



Coordination work – Tuning and timing rice production in Burkina Faso

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ABSTRACT

Agricultural growth poles and development corridors are key instruments for fostering economic growth in rural areas and widely employed across the African continent. This paper contributes to the growing body of scholarship that empirically investigates how these large-scale spatial development strategies ‘hit the ground’. Drawing on ethnographic research within the Bagré Growth Pole Project in Burkina Faso and focusing on its key sector, rice, we develop the notion of coordination work. Coordination work captures the quotidian dimension of a growth pole project that is the instruments and interventions aimed at aligning different actors, activities, and arrangements in the project zone. Deploying a practice theoretical lens, we empirically unfold three modes of coordination work, namely the work of agricultural advisors on demonstration fields, consultancy support to farmer groups and unions, and the setting up of a binding agricultural calendar. We contend that a focus on coordination work illuminates the underlying assumptions and effects of distinct measures and instruments while also pointing to the cross connections between them. Ultimately, we show how specific project components change socio-ecological rhythms by tuning and timing practices at the center of megaprojects.

1. Introduction

“Take Bagré years ago. Nothing but a village. Now, there are a lot of things here. Shops, a gas station, office space in the MEBF, the cattle market, the canals, the new rice plains. All things are put in place. Sure, it doesn’t quite work yet. It takes time. Come back in 10 years or so and you’ll see what it has become. It will be Burkina’s granary; a real growth pole.” (Field notes, Bagré, 14/09/2017)

In the last decade, megaprojects, such as growth poles, development corridors, and special economic zones, have mushroomed across Africa (Dagor et al., 2016; Picard et al., 2017). Poles, corridors, and zones alike aim to strengthen agriculture or other industries in specific places while also enabling connectivity between these centers and global markets (Dagor et al., 2016; Picard et al., 2017; African Development Bank, 2019; Schindler et al., 2019; Tups and Dannenberg, 2021). “[D]riven by an ongoing rush to invest in Africa’s natural resources” (Enns, 2018: 105) they assume that publicly funded infrastructure projects together with private investments will foster regional integration in global value chains and economic growth, thereby contributing to food security and the alleviation of poverty (Speakman and Koivisto, 2013). Putting a

“strong emphasis on the transformational power of technology and infrastructure” (Mosley and Watson, 2016: 453) they comprise of massive investments in large-scale infrastructure supposedly inducing chain reactions that result in societal and economic development (Tyrou, 2018).

While growth pole theory has emerged from applied economics in the 1950s (Perroux, 1950, 1955), social scientists have only recently started to explore their impacts and everydayness (Mosley and Watson, 2016; Schindler et al., 2019; Stein and Kalina, 2019). Looking at recent approaches to and studies of growth poles and spatial development tools more broadly, two broad lines of inquiry can be distinguished. On the one hand, economists and development practitioners are concerned with the instrumentalization and evaluation of spatial development schemes such as growth poles and development corridors (Speakman and Koivisto, 2013; Kimengsi and Fombe, 2015). These works document shifts in the underlying logics of large-scale development interventions. Most notably, the initial focus on family farming around large-scale irrigation schemes has shifted to include commercial investors that are deemed capable of contributing significant investments in infrastructure and the mechanization of agricultural production. Research documenting changing

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compositions of activities and actors highlights the tensions as well as the repercussions within shifting system constellations (Brondeau, 2018; Sylla et al., 2023).

On the other hand, social scientists have begun to fundamentally question idealist assumptions that underpin the planning and implementation of growth pole initiatives, examine the contestations they invoke, and their uneven effects across different scales. Drawing from different theoretical and conceptual backgrounds these works have started to pay attention to the lived realities of such megaprojects, emphasizing their situatedness in time and space. They analyze how the projects' histories partly uphold imperial and colonial legacies (Enns and Bersaglio, 2020; Kimari and Ernstson, 2020), how they affect land rights (Enns, 2019; Sulle, 2020), foster im/mobility (Enns, 2018, 2019) and land grabbing (Kaarhus, 2011; Regassa et al., 2019); showcase the (contested) visions and imaginaries attached to these megaprojects (Mosley and Watson, 2016; West and Haug, 2017; Müller-Mahn, 2019; Müller-Mahn et al., 2021) and interrogate their effects on the everyday life of affected populations (Aalders et al., 2021; Hauer, 2021; Mkutu, 2022). In sum, attention has been paid to the spatial repercussions that megaprojects induce (Dannenbergh et al., 2018; Regassa et al., 2019), the temporal reorientation and visions for development they convey (Mosley and Watson, 2016; Chome, 2020), and the conflicts and connections among different social groups they provoke or amplify (Enns, 2019; Chome et al., 2020; Hauer and Nielsen, 2020; Korbéogo, 2020). This research deepens our overall understanding of how contemporary growth pole policies affect people in places.

Our¹ paper contributes to this body of research by providing ethnographic insights from the Bagré Growth Pole Project (BGPP) in Burkina Faso. Based on nine months of ethnographic fieldwork in 2017 and 2018 this paper delves into selected constitutive activities of realizing a growth pole. Thereby it empirically extends the ongoing examination of growth pole projects to include a West African case and one that is well advanced in terms of implementation. Conceptually, it focuses on what we term coordination work. Coordination work refers to a range of instruments and interventions to get “all the things put in place” to work, thereby shedding light on how socio-temporal rhythms unfold, are negotiated, and do or do not change in the wake of a large-scale development project.

The paper is organized in five sections. We start by introducing the BGPP, paying particular attention to its key component rice farming which is at the heart of our study. Thereafter, we present our methodology and familiarize the reader with the fieldwork and conceptual frame that guided our inquiry. Our analysis is split in two parts. First, we depict the precariousness of rice farming by attending to the elements and conditions that must be brought together to enable rice farming. Reframing rice farming as a matter of coordination, we, secondly, turn to the work of agricultural advisors on demonstration fields, consultancy support to farmer groups and unions, and the setting up of a binding agricultural calendar, all of which we analyze as means of stabilizing and coordinating rice farming and forming socio-temporal rhythms around rice. We then discuss the consequences of our analytical insights for fostering comparative research on large-scale projects and pushing contemporary critique of growth poles and corridors beyond recognition and advocacy toward potential practical interventions. We close with a brief conclusion.

2. The Bagré Growth Pole Project in Burkina Faso

The Bagré dam is situated 170 km south-east of Burkina Faso's capital Ouagadougou in the region Centre-Est, Boulgou province along the Nakanbé river (Fig. 1). The BGPP operated from 2011 to 2021 with

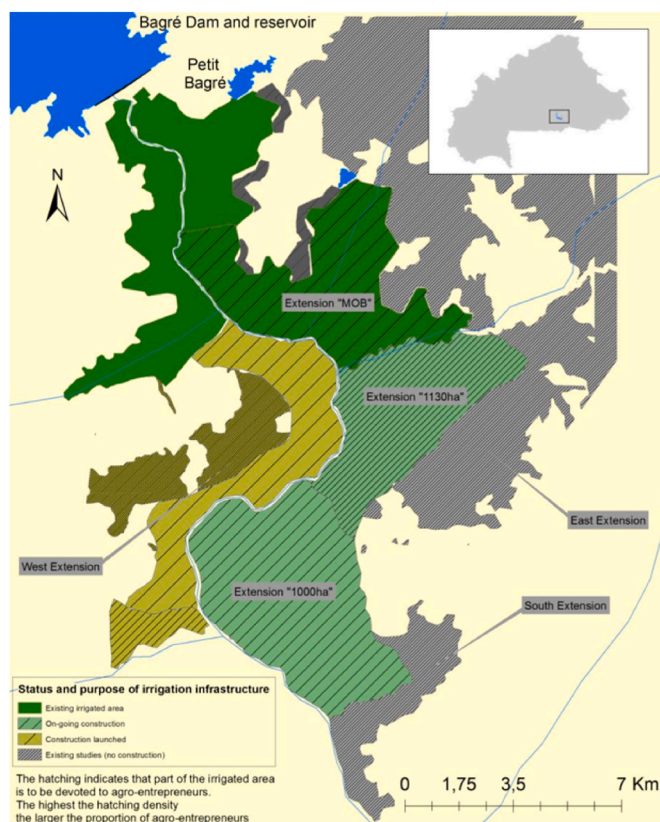


Fig. 1. Status of irrigation development downstream of the Bagré dam during fieldwork in 2017/2018.

adapted from Venot et al. (2017).

major financial support of about 165 million USD from the World Bank and additional funding by the African Development Bank (the so-called Bagré Growth Pole Support Project). It aimed at the systematic development of a zone loosely defined by the scope of the Bagré dam and connected irrigation scheme that allowed for rainfall-independent rice production. The BGPP did not start from scratch. The planning of the dam and irrigation scheme reach back to the 1960s (Faure, 1996; Fauré, 1997; Yaméogo, 2006). Financed by consecutive donors, e.g. the Taiwanese development cooperation, a first pilot project² focusing exclusively on family farming was funded in the 1980s, followed by three stages of building and extending the irrigation scheme between 1995 and 2009 (Korbéogo, 2020: , see also Fig. 1 [existing irrigated area]). Given the initial donors' expertise in rice (Hsiao-pong, 2009) and increasing rice consumption across the country (Seck et al., 2012) whilst concurrent import dependency (MAAH, 2011) rice became the central component of the Bagré hydro-agricultural landscape, and the land conversion was accomplished accordingly. Two main canals emanate from the dam wall to supply a system of secondary and tertiary canals sluicing the sloping terraces down to the Nakanbé. In its early days, the converted land was almost exclusively attributed to smallholders who received around 1 ha per family inside the irrigable area. Most of the farmers who settled in Bagré during the first project phases were migrants from different parts of the country. The first generation of beneficiaries also received additional land, so-called garden fields, to farm for household consumption. However, during fieldwork many farmers reported that these plots were claimed back by the autochthone

¹ The paper is written in 1st person; singular is used for referrals to the field (work) undertaken by the first author. 'We', in turn, relates to the analysis and concept work jointly accomplished by the first and the second author.

² The so-called “Petit Bagré” included a small reservoir that supplied 80 ha of irrigable rice plains and was later incorporated into the grand irrigation scheme as a buffer reservoir (Korbéogo, 2020).

population due to an overall increasing pressure on land caused by population growth as well as changing compensation schemes (Bazin, 2017; Hauer, 2021). Thus, today most farmers first and foremost depend on rice farming for making a living; additional income is generated by small businesses (e.g. repairing motor bikes, selling food, or tailoring) and remittances. When the BGPP was set up in 2010 to achieve an increase in economic activity, employment generation, agricultural production, private investments as well as stable food prices (World Bank, 2011: 6), it also extended previous projects' infrastructure and reshaped its management. Land conversion continued to prompt rice farming, although crop diversification was a formulated goal. Thus, of the 4394 ha under conversion, only 2072 ha were dedicated to smallholders for rice farming (Fig. 1 [ongoing constructions]). On these lands irrigation is achieved by the force of gravity, as in the existing irrigated areas, hence no further expenses by farmers are needed. The remaining 2322 ha of land for commercial farming on the contrary were mainly located above the water level and require further investment to bring the water from the canal system, e.g. by water pumps, which makes commercial farmers in theory a little more independent regarding crop choice and water use. By the time of the fieldwork only few commercial farms were operating, therefore research mainly concentrated on small-scale farmers. Nonetheless, (potential) commercial farmers constituted a key point of reference for the zone managers as will be shown below.

Two local institutions shared the implementation of the BGPP. Bagrépôle, on the one hand, was responsible for the extension and management of the canal system to increase the irrigable area from 3380 ha in 2011 to 7774 ha by the end of the project.³ On the other hand, the Maison d'Entreprise (MEBF) took charge of strengthening smallholders. Its mission statement was "to stimulate the establishment of small-scale enterprises by helping smallholders to improve their capacity to respond to markets and increase their competitiveness" (World Bank, 2011: 11). Support instruments included workshops and trainings, consultancy services and the allocation of grants. Within the project area around 3000 families depended on rice farming for their livelihood, corresponding to roughly 1 ha allocated per household, although that rule was highly contested and put under scrutiny during the project's course (Bazin, 2017).

During the ten years of its operation the BGPP had experienced persistent difficulties, such as temporary construction freezes and an explosion of costs that had put the implementation of several infrastructure components such as roads and the electricity grid on hold. Yet, the government of Burkina Faso and the project managers still deemed the project realizable (Bassole, 2019). The same message was conveyed to me by the director of the MEBF in the quote at the beginning of this introduction. I was sitting in his car, while he drove past Bagré's busy main road, when he evoked time as a key to success to the ongoing BGPP: 'Ten years from now it would all work'. I remember wondering *how*. This discrepancy – the vision and designation of Bagré as "Burkina's granary" (as my interlocutors would repeatedly say) and the numerous accounts of how "it doesn't quite work yet" (as the same interlocutors would say, too) – led my empirical inquiry.

3. Fieldwork and framing

This paper is based on fieldwork conducted in Burkina Faso between May and November 2017 and May and August 2018 by the first author. Of the nine months of fieldwork, the first author spent half the time in Bagré and the other half in Ouagadougou. The overall goal of the research project was to provide insights into the implementation of the BGPP with a particular focus on the rice sector. By the time of fieldwork

³ At project closure in 2021, 2200 ha of irrigated land had been put into production by the project and allocated to smallholders and investors. The remaining 2194 ha were still under conversion and financed by the African Development Bank.

large parts of the rice plains were still under conversion (Fig. 1). The prospect of a massive extension of the irrigated area together with many new farmers including large-scale commercial farms drove the project during the time of fieldwork. Research therefore centered on everyday practices, struggles and negotiations of and between managers and farmers to anticipate the upcoming changes.

Ouagadougou hosted the institutions that provided the political and legal framing and financing of the BGPP such as the World Bank, Bagrépôle and the MEBF, although the two latter also held satellite offices in Bagré. Furthermore, Ouagadougou was the main market for the rice produced in Bagré (Burkina Faso/MAAH, 2011; Bill and Melinda Gates Foundation, 2012). Fieldwork in Ouagadougou consisted of semi-structured interviews (Longhurst, 2003; Valentine, 2005) with experts at the National Institute for Research on Environment and Agriculture (INERA), the Ministry of Agriculture, the National Management Corporation for Food Stocks and Food Security of Burkina Faso (SONAGESS) as well as representatives of rice-related national organizations, such as the National Rice Producer Union and the Interprofessional Committee on Rice. Because no central database for reports, assessments, statistics, and other rice-sector related publications existed, documents that the interviewees referred to were also collected at these occasions. These documents were used to understand the frames of reference for local actors and deepen insights into the rice sector and its operations. Moreover, conversations were held with rice vendors selling Bagré rice. 45 semi-structured interviews and conversations were transcribed and coded. Prevailing issues that characterize the rice sector of Burkina Faso, namely its overall structure, major programs, and measures to strengthen the sector, problems of fragmentation and commercialization as well as consumer preferences and decisions, were in this manner identified.

Fieldwork in Bagré – one of Burkina Faso's most important rice producing regions (Burkina Faso/MAAH, 2011) and home to the flagship BGPP (Bagrépôle, 2014; Yaméogo, 2015; World Bank, 2021) was less formalized and characterized by "a fuller engagement with social action in situ" (Hitchings and Latham, 2019: 1). During her stays, the first author lived in the center of the project area and was offered a workspace in the MEBF. That way, she was able to closely observe and participate in the everyday activities at the managing level and across the rice plains. Together with two assistants,⁴ she did regular tours through the plains to document – in writing and photography – the state of the rice fields. Living amid the rice plain allowed for repeated meetings and ongoing informal conversations; chatting to farmers while watching their fields change, spending work weeks with an agricultural advisor and manager of Bagré rice farmer union and participating in quotidian encounters at the marketplace, kiosk, and roadsides where information were shared, and news discussed.

Looking at and coding the data – extensive observation protocols and series of conversations focusing on the project's rice component as it was enacted by farmers and managers in everyday practices and encounters such as infrastructure construction and procurement, collective organization, and service provision – drew our attention to a range of attempts and measures to better align rice-related actors and activities. In fact, delays of all sorts – in construction progress, rice seeding,

⁴ During fieldwork the first author employed and worked with three assistants: Inoussa Ramde, Martin Wèndngùdi Compaoré, and Souleymane Yougbaré. They not only chauffeured and translated whenever local languages were used but most importantly shared thoughts and reflections on what we observed and heard. While Janine Hauer speaks French fluently, she did not master local languages. However, language barriers were also a significant part of the field. Most official documents existed in French only, so did the statutes of the farmer and producer associations, and bank documents (language was only one barrier obviously, illiteracy another). Official meetings were mostly held in French and simultaneous translations were rare. Discontinuous information flows therefore shaped the local ricescape.

repayment of loans across individual as well as collective levels of organization – were accompanied by equally diverse attempts to speed up and orchestrate activities and people. These activities are the pivot of our analysis.

We ground our analysis of the practical attempts of aligning and articulating people, practices, and arrangements to be mutually synergistic rather than thwarting one another – what we frame as coordination work – within the broader realm of relational thinking informed by interdisciplinary approaches that have been formulated in the wake of the “practice turn” in social theory (Schatzki et al., 2001). Deploying a practice theoretical sensitivity to megaprojects, such as the BGPP, not only directs analytical attention to its everyday practical implementation but also opens for de-essentializing assumptions and categories (e.g. individual agency and structural deficits) by revealing their historicity, contingency and practical, material-semiotic constitution that is constantly made and remade. Central to our argument are works that focus on the temporal dynamics of social practices in everyday life (Shove et al., 2012a), the role of rhythmicity for processes of the institutionalization of practices (Blue, 2019) and the formation of socio-temporal rhythms through coordination (Southerton, 2020). These works help us to think about observable paces and rhythms as outcomes of lives, projects, and practices (Shove et al., 2012a: 96) and to examine their formation by analyzing “how practices as entities are organized (or arranged) and how those practices are performed (and experienced)” (Southerton, 2020: 162). In describing rice farming as practice, we shift back and forth between what Shove et al. (2012a) conceptually distinguish as “practice as entity” and “practice as performance”. Whereas the former allows us to unravel the different elements and conditions that configure the practice of rice farming, the latter alerts us to the concrete ‘doing’ of rice farming and the specific patterns that emerge from its timing and reproduction or modification. By zooming in to map the components that condition and connect to the practice of rice farming, and out, to grasp the specific constellation that emerges from it (Nicolini, 2009a; 2009b) we capture the socio-temporal organization of rice farming and how it is experienced. Reading our data through this lens sets the stage for discussing forms of coordination work that ultimately aim at transforming the temporal organization to synchronize rice farming across the BGPP area.

4. Coordinating elements and performances of rice farming

4.1. “Struggling to get things in place and done in time.”

Bagré, 27th July 2017. It is a warm cloudy morning. I am sitting behind my assistant on his motor bike. We are heading westwards, just beneath the reservoir. We are crossing the eastern canal that carries water from the Bagré dam. We go past one parcel after the other, each of them approximately one hectare in size. Their forms shift. Sometimes straightly drawn rectangles, sometimes curvy terraces. In the rice fields, small dikes stop the water. We do not see many people and most of the fields are overgrown by weed. Only a few plots have been cleared and I spot some tender greenish rectangles amidst the dark brown soil – the first tips of the rice seedlings. (Field notes, 27 July 2017)

A week later, on the 2nd of August:

More fields sprayed with chemicals that kill the weeds. Plots are cleared from weeds and the soil is tilled. Few farmers possess cattle and a plough, most often a wooden pick is used for tilling – hard manual work. Where the work is far advanced, women are planting the rice seedlings. Their skirts raised over their knees they are standing in a row. Evenly placing the seedlings in front of them they slowly make their way through the field. [...] Finishing our tour we drive past Bagrépôle’s office building. Brand-new tractors are strung under a carport. They are so clean; it is hard to imagine they enter the fields. (Field notes, 02 August 2017)

Between July and November 2017, my assistant and I repeated our tour at least once a week. We changed the path each time to get to see different parts of the plains. We noted that farmers followed their personal schedules for rice farming. As we were told, they sowed whenever they had amassed enough money to pay the seeds, fertilizer, and labor force. No zone calendar or advice of farmer groups drove their timing and there were almost no joint work efforts to get the tasks done on several fields at once. This lack of collective organization was repeatedly problematized when we spoke to rice farmers and laborers, advisors, consultants, and managers amidst the rice fields; it was deemed a prerequisite for the vitally needed intensification – an increase in yields per hectare – and extension – junction of additional rice plains currently under conversion – of rice production in Bagré. People agreed that Bagré fell short of expectations and ‘wasn’t there yet’; the growth pole’s promise had yet to be fulfilled. Diverging explanations for this situation circulated. One consultant located the problems in predecessor projects. These projects had developed the dam and the existing canal system but were judged as too monolithic (depending on rice only) and paternalistic.

“Bagré began as rice region only, nothing else. In the past, everything was done for the rice farmers. The Taiwanese told them what rice to plant, when, and how. But they [the farmers] didn’t really learn to take responsibility. When the Taiwanese went away, much of the organization broke down.” (Interview with a consultant from Ouagadougou who supported the rice processors’ union, male, 36 years old, Bagré, 28 September 2017)

The farmers in turn cherished the centralized organization of the past. A farmer explained that when the Taiwanese were there everything was better organized.

They would call the farmers together when it was time to sow. They would bring the machinery to prepare the fields, distribute the seeds, be present in the villages and make the farmers work together. The organization was better at the time. Nowadays he rarely sees any of the plain managers on the fields, he continued. A complaint many farmers repeated. Access to all ingredients had become an individual responsibility but was oftentimes regarded as too complex for a single rice farmer. (Field notes from a chat with a rice farmer in Bagré, male, 52 years old, 12 October 2017)

When the BGPP was launched in 2011, euphoria about “the possibility of another development” (Bejot, April 10, 2012) and “the opportunity to strive toward food self-sufficiency” (Bazié, April 12, 2012) was publicly expressed; its organization was supposed to enable self-sustaining growth rather depending on ongoing foreign aid. However, almost ten years later the growth pole was still a dream (Bassole, 2019). Bagré was not a sea of thriving rice paddies. Rather it was a mosaic of brown, green and yellow plots, of dry soil and diluted mud, and a green rice field here and there. Although elements of rice farming – water, plots, seeds, fertilizer, labor force etc. – were in principle available (farmers rarely complained about missing availability of ingredients), they were not always accessible for the rice farmers who blamed the managing institutions and called for stronger support:

“When I sell my rice, it takes weeks until I get paid. But I need the money to start another round of rice sowing: seeds, labor, pesticides, transport. Sometimes I need to go far to get them. You need to have enough money to start the season. Bagrépôle should help the farmers. The MEBF should help the farmers.” (Field notes from a chat with a rice farmer in Bagré, male, 24 years old, 13 June 2018)

Timing mattered. Each step of rice farming involved significant expenses that hardly any farmer could cover. They relied on the rice sales of the previous season as much as on access to loans, through group and union structures prompted by the BGPP, but also through alternative modes of organizing, e.g. contract schemes with processors and independent means through social networks as well as income generated by

various other economic activities (e.g. small businesses), none of which were accounted for or supported by official project measures. In the light of high expectations, management support was deemed too little by most farmers. “We are supposed to feed the country” I was told numerous times. But rice farming in Bagré was far from resembling modern agriculture.

“You see we do manual labor? Why don’t they send the tractors? Would anyone grow rice like this where you come from?” (ibid.)

Rice farmers knew the machines were there and they had diverging explanations of why manual ploughing remained the rule. Some said important pieces had not yet been delivered and the tractors did not work yet, others thought they were kept for commercial farmers, still others said they could not enter the plains during the rainy season because the roads were in a too poor state.

Beyond access to loans and technology, farmers were concerned about water availability. After all the irrigated area would soon more than double. What would happen when an increasing amount of land had to be irrigated? During our conversations farmers often wondered if the dam would provide enough water to support the upcoming expansion. Varying feasibility studies estimated the irrigable area at around 11,500 ha (World Bank, 2011; Venot et al., 2017). Yet, the unpredictability of rainfalls poked uncertainty. Many farmers expressed doubts as to whether the managers of the project really could guarantee water supplies.

“Water isn’t a problem, yet. The reservoir is filled and the canal, too. When we need water, we can open the gate and get water. Nobody prevents us from opening the locks. But with the extension? We don’t know. Some say the reservoir is insufficient. If everyone takes water all the time it will be a problem.” (Field notes from a chat with a rice farmer in Bagré, male, 32 years old, 18 June 2018)

The zone managers shared the farmers’ concerns – stable supply of inputs and access to finance, mechanization, and irrigation – but framed them in an opposite manner rather treating them a problem of individuals’ discipline. In an interview with a leading agronomist at Bagrépôle, we discussed the points raised by the farmers.

“The farmer union (zone level) should collect all needs, through the groups (village level) in terms of loans, seeds, fertilizer etc.; then negotiate the loans with the bank, distribute all ingredients and later collect the harvest, sell it, pay the money back. In the past, the groups and union have been struggling to get things in place and done in time; it has been badly managed, and money has been stolen. There have been some bad choices; the farmers and their representatives need to be more reliable.” (Interview with an agronomist at Bagrépôle, 47 years old, male, 04 October 2017)

According to the agronomist the farmers had badly chosen their representatives and therefore were to blame for the failure of collective organization. Along the same lines he took up my question about the absence of mechanized farming despite the machines in front of the office where we talked.

“You know the zone by now. Imagine the tractor drives out to plow one hectare each time. This is inefficient. Maybe one hundred. But the village groups do not comprise all farmers of the village anymore. The union does not properly represent the groups. Whom do we lend the machine? Who pays for it? In theory, mechanized farming is possible. But the farmers need to be more disciplined, and they need to organize. The tractors can go out once to do all fields in a zone, but you know how prolonged the season is.” (Interview with an agronomist at Bagrépôle, 04 October 2017)

The lack of collective organization as well as asynchronous workflows were problematized repeatedly when I talked to the zone managers. But good timing, or rather the absence thereof, were also problematized in prospect of the upcoming massive enlargement of the

irrigation zone.

“There is enough water, but we cannot waste it by letting everyone do as he pleases. The farmers must stick to a certain timing, so water will be needed by everyone at the same time. Then we open the canals. Water cannot constantly flow once the new areas start cultivating. We need more discipline. The schedule must be respected.” (Interview with an agronomist at Bagrépôle, 04 October 2017)

Timing – getting farmers to “respect” the schedule and follow the farming timeframes – was framed in terms of (individual) discipline and knowhow and it was acknowledged that good timing depended on collective organization and information.

“First, the farmers need to know when to do what. Therefore, we provide training. We tell them what the right moment and the exact amount of product is. We also have demonstration fields. [...] So, we do a lot to support the farmers. Second, the farmer groups and union are there to facilitate access to credits. They should also organize the transport. They could save a little on each year’s harvest, so they can afford a vehicle that could serve all farmers. They must do what none of the farmers can do alone. Therefore, we support and train them.” (Interview Bagrépôle, 04 October 2017)

On the one hand, rice farming in Bagré consisted of a range of interdependent elements such as seeds, fertilizer, pesticides, tools and water, and the knowledge of *when* and *how* these things needed to be brought together. On the other hand, the BGPP entailed investments and measures to ensure the availability of elements. Yet, we found diverging ideas about how the bringing together of elements, implementation of good performances and the overall timing of both were to be achieved. In the following section, we examine different project instruments and instances of coordinating the practices, that is elements and performances of rice farming.

4.2. Toward coordination: orchestrating performances, elements, and schedules

I shadowed one of Bagrépôle’s agricultural advisors during one week in October 2017. He was in his fifties and born and raised in the zone. He had been one of the first farmers installed on the rice fields established in the 1980s and later followed regular training sessions about new farming techniques. He became an advisor working for Bagrépôle in 2012 and acted as a contact person between the institution and the farmers. Together with his advisor-colleagues he observed and talked to the farmers on their fields. One advisor theoretically supported more than 400 farmers and covered more than 500 ha. This was hard, he explained, but “Bagrépôle is about to hire a bigger number of agricultural advisors, because we are too few” (Field notes, October 05, 2017). From his personal involvement in the zone and regular field visits he knew what prevented farmers to cultivate rice, e.g. sickness or lack of money. He knew many of the families and could tell how different family members contributed to the household income beyond rice farming and how the rice fields were affected by these activities. The advisors’ presence also provided an opportunity for farmers to communicate problems that they considered the responsibility of the zone managing institutions to solve. Their common difficulties in accessing loans, mobilizing, and paying workforce but also seeds, fertilizer, and agricultural chemicals featured prominently in their complaints, but they also addressed more immediate problems such as defects in the irrigation infrastructure or an impassable stretch of road that prevented them from on-time rice farming.

Besides collecting complaints, the advisors ensured the dissemination of know-how on rice farming on so-called school fields. There, they demonstrated different farming techniques and their effects, e.g., planting one rather than five seedlings, varying the amount and timing of fertilizer, or comparing chemical and organic fertilizer. Demonstration in practice was considered more efficient than theoretical training

(which was also done), although it was slower and more expensive. Farmers were invited to follow the field's progress over the course of the cropping season. That way, demonstration fields provided a kind of immediacy, whereby farmers experienced first-hand what even little changes to their techniques could do.

Agricultural advisors linked farmers and project managers in manifold ways. Being close to the farmers they were well-positioned to detect the everyday difficulties of the approximately 3000 rice farming households engaged in the BGPP. These advisors were not only able to direct managerial attention to where interventions were needed, both materially and socially, but also had a very deep understanding of how rice farming related to other economic activities. Moreover, advisors also disseminated messages and information from the managerial institutions and reminded the farmers of the expectations, rules and procedures optimizing production. The practical training on school fields served to optimize farming performances. However, the number of extension officers rose slowly. Although the advisors' work was generally cherished by farmers and managers alike, their impact did hardly transcend the individual level and their outreach remained limited.

To scale up coordination and synchronization to the zone level, further means of organization were prompted. To achieve this collectivization, village groups and water user associations were established during the early years of the Growth Pole (Yaméogo, 2006: 97; Venot et al., 2017: 4). Every farmer cultivating rice was automatically assigned to a village group. All village groups together constituted Bagré's rice farmer union. The groups and union were supposed to collectivize activities such as the acquisition of credits for farming inputs, assuring the order, delivery and distribution of seeds, fertilizer, and pesticides, and selling the harvest profitably by supplying large and stable quantities. The group and union structure did however not work properly. Many farmers reported on the disappearance of money collected via the groups. Others told how rice stored in the villages' storage houses had been picked up but never been paid for. Acknowledging this as well as the need to re-establish farmer groups and the union, the BGPP had offered consultancy services, implemented through the MEBF. Consultants had 'accompanied' the farmer union and village groups to (re)build their structures and enhance their management procedures. Their approach was always identical: the consultants carried out analyses of the strengths, weaknesses, opportunities, and threats (SWOT) and presented their results to the group representatives. Then new statutes were set up and procedures put in place, commonly as forms and documents that were to be used to formalize certain work steps such as the determination of credit or input requirements, their distribution or redemption. But progress was slow. The managing director of Bagré's farmer union, Mister W, explained how every village group was supposed to prepare a balance of account, but this had not been done by any of them. These groups also were to raise their own loans for fertilizer and seeds since the union no longer functioned in this respect, but he was unaware of how this was going as 'every group does something different' (field notes, September 11, 2017). The procedures that were envisioned by the consultants were out of sync with the realities of most rice farmers. High rates of illiteracy in French language, and the lack of digital infrastructure such as computers and printers made it hard to see how these new procedures could be practically implemented and ultimately strengthen the role of the groups. Mister W also complained that his attempts to 'put some organizational procedures in place with the help of the MEBF was not progressing either' (ibid.). He deplored that the coordination between farmers and managing institutions was generally poor. Paying debts and reinstating organizational procedures to prevent further encumbrance had not happened as this required agreement between the farmer groups and the managing institutions Bagrépôle and the MEBF, something that was not systematically tackled or easily achieved. Yet, Mister Ws position as the union's managing director served as a hinge between these different organizational units and levels. It matched the widely acknowledged need to articulate units and levels of organizing rice farming. Project partners of all kinds, state

officials, NGOs, traders, researchers, and others with an interest in rice farming often contacted Mister Ws office to get in touch with farmers, launch project proposals or get data to evaluate the farmer's situation. Instead of pro-actively putting forth the union's mission of strengthening the farmers, their capacities for rice farming and their interest vis-à-vis the broader rice sector, Mister Ws daily tasks consisted mainly of re-actively informing different organizing bodies about the other bodies' activities and replying to requests of potential project investors. This orientation toward the outside rather than the inside of Bagré rice farming activities caused a lot of skepticism among many rice farmers regarding the advantages of the group-union system:

"The group doesn't do a lot for me. They don't provide inputs. And they don't schedule our activities or organize inputs or workers. This doesn't happen anymore like it used to happen with the Taiwanese. And the union talks to Bagrépôle but not to the farmers." (Interview IV with a rice farmer, male, 42 years old, Bagré, 25/06/2018)

Despite these failures, the managing institutions adhered to the farmer union's potential for centralizing and collectivizing organizational duties related to rice farming. Consultancy services were implemented to identify and correct procedural weak spots. The employment of a managing director of the farmer union was a direct response to the consultants' advice. The managing director was to enable new farming and organizational procedures and to foster the flow of information between managing institutions, partner organizations and farmer groups and the union. However, other new procedures did not work as they did not entirely match the givens in terms of farmers' capacities. Farmers' attitudes towards the group-union system were mixed. Whereas some believed that a new start was possible, others reoriented toward alternative forms of organizing, such as self-organized groups or contract schemes with local rice processors (Hauer and Nielsen, 2020). These attempts of coordinating differently were not systematically considered or addressed by the managing institutions and their potential for coordination therefore remained limited.

A third realm of managerial intervention was the attempt to establish a binding schedule for farming activities. Particularly water use was to be regulated via this calendar to assure that there was enough water to irrigate all plots, including potential commercial farmers. A so-called calendar validation meeting in July 2018 brought together zone managers, regional and local authorities, territorial collectives, group leaders, rice farmers, investors, and other project-affected persons, the latter being mainly rice farmers-to-be. Around 160 people were present. Different speakers kept repeating the meeting's central message as an excerpt from the talk of an officer from Bagrépôle exemplifies:

"Currently, 3380 ha of irrigable rice plains are being farmed. Soon, there will be an extension to 7774 ha. These fields are at the heart of the growth pole, which aims to increase economic activities in the zone, create jobs, expand trade, and transform and expand agricultural production. However, in the past, the agricultural calendar has not been sufficiently respected due to insufficient commercialization [of rice], disorganization and undisciplined farming practices, and disrespect of the zone specifications. Hence, to deal with all the difficulties and to live up to the growth pole's expectations a calendar has been developed. It is meant to clearly communicate the responsibilities of all actors within specific time slots including the use of human and technical resources." (Field note, 17/07/2018)

In fact, two calendars – one for the rainy and one for the dry season – were explained in detail. They indicated when specific agricultural activities were to be carried out. It also indicated which actors had to carry out the tasks as well as the responsible parties to oversee and coordinate them. Finally, it specified the means of communication to remind farmers and managers of their tasks. It became clear from the speeches that the calendar would be strictly followed in the future under the control of the zone managers and the farmer union. 'Controls will be rigorous and if you do not farm accordingly, you better not farm at all',

one zone manager proclaimed. Later the meeting floor was opened for questions and interrogations around the timing of different activities arose. How to assure that there was enough labor to plant the seedlings; who guaranteed that fertilizer was delivered on time and the rice sold fast enough so that money to buy seeds for the next season was available at the right moment? The managers' responses remained vague, but both agricultural advisors and the farmer union were mentioned. Three hours later the calendar was ceremoniously signed by the president of Bagré's rice producer union and several representatives of the area's government and management bodies. In his closing statement, the director general of Bagrépôle stated: 'It's time that we [Bagrépôle and the rice farmers] join hands and move forward together' (Field notes, July 17, 2018).

A binding agricultural calendar was meant to encapsulate and consolidate the timing of rice farming – to rhythmize rice farming across Bagré. The calendar supposedly coordinated rice farming on the fields, but also the various related organizational levels needed to support this. Not only it ordered and sequenced activities directly related to rice farming, but also highlighted the connections between different actors, arrangements and performances that were mutually dependent for successful rice production. The written calendar visibly displayed the need to align all the elements that the project had 'put in place' spatially and temporally to perform efficient rice production. Yet, although the various measures included in the calendar's realization were mentioned, there practical hanging-together was not articulated as the vague answers to the farmers' questions made clear.

5. Discussion: coordinating better and otherwise

'To join hands and move forward together' captures the argument we have unfolded across the previous sections, namely that much of the measures and instruments that accompany the implementation of megaprojects, such as the BGPP target the re-formation of socio-temporal rhythms by accomplishing coordination work. In the first instance coordination work – as we have conceptualized it throughout the analysis – is a useful lens to examine the practical accomplishment and the effects of a range of measures and instruments that make and re/shape everyday life in Bagré. The work of agricultural advisors allowed for insights into the reality of farmers' lifeworlds beyond rice farming and their work on demonstration and school fields enabled a relative immediate uptake of advice to optimize farming practices. Their presence thus helped to conciliate between farmers and managers, although their work was often complicated by poor material conditions such as functioning motor bikes or muddy roads that prevented them from going to remote plains. Yet, rice farming was visibly more synchronized where advisory services reached the farmers, although more central zones also provided better infrastructural conditions (e.g. maintenance of roads and canals). Agricultural advisors were well-placed to report on the deterioration of infrastructure, the lack of access to certain inputs and the reasons for it. However, although by the time of fieldwork, the necessity to expand the system of agricultural advisors was recognized and formulated, it was not pushed forward by Bagrépôle or the BGPP more broadly. From their perspective, the few existing advisors were mainly seen as multiplying best practices toward the farmers. Rice farming was considered the main occupation of the farmers. Consequently, the advisors' deep knowledge of the household structures and other economic activities was not systematically requested to understand interdependencies and identify needs for intervention. Likewise, while the need to support farmer associations was generally expressed, the efficiency of the practical steps of remaking the associations was often questionable as Mister Ws skepticism toward the bureaucratic tools introduced by the consultants revealed. Whereas bureaucratic procedures were considered apt from afar they did not match the (material) conditions (e.g. computers and archives) and capacities (e.g. literacy) in Bagré, a problem that was unlikely to be solved by simply offering more consultancy services. Rather the practical conditions as well as their

enactments (or absence thereof) need to be taken seriously to eventually make the associations work. And finally, the attempts to schedule and synchronize rice farming activities presumed the existence of certain elements (e.g. functioning associations) not yet in place. Coordination work-as-practice thus deepens our understanding of how the tuning and timing of rice related practices is accomplished and what obstacles their performance faces, thereby also pointing to potential leverage points to coordinate differently, e.g. assess farmers' various occupations and how they might interfere with rice-related activities, develop tools that meet the actors' capacities and allow alternative group structures to emerge.

Secondly, the notion of coordination work prompts us to bring together and connect a range of measures and instruments that are often considered separate; we have shown that the work of agricultural advisors on demonstration fields, the dys/functioning of farmer associations and the synchronization of rice-related activities hang together. The executive institutions mostly acted independently from one another. Moreover, they were located in different buildings. Altogether, the contact points between them were limited. While emic analyses of managers and farmers alike repeatedly emphasized the connections between individual and collective modes of organizing as well as the need to strengthen both, in practice the means and measures to achieve these goals were hardly ever considered together. In fact, the first author's presence in these different realms of coordination was welcomed as providing insights into otherwise obscured activities. Scholarship on growth pole and corridor projects has highlighted, most notably, the contestations and negotiations between project-leading elites and local populations (Mosley and Watson, 2016; Regassa et al., 2019), although a multitude of interests have been recognized to differentiate distinct strategic positionings (West and Haug, 2017; Enns, 2019; Sulle, 2020). Attention to coordination work additionally attends to the interdependencies and undervalued connections between different project managing institutions and at various levels of project-affected people's organizations thereby pointing to the potential of better aligning the activities carried out within different project components, e.g. by organizing systematic exchange between them.

Thirdly, coordination work, as a conceptual tool, also provides a means to interrogate more systematically into alternative practices of coordinating and bringing them onto the table(s) of those (in power and) in charge of the socio-temporal reorganization of the project zone through the implementation of megaprojects. Scholarship on growth poles and other spatial development tools often contrast top-down visions and perceptions. On the one hand state visions are being imposed on local populations, on the other hand these visions are unevenly taken up, altered, and fed back, a loop that is yet to be fully understood (Aalders et al., 2021). Our own approach focused particularly on the realm of encounters between different stakeholders. Thereby we highlighted the entanglement of local populations with megaprojects (e.g. as hired advisors) without disregarding institutionalized power imbalances. Coordination work – in our account – is highly institutionalized, meaning that the means of tuning and timing rice related activities in Bagré are chosen and defined by managers rather than the farmers themselves. However, our analysis allows for further inquiry to sketch alternative forms of coordination work outside the official realm. In the wake of dysfunctioning farmer associations, some farmers have started to build their own collectives, e.g. small groups that engage in contract schemes with processors (Hauer and Nielsen, 2020). Such attempts of organizing otherwise did not – by the time of fieldwork – receive institutional attention or recognition (e.g. as interest groups in the calendar validation meeting), although they are potentially well-placed to in terms of synchronizing farming activities.

Fourth, megaprojects, such as the BGPP in Burkina Faso do not only consist of massive interventions into landscapes – e.g. the construction of dams and canals, levelling the ground, the temporary eviction of people and loss of land for infrastructure construction – but also confront people with significant changes of socio-temporal organization conveyed through a range of measures and technologies such as

agricultural advisors and demonstration fields, farmer groups and unions and consultancy services to support them and the setup of a binding schedule to coordinate farming activities. Taking these attempts seriously our paper empirically contributes to deepen the understanding of how spatial development tools such as growth poles reconfigure social and ecological relationships in Africa (Schindler et al., 2019). Shifting back and forth between practices as entities and practices as performances (Shove et al., 2012b) we have shown that the provision of technology and infrastructure which is a priority both, for growth pole advocates in general (Speakman and Koivisto, 2013) and managers in the BGPP (“all the things are put in place”) does not necessarily result in the desired enactment of these technologies. Coordination work then is an apt lens to add a qualifying lens to current discussions on megaprojects; it helps us to grasp not only what works or does not but also when and how. Thereby coordination work is also an invitation for further inquiry. The Bagré Growth Pole Project is only one of a growing number of spatial development tools to foster agricultural production (among other). As has been noted these projects often build on previous initiatives with changing rationales, e.g. from supporting family farming to attract commercial investors (Sylla et al., 2023). Comparing both, the reference frames, and conditions for coordination as well as its effects promises new insights and inspirations for coordinating differently. All the more, as the difficulties within the BGPP were never explicitly linked to or compared with other megaprojects beyond Burkina Faso.⁵

Finally, locating our critique within the BGPP rather than above, the concept of coordination work demonstrates a possible way to push research on megaprojects beyond a distanced critical stance. Attending to the histories and systemic connections of specific megaprojects within shifting development paradigms Enns and Bersaglio (2020) and others (Kimari and Ernstson, 2020) articulate well-founded critiques of global neo-colonial and imperial orders. In this light, current rice production and consumption in Burkina Faso are as much related to colonially embedded, globalized food relations as they are instantiations of dominant ideas of modernity as reflected in their diligence to attract commercial investors. We understand the BGPP as an effect of these relations as well as an effective means to their stabilization in line with empirical studies that clearly recognize, reveal, and explain the non-linearity and complexities of megaprojects hitting the ground (Chome et al., 2020; Gonçalves, 2020; Aalders et al., 2021). Moreover, these works offer a useful conceptual vocabulary that illuminates similarities and differences between and across different cases (Mosley and Watson, 2016; Dannenberg et al., 2018). By zooming into the BGPP, then, we illuminate on its paradoxical nature of co-constituting (food) insecurities across Sub-Saharan Africa, while also promising to fix them in the future. Taking seriously our interlocutors’ awareness “that it doesn’t quite work yet” we refrain from overly critical articulations that question the overall existence of the BGPP and the efforts made by its initiators in order to keep a conversation going in which small practical changes and conceptual propositions might fuel productive encounters between researchers, farmers and project managers.

6. Conclusion and ways forward

Throughout this paper we have advocated a practice-oriented study of growth poles and development corridors, using the example of the Bagré Growth Pole Project in Burkina Faso. By analytically dissecting the practices of rice farming and their coordination by agricultural advisors on (demonstration) fields, by consultants and managing directors in union offices, and zone managers in calendar meetings, we contribute

⁵ The authors thank the anonymous reviewer for raising the question of comparability. For a lack of detailed knowledge about other large-scale irrigation schemes such as the Senegal River Delta and the Office du Niger in Mali we do not attempt to draw any comparative lessons in our paper, but clearly acknowledge and encourage making use of our conceptual suggestions to do so.

to the growing body of empirical scholarship on globally employed travelling models such as growth poles and development corridors. Through intensive fieldwork and close observations of activities related to rice farming, we brought into view how one and the same practice is shaped and targeted in and by an interplay of interventions. We have concluded that a critical assessment of current megaprojects requires attention to that interplay of practices and related measures rather than subjecting each instrument and actor to individual evaluation. Our approach, we believe, can be fruitfully adopted to inquire into diverse spatial development tools and how they are put to work on an everyday basis thereby complementing the broad scholarly interest in growth poles and development corridors as tools for future-making. Ultimately, coordination work not only conditions the emergence of socio-temporal rhythms, but also contributes to the overall pace of change and the dis/continuous acceleration or retardation that paves the ways toward African futures.

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CRedit authorship contribution statement

Janine Hauer: Writing – original draft, Visualization, Methodology, Investigation, Data curation, Conceptualization. **Jonas Østergaard Nielsen:** Writing – review & editing, Supervision, Conceptualization.

Declaration of competing interest

No conflict of interest exists.

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Data availability

The paper is based on in-depth ethnographic fieldwork. The material includes confidential information, which is not publicly disclosed to protect the privacy of the informants.

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