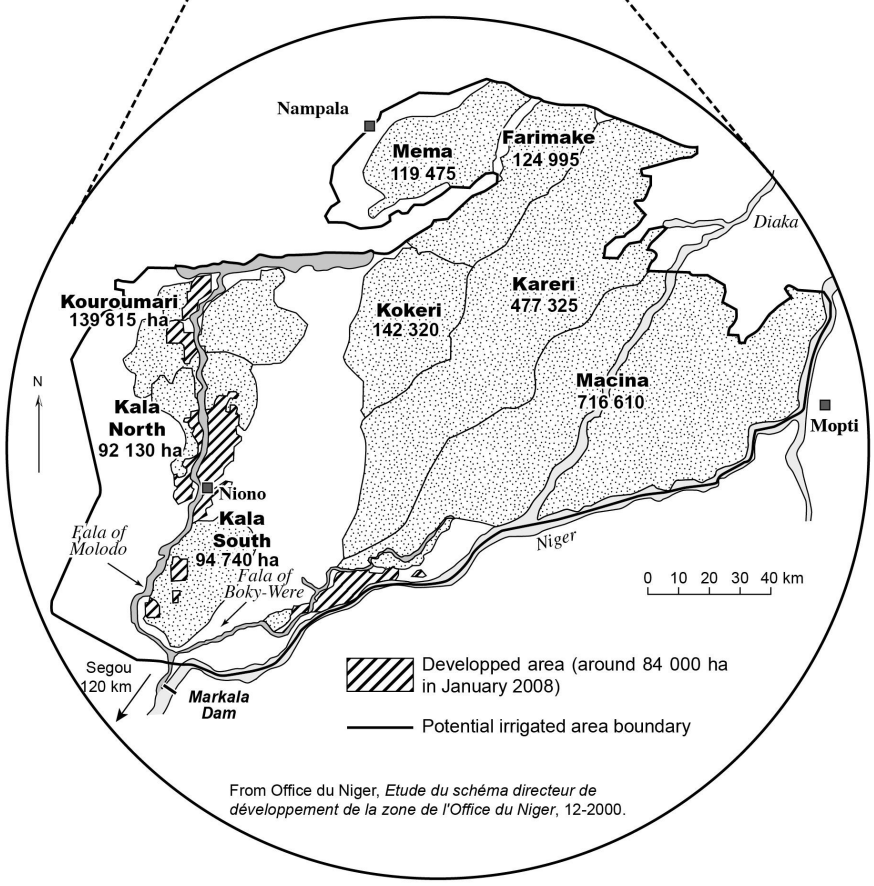
Food security is one of the main development goals of this millennium. At the end of May 2015, the media praised the figures announced by the last FAO report (le Figaro, 2015): 795 million people suffer from food insecurity in 2015 as opposed to a little over a billion in the early 90s (Rapport FAO, 2015). 33.7 million of this population lives in West Africa (Programme CE-FAO, 2008). Ten years after an international agricultural price crisis that led to food riots in many countries, the creation of agricultural growth clusters or agropoles is the driving force for an agricultural growth model, while the impact of the latter on improving food security has not been demonstrated to date (Dagorn, Jamart, Jorand, 2018). This strategy, supported by African states as well as by international organisations, development agencies and multinationals, is based on a strong incentive for private investment in agriculture, favoured by large-scale land allocations (Dagorn, Jamart, Jorand, 2018). The aim is to produce enough to supply cities, consolidate agricultural sectors, and even export to neighbouring countries and further develop an agro-industrial potential via a "second green revolution" (Djire, Keita, Diawara, 2012, Bouessel, 2016) .

In West Africa, member states of ECOWAS (Economic Community of West African States), aid agencies, international organisations, socio-professional actors and NGOs (Non Governmental Organisations) have agreed the implementation of ECOWAP (Regional Agricultural Investment Programme). This provides a common framework for an efficient and coherent action. The aim is to "*harmonise and integrate the objectives through various strategies and programmes by countries and intergovernmental organisations in the sub-region*", including the WAEMU (West African Economic and Monetary Union) agricultural policy as well as the Strategic Framework for Food Security managed by the CILSS (Permanent Interstate Committee for Drought Control in the Sahel) (Brondeau, 2010). In this context, thanks to the intensification and expansion programmes undertaken since the mid 80s, the Office du Niger area, located in the upstream section of the Inner Niger Delta in Mali, (see map 1 and 2) is considered the "rice basket in West Africa" (Brondeau, 209).

While securing food production is more than ever a major challenge and the announced production targets cannot be reached with the current public financial resources, investments by private company, including foreign businesses can appear to be a real opportunity. It seems the agricultural growth model associated with land privatisation and agribusiness development encouraged by international bodies and major lenders is becoming the most likely. So, the Malian government's project is to transform this area into an agropole capable of ensuring food security at national and macro-regional levels.

Map 1. Inner Niger Delta and the Office du Niger area





From Office du Niger, *Etude du schéma directeur de développement de la zone de l'Office du Niger*, 12-2000.

Map 2 : Office du Niger : 8 hydraulic systems of the initial project

Context and issues

In recent years, agricultural growth clusters have multiplied and are becoming ever more important in agricultural development strategies in sub-Saharan Africa. They *[...] benefit from a regulatory, legislative, customs and/or tax framework to encourage private investment, and rely on partnerships between public (states, donor countries, development banks, etc.) and private stakeholders (large private investors, multinationals, etc.) for the creation, funding, development and management of all activities carried out in these agricultural clusters.* They are equipped with infrastructures to support production, processing and marketing of agricultural raw materials, and are connected to regional and international markets for the purchase of inputs or the sale of products [...]. *The approach through agricultural growth clusters brings together existing agricultural development intervention logics (large-scale irrigation, public-private partnerships, formalising land titles, contracting family producers, etc.) by placing large private investors at the heart of governance, when defining objectives and implementing projects* (Dagorn, Jamart, Jorand, 2018). They are therefore generally considered in areas with high agricultural potential, often with irrigation or areas which could potentially be irrigated.

These agricultural growth clusters are spreading across the African continent since they are strongly supported by the World Bank (WB) and the African Development Bank (AfDB) since 2016, encouraged as part of the launch of the New Alliance for Food Security and Nutrition in 2012, and boosted by the creation of the Grow Africa platform in 2011. This success is associated with the belief that the potential of existing agricultural land is currently underused by family farming which would justify the allocation of land titles to private investors, and the logic of contracting with family farmers.

This dynamic is associated with the launch of the "Alliance for a Green Revolution in Africa" (Agra) by the Rockefeller Foundation and the Bill and Melinda Gates foundation which "*is in keeping with the intensification approach through the mechanisation / irrigation / selected seeds / synthetic fertilisers and pesticides package, with the Green Revolution in Asia and Latin America, while redefining the respective roles of States and private actors in governing value chains and the agricultural sector"* (Dagorn, Jamart, Jorand, 2018). We understand better why companies such as Syngenta are one of the privileged private partners of the Public-Private Partnerships working in Mali (Agra, 2016).

Since 2005, the Malian government has already developed a favourable business climate in line with the evaluation criteria of development policies, set up by the World Bank through the "Doing Business" and "Enabling Business in Agriculture" indexes, and as such, updated the Investment Code which sets a preferential customs and tax regime to promote private domestic and foreign capital investment in production activities and services. It offers tax benefits, such as tax exemptions for up to eight years of activity. This call for private investment has established a strong dynamic: over the 2004-2009 period, 840 applications were registered (Adamczewski, Jamin, Tonneau, 2011).

Furthermore, since the "food riots" in Bamako in 2008, the Government of Mali must manage programmes which will provide food security to the populations. The Rice Initiative Plan was set up in 2009 (Brondeau, 2010). More recently, as part of the Agricultural Development Policy (APD) to which relates the Project for Increasing Agricultural Productivity (Projet d'Accroissement de la Productivité Agricole - PAPAM), extensive expansion projects are planned for the Office du Niger area. The "*overall aim*" of 2014-2018 contract plan "*is to contribute to food security and to the fight against poverty in Mali through an increased economic growth. This plan is part of the vision for an integrated development with the ambition of transforming the Office du Niger into the main Agropole for the rural and urban development (ASRU)"* (Konaté (a), 2014).

Its strategic orientation is built on (i) partnerships between public and private actors involved in agricultural development, (ii) leveraging comparative advantage of each region by putting in place regional plan and encouraging local investments; (iii) creation and operationalization of agropoles; (iv) mainstreaming gender and good governance in all the interventions (Agra, 2016).

In addition, the new plan by the African Development Bank (AfDB) for the 2016-2025 period, called "Feeding Africa", is focused on the development of agropoles, which is supposed to guarantee regional rice self-sufficiency within the Office du Niger area (Boussel, 2016). The announced targets in terms of development potential by the Malian government have been raised: at the last French International Agricultural Show (SIA) in Paris, the Minister of Agriculture and the CEO of the Office du Niger in search of investors have announced 1.9 million hectares considered available for development including 1.4 with gravity irrigation (map 2). These figures are given in the new Master Plan for the Regional Development of the Office du Niger area (Bouessel, 2016).

In this context, how can small family farms, whose role in food security has been confirmed during the "International Year of Family Farming" (2014), retain their position on the land? While this agricultural system is often opposed to that of agribusiness, it may be appropriate to start considering the ability of each of these agricultural models to contribute to food security objectives? Will the agribusiness development really be able to guarantee a food supply to the majority? Are family farms inevitably doomed? Could these two agricultural models complete one another in securing food production at different spatial scales?

Agropole: a guarantee for regional food security?

The Office du Niger area in Mali, as presented at the Paris SIA, is a pilot region and flagship project for food security in the region. The production targets for 2017-2018 are already set at 1 million tons of paddy rice, 350,000 tons of vegetables, 30,000 tons of corn, 47,000 tons of potatoes and 5,000 tons of fresh fish from floating cages, ponds and rice-fish culture. The correct implementation of this campaign plan implies that producers are provided with certified seeds and quality organic and mineral fertilisers for which funding was re-established.

The Ségou Agropole should increase plant and animal production and improve their processing and marketing. For this purpose, the conversion of earth channels into concrete channels, the development of sprinkler and drip irrigation, the construction of a bridge and port on the Niger River at Ségou and the construction of canning and processing plants for vegetable products, etc. are planned. (Adohoun, 2017). The prospects also involve the development of fish farming (200 floating cages likely to create 1000 jobs) and the installation of agro-shepherds along the drainage outlets (Coulibaly, 2016).

The irrigated area is therefore subjected to enormous pressure from actors with competing interests who have to share common land and water resources

A juxtaposition of projects with multiple objectives: a kaleidoscope of random prospects

In the Office du Niger area, irrigation of almost 98 000 hectares of small farms has been painstakingly implemented since 1947 (see map 3). However, there is currently an unprecedented number of expansions, either planned or underway, without exactly knowing the terms of each expansion nor their precise extent. 200 000 ha of irrigated land was the maximum target announced in the first Regional Development Master Plan for 2020 in terms of available water resources (Coulibaly, 2016). However, in 2009, the Sexagon (main farmers' union in the Office du Niger area) estimated that 360 000 ha were allocated to foreign investors (BCEOM, 2001). These estimates may, however, be considered as

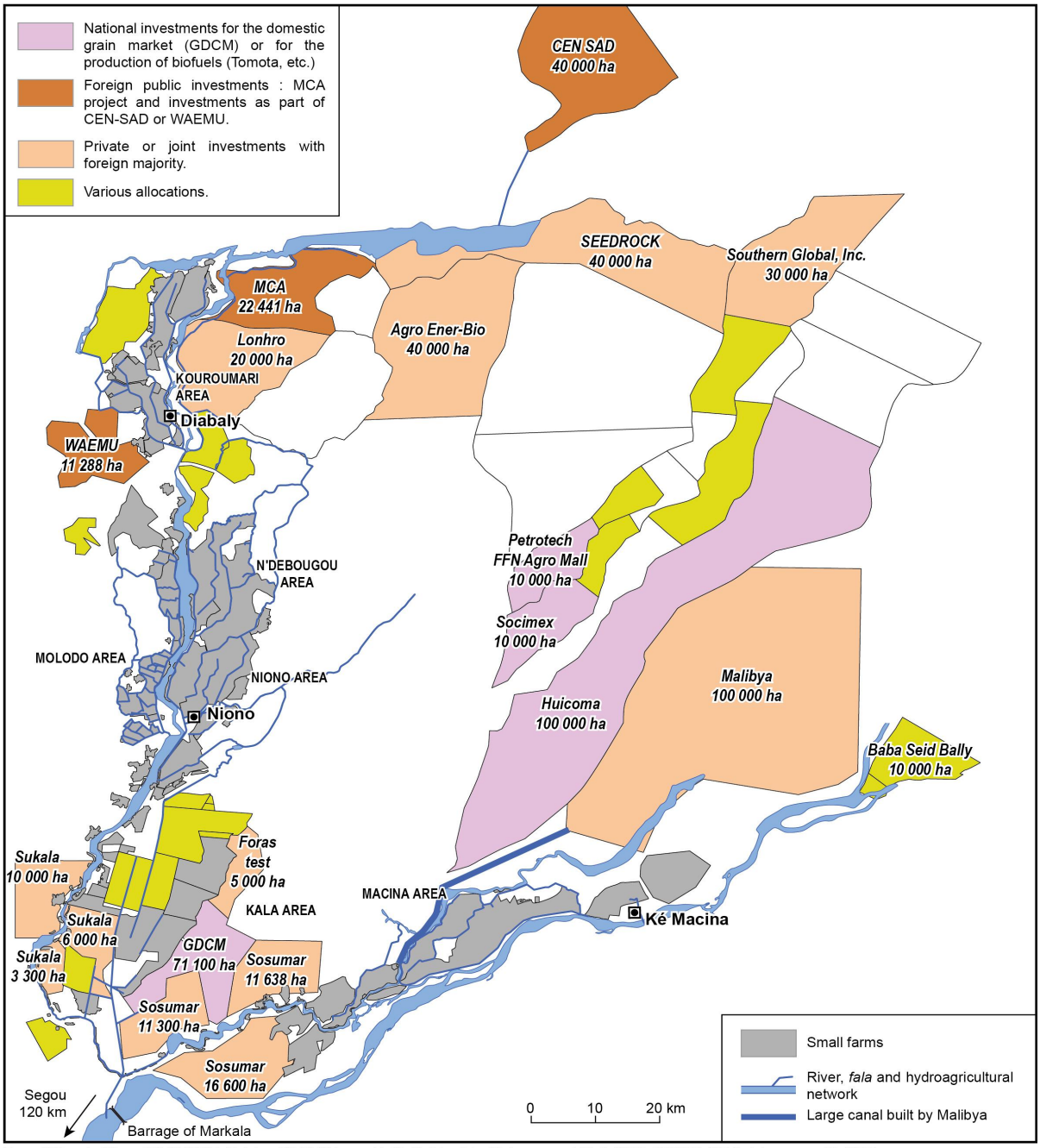
unreliable: the development of 870 000 ha was announced in 2010 as part of various leases allocated to private and public investors (Adamczewski, 2014). In 2012, 470 000 ha were officially allocated and divided into 15 projects, each extending over surfaces between 2 500 and 100 000 ha (Chouquer, 2012). In this context, tensions and disputes are increasing. The pace of expansion programmes has been increased by the Malian government and national and foreign private investors are assigned officially free land (Chouquer, 2012). However, these irrigated lands is partially used by a population (land and livestock) who have ancient customary rights to the land.

Two projects were launched as part of a macro-regional economic cooperation. 100 000 ha have been allocated to member countries of the WAEMU. The developed plots should have been distributed to nationals from 8 member states as 9, 21 or 48 ha plots (Brondeau, 2011). A similar project was proposed as part of the cooperation between Mali and the CEN-SAD (Community of Sahel and Saharan States) (see map 3).

As part of the Millennium Challenge Account (MCA, 2009), the United States undertook a development project in Kouroumari on the Alatona site (see map 2). 14 000 ha were divided among 1 785 farmers and sold in 10, 30, 90 and 120 ha plots. The aim of these projects is to promote medium size private farms which are able to finance part of the irrigation facilities. These farms are able to take part in increasing grain production and therefore help guarantee regional food security.

The promotion of farming entrepreneurs as advocated by main lenders is however hampered by the lack of funding available to local farmers. These entrepreneurs therefore require some sort of financial allocations. Recent expansions in Salibougou and Bewani have been financed by the World Bank and the European Union. These expansions are constructed in order to create farms with a surface area of 3 ha and are distributed to the local and foreign populations who do not have funds to invest in the project (Konaté (a) 2014). In all cases, the issue of the eligibility criteria for taking part in these expansion projects and allocating the land is raised. Furthermore, these projects question the access to land by the local population using customary rights.

Map 3. Major projects launched in the Office du Niger area



From Office du Niger, DAGF/SCF, Octobre 2010 (Ségou, Mali). Oakland Institute, rapport Mali, 2011. GRAIN, 2012. Adamczewski, 2014.

Eight other projects in 2012 were led by private companies with the main aim of developing crops for biofuels (Jatropha curcas) or sugar cane. The Sosumar project (Sugar Company in Markala with mainly South African funds) has 14 000 ha planted with sugar cane. Part of this production is to be transformed into bioethanol (see map 3). Some crops have been tested for several years, pending the validation of environmental studies and the resettlement plan for displaced populations (BAD, 2009). Chinese companies which already control 6 000 hectares planted with sugar cane in this area and have built three Sukala factories, are wanting to triple their production capacity by expanding the cultivated surface areas, part of which would be devoted to the production of biofuels.

Other “pure speculation” projects are being led by investment companies such as Lonrho.

Additionally, large projects have been launched through agreements between the Malian government and public investment companies or sovereign wealth funds: Saudi Arabia via a company called Foras or Libya via the Malibya company. The direct foreign investments are actually intending to supply international markets as part of the outsourcing of agricultural production. One can hardly say that these projects will be able to guarantee food security when most of the production is destined to supply investing countries which are moving away from international markets and their hazards since the 2008 food crisis. For example, "Malibya Agriculture" has been appointed for the development of 100 000 hectares allocated to Libya (see map 3). Eventually, rice production should reach 1.6 million tonnes. It is intended to introduce corn crops on a large scale to support the creation of an intensive livestock production pole (960 000 animals) (Brondeau, 2010).

None of these project intend to support food security (Brondeau, 2010, Adamcsewski, Jamin, Lallau, 2012). This also applies to Malian investors such as the Tomota group who is planning to provide irrigation for approximately 100 000 hectares of various oilseeds (sunflower, soya bean) and jatropha (Jatropha curcas) for the production of biofuel (Brondeau, 2010). National investors are also involved, including, on top of Tomota, the Kéïta Group Industrial Agro Complex (IAC), a company with a lease on 7,400 ha. This industrial group has a complete chain of agricultural equipment and produces mainly potatoes, corn, wheat and rice. As for the Grand Distributeur céréalier du Mali (GDCM), it farms 7,400 ha to produce wheat for its mill and livestock. In addition, the Modibo Kimbiri Cooperative, gathering farmers working 342 ha in the N'Debougou area, with an average yield of 6.54 t/ha, produces around 4,200 tons of paddy rice per crop year, while promoter Mamou Camara from the Malian Diaspora, currently farms 400 ha for rice-growing in the Ké-Macina area, with an annual production of 2,500 tons of paddy rice. (Adohoun, 2017).

We can only note the wide variety of actors involved and the lack of coordination in targets decided for these projects (see map 3) which must be included in the construction and operation of this agropole.

Ségou agropole: a poorly identified project

The project to create an Agropole in this area has recently been announced in many official speeches (Moutta, 2014). However, information available to date remains rather vague and disparate.

The quantified objectives are certainly clear. Based on the good results of the 2014-2015 campaign (771 000 tonnes of rice and 410 000 tonnes of vegetable products), the target of producing 1.12 million tonnes of rice in 2018 is well on its way through a sustained expansion (13 000 ha per year) (Moutta, 2014). 2 500 ha have already been inaugurated in March 2015 in Bewani (European Union funding), together with 2,200 ha in Saligabougou (World Bank funding). At the same time, 3 000 ha are currently being rehabilitated in Molodo (through Canadian cooperation) to which must be added the 1 722 ha in Siengo (German funding). Le The PRESA-DCI (Project to Strengthen Food Security through the Development of Irrigated Crops), funded by the AfDB, includes the rehabilitation of 3,426 ha within the Molodo area and a number of drains (70 km have just been completed) as well as the finalisation of the layout and development 2,200 ha in Sabalibougou (Scom, 2018). The development prospects announced by the direction of the Office du Niger in May 2015 relate to 350 000 ha in 2020 (Konaté, 2014). As reflected by the participation of the Minister of Agriculture and the CEO of the Office du Niger at the SIA in Paris in March 2018, new investors are actively sought to develop such surfaces.

At the same time, the development of large-scale fish farming is being considered through fish stocking the falas and canals. Tests on the use of fish cages have had successful results

(Moutta, 2014). The installation of approximately 215 floating cages has created 1,075 jobs. (Berthé, 2017).

The agricultural policy to secure food supply only seems to be addressed in terms of increasing agricultural production rather than improving the food production system.

For example, transformation projects for these food products which could create added value and employment and therefore avoid losses during "overproduction" periods, are still few. This is particularly true for the tomato crop. The lack of processing units has only briefly been mentioned by one of the ministers involved (Konaté, 2014(b). The means of transferring the products to various potential consumption centres have never been properly investigated.

The M3 plant in Ségou, however, is a key element of the planned agro-industrial complex: 7 new units planned for January 2018 for the processing of millet, corn and wheat into flour, pasta and couscous (ON-Mali.org, 2018). The different mills will also produce 70,000 tons/yr of ban used as livestock feed. The implementation of these new units is the result of a public-private partnership signed in December 2014 between the AfDB, the WADB (West African Development Bank) and the Atlantic Bank of Mali on the one hand, and the Moulins Modernes du Mali company on the other hand. This promises future job opportunities.

> *[...] Dozens of labourers, recruited primarily among the local population, will work on the construction site. This experience would allow them to get a similar job on other sites. [...] The new M3 project [...] will promote the creation of SMEs for product sales and provide new opportunities for local subcontractors in several areas: construction, sale of goods and equipment, services related to project activities (catering, cleaning, waste disposal etc.) and other services such as studies, communication, advertising, rehabilitation and repairs. [...] M3 will require contractors to use a local workforce and include in its contracts a clause relating to the transfer of skills and technology to the local workforce. Priority will be given to women and children [...].(*AfDB, 2013)

To date, 400 to 600 additional jobs are actually planned, although the figure of 1500 was mentioned in March 2018 during a visit by the Minister of Agriculture (ON-Mali.org, 2018).

Family farming and food security: a complex equation

> *"Family farming is done on a very small scale. It is mainly characterised by its purpose which is not profit, but the continuation of the family circle. The family circle generally includes many people from different generations. These family farms, because of their purpose and the need to reduce any risks (climate, parasites), always combine several economic activities: annual and perennial crops, livestock, gathering, hunting, fishing, non-agricultural activities either on their land or through seasonal migration […]"* (Seck, 2014).

The primary objective of a family farm is to secure the food supply for the family's own consumption. However, they may also supply local markets (Cirad, 2014).

A hollow recognition?

By declaring 2014 the "International Year of Family Farming", the international community has recognised the key role of family farmers in the fight for food security. The socio-economic and environmental role of family farming is finally being recognised and these farms have many supporters both among international organisations (de Schutter, 2010)

as well as associative forums. In 2009, the French Committee for International Solidarity (CFSI) and the Fondation de France have teamed up to launch a programme to reinforce family farming in sub-Saharan Africa. It has since been refocused on West Africa in 2010. The FAO estimates that small-scale farmers supply up to 80% of the food in sub-Saharan Africa and Asia (Dagorn, Jamart, Jorand, 2017).

Despite this current discourse, family farming is still often considered as extensive farming combined with traditional, if not archaic, techniques and a complete lack of professionalism. Family farming is simply reduced to subsistence economy. The policy of agropoles is based on the belief that small-scale farmers cannot rise to the challenge of feeding African countries ((Dagorn, Jamart, Jorand, 2017). The official position of Mafa Chipeta, FAO representative for East Africa, is indicative of this analysis: *"We will never feed the entire Ethiopian population from only the production of small farmers. Only intensive farming and imported technologies can. […] We have been trying to attract investors interested in our country's agriculture for years. So, now that we have been successful, we are not going to turn them down. […]"* (Zaugg, 2009).

As part of the new contract plan, the Malian government and the Office du Niger management are communicating constantly, insisting on the part of the state budget allocated to a rural development policy (15%). However, the proportion actually allocated to support family farming is not given. The Office du Niger area has long been considered as an "island of farming prosperity" (Marchal, 1974). However, farms are facing a difficult environment in particular in terms of land policies in a context of increasing commodification of land which favours private ownership (Brondeau, 2010; Adamczewski, 2014; Konaté, 2014(b), associated with the enthusiasm for a Public Private Partnership.

Exhausted farms

Family farming has certainly made very clear progress since the liberalisation of the economy and the rehabilitation of irrigated areas started the 80s and 90s: the total production of paddy rice has grown ten-fold: 596,000 t were harvested in 2008 against 57,000 t in 1982. Rice yields have increased four-fold, from 1.8 t/ha to more than 6 t/ha in 2008 (Adamcsewski, 2014). Farmers, encouraged by economic incentive measures (production and sale deregulation), quickly adopted innovative farming techniques such as transplanting and compartmentalisation of land plots, all the more so that they were quickly effective. Changes in the irrigated surface within the Office du Niger was quickly interpreted as a green revolution for which it was rapidly nicknamed the "Mali's rice bowl" (Bonneval, Tonneau, 2002).

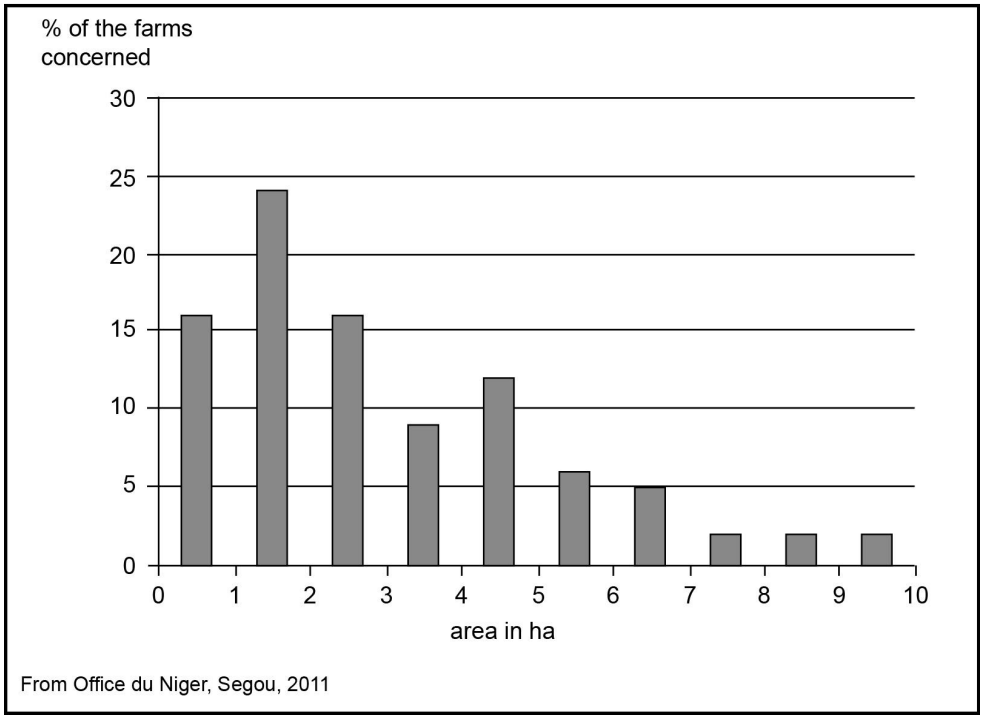
Poverty has somewhat decreased with 63% of households in the Office du Niger area below the poverty line, compared to 81% at the national level. The percentage of people living in poverty remains high, but its severity was much lower in that area than in the rest of rural Mali (Adamcsewski, 2014). The reduction in actual poverty is therefore only relative. The high natural population growth and the arrival of a new population (a population of 62,000 in the Office du Niger area in 1983, more than 420,000 in 2008 (Adamcsewski, 2014), in a context with limited development of new irrigated land due to funding ability, has resulted in a decrease in available land per family (7.8 ha on average in 1982, less than 3 ha in 2006), (Adamcsewski, 2014**)** with a risk of jeopardising the very survival of these farms.

The Collectif des paysans de l'Office du Niger (Copon, a farmers' collective) and the Europe Africa Interact Network held a conference for both the general public and the press on Thursday 22nd February 2018 in Niono. The aim was to raise awareness on the farmers' distress due to the lack of land, the payment of water rates and the price of expensive and poorly distributed fertilisers (Kane, 2018).

In fact, many family farms which are linked to the Office du Niger are in a very uncertain situation. Some get high yields (up to 6 t/ha) but results are extremely uneven (Brondeau, 2010). Because of the high fertiliser price, farmers cannot use the needed doses. This contributes to farming debt leading to disinvestments: sale of agricultural equipment, draught oxen and land plots (Brondeau, 2010). This debt hinders any investment, weakens the intensification process and is the first reason for eviction.

Therefore, in an area qualified as a "rice basket", paradoxically, most of the farms only generate very little marketable surplus. It does not look like local farmers have been given the means to undertake any real change. The lack of any technical and commercial support and the farms' too small size are probably the main obstacles to the modernisation of family farming: 56% of farmers work on less than 3 ha (Zaugg, 2009), see table 1). The average farm size is estimated at 3.7 ha (Dave, 2008). The bulk of the rice put on the market comes from a minority of prosperous farms with larger irrigated areas and often managed by non-resident employees.

Table 1 : Surface of family farms in the Office du Niger



Precarious and inequitable modes of tenure

> *"The different successive regulatory frameworks during the history of the Office du Niger have locked land management. Land allocations have always been temporary, and farmers are still subjected to very strict specifications. Despite their recent involvement in decision-making and the existence of a farming permit, the farmers' situation remained very uncertain and subject to strict management by the Office du Niger."* (Adamsweski 2014).

This precarious land tenure is explained by the tenure systems in force in the Office du Niger area. The creation of a residential lease now allows farming families to keep their homes in case of eviction. However, the most common annual farming contract (CAE) remains very uncertain: it can be challenged every year in case of non-payment of water rates or because of insufficient yields.

The Farming Permit (FP) is the only mode of tenure that provides security for family farms, but if it gives the holder an indefinite and transferable right of tenure, the title can be

withdrawn and the farmer rapidly evicted for non-payment of water rates. As a result, between 1992 and 2007, only 2,325 farming permits (for a total of 9,370 ha) were issued and no new farming permit applications have been filed since 2003 (Adamsweski 2014).

The main reasons for a contract being terminated and the farmer evicted are as follows, whatever the mode of tenure: land plots are unfarmed, water rates unpaid, hydraulic network not maintained correctly, land plot sublet or transferred, non-compliance with other contractual commitments...

The other two modes of tenure, i.e. the emphyteutic lease (50 years) and the ordinary lease (30 years), were set up for investors (whether national or foreign) wanting to set up businesses in production, processing, trade or services related to agribusiness. This type of tenure is normally restricted to undeveloped land, but this means that land used for rain-fed crops or livestock can be transferred under these allocations.

In addition, sub-leases are dealt with in different ways. For example, while the agreement with Libya provides for a long-term lease free of charge, the agreement concerning the Markala Sugar Project (PSM) involves a long-term lease with land fees which the financial value is estimated at FCFA 2,050,000,000 over the 50-year duration of the lease. A similar approach was taken with the agreement for N-SUKALA (with fees of FCFA 2,038,000,000 for 50 years), but in the case of M3 SA, neither the agreement nor the contract mention payment of a fee for the lease. **(**Djire, Keita, Diawara, 2012). The lease contract between the ON and M3 SA stipulates that M3 SA can sub-let its land within the terms of the contract but can only do so once the land has been developed. Malibya, on the other hand, does not have the right to assign or rent the land it has been allocated to third parties without written agreement from the Malian party.

In this context, despite the existence of a management decree and specifications, “illegal”, but widely tolerated practices have emerged at the Office du Niger. As such, renting or selling land plots is very common, although difficult to evaluate because of their illegal nature. Farmers’ associations and unions denounce the fact that large plots are rented by the Office du Niger to officials or traders who then sublet them to farmers (Kane, 2018).

The “land grabbing”, process which seems to qualify the agricultural practices of some investors, is a threat to farmers (Grain, 2008; Cotula and *al*, 2009).

Farmers facing agricultural land and water grabbing

In reality, the fundamental problem is the legal status of this undeveloped land falls into two categories: first, land that has already been registered, with title deeds transferred to the ON; and second, land that has not yet been registered and over which resident communities exercise customary rights. A large proportion of ON land has not yet been registered with the state and requires the taking of customary rights and compensation for the holders (Djire, Keita, Diawara, 2012).

Otherwise, in the absence of clear national guidelines in respect of the displacement and resettlement of affected communities, everything depends on the goodwill of the developer and any requirements imposed by lenders. (Djire, Keita, Diawara, 2012).

Investment projects in the Office du Niger are recently subject to ESIA (Economic and Social Impact Assessment) requirements, but some developers obtained their lease contracts and began their construction work without having carried out any and sometimes even before the lease contract had been signed with the ON (in the case of Malibya). These investors were applying for large areas of land used by farmers and transhumant herders (Djire, Keita, Diawara, 2012). N-Sukala and Tomota began to clear the land without sufficient public consultation. Tomota cleared around 1400ha in the same way as Malibya.

In the area of Bewani, some of the land cleared by N-Sukala belonged to the local villages and was used for grazing, firewood collection and dry cereal cropping. Local people were not

adequately informed through the public consultation required by the decree concerning the environmental and social impact studies. They said that they received no prior compensation.

Admittedly, projects such as Alatona or Sosumar include Resettlement Plans (PRP) for displaced populations (MCA, 2009; BAD, 2009) which have negotiated with their representatives.

> "*1718 households will be directly concerned by the major negative effects of the Programme Sucrier de Markala (SOSUMAR), including people subject to physical displacement, while around 4294 other households will be indirectly affected (IIED) But some of the villages involved in the consultations have expressed their opposition to the project which is expected to only relocate fewer than 100 people. [..] Among other things, the project will rebuild housing entirely in conventional, more durable materials, to enable them to re-establish and improve their living standards. The project will also allocate either rice or sugarcane fields, at their choice, to people who have lost their arable land. Grazing areas will be relocated to two rangelands located 54km and 56km respectively from the most remote places in the PSM area"* (Djire, Keita, Diawara, 2012).

In the village of Welentiguila, for example, 70ha of land have been taken to set up sugarcane nurseries. A compensation has been paid to villagers (at a rate of FCFA 50,000/ha/year), coupled with the wages earned by farm labourers working in those nurseries. However, compensation amounts are not regular incomes for indefinite durations, and longer-term impacts remain to be seen.

The question of resettlement is an important aspect of the agreement with M3 SA which will develop a resettlement plan for any people who may be displaced by the project : in the event that the allocated land includes sensitive areas such as villages, sacred sites, transhumance routes and fields, the operation will take account of compensatory measures.

> "*This provision could be interpreted as an attempt to take some account of Malian farmer organisations, although very little seems to have been done to date to put it into practical effect*." (Djire, Keita, Diawara, 2012).

In other cases, however, displacement, compensation and resettlement conditions have been completely ignored. For instance, no allocation is made in the Malibya project and no responsibility is taken with regards to local communities being evicted from their village: local municipalities have had to take charge in managing resettlements and potential land disputes. At least 16 villages were displaced (Brondeau, 2010; Adamczewski, 2014). Local populations were not consulted and only informed at the very last minute (Crépu, Boris, 2010). Compensation initially valued at 24 million Euros has been reduced to 178 000 Euros and has not been paid in full (Adamczewski, 2014). Some fields located in villages near the project were partly covered with rubble extracted when digging the canal. Moreover, facilities for CGC, the Chinese company in charge of the construction of the infrastructure, were located on the main transhumance route for livestock (Brondeau 2010). The canal, with a width of 70 to 100 meters, isolated some villages and made any trip extremely complicated for the local population and livestock because only three bridges are provided over a 40 km stretch (Adamczewski and *al*, 2012; Adamczewski, 2014).

This canal once filled is not operated by Malibya as the company left the area in July 2010. Since then, water is regularly released in the area located at the end of the canal at PK40, flooding parts of Tangana. Local villagers have developed an infrastructure for irrigated crops on the area flooded during the release of water. These initiatives have been condemned by

management at the Office du Niger. "*Poorly identified economic operators and Spanish investors may be allowed to use the area"* (Traoré, 2015).

All lease agreements and contracts mention access to water and charges for water, but treat them in different ways. Thus, Mali promises to 'give' Malibya all the permits it needs to use water from the Macina canal and underground sources. More precisely, it promises to 'allow Malibya unrestricted use of the water it needs during the rainy season' and 'provide sufficient water for less thirsty crops' (our translation) from the Macina canal during the lowwater period. The water fees for this are set at FCFA 2470/ha/year for pivot irrigation, and FCFA 67,000/ha/year for gravity irrigation. The same figures appear in the agreement with M3 SA. (Djire, Keita, Diawara, 2012).

However, the issue of access to water during the dry season is a recurring demand by the population living downstream from the Malibya project. It was estimated that this project required at least 115 m^3/s during the off-season. However, the river flow available after irrigation of the surrounding small farms is approximately 40 m^3/s (Adamczewski, 2014; Hertzog and *al,* 2012). The water supply priority given to Malibya as Sosumar (Djire, Keita, Diawara, 2012), as part of the agreement granted by the Malian state (Brondeau, 2010), is likely to generate competitive if not conflictual relationships with crop and livestock farmers and fishermen downstream of the project as well as with other countries bordering the Niger River (Brondeau, 2010; Adamczewski, 2014; Hertzog and *al,* 2012). The question is whether these water rights given to the Libyan project can be transferred to other operators.

Analysis of the water management situation included in the ESIA of Sosumar Project shows that users water needs in the dry season could only be met without major difficulty through measures to increase water availability (namely, construction of the Fomi dam upstream in Guinea), and that palliative measures would need to be put in place pending construction of the dam, (Djire, Keita, Diawara, 2012).

This issue is all the more crucial that 1.4 million hectares are now officially considered to be potentially equipped with gravity irrigation (i.e. the technique using the most water), while the CGESM (Commission for the Water Management of the Sélingue and Markala Dams), is announcing that Niger's flows are at their lowest in over 30 years, leading to the cessation of off-season crops and power cuts. These lower flows are largely due to the silting and proliferation of invasive plant species (Scom, 2018).

For several years, agricultural officials have been trying to mobilise, at different scales, farmers affected against what they see as "land and water grabbing". The Sexagon (Farmer's union in the Office du Niger area) and the CNOP (National Coordination of Farmers' Organisations) are among the most active nationwide. Their actions are relayed by the media in Bamako. The CNOP organised an international forum on land grabbing in November 2010 in Kolongotomo, a symbolic town near the Malibya project.

Some disputes have been ongoing for years and ended up being discussed in the media. Two villages, Sanamagougou and Sahou, are fighting against their eviction notice following the allocation of their customary lands to "Les Moulins Modernes du Mali". Some defiant villagers were arrested (Section Européenne Afrique-Europe-Interact, 2015).

The CMAT (Malian association against land grabbing) has filed a lawsuit against this company. The first hearing was held in February 2012 but no decision has yet been made. The CMAT includes the CNOP-Mali, the AOPP (Farming professional organisation), the CAD-Mali (Coalition of African Alternatives - Debt and Development), and the UACDDDD (Union of coordination associations for the development and defence of deprived population). A sit-in entitled "landless villages" was organised in front of the administrative district in Bamako. This move is supported by the human rights organisation FIAN International and by Africa-Europe Interact (Section Européenne Afrique-Europe-Interact, 2015).

These initiatives have had limited results and are poorly perceived by management at the Office du Niger and by the Malian government (Sidibé, 2015; Maliweb, 2015)

Family farming and agribusiness: potential complementarities, under certain conditions…

At this stage, one model should not be favoured over the other. Each has its limitations and strengths in terms of food security.

Food security: an issue to be addressed at different levels?

Food security is based on four pillars: (i) access, i.e. the ability to produce or buy one's own food, and therefore have sufficient buying power to do so; (ii) availability, which remains a problem in areas where food production is insufficient to cover the needs; (iii) quality of the food from a nutritional, health, sensory and socio-cultural point of view; (iv) regularity of food availability, of the means of access to the food and its quality (Programme CE-FAO, 2008, Rastoin, Ghersi, 2010). Food security is therefore considered as part of a food system, i.e. "the way people are organised in space and time to get access to and consume their food".

On one hand, it is conceivable that the Malian government wants to honour its commitments as part of the WAEMU and develop business partnerships across West Africa. On the other hand, the need to ensure a regular food supply at a national level and maintain sustainable prices for urban populations in particular is understandable.

Agribusiness is an economic concept which takes into account all operations involved in the manufacture and distribution of agricultural products. It includes production, storage, processing, distribution and transformation of agricultural raw materials. It seems obvious that the development of agribusiness in the Office du Niger area should allow a steep increase in production required to supply food at national and macro-regional levels.

However, in the current context, large-scale land allocations and the opening of private land market to foreign and national investors can only contribute to these goals if agricultural programmes focus on food production, while tens of thousands of hectares have been allocated to companies wishing to produce biofuels, such as the Malian company Tomota or various other foreign companies (see map 3).

So, questions have to be raised about the relevance of the policy choices made. With a few exceptions, the contracts and agreements for large investments in the ON area make no reference to the end market for the projects produce. For example, the recitals of the agreement between Malibya and the government of Mali quote food self-sufficiency as one of its objectives, but the contract makes no mention of the destination of the produce. How can a project contribute to food self sufficiency if produce is sold on export markets? (Djiré, Moussa, Diawara, 2012).

Furthermore, clear agreements should be established with foreign investors so that the outsourcing of agricultural production as is carried out in certain countries does not compromise Mali's ability to supply its domestic and international market. Moreover, there are issues regarding the technical feasibility and sustainability of these large agricultural projects as their water requirements have been very poorly assessed through botched or unavailable impact assessments (Clavreul, 2009).

Above all, the reliability of the partners to which the Malian government is allocating large areas is questionable. Indeed, some projects only seem to exist on paper while some major developments have indeed been carried out, such as the widening and deepening of the Boky

Wéré canal. This project was undertaken over a length of 40 km by “China Geo-Engineering Corporation” (CGC), a Chinese company. It was completed and filled with water. However, the Malibya project has been stopped since July 2010, even before the Libyan revolution broke out (Adamczewski and *al*, 2012; Adamczewski, 2014). In the end, actual investments only represent less than 3% of those estimated in preliminary studies (Adamczewski, 2014) Experiments were carried out over 7 ha following the impoundment of the canal and the marking out of the different plots.

Beyond this example, it seems that the reality of these new projects cannot be compared to the original goals (Adamczewski, 2014, Burnod and *al*, 2011). This wave of large-scale land allocation, particularly intense between 2008 and 2011, also tends to slow down (Land Matrix, 2015). It seems that some investors are taking advantage of the opening of the land market to acquire cheap agricultural land with leases lasting several decades. They can rapidly get return on the few investments and the water charge by sub leasing the land to the farmers. This practice used by Malian companies and COVEC (Chinese investments) could be considered for projects which are currently shelved.

On the other hand, preserving family farming can be an asset to ensure local and regional food supply. 70% of the food produced in the world comes from family farming (Cirad, 2014). 500 to 800 million small farmers ensure their own food security and are the only ones with sufficient capacity to feed the rest of the world, cities included. Family farming is also the largest provider of employment in the world with 1.3 billion people working on the farms (Cirad, 2014). Commercial food farming around large cities is well established (Chaléard, 1996). Therefore, there is a potential market in the Office du Niger area with its population of 486 000 (Konaté, 2014 (a), and neighbouring regions (city of Segou exceeding a population of 130 000 at the 2009 census).

Supplying food to this area probably requires the development of a food-processing sector (providing employment to the area) capable of transforming and packaging these products as well as the setting up of an efficient transport sector. The idea is to supply local and regional markets while maintaining product quality and freshness and adapting to food consumption in an urban environment (packaged products etc.).

Furthermore, securing land tenure is one condition, although probably inadequate but nevertheless vital to maintaining and developing such farms. Individual ownership is not necessarily a demand among farmer organisations as these remain attached to a collective land management. Because of this, collective land allocation is more and more considered. One of the recent reports prepared for the World Bank recommends that customary rights are secured using a collective or individual property registration (Byamugisha, 2013). Because the overall systematic registration procedures are inefficient, there has been a paradigm shift in terms of land policy: from a substitution model (from private individual rights to customary rights) in the 1990s and the years 2000 to an adaptation model (customary rights) (Colin, 2009). In the current context of high land pressure and large-scale land allocations, the risk is to see poor farmers sell or mortgage their land for the benefit of the most active players and at the expense of maintaining family farming.

The conclusions of the study led by Oxfam, Action Against Hunger and the CCFD-Terre Solidaire, (Dagorn, Jamart, Jorand, 2018), in areas that have been developed into agropoles, call into question the relevance of these initiatives. In Burkina Faso, a decline in food availability has been observed in most areas of growth, many already suffering from food insecurity. Thus, according to field surveys carried out by the Confédération Paysanne du Faso, 56.7% of households living in growth clusters are experiencing issues around food self-sufficiency. In Bagré, a location for one of the main agropole projects, residents are now reporting a lower food availability on local markets. The supply of grain products on the markets has indeed declined as land previously farmed for corn, millet or sorghum has been

devoted to rice monocrops. Other agricultural land has been allocated to families displaced by the project. Family farmers who have been integrated into the Growth Cluster are allocated 0.99 ha for rice monocrops, while the survival threshold for such a farm is 3.5 ha (Dagorn, Jamart, Jorand, 2018).

Contract farming: going beyond negative or opportunistic experiences, should complementarities be redefined?

However, as social and economic excesses associated with large-scale land allocations appeared, the need for more equitable contracts between the different actors has sparked a renewed interest in contract farming. This is usually a contract between small farms and agribusinesses. Both parties agree well-defined obligations and payments for tasks performed. These agreements often include product specifications, such as volume, quality and delivery time. Within this framework, small farmers have better access to credit, advice, training as well as better integration to the market with secure outlets and prices (Adamczewski and *al,* 2012; Dagorn, Jamart, Jorand, 2018).

This system is likely to contribute to developing family farming and securing a food supply for rural and urban populations. For example, it is commonly argued that cotton producing farmers under contract with companies such as CMDT in Mali or SOFITEX in Burkina Faso are provided an income and education which have allowed them to modernise their farms and improve their food crop yields. In the early 2000s in the region of Dagana (Senegal lower valley), 12 000 tomato producers were linked through commercial contracts with SOCAS, a company which owns several plants for the production of tomato concentrate. 80 000 tonnes of tomatoes were therefore sold to that company in 2007 (Brondeau, 2010). Yields could reach up to 70 t/ha. Profits were partly reinvested in modernising these small farms. They also helped improve the lives of families and increase the school attendance for their children. However, this fragile system has been undermined by the arrival of the French company "Grands domaines du Sénégal" who wanted to develop greenhouse tomato crops. SOCAS was also tempted by the import of Chinese tomatoes to supply its plants at lower cost (Brondeau, 2010).

However, these experiments are rare in Africa. Furthermore, a review of contract farming in previous decades has been very critical (Vavra, 2009; Tonneau and *al*; 2012, Prowse, 2013). Because of the lack of regulation and unequal relationships between the different stakeholders, the very idea of contract farming is questioned (Brondeau, 2010). In some cases, this type of contracting does not provide for small farmers with a stable contract nor the opportunity to manage their farm freely. In Brazil, this type of contracting has created a class of capitalist farmers. These accelerate the proletarianisation of the poorest farmers by buying their land (Tonneau and *al*, 2012). However, later experiments at supporting family farming have yielded better results. These are integrated projects which include programmes for the construction of infrastructures and social policies (Vavra, 2009).

The example of the Markala Sugar Project developed by Adamsceski and *al* (2011) is a perfect example of the limits of contracting. Faced with protest movements opposing the Sosumar-managed Markala Sugar Project in 2007, the project revised its objectives to include a "contract farming" component (Diarra, 2012). In addition to the type of management initially planned and the requirement to employ at least 5,000 people via SoSuMar and CaneCo (Djité, Keita, Diawara, 2012), 40% of the land, i.e. 5,600 ha, will be awarded to independent operators who will be bound by contract to Sosumar; 4,350 ha will be used for sugar cane crops but 1,250 ha will be allocated to vegetable crops between irrigation pivots (Djité, Keita, Diawara, 2012).

The terms of the proposed contract are as follows: "[...] *every farmer will be required to grow sugar cane; he can choose his land plot; the developer will provide the land, the cane cuttings, any inputs, water, advice and monitoring; the farmer will be in charge of production and will be required to supply all of his cane harvest to Sosumar. Prices will be set according to the market, [...]. The requirement of a monitored technical route means that the crop will be managed by investors: the farmers will be "supervised" in order to produce the quantity and quality sugar cane required for the factory. [...] They will be able to grow other products at their discretion and only between the irrigation pivots, where controlling the water is difficult and where the trucks circulate for delivering the sugar cane to the factory. The farmers would be considered as the land plot beneficiaries, but their exact land rights could not be identified [...] "* (Djité, Keita, Diawara, 2012).

In actual fact, if the commitment to establish contractual relationships with local producers is part of the selection criteria of the prospective investors, so far, it has hardly been honoured. In the absence of a coercive legal framework, both farmers and agribusiness companies fear that the terms of the contract will not be complied with. Farmers' organisations are still poorly equipped to support family farmers in these negotiations (clauses and contracts compliance, setting purchase prices and payment terms for the productions).

In addition, as part of these agropole projects, part of the rural population is destined to leave the agricultural production sector to gain access to jobs offered by these companies. However, contractualisation does not guarantee the development of decent jobs as evidenced by irregularities observed on older Burkinabe or Tanzanian projects. " *In Burkina Faso, where the development of the Bagré Growth Cluster aims at creating 30,000 jobs, young people still seem to be leaving the area to look for work in urban areas. When job creation is effective, their quality is not guaranteed, without minimum clauses relating to wages, conditions of employment, etc. People employed as day labourers on the Kilombero Plantations ltd (KPl) farm in Tanzania reported being paid below the Tanzanian minimum wage and unable to meet their basic needs. They also reported a lack of personal protection equipment for work as well a lack of medical supervision with regards to the health risks of field work, including the use of chemicals.* (Dagorn, Jamart, Jorand, 2018).

Conclusion

First introduced by economist François Perroux in the 1950s, the concept of growth cluster was conceived in a theoretical economic space that established a systematic link between growth and development. *"The growing interest of West African policymakers in the concept of growth clusters is based on the assumption that any investment necessarily leads to growth and that growth automatically leads to a reduction in poverty"* (Dagorn, Jamart, Jorand, 2018). However, those promoting agricultural growth clusters have never detailed the conditions and mechanisms that would enable them to generate sustainable and balanced territorial development. This approach to agricultural development considers the fight against hunger essentially as a challenge to increase production and yields, without taking into account the income of the poorest nor where the agricultural production is sent (Ahodode, 2017). Furthermore, members of the Réseau des Organisations Paysannes et de Producteurs de l'Afrique de l'Ouest (Network of Farmers' Organisations and Producers of West Africa - ROPPA) and other international organisations or organisations arising from the African civil society, have thus criticised large-scale simplistic private investment and raised serious doubts on their ability to lead to a development process (Dagorn, Jamart, Jorand, 2018). These agropole projects help promote a two-tiered agriculture that promotes investment and development of national and international companies at the expense of the survival of family farms. In addition, by using intensive monocrops from a few promising productions for export

or for the national market, the development of agricultural growth clusters has exposed the populations concerned to increased environmental and health risks.

Furthermore, in this context, the effectiveness of public development aid in the fight against hunger must be questioned, since these projects concentrate significant contributions from donors to small areas. Hence, the annual funding from the World Bank in Bagré for 2011-2017 reaches 4.6% of the country's average budget for the agricultural sector, in an area representing less than 0.5% of the agricultural land and less than 0.3% of the country's agricultural assets (Dagorn, Jamart, Jorand, 2018).

International institutions, such as the World Bank or the FAO are trying to regulate large-scale land investments by suggesting codes of conduct, but the principles set out are not binding, as are the provisions of environmental and social studies recommended by these organisations. Farmers try to speak up through demonstrations and denounce the effects of this farming policy through farmers' unions and peasant organisations, but the weight of civil society is limited, populations are widely overwhelmed by opaque economic and political agreements negotiated at state level (Adamcsewski, Jamin, Tonneau, 2011).

It is however difficult to get these agropoles out of the ground. Their launch does not necessarily attract a massive influx of private investors, who sometimes wait for the implementation of a basic infrastructure as well as the promised tax or customs incentives. A study based on the analysis of 20 projects also concludes that the complexity of the agreements added to vast number of activities at macro-level (business environment), meso-level (growth clusters) and micro-level (subsidies and business support) can explain the poor performance of these projects, (Dagorn, Jamart, Jorand, 2018).

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