



Responsible Land Governance: Towards an Evidence Based Approach

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IDEOLOGIES. DEVELOPMENT MODELS AND IRRIGATED LAND TENURE: THE BAGRÉ IRRIGATION PROJECT IN BURKINA FASO

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Abstract

This paper discusses the history of irrigation development and related land allocation in the Bagré area in the South of Burkina Faso. It specifically analyses current processes at play as part of the recent Bagré Growth Pole Project implemented by the government of Burkina Faso with support of the World Bank. The paper stresses the efforts made to put in place a fair and equitable compensation mechanism for the people being affected by the extension of the irrigated area downstream of the Bagré dam. The practicalities and thresholds considered in the compensation scheme are partly driven by the need to free some rainfed land to allow agro-entrepreneurs to settle in the area, financially contribute to the infrastructural costs of developing irrigation, and develop intensive and profitable irrigated production systems. This leads to socially constructing land scarcity, and threatens the future viability of smallholder farming. This happens even though the expressions of interests received to date by Bagrepole from agro-entrepreneurs appear little likely to trigger the virtuous development circle hoped for.

Key Words: Compensation, Growth Pole, Irrigation, Land allocation, Burkina Faso



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Introduction

Following the international food crisis of 2008, agriculture made a noticeable come back on the international development agenda, which had been already announced in the 2007 World development Report in which agriculture was presented as “a vital development tool for achieving the Millennium Development Goals” (World Bank, 2007a). The Sustainable Development Objectives have now replaced the Millennium Development Goals but agriculture remains high on the international agenda (see for instance: https://farmingfirst.org/sdg-toolkit#section_2). Projects and reforms dedicated to agricultural water management – a rather recent and generic term that encompasses irrigation- are receiving renewed interest from donor agencies and national governments alike. Improved water management has indeed long been seen as a way to increase agricultural productivity hence alleviate poverty, especially in sub-Saharan Africa where water resources are said to be plentiful yet untapped due to low investments, scant infrastructures, and weak human and institutional capital (AfDB et al., 2008; World Bank, 2007b).

The policy importance given to developing water resources for irrigation in sub-Saharan Africa is clearly illustrated by the fact that it was identified as a “primary action area” by the New Partnership for Africa’s Development (NEPAD) in its Comprehensive Africa Agriculture Development Program (CAADP) (NEPAD, 2003). At the same time, irrigation in general and large public irrigation systems in particular have long received bad press for their negative environmental (change in flow patterns, damages to existing ecosystems) and social (displacement of populations, land conflicts) consequences. They have been said to fare well below expectations given their high investment costs and to fail addressing the issue of poverty. One of the most forceful critiques that has been formulated is the inability or unwillingness of public management agencies to sustainably manage large scale irrigation infrastructures, which led to worldwide reforms to devolve irrigation management responsibilities to irrigators themselves, often in a context of economic structural adjustments plans as early as the 1980s (see Groenfeldt and Svendsen, 2004; Garcès-Restrepo et al., 2007 as well as Mollinga and Bolding for a critical review). These reforms have been heavily critiqued for being narrowly framed around the issue of ‘deferred maintenance’ (the fact that maintenance is postponed in anticipation of further funding for rehabilitation) and for failing to address the broader challenges of the sector, too (see for instance, Suhardiman and Giordano, 2014). Scholars notably highlight that the public administration did not really defer decision making, but only obligations, to farmers; these, in turn, could not manage the systems as they wanted and were not in a position, or unwilling, to financially contribute the amounts required to maintain the infrastructures at desirable levels of performance as assessed by the engineers who designed and built them.



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The image that thus emerged is that of an inability of the state and smallholders to make productive use of economic assets, and has triggered calls for increased private involvement in irrigation development and management (see, for instance, Mandri-Perrott and Bisbey, 2016; World Bank, 2007c). Broadly speaking, this private involvement can take two forms. First, land allocation within already or potentially irrigated areas whereby agro-enterprises are meant to cultivate high value crops on large areas hence generate a surplus and pay for the maintenance (and even sometimes the construction) of irrigation infrastructures. A second form of private sector involvement is when a (semi)-private enterprise is responsible for overseeing irrigation development and management (see, for instance, World Bank, 2007c).

In Burkina Faso, these two trends are at play in the Bagré area where a large gravity based irrigation scheme started being built in the late 1990s and new investments are currently made. In Bagré, there is (1) on-going smallholder based irrigation in a scheme built at a time when a public agency oversaw irrigation development and was responsible for the establishment of water user associations; (2) an extension of the irrigation scheme for smallholders and their on-going resettlement (3) plans to further develop irrigation infrastructures and allocate land to agro-entrepreneurs who would financially contribute to infrastructure development. As such, it appears to be a particularly interesting case study to shed light on the intertwined debates around private sector involvement and land tenure management in the irrigation sector in sub-Saharan Africa. The comparison between on-going irrigation practices and the hypothesis made regarding irrigation in the planned extension, notably, allow shedding light on the interplay between ideologies and practices of land tenure management and irrigation development. To do so, we draw from the first hand experience of some of the authors, in depth review of publicly available World Bank documents, field work, agro-socio-economic surveys, key informant interviews, and participatory activities conducted as part of a collaborative project between two French public research institutes (CIRAD and IRD), Bagrepole and the Nakanbè Water Agency in Burkina Faso.

Irrigation in sub-Saharan Africa: Current Debates on Land and the Private Sector

Irrigation is back on the international (World Bank, 2007) and continental (NEPAD, 2003) agenda but there seems to be a wide reaching disenchantment among many funding agencies and national governments regarding the way public agencies have managed irrigation to date. In addition to underperforming public agencies, smallholders are also often pointed out for being responsible for the decay of existing and costly irrigation infrastructures. They would indeed be little productive/profitable and unable or unwilling to contribute to their maintenance. As a consequence, and in line with a broader



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neoliberal discourse, the private sector is increasingly presented as a way to ensure that irrigation (investments) finally yields on the promises of increased agricultural productivity and poverty alleviation.

Private sector involvement is promoted at two main levels. First, through the establishment of (semi)-private organizations that would manage irrigation infrastructure development and management according to market principles. These agencies would provide services to farmers (among others, timely and adequate water supply), which the latter would pay for. The money hence collected allowing to both maintaining the infrastructure (hence the service) and remunerating the staff of the organization, and even possibly generating a profit. Along this line, Public-Private-Partnership (PPP) is seen as a specific modality of private sector involvement, particularly promising for upgrading or developing critical irrigation infrastructures, which are said to still be lacking in sub-Saharan Africa (see, for instance, World Bank, 2011b, 2013). Second, private sector involvement in irrigation has also come to be equated to promoting agro-entrepreneurship or agro-business, meant to generate significant financial surplus hence contribute to the maintenance of infrastructure, contrary to smallholder farmers.

The potential of the private sector to trigger broad-based development is held high, but this is often to better stress that the current agricultural sector of sub-Saharan countries does not provide an environment conducive enough for these long awaited private investments. To redress this situation it is notably proposed to create areas or sectors that will be given a special status to be attractive enough for enterprises and companies to invest. Among these are the well known “Special Economic Zones (SEZ)” and the lesser known “Growth Poles”. The notion of growth pole was first articulated by the French economist François Perroux in the 1950s and largely used in the following decades for regional planning and development exercises. It posits that growth ‘starts’ in a specific place and then ‘moves on’ from there through a trickle effect (see, among others, Perroux, 1955 as well as Parr, 1999 for a retrospective on the notion of growth pole strategies). The idea of growth pole seems to have re-emerged in the 2000s and is notably promoted by the Trade and Competitiveness Global Practice of the World Bank as one of its “spatial growth and investment strategies” (World Bank, 2015), but amidst internal controversies regarded its feasibility and added value (*pers. comm.* with World Bank staff).

According to their proponents, growth poles (projects) are multi-year public-private investments and “often consist of infrastructure projects with associated investments and capacity building efforts directed at the private sector” (Speakman and Koivisto, 2013, p93). They “are based on a resource that serves as an inherent revenue producer [and...] enhance already existing opportunities” (Ibid). The underpinning



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is that large “*simultaneous, coordinated investment in many sectors*” creates a strong enough basis “*so that it becomes profitable for firms to invest*” (Ibid); a capacity to innovate and adapt to market conditions by large companies with enough negotiation power would then be all it takes to create a spill-over effect. By their sheer size and the number of actors involved, growth poles (projects) are, however, seen as risky ventures; one of the main challenges being to sustain large investments over a long period of time.

This question of securing large and long-term private investments in sub-Saharan Africa is not specific to growth poles; it has also been a recurring theme in discussions over the African agricultural sector and is closely intertwined with the question of land security. Indeed, the fluidity of land access and use rights that characterizes most of rural sub-Saharan Africa has long been presented as a reason for the low productivity of African agriculture and a stumbling block for attracting the private investments that would allow breaking the deadlock. This happened even though there is ample evidence that customary tenure dynamics are not always associated to insecurity per se (for a review, Lavigne Delville, 2006).

It is against this backdrop that many countries have engaged in reforms and policies aiming at securing land through the formalization of rights. Even though customary tenure is generally characterized by a “bundle of rights” whereby different individuals can claim different types of use and access to the same plot of land, formalization has often taken the form of mapping and land titling exercises whereby a single individual is recognized and further granted ownership to any single plot of land (for a review and critique of these policies see Chauveau and Lavigne Delville, 2012 and Lavigne Delville, 2013). These reforms have raised significant attention maybe best epitomized by the worldwide debate on ‘land grabbing’ whereby outsiders are provided land rights and land titles at the expense of local communities (see, among others: Cotula et al., 2009; Borras and Franco, 2012). In this context, irrigated areas, notably within large gravity irrigation systems, have recently been under specific scrutiny. They, indeed, stand alone for multiple reasons, all impacting the modalities of access to and use of the land: people are necessarily displaced for their construction or rehabilitation (and sometimes compensated); some land is taken up by (generally public) infrastructure in the form of dams or canals; significant investments aimed at improving land productivity are made and need to be maintained; the value of the land consequently increase (Bélières et al., 2013; Adamczewski, 2014). In some instances new institutional actors emerge (such as public irrigation agencies or water user associations), and almost always do the juridical status of the land change adding an additional layer of complexity to an already complex situation. The Bagré area that we describe below is witnessing these changes with potential far reaching consequences.



Irrigation Development in Bagré, Burkina Faso

A Long-Held Dream

The Bagré region in the South of Burkina Faso has long attracted the attention of the Burkinabè government and its technical and financial partners. Since the eradication of onchocerciasis in the mid 1970s, it is seen as an area with high potential both in terms of agricultural development, notably in the form of irrigation, and hydro-electricity generation. A first pilot project called “Petit Bagré” with a small dam commanding an irrigated area of about 80 hectares was funded by the French cooperation in the mid 1980s. In 1986, a public agency, the *Maitrise d’Ouvrage de Bagré*, was established to oversee planned water and agricultural development in the area, notably the construction of a dam storing up to 1,7 billion m³ on the Nakanbè river (White Volta) between 1989 and 1993. At the time, the main purpose of the dam was to provide irrigation water to a gravity irrigation system located downstream, with hydroelectricity generation being the second major use of this multi-purpose dam. Due to the slow progress of irrigation construction work and the difficulties faced in the irrigated schemes (see below), hydroelectricity has constituted the major water user until now, managed by the public agency, SONABEL.

As far as irrigation is concerned, the Taiwanese cooperation funded the construction of a first rice scheme of 1,200 hectares on the right bank of the river. The construction started in 1995 and was completed by 2002 with the first farmers settled in the scheme in 1996 and the MOB overseeing its management. It is only after construction started, in 1998, that the Bagré area was named as a “Public Utility Area”, granting the government of Burkina Faso and the agencies overseeing development of the region (at that time the MOB), the right to expropriate people in the sake of public interest. Between 2002 and 2004, a consortium of Western and international donors supported the construction of a 600 hectares rice scheme (in addition to the already existing 80ha) on the left bank of the river.¹ Between 2006 and 2009, another 1,500 hectares extension was built with the support of a consortium mostly made of Arabic donors.²

By 2009, only about 3,380 hectares out of the 33,000 envisioned in the earlier feasibility studies had been equipped downstream of the dam and less than 3,000 hectares were actually irrigated. Reports highlighted the low performance and productivity of rice cultivation and several studies pointed out the challenges

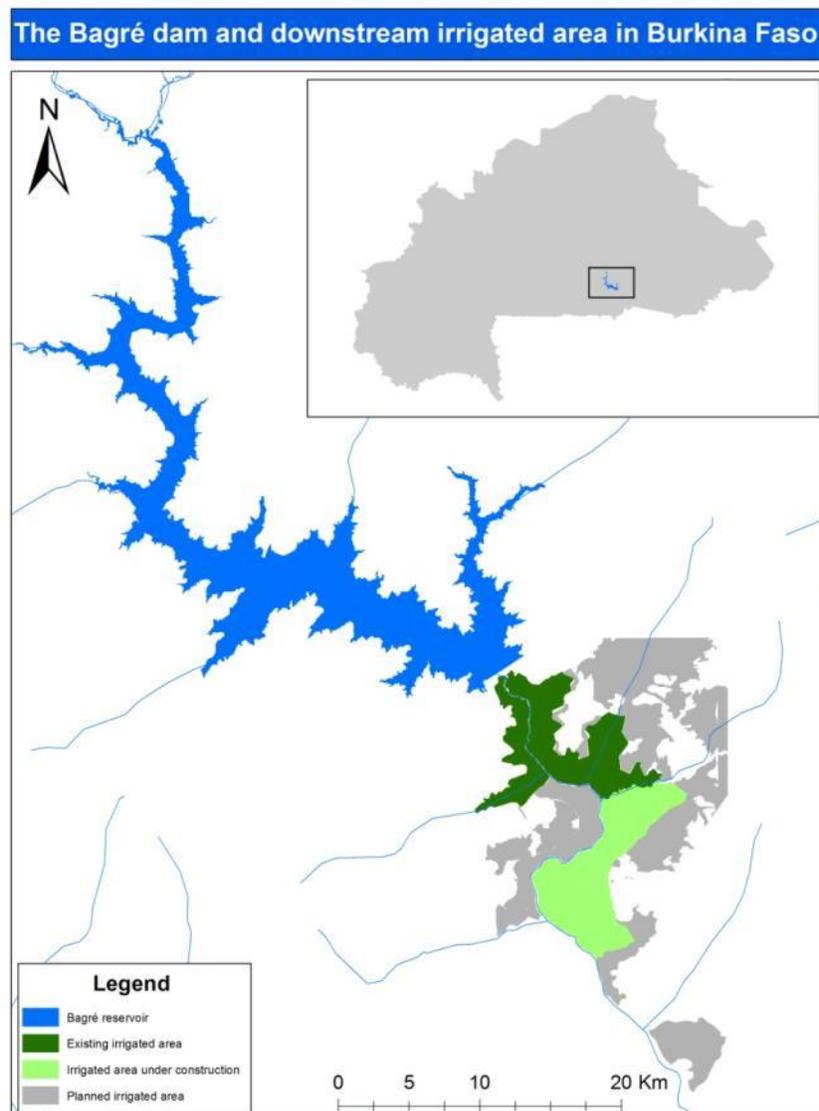
¹ Donors included the West African Development Bank, The *Caisse Française de Développement* (former French Agency for Development –AFD), The African Development Fund and the European Development Fund.

² Donors included The Kuwait Fund for Arab Economic Development FKDEA, the Islamic Development Bank, the European development Fund, and the Fund of the Organization of the Petroleum Exporting Countries.



faced by the public agency (the MOB) in charge of managing the system and the lack of capacity of the water user associations that had been set up (for details on land and water development in the Bagré area since the 1970, see, among others, Bagrepole, 2012; Kaboré and Sédogo, 2014; Carboni et al., 2016).

Figure 1. The Bagré dam and irrigated area in the South of Burkina Faso (circa 2015) (The authors)





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The Bagré Growth Pole Project: A controversial project, high on the agenda

Attention to the Bagré area picked up again in the late 2000s when the government of Burkina Faso together with the World Bank launched the US\$135 million Bagré Growth Pole Project, which includes a World Bank grant of US\$115 million (2011-2017; in 2016 the project was extended until 2018). The Bagré Growth Pole Project posits that agricultural development –especially in the form of extending irrigated areas- will trigger broad socio-economic development in the project area, and beyond, at national level. For the purpose of this paper, two aspects of the project are particularly noteworthy: (1) the promotion of agro-entrepreneurship; and (2) the willingness to set up a private entity to oversee irrigation development and management, which had until now, been the remit of a public agency (see above). Bagrepole SEM,³ a semi private agency was indeed established in July 2012 to manage the project together with the *Maison de l'Entreprise* of Burkina Faso and oversee the development of the “Priority Utility Zone” of Bagré. In addition to overseeing irrigation infrastructure development, Bagrepole is also responsible for handling resettlement issues, which are financed through a US\$3.2 million contribution of the government of Burkina Faso to the project (Bagrepole, 2012; World Bank, 2001b).

The Bagré Growth Pole Project is particularly interesting as it epitomizes one of the World Bank spatial growth strategies or solutions, which are debated within and outside the World Bank given the mixed results of similar projects obtained to date (*pers. comm. senior World Bank staff, 25/11/2016*). The Bagré Growth Pole Project was indeed launched amidst internal controversy and de facto became a “lab” through which the overall growth pole approach but also the idea of Public-Private-Partnership (PPP) in irrigation would be assessed.⁴

For the project proponents, Bagré and Burkina Faso appeared particularly suited to implementing and making the case for a growth pole approach. At national level, the then recently published World Bank strategy for supporting Africa’s future (World Bank, 2011a) and the ambition to unlock the potential of agribusiness on the continent (World Bank, 2013) aligned with the Accelerated Growth and Sustainable Strategy (2011-2015) of the Burkina Faso government. The latter indeed identified the promotion of growth poles as its first strategic axis of development (Government of Burkina Faso, 2011) and the Bagré

³ Bagrepole is owned at 61.5% by the state and 38.5% by the “private institutional sector”. At the time of the writing, Bagrépôle hardly functions as a private enterprise: it does not generate any profit through its activities and is fully supported by third party (development agencies, the government of Burkina Faso, etc.)

⁴ The internal stakes were high as the project was one of four pilot projects supporting the World Bank Africa strategy, and prepared through a tripartite partnership between the agriculture and private sector teams of the Africa region of the World Bank and the Africa agribusiness team of the International Finance Corporation (IFC).



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Growth Pole Project was high on the national agenda as clearly illustrated by the fact that it is hosted in the Prime Minister Office –rather than in any sectoral ministry. The importance given to growth poles is still high on the national agenda as shown by the World Bank supported attempts to elaborate a national policy for the promotion of growth poles (EGIS and SECAM, 2016).⁵

At regional level, the focus on Bagré was broadly justified by a World Bank staff involved in the project: “it made sense [...] Burkina Faso is well known in the region for the diversity of agricultural products [...] Bagré] has already attracted a lot of investments and efforts [...] it seemed a promising area to launch a project of this size [...] where else?” (pers. comm.. 25/11/2016). The presence of a dam, the central position of Bagré within Burkina Faso itself located at the crossroads between coastal and land-lock countries, and past investments in irrigation were seen as providing Bagré the necessary edge to serve as “the seed” or regional and national economic growth, even though the project appraisal report identified serious challenges to doing business in the country (World Bank, 2011b).

The Bagré Growth Pole Project is multi-faceted with several components; the following sections solely deal with the irrigation development component and the related resettlement dynamics; it does not aim to be read as an evaluation of the project as a whole.

Irrigation Development and Land Tenure in the Bagré Area

The Bagré Growth Pole Project: Ambitious Targets and Delays in Building of Irrigation Infrastructure

As stated in the project appraisal report (World Bank, 2011b), the objective of the project in terms of irrigation development was to “*finance remaining infrastructure to complement investments already made by the Government, including [...] design, construction and equipment of irrigation canals for the irrigation of up to 15,000 ha*” (p. iii) out of a potential held to be about 30,000 ha (see for instance World Bank, 2011b; Bagrepole, 2012). The cost of such infrastructure was evaluated at US\$52 million (World Bank, 2011b). Among these 15,000 hectares, it was envisioned to build 3,000 ha of gravity irrigation scheme (the project would fully finance construction up to tertiary canals) and 3,000 ha of *bas-fond* (low-lying irrigation schemes with partial water control) to be used by smallholders. The remaining of the potentially irrigable area can't be irrigated by gravity alone but requires water to be pumped to the fields.

⁵ In 2011, the government of Burkina Faso envisioned to established a growth pole in the Sahel region in the North (around mining activities and livestock); 2 growth poles around irrigation activities around the existing Sourou scheme and the large Samandeni dam (where there is no irrigation yet) and a growth pole in the east of the country (around tourist activities). Support to the establishment of these growth poles has yet to be materialized.



This means higher investments and higher operation and maintenance costs. It was envisioned that the primary infrastructure (primary canals, roads, and electrification) would be build by the project; agro-entrepreneurs who would be allocated land in the project area would, then, finance the necessary infrastructure (from secondary canals to on-farm irrigation systems).

In 2012, the total net irrigable area was re-estimated at about 11,500 ha (including 1,500 ha of low lying lands) on the basis of topography and soils characteristics (Bagrépole, 2012). As detailed technical feasibility studies prior to construction were conducted, these numbers were further adjusted to about 13,400 in addition to the 3,300 already irrigated (see table 1).

Table 1. Status of existing, under-way and planned irrigated area downstream of the Bagré dam

	Net irrigated area		Type of water supply	Construction status -2016
	Smallholder	Agro-entrepreneurs		
Existing irrigated area, right bank	1200		Gravity	Completed
Existing irrigated area, left bank	600		Gravity	Completed
First extension (MOB), left bank	1200	300	Gravity/ Pumping	Completed
Current extension, left bank†	1150	1050	Gravity/ Pumping	Ongoing ; to be completed in November 2017
West extension, right bank	945	1250	Gravity/ Pumping	Contract signed (October 2016)
Northern extension, left bank	615	4970	Pumping	On-hold
East extension, left bank		2290	Pumping	Not yet discussed
South extension, left bank		300	Pumping	Not yet discussed
Upstream of the dam	550	285	Pumping	Not yet discussed
Total	6260	10445		

†This area include the extensions known as the ‘1000ha extension’ and the ‘1130 ha extension’, sometimes pulled together under the name ‘2582 scheme’. *Source:* Figures of net irrigated area are adapted from Bagrépole and Maison de l’Entreprise (2013)

The appraisal report envisioned that critical irrigation infrastructures would have been built 3 years after “project effectiveness” (World Bank, 2011b). The financing agreement between the World Bank and the government of Burkina Faso was signed in July 2011 for a starting date set up on November 2011. Bagrépole was established in June 2012, indicating a rather rapid launch of the project. However, construction of the planned infrastructure has been significantly delayed for multiple reasons: (1) the time needed to conduct a comprehensive identification of the households affected by the project, identify the



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assets they would lose and reach a consensus on the compensation scheme to put in place was underestimated (see below); (2) the necessary time to put in place the environmental and social safeguard policies of the World Bank and strengthen Bagrepole led to contracting the construction companies for the building of the first extension phase in May 2014, just before the rainy season when construction is difficult; (3) the independent supervising agency was only mobilized in January 2015 and no construction work was done prior to that; (4) the initial feasibility studies done in 2004-2007 and further revised at the start of the early 2010s as part of another World Bank project (the *Programme d'Appui aux Filières Agro-Sylvo-Pastorales-PAFASP*) did not give proper attention to the topography of the area, which led to a further 8-months shutdown of the construction work as the supervising agency conducted further studies,⁶ (5) the work started again in September 2015 but delays in the signing of amendments to the initial construction contract meant that construction companies were rather reluctant to conduct work that were not initially envisioned in their contract (*pers. comm.* with staff of the independent supervising agency; by the time of the writing, amendments to initial construction contracts have been signed).

By the end of 2016, and according to the team leader of the independent supervising agency, about 20% of the construction work of the '2582 ha' extension was completed (see light green area on Figure 2). Construction of this scheme is expected to be completed by the end of 2017 and land to be allocated to both smallholders (about 1150 ha) and small to medium entrepreneurs (about 1050 ha) (see table 1). The northern extension that came second in terms of priority and where the land was to be mostly allocated to large agro-entrepreneurs has been put on hold. Following an implementation support mission in October 2016, and given the remaining budget as the project is nearing its end, the World Bank notified its intention to focus the remaining investments on improving infrastructures in the existing schemes and those under construction. The objective is to facilitate the installation of small to medium agro-entrepreneurs (who applied for a land area comprised between 5 and 50 ha) alongside smallholders in the schemes currently being built (World Bank, 2016). At the meanwhile, there are on-going negotiation regarding an additional financing of 50 million US\$, but, at the time of the writing, it is not envisioned this additional financing will cover the primary infrastructure of the northern extension (which was meant to be funded under the Bagré Growth Pole Project).

⁶ The Bagré Growth Pole Project appears illustrative of a general trend as far as irrigation infrastructure projects are concerned: the fact that projects are often based on old technical feasibility studies (conducted as part of earlier initiatives) that do not provide a sound basis to assess the current situation. These studies often need to be revised, which is rarely foreseen, leading to delays and rising costs in infrastructure construction. In the case of The Bagré Growth Pole Project, the two construction contracts have been raised by about one third and the companies received an extra of about 10% of the initial contract as compensations for the delays incurred. Importantly, social and environmental safeguards studies have been conducted under the current Bagré Growth Pole Project (see below).

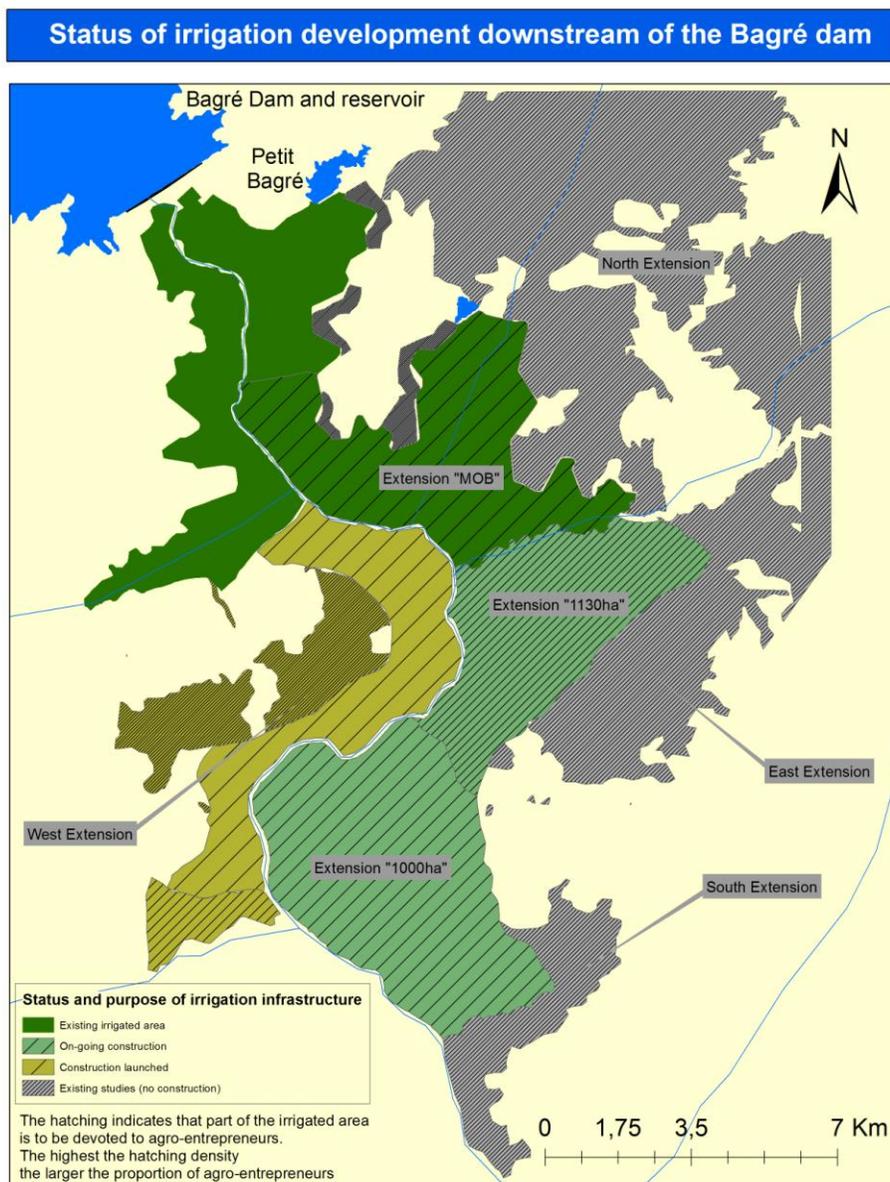


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Figure 2. Ambitious plans for irrigation development in Bagré (The authors)



Further, in February 2016 and after 18 months of preparation, the African Development Bank (ADB) launched its own 5 years US\$30 million project⁷ to support irrigation development in the Bagré area. Three fourths of the budget is devoted to rehabilitating the existing irrigation system on the right bank (1,200 ha) and extending the irrigated area on the right bank for both smallholders and agro-entrepreneurs

⁷ To which about US\$7 million need to be added as contribution from the government and 'beneficiaries'



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(what is known under the name ‘West Extension’) (Fonds Africain de Développement, 2015). The construction companies have been mobilized in October 2016 and the supervision of the work is to be conducted as part of the World Bank funded Bagré Growth Pole Project. A comparison of the planned investment costs and duration of the ADB and World Bank projects (US\$22.5 million for 2,200 ha and the rehabilitation of 1,200 ha and US\$52 million for up to 15,000 ha, respectively) point out to the fact that investments costs and required time had probably been underestimated in the World Bank project.

Beyond the increase in infrastructure costs, a major consequence of the delays observed is the fact that people who had been displaced as early as October 2014 (and concomitantly forbidden to cultivate their rainfed plots where the irrigation infrastructures were to be built) have not been able to cultivate for the last 3 rainy seasons and will not cultivate for the next rainy season as well. Initially, it was envisioned that the impossibility of rainfed farming in the area would only last two rainy seasons. Bagrepole has adjusted to these delays and farmers have been financially compensated for each of the harvests lost (see below) but successive delays in construction still triggered a feeling of uncertainty among smallholders, who may find it more difficult to manage cash rather than a stock of cereals (Maisin and Le Boniec, 2016).

A short historical perspective on resettlement and compensation

Land dynamics in the Bagré area are the results of a complex interplay between different customary land tenure regimes (that of the two main ethnic groups -the Bissa and the Mossi- who live in the area since onchocerciasis (river blindness) was eradicated in the 1970s), and processes of attribution of irrigated land as part of several development projects that have been implemented since the 1990s by the *Maitrise d’Ouvrage de Bagré* and *Bagrepole*. It is also characterized by several waves of migration, displacement and resettlement. Until the 1990s, in-migration was welcomed by the local population but irrigation development lead to a massive influx of people, also leading to increased pressure on rainfed land.

In the 1990s and early 2000s, when the first schemes were built, people affected by the construction of irrigation infrastructures were not compensated for the losses they incurred during construction. The MOB, however, tried to prioritize land allocation to households who had been directly affected (i.e. households who previously cultivated land in what was now an irrigated scheme or who had to move their housing) as well as workers who had moved in the region for the construction of the dam and irrigation infrastructure. Each head of household was allocated 1 ha in the irrigated scheme and 2 ha of rainfed land (0.5 hectare for the house and house-field (*champ de case*) and 1.5 hectares for rainfed crops). As will be shown below, the allocation of rainfed land had a crucial importance for sustaining local livelihoods. In



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some instances (right bank), however, the households who had customary claims on rainfed land retained it and impeded the households who were allocated land by the MOB to cultivate rainfed land (Kaboré and Sédogo, 2014; Carboni et al., 2016). At the time, households were also resettled in “ready-made” artificial villages (named V1 to V10); they had no choice regarding the village they were resettled in and the house they were allocated. Households were not granted any ownership title, lease contract of exploitation license for the plot in the irrigated area and the contract that govern their use of irrigated plots forbid them to rent the land. Rainfed land continued to be governed according to customary tenure dynamics.

The first 1,500 ha extension was built between 2006 and 2010 and was meant to benefit both smallholders (600 ha) and agro-entrepreneurs (900ha) (see footnote 2 for a list of donors who funded this extension). Similarly to the previous scheme, there was no identification of the affected households and no compensation for the losses incurred during construction. Once the scheme built, land allocation started in 2011 and was managed by the MOB. Following a recommendation of the Minister for Agriculture of the time, allocation mostly targeted women and the youth. This triggered opposition from those households who were previously cultivating in the area and did not received any plots in the newly built scheme (see Carboni et al., 2016). After repeated negotiations involving traditional authorities, elected representatives, the territorial administration (and Bagrepole from 2012 onwards), there is now a stabilized list of farmers entitled to cultivate between 0.5 and 1 ha within the 1,500 ha irrigated scheme (and no rainfed land). In 2010, the MOB had also allocated 100 ha to an agro-entrepreneur (for potato, maize, onion, and rice; partly under pivot irrigation). In 2012, Bagrepole started formalizing the situation by signing a draft agreement with the entrepreneur. After 3 years and in line with the social safeguard policies of the Bagré Growth Pole Project, the land allocated to the entrepreneur was reduced to 50 hectares because he failed to cultivate the full 100 ha that had been allocated to him by the MOB in 2010.

The Bagré Growth Pole Project: Social safeguards, resettlement and land allocation

When the Bagré Growth Pole Project started, the situation was sensitive and Bagrepole quickly came under the spotlight with special scrutiny on whether the project would lead to land appropriation by outsiders at the expense of the local population. At the same time, and following a new land law enacted in 2012 (GoBF, 2012a), the government published a specific decree dealing with irrigated land tenure in 2012 (GoBF, 2012b). The main innovation of the decree is to state that a comprehensive land survey has to be conducted before irrigation infrastructure construction starts (Carboni et al., 2016) and that affected people have priority over land allocation in the newly built scheme. According to the decree, irrigated



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farmers are not granted an ownership title but an “exploitation license” that can be passed on to family members (but not sold nor rented, as land remains State property) or a lease agreement. Rights and obligation of the irrigators are enshrined in a contract (*cahier des charges* in French), which if not respected can lead to the exploitation license or lease to be revoked. Though is very rarely observed, this can happen for instance if the irrigators refuse to pay operation and maintenance fees, do not reclaim the land, do not set up a system productive enough according to the standards of the management agencies, do not respect the rules set up by the farmer organization they are meant to be part of, etc.

The national legislation, together with the 2001 World Bank operational policy 4.12 on “Involuntary Resettlement” (World Bank, 2001) constitute the institutional and policy framework according to which issues of displacement and compensation are handled by Bagrepole. However, as the Bagré Growth Pole Project was negotiated and initiated concomitantly to the revision of the Burkinabè land law, Bagrepole had significant room of manoeuvre to define its own procedures, described in a policy framework for population resettlement (*Cadre de politique de réinstallation des populations*; MEF, 2011a). Accordingly to World Bank procedures, social and safeguard policies are further presented in an Environmental and Social Management Framework specifically developed for the project (MEF, 2011b).

Bagrepole learned from the mistakes of the past and the problems faced by the MOB when handling land compensation and resettlement. A major difference with past experiences lies in the efforts made to identify and map the households and individuals affected and displaced by the extension of the irrigation system (see table 2); to list the assets they are losing because of the project; and to devise a compensation scheme in which the diversity of access and use of the land is accounted for as much as possible (though the complexity of customary land tenure and the flexibility in land use and access is not fully grasped as shown by Carboni et al., 2016). In line with the environmental and social management framework devised for the Bagré Growth Pole Project, such work took the form of devising Resettlement Action Plans (RAP). Unfortunately, there are as many RAP as extensions considered (instead of one comprehensive RAP for the entire area), which makes it difficult to have an integrated view of the situation. For instance, not all resettlement actions plans were conducted by the same organization and there are significant differences in the ways individuals affected by land loss have been identified and listed from one RAP to another, but also from one surveyor to another (see Carboni et al., 2016).⁸ Another shortcoming of the

⁸ The resettlement plan of the so called “1130 ha extension” is a case in point. It was conducted as part of the PAFASP project supported by the World Bank (2006-2014) and was first validated in 2011 (the scheme was indeed meant to be funded through this earlier project). The recommendations and compensation scheme envisioned at the



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lists of people affected by land loss is that they do not provide information on landholding structures. In other words, it is not possible to know whether the affected individuals and their households have access to plots of land that are not impacted by the construction of the irrigation infrastructures. This information, however, is crucial to know whether the compensation scheme will indeed allow maintaining or enhancing their livelihoods, the objectives of both the World Bank and Bagrepole resettlement policies and frameworks (World Bank, 2001; MEF, 2011)

Table 2: Extent of resettlement in the Bagré area

	Population impacted by land loss in the future irrigated area		Impacted land area		Total area to needed for compensation (ha; Ratio 1:4)	Total area available for smallholder (see table 1)
	Affected individuals‡	Total population	Total area (ha)	Average size/field (ha) †		
On-going construction	~ 950	~ 7,500	3400	2.7	850	1150
Construction launched	~ 1300	~ 8500	2575	1,3	645	945
Northern extension	~1200	~ 3000	2860	3,1	715	615
Sub-total	3450	19000	8838		2210	2710
Other extensions	~ 675	N/A	2400	2	600	None

Source: Adapted from Bagrepole database; Bagrepole (2014, 2014b) ; MOB (2014); and BAD (2014). Notes: ‡ The ‘individuals’ are people who have a tenure claim on specific plots land (these are often heads of households: in the 1000 ha extension; for instance; 374 individuals belonging to 333 households have been identified; in the ‘1130 ha’ extension; 570 individuals to 418 households have been identified). The total affected population is higher as members of households are accounted for. †The different RAP map the fields impacted by the construction of the irrigation infrastructure. This table provides the average size of these fields. A given ‘affected individual’ may have a claim on one piece of land or several (in the scheme under construction, 950 individuals for 1408 fields are listed).

Framing Land Compensation in Overtly Positive Economic Terms

time were not in line with the environmental and social management framework (ESMF) devised for the Bagré Growth Pole Project and the RAP was revised in 2014. Further, the RAP of the western extension was conducted as part of the preparation of a project to be funded by the African Development Bank; it follows the ESMF of the Bagré Growth Pole Project,



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The first way people affected by the project are compensated is a financial compensation for the assets they lose, valued at their full replacement costs (this includes houses, buildings, wells, granaries, manure pits, trees, etc.). Such compensation is meant to cover the cost of resettlement and of building equivalent infrastructures in the area where people are resettling (people who lose their habitation are granted an ownership title on a plot of land where they can rebuilt their house).⁹ The loss of community assets (such as schools, health and social centers, religious buildings such as mosque or churches, community wells, etc.) is also compensated for as Bagrepole builds similar infrastructures in the resettlement villages. It seems that the amounts at which assets have been valued did not raise serious concerns; Bagrepole adjusting rates upward on the basis of discussions with representatives of the affected communities. On the other hand, assets of cultural significance (such as graves and places of worships) affected by the construction of irrigation infrastructures appeared to have been particularly sensitive issues and were discussed with religious and traditional authorities and an arrangement reached on a case by case basis (which always involved the payment of displacement costs and related ceremonies if needed).

As far as agricultural land and cultivation are concerned, the most noticeable innovation in the way Bagrepole handles compensation and resettlement is the acknowledgment of the need to compensate people who use (i.e. cultivate) agricultural land and those who have recognized customary claims on the land (for each plot of land, these may be the same or different persons). Cultivators are compensated financially as long as construction goes on, because they can't access the land they usually cultivate (Bagrepole gives them an amount of cash, each year, corresponding to the value of the harvest lost that year, and for as many years as irrigation infrastructure construction lasts).¹⁰ World Bank (hence Bagré Growth Pole Project) safeguard policies, however, do not account for the loss of some livelihood activities such as the loss of provisioning environmental services of the natural vegetation (e.g. non timber products, fire wood, etc.) though these often play a significant role in the livelihoods of the poorest as shown by Tapsoba (2016). People having a customary claim on land will be compensated in the form of land in the future irrigated area. Interestingly, community members whose house and/or fields are located in the area that is now under construction recognized that people being displaced/affected because of the northern extension could also be allocated land in the scheme currently under construction even if

⁹ When the MOB managed irrigation in Bagré, affected households were provided with a ready-made house in one of the artificial villages. Bagrepole, on the other hand, prefers providing a financial compensation, leaving it to the displaced households to choose the type of housing they want to build.

¹⁰ The crop-based valuation scheme has been discussed with and validated by farmers during consultation. Some farmers face difficulties to manage cash; further they have to buy cereals at market price, which can be higher than the value considered when calculating their compensation (Maisin and Le Boniec, 2016).



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they had no tenure claim in that specific area (rather than waiting for land to become available in the northern extension).¹¹ They however highlighted that needs of local community members needed to be accounted for first.

The area that should be allocated to each affected individual and the criteria to be used to calculate it have been the topic of intense discussions among farmers, Bagrepole, and the World Bank to ensure a “just compensation” would be put in place. A minimum land allocation of 1 ha per household as had been done in the schemes managed by the MOB and is widely considered as being the minimum area required to ensure farm profitability (Bagrepole and Maison de l’Entreprise, 2012);¹² the proportion of the landholdings taken up by the irrigation scheme; the size and level of vulnerability of the households; their capacity to engage in productive agriculture; and whether they already have access to the existing irrigation schemes were among the criteria that were discussed. In the absence of a comprehensive database to characterize each affected household it proved difficult to reach a clear consensus, and an economically grounded blanket approach will eventually be followed.

Each individual identified as having a customary land claim on a plot of land affected by the project will be allocated one fourth of this area in the scheme currently being built. A major shift from the 2012 decree (GoBF, 2012b) is that Bagrepole will deliver land titles to smallholders, not exploitation licenses. Irrigators will still have to comply to a specific contract (*Cahier des Charges*) drawn by Bagrepole but they will have the right to sell their plots if they wish so – with Bagrepole having a preemption right to buy it (similarly to what was envisioned in the 2012 decree, the land title can be revoked if the irrigators does not respect the contract; Bagrepole, nd).¹³ If an individual gets less than 1 ha through this process (because s/he lost less than 4 ha), s/he will be entitled to request for up to 1 ha and granted an emphyteutic lease on the supplementary area, granted there is remaining irrigated land available .¹⁴

In these conditions, it means that about 950 individuals affected by land loss because of the on-going construction (representing a total population 7500 people) will be allocated irrigated fields ranging from

¹¹ Such allocations have not been done as people impacted by the northern extension have not yet been displaced.

¹² The land tenure framework developed by Bagrepole for instance stated that individuals with a recognized customary right of use in the area where the irrigation schemes would be built would be allocated an irrigated plot “whose area will depend of the total area s/he lost and necessarily comprised between 1 and 5 ha” (Bagrepole, 2015)

¹³ Bagrepole is also planning to grant similar land titles to farmers who are cultivating in the currently irrigated area.

¹⁴ The rights and obligation related to land titles and emphyteutic leases are drawn in contracts (*Cahier des Charges* in French). If a farmer or an agro-entrepreneur does not respect the terms of the contract, the land title/lease agreement can be revoked. Insufficient agricultural results, the refusal to pay the water and infrastructure fee, the non-compliance to the environmental and social management plan, sub-renting the land are reasons for revocation, among others (Bagrepole, nd; Bagrepole ndb).



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0,01 ha to 6 hectares with an average allocation of about 0.7 hectares. This amounts to a total of 850 ha out of the 1150 ha available for smallholders. It is hence possible to ensure that all these individuals have 1 ha (this represents an extra 125 ha that would benefit one third of the affected individuals who would be initially allocated less than 1 ha). In addition there are about 1,200 people to be potentially affected by land loss in the northern extension (for a total population of 10,500) (see table 2). These should be allocated irrigated fields ranging from 0.01 ha to 5 hectares with an average allocation of about 0.8 hectares. This amounts to a total of 715 ha while only about 615 ha are available for smallholders in the northern extension. In theory it is possible to allocate land in the scheme currently being built to some of the smallholders having land claims in the northern extension (at least when considering a ratio of 1:4).¹⁵ However, given the potential time-lag between on-going construction and the building of the northern extension, it is not clear whether this land will still be available when smallholders of the northern extension will be displaced.

The ratio of 1:4 is largely presented as stemming from a comparison between the current profitability of rainfed agriculture and the expected profitability of irrigation in the newly built schemes. In the ‘1000 ha scheme’ resettlement action plan, the average rainfed agriculture revenue has been evaluated at about 135,000 FCFA/ha while the expected revenue from an hectare of rice is said to be about 660,000 FCFA per year (accounting for a yield of 5 to 6 tons and 2 crops a year) (Bagrepole, 2014b), which would rather point to a ratio of 1:5. The following section further investigates the implication of such threshold on the viability of smallholder farming in the future irrigation schemes in Bagré.

Learning from the past: Economics of smallholder irrigation in the Bagré area

Turning towards the existing irrigated area allows getting a better sense of the implications of the compensation thresholds considered. First, the productivity and profitability scenarios used by Bagrepole appear to be rather optimistic. GWI (2016) indeed evaluates that rice yields in the existing irrigated area vary between 3.3 tons/ha/season (bad year) to 5 tons/ha/season (good year) with an average at about 4.4 tons per hectare and per season as opposed to 5 or 6 tons/ha/season (see also Kaboré and Bazin, 2014). Tapsoba (2015) further highlights that the lowest yields (less than 3.5 tons/ha/season) are observed in the smaller landholdings and that net rice revenues are lower than those considered by Bagrepole for all farmers but the few small entrepreneurs who produce seeds (see table 3).

¹⁵ 600 people affected by the Northern extension will be allocated less than 1 ha; an extra 500 hectares would be needed if each of these affected individuals were to benefit from 1 ha of irrigated land. This land is not available – at least under gravity irrigation in the scheme currently being built.



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Table 3 further highlights that retaining significant rainfed land or extending the irrigated area beyond the initial 1 ha allocation (through the lease of land for instance, though it is officially not allowed) has been key for households not to fall into poverty. Though the numbers slightly differ, these results are in line with a study conducted by GWI and showing that households cultivating up to 1 ha in the irrigated scheme alone are well below the poverty line and just cover their food needs (with an agricultural revenue of less than 80,000 FCFA/person in an average year). The situation is slightly better if households still have access to limited rainfed agriculture (their revenue reaching about 100,000 FCFA/person in an average year). Households who have more than 1 ha of irrigated rice, on the other hand, are above the poverty line with an average of about 140,000 FCFA/person (revenues per capita are similar whether or not they have access to rainfed land) (GWI, 2016). According to the two studies, off-farm revenues are highest among households deriving significant agricultural revenues, illustrating a phenomenon of wealth concentration.

Table 3. Key Economics features of smallholder farming in the Bagré irrigated area

Rice-based net revenues (ha/year) (selected household types)	FCFA/ha/year
<i>Irrigated Rice (1ha) + rainfed land (<1ha)</i>	375,000
<i>Irrigated Rice (1,5ha to 2.5ha) + rainfed land (1 ha)</i>	320,000 to 460,000
<i>Irrigated rice (1 to 1,5 ha) + Rainfed land (>5ha)</i>	540,000
<i>Small agro-entrepreneurs (rice seed production> 5 ha)</i>	1,500,000
Net revenue/working person (selected household types; includes off farm revenues)	FCFA/working person
<i>Irrigated Rice (1ha) + rainfed land (<1ha)</i>	150,000
<i>Irrigated Rice (1,5ha to 2.5ha) + rainfed land (1 ha)</i>	240,000 to 420,000
<i>Irrigated rice (1 to 1,5 ha) + Rainfed land (>5ha)</i>	360,000
<i>Small agro-entrepreneurs (rice seed production> 5 ha)</i>	800,000
Food security line (FCFA/person)	110,000

Source: Adapted from Tabsoba (2016). US\$1= 610 FCFA (in February 2017)

These observations are worrying given the allocation processes currently envisioned. Indeed, about one third of the individuals having land claims in the area under construction will receive less than 1 hectare of irrigated land in the new scheme, which the above data clearly shows is not enough to insure a decent level of living let alone trigger a process of agricultural growth. There is little land to increase the foreseen allocation (unless land that requires higher investment to be irrigated and had been ‘reserved’ for agro-entrepreneurs is used). In these conditions, whether new irrigators will be above the poverty line will largely depend on whether they retain rainfed land or already have access to irrigation in the existing scheme (this is difficult to assess in the absence of a comprehensive database characterizing the farming



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landholdings in the area).¹⁶ A potentially positive aspect (which was not foreseen during project appraisal), though, is the fact that rice cultivation is only possible on about one third of the scheme currently being built (Bagrepole, 2016a). This means that most farmers will also engage in cultivating other crops, most likely irrigated maize as well as vegetables to a certain extent. The economics of irrigated maize (a crop already cultivated in rainfed land and appreciated by farmers) appear rather beneficial for smallholders when compared to rice (high yields and lower input requirements than rice) even though there might be risk of over production hence dwindling market price. Vegetables, on the other hand, can be very profitable but require significant input investments, are very sensitive to market fluctuations, and require good water management. These are significant challenges, which to be addressed, will require significant support and planning on the part of Bagrepole (see Bagrepole, 2016b)

A precipitated and elusive search for agro-entrepreneurs?

As stated above, one of the main objectives of the Bagré Growth Pole Project is to attract agro-entrepreneurs that would both contribute to irrigation investments costs (by building secondary infrastructures) and engage in high value intensive agricultural production so as to be able to support irrigation operation and maintenance running costs. It was also envisioned that agro-enterprises would provide on-farm and off-farm opportunities for inhabitants of the Bagré area (World Bank, 2011b).

Both the process and the outcomes of the selection of agro-entrepreneurs raise some questions. As far as the process is concerned, the call for expression of interest was launched by Bagrepole rather early in the project (in March 2013) while primary irrigation infrastructures were not yet in place. Launching the call early allowed assessing whether the project was attractive (and for whom; see below) but seems to have been largely motivated by the need to demonstrate the added value of the growth pole approach at a time when it faced mounting critics internally in the World Bank and when the Bagré Growth Pole Project showed little progress. This decision, supported by staff of the Trade and Competitiveness global practice (who was in charge of managing the project), was disputed within the project team itself, both by Bagrepole but also by those World Bank staff in charge of overseeing irrigation infrastructure development (*Interviews with Bagrepole and World Bank officials*).

¹⁶ The RAP of the '1000 ha extension' mentions that 25% of the individuals affected by land loss will not retain access to any rainfed land; about 40% of them will retain access to one rainfed plot not affected by construction; about 20% will retain access to 2 rainfed plots; and the remaining will retain access to 3 rainfed plots or more. The size of these plots is not indicated (Bagrepole, 2014b).



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Following the selection of agro-entrepreneurs completed in July 2014, little follow up was done until the end of 2016 (as the focus shifted to resettlement issues) when Bagrepole, with the support of the World Bank team, contacted some of the largest potential agro-entrepreneurs (called ‘anchor investors’ and seen as being the most in line with the idea of a growth pole) and organized a series of consultations together with the *Maison de l’Entreprise du Burkina Faso*. These consultations aimed at providing information about the progress of the project to date and check entrepreneurs’ intention to invest, which, we were told, was renewed. At the time of the writing, it is not clear whether this absence of follow up and the delays in infrastructure building will deter some investors to finalize their projects (see also IFC, World Bank, MIGA, 2016).

As far as the outcomes of the selection are concerned, a member of the commission that assessed the applications highlighted that many of them were left out due to (1) the lack of bank guarantee and (2) the fact that applicants did not account for the necessary investments in secondary and tertiary irrigation infrastructure. This happened even though the call for expression of interest clearly mentioned that only the primary infrastructure would be built by the Bagré Growth Pole Project and highlights the lack of awareness regarding the underpinning of the projects among potential entrepreneurs. The selection process involved further individual meetings between Bagrepole and the 108 pre-selected applicants (out of 737 proposals) to further explain the situation. Better aware of the level of investments (about US\$8,000/ha according to Bagrepole) required, many applicants reduced the area they proposed to develop. The total demand for land thus decreased from about 20,000 ha to about 11,300 ha for 108 agro-entrepreneurs (still representing a total investment in infrastructures that could reach about US\$90 million; latest estimates show that there would be about 10,500 ha of land available for agro-entrepreneurs in the area; table 1). The lack of awareness of interested candidates regarding the implications of being allocated land in the Bagré area was clearly illustrated when we met a retired high-level civil servant who submitted an application and stated: *“really, I did not know I would have to invest so much in irrigation infrastructures; this project, it’s not for the poor; it is for people who are sitting”*. Though anecdotal, this statement clearly illustrates that the call for expression of interest triggered a small scale land rush. Many small and medium Burkinabè entrepreneurs saw in this call an opportunity to gain access to land in an area widely seen as valuable given the existence of the Bagré dam and the plans to develop irrigation, but many did not realize what it would mean in practice. A recent study on the profile of the pre-selected agro-entrepreneurs confirm those insights; the study notably pointing out to the lack of preparedness of some of the agro-entrepreneurs and a widespread tendency to underestimate the investments required of them (IFC, World Bank, MIGA, 2016). The study further points out the lack of



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financial capacity of many of the smaller and medium size entrepreneurs, begging questions regarding the overall feasibility of the project (Ibid)

Table 4. Main characteristics of the selected “agro-entrepreneurs” projects

	5-49 ha	50-100 ha	101-499 ha	>500 ha	Total
Type of agro-entrepreneurs according to the terminology of Bagrepolé and the World Bank	Small and medium private investors	Large private investors	Reference or Anchor investors		
Number of requests	74	17	10	7	108
<i>Burkinabè requests (individual)</i>	54	9	1		64
<i>Burkinabè requests (groups)</i>	3	3	2		8
<i>Burkinabè requests (companies)</i>	15	5	7	4	31
<i>Foreign requests (individuals/ companies)</i>	2			3	5
Cumulated area and crop envisioned	1217	1379	1705	6990	11291
<i>Rice</i>	517	549	485	1500	3051
<i>Banana</i>	175	240	400		815
<i>Maize</i>	297	100	420	1490	2307
<i>Sugarcane</i>				2500	2500
<i>Others (onion, soya, moringa, sunflower...)</i>	193	525	400	1500	2618

Source: Adapted from Bagrepolé (2014c)

Despite the pre-selection that was done, many of the selected agro-entrepreneur projects (see table 4) still appear rather fragile. It remains to be seen whether the agro-entrepreneurs will indeed be in a position to support the costs of developing the secondary and tertiary infrastructure (the primary infrastructure has been put on hold for the time being – see above) and whether the farming systems they envision to put in place will trigger the virtuous circle called for in the World Bank project appraisal. Table 4 indeed shows that most selected projects are Burkinabè and for areas of less than 50 ha, with rice and maize being the most commonly envisioned crops (they are already widely cultivated in the area). This may be particularly problematic given the already existing difficulties to transform and commercialize the rice currently produced in the existing irrigated area, and the fact that rice cultivation appear little profitable for farmers (unless they produce seeds) (see above). Finally, there are a few large projects (>500 ha) based on cultivating other more high-value crops (sugarcane, sunflower, vegetables).



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Given the delays observed in the building of irrigation infrastructures, land in the northern extension has not yet been allocated to large agro-entrepreneurs and it remains uncertain whether the latter will ever put it under cultivation. Bagrépôle, however, has started compensating smallholders for the assets they may lose in the perspective of their resettlement because of the construction (they, however, continue to cultivate their rainfed fields). At the same time, given the costs overrun incurred by the project and the impossibility to finance the primary irrigation infrastructure of the northern extension as was initially planned, the World Bank has decided to concentrate its support on the establishment of the small agro-entrepreneurs who have been selected by Bagrépôle. These would be allocated land in the pump-based portion of the scheme currently under construction (light hashed green area in Figure 2). Presented as a pragmatic move that would also allow building the capacity of Burkinabè actors in terms of investment promotion, this strategic choice is highly debated by senior officials of Bagrépôle who call for further infrastructure development as, they are of the opinion that *“focusing on these smaller scale entrepreneurs is unlikely to trigger significant growth; an agricultural growth pole requires extending irrigated areas significantly to ensure a volume of production that will be attractive for supply chain actors”*.

Conclusion

When launched in 2011, the Bagré Growth Pole Project was widely presented as an innovative approach to large scale irrigation development in sub-Saharan Africa, one that would harness the potential of the private sector. This was meant to happen through (1) a private agency overseeing the development and management of irrigation infrastructures and (2) agro-entrepreneurs who would contribute to the costs of infrastructure development and establish intensive farming systems able to provide jobs to a large rural population and support a broader economic development. 5 years down the line, a semi-private agency, Bagrépôle, has indeed been set up and is piloting irrigation development in the Bagré area. Agro-entrepreneurship, on the other hand, remains rather elusive: individuals and enterprises who signaled their interest have been pre-selected but none have invested yet. A vast majority of them reiterated their interest to invest in irrigation development (including the financing of secondary and tertiary irrigation infrastructure) during consultation meetings organized in late 2016 but it remains to be seen whether all of them will have the means to support these costs, as hoped for by the promoter of the project.

Though framed as a breakaway from past approaches to irrigation development, the Bagré Growth Pole Project has faced similar challenges than earlier projects: the need to revise some of the technical feasibility studies that were conducted as part of earlier projects, cost overruns, delays in construction (a



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first phase of 2,580 hectares is expected to be finished by the end of 2017 while the project ambitioned to build “up to 15,000 hectares” by the same date). The project continues however to attract significant attention and to receive donor support (the ADB is for instance financing the rehabilitation of 1,200 hectares and the construction of an extra 2,200 ha). One of the main consequences of the challenges faced is the fact that the northern extension where a majority of the larger agro-entrepreneurs were meant to be allocated irrigable land has been put on hold until further notice – thus raising questions on the very ideas and ideology that underpinned the project initially. Attracting large scale agricultural investors that would spearhead economic growth in the area and beyond is still presented as a priority by the project promoters but this has become a longer term objective than what was initially and optimistically envisioned.

In the meanwhile, smallholders who cultivated fields where the irrigation infrastructure is currently being built have not been able to engage in rainfed agriculture for the last three rainy seasons (and will not be able to cultivate in the 2017 rainy season as well). This is where the innovative aspect of the project reveals itself. Learning from past experiences and in line with the Burkinabè policy framework and the OP4.12 on Involuntary Resettlement of the World Bank, Bagrepole made significant efforts to identify and map the households and individuals affected and displaced by the extension of the irrigation system, to list the assets they are losing because of the project, and to devise a compensation scheme in which the diversity of access and use of the land is accounted for as much as possible. First, displaced households are compensated at full cost for the assets they lose and supported to resettle in new villages in which basic infrastructures are built by Bagrepole. Second, cultivators (who may not be the persons having a traditional land claim on the land) are compensated for the lost harvests as long as construction is ongoing (Bagrepole has already made three payments and a fourth one will be done in April/May 2017). Third, people who had (traditional) claims on the land now being put under irrigation are entitled to a plot in the newly built irrigated area. They will be granted a land title, and would have to respect rights and obligations as defined in a specific contract (*Cahier des Charges*).

The rules and criteria according to which smallholders would be allocated land in the newly built irrigated area have been extensively discussed among stakeholders to ensure a ‘just’ compensation. However, what constitute ‘just’ has been a matter of debate and, given the complexity of the issue, Bagrepole and the World Bank settled for a default option whereby each individual with a claim on a piece of land will be allocated one fourth of this area in the newly built irrigation system. This 1 to 4 ratio is based on rather optimistic scenarios regarding the productivity and profitability of irrigated farming (that would potentially be 4 times higher than rainfed farming) and it is devised to maintain rather than enhance the



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revenues of smallholders, which appears to be problematic given the demographic growth in the area. It also means that about one third of smallholders affected by the project will be given a land title over less than 1 ha of irrigated land, which has been shown not to be enough for households to live above the poverty line. If such households do not retain access to some rainfed land (or do not already have access to irrigated land in the existing scheme), there is a risk they fall in a poverty. Aware of this Bagrepole considers that individuals who would have been allocated less than 1 ha will be given priority if they request additional land and granted an emphyteutic lease on the additional area up to 1 ha. However, given the plans to build the northern extension and allocate most of the land there to agro-entrepreneurs, the number of smallholders potentially affected by the project increase significantly. It remains to be seen whether there will be enough land in the gravity based irrigation system being currently built and in the West extension to be built by the ADB to accommodate this additional land demand.

The construction of irrigation infrastructure in Bagré leads to creating a situation of land scarcity, which could turn into a poverty trap. This is partly because the area that can actually be irrigated is much smaller than the rainfed area taken up by the irrigation schemes. This situation is made even more severe because of the ideology that underpins the project. Indeed, the size of the population displaced and affected by the extension of the irrigated schemes (which, according to the Burkinabè and World Bank policies has to be granted land in the newly built irrigated area) is made larger due to plans to allocate land to agro-entrepreneurs. At the time of the writing, though, it is unclear whether investments by agro-entrepreneurs will actually materialize, and at which time horizon, given that the construction of the primary infrastructure they were meant to use has been put on hold until further notice. Further, a large number of the expressions of interest received to date by Bagrepole remain centered on cultivating food crops on medium areas (less than 20 hectares). In a context where rice production is little profitable, partly due to the absence of supply chain infrastructures, it remains to be seen whether these will provide the basis for agricultural development, on and off farm employment opportunities and inclusive economic growth.

In such conditions, there is a need to invest significantly in creating off farm employment opportunities in and outside the agricultural sector as well as to rethink whether some of the pump based irrigated area that was meant to be allocated to agro-entrepreneurs can't be re-diverted to benefit smallholders who would then been granted access to larger plots of land, hence be better positioned to engage in profitable farming systems. This may mean adjusting the infrastructure design so that it is flexible enough to meet the needs of smaller farmers; it also means that smallholders will have to bear higher operation and maintenance costs hence would require significant investments in the soft component of irrigation management to



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avoid the deferred maintenance vicious circle (i.e. the fact that maintenance is postponed in anticipation of further funding for rehabilitation), for instance through the establishment and long term support to water user associations who would be given significant room of manoeuvre on how to pilot irrigation in the scheme. This also means an increased pressure on the state coffer (and, at first, lower internal rate of returns for the financiers), but this may be the price to avoid a large scale poverty trap.

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