

## Chapter 9

# Rice and Revolution

## *Agrarian Life and Global Food Policy on the Upper Guinea Coast*

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### **Introduction**

Along the Upper Guinea Coast, rice has played a significant role in shaping land and livelihoods, persons and population flows, desires, dreams, disappointments, spiritual and moral life, and interactions and transactions for many hundreds of years, or perhaps even a few thousand. For several centuries this area of West Africa was known to Europeans as the Grain or Rice Coast, signalling their recognition of the importance, abundance and defining aspect of rice in this region (or, more selfishly, their own interest in securing this rice in their trade along the coast). But both before and after European dominance in this area, rice played a defining role in residents' interactions with each other and with the various outsiders who traded, raided and invaded in their midst. Rice in this region has been linked to the rise of the great precolonial West African states of Ghana, Mali and Songhai (Grist 1959; Osseo-Asare 2005). The rice-growing landscape – especially the mangrove swamps – that evokes the topographical imaginary of this region has often served as a refuge from various external forces and foes, from centuries-old Islamic incursions (Paulme 1963; Linares 1981) to more recent iconoclasts (Sarró 2009), and from Atlantic slavers (Hawthorne 2003) to more recent civil strife (Richards 2006).

This chapter provides a broad view of the history and interpenetration of rice in social, political, religious and ecological domains across the Upper Guinea Coast, chronicling also the current difficulties of residents in this region who are no longer able to grow enough of it. I have divided the chapter into two parts. Part One, in addition to synthesizing the general history of rice in the region, focuses on a specific population of Upper Guinea Coast residents – the Diola of Guinea-Bissau – as they confront the challenges of a dramatically altered environmental and economic landscape. Their experiences are unfolding at a time of revitalized attention to agricultural development in Africa, particularly under

the auspices of the New Green Revolution for Africa. Part Two then examines this resuscitated effort to address the plight of African farmers. By first setting the stage with an ethnographic portrayal of a rice-based society coming to terms with profound changes in its natural, social and religious world, I hope to give readers a sense of the severe limitations of high modernist and antipolitical development approaches to addressing the complexities of agrarian change and rural poverty in postcolonial Africa.<sup>1</sup>

## Part One: Sacred Rice

After a few months of residency in a Diola village in north-western Guinea-Bissau, I was deeply immersed in a life where rice dominates one's actions, preoccupations, even dreams. I had harvested ripe rice at the height of the dry season, lugged baskets laden with freshly cut rice from the paddies to the village, helped pound and winnow rice at my adopted family's home, and cooked rice over wood fires in large pots of heavily salted water. I had eaten rice at least three times a day, every day, sometimes served with small fish or a sauce of boiled hibiscus leaves, but mostly plain rice – *kutangu*, as it is called in Crioulo – morning, afternoon and night. I had eaten such rice not just in my daily meals but also in ceremonial contexts, when it was prepared in enormous pots and distributed among participants who gathered in small groups around a shared tin bowl. I had seen unhusked rice used to decorate funeral grounds, strung on cords connecting gigantic cottonwood trees and hung in bouquets around the central platform where the corpse was seated. Small sachets of rice often encircled a young girl's waist at a neighbourhood dance, and celebrants at intervillage wrestling matches wore delicately balanced bundles as headdresses. I had discussed rice with my neighbours and friends, or rather, listened as they spoke endlessly of rice, sometimes in technical terms (seed variations, irrigation methods, transplantation practices), sometimes in worried tones ('there's not enough rice to go around anymore'; 'our granaries are empty') and sometimes in metaphorical tropes ('our money is rice'; 'rice is our life'). Rice is omnipresent in Diola economic, social and symbolic life. It is the centre of social gossip; people regularly discuss whose supply is abundant and whose is depleted. Rice is the medium of exchange during life-cycle redistributive processes such as weddings, funerals and initiations. And rice is the ticket to ritual power, as spirit shine ceremonies require abundant expenditures of one's crop. Diola lives, like those of most rice-growing people in this region, are permeated by rice. Growing, eating, displaying, wearing, discussing and revering rice. It was ubiquitous. When I closed my eyes at night, panicles of rice swayed behind my eyelids.

Scholars of the Diola have consistently offered rich portrayals of this rice-oriented society. Even when rice is not their intended subject, its presence still pervades their pages (see e.g. Almada 1964 [1594]; Baum 1999; Coelho 1953

[1669]; Lauer 1969; Linares 1970, 1981, 1985, 1992; Mark 1985; Péliissier 1966; Thomas 1959, 1963). As Linares sums up, ‘Rice is the symbol of ethnicity, of continuity, of all that is traditionally Diola. ... Rice keeps men tied to the land, village-bound, and wholeheartedly peasant’ (Linares 1970: 223). I myself did not go to the Diola region of northwest Guinea-Bissau to study rice. And yet, ten years after my first Diola rice harvest, I still find myself returning again and again to rice, not only as a central organizing feature of Diola social life but as the ‘thing’ that mediates their encounters and exchanges with others, as well as their reflections and reassessments of themselves.

Diola see rice as part of a covenant with their supreme deity, Emitai, in which they work hard to cultivate the crop and Emitai sends rain to nourish it (see Baum 1999). Throughout my fieldwork in 2001–2003 and during my return visits over the past eight years, I saw this covenant in action in Diola farmers’ arduous efforts in the rice paddies, their commitment to well-organized work groups at crucial moments in the agricultural cycle, their regular libations – and occasional costly sacrifices – at spirit shrines to propitiate their gods and bargain for rain, and their careful child-rearing practices that socialize young people into an ethical life of hard work and no theft (see Davidson 2007, 2009). I also heard these sentiments regularly expressed in anthropomorphic and deistic references to rice. ‘The rice is pregnant’, my work associates would note as we walked through a paddy. ‘Rice’, my neighbours would tell me, ‘is sacred’.<sup>2</sup>

This concept of sacred rice is the centrepiece of Senegalese filmmaker Ousmane Sembene’s portrayal of French colonial brutality in southern Senegal in his 1971 film *Emitai*. After conscripting young Diola men to fight in the French army in World War II, colonial officials demanded locally produced rice as a tax from the Casamance Diola villagers so adept at producing a surplus. Despite the otherwise caricatured portrayal of Diola religious life – elders sit amongst human skulls and sacrifice animal after animal in order to appease their gods, while their wives are held at gunpoint under a scorching sun until they hand over their rice – Sembene did, I think, capture a central dilemma in Diola (and probably other rice-cultivating peoples’) social and spiritual life. In addition to quite accurately portraying the physical rhythms of rice cultivation, Sembene shows Diola struggling (and divided) over a thorny conundrum: How can they give away their rice, which is sacred to them? And how could their gods abandon them – the humans that propitiate them – for the sake of rice? This is encapsulated in perhaps the most problematic scene, when the dying ‘chief’ argues with the gods about what is more valuable: Rice? The people? The gods themselves?

These questions never get answered and might still be asked today, although under very different circumstances. In Sembene’s film, Diola were pressured to give their surplus rice to the French colonial authorities, which they insisted was a violation of their principle of ‘sacred rice’. In contemporary Diola-land in Guinea-Bissau, the main problem is that Diola can no longer grow *enough* rice –

not only to meet their ceremonial needs, or to have surplus for a potential tax, but even to feed their families. Diola villagers are on the frontlines of global climate change. Within the past thirty years, declining rainfall, desertification and widespread erosion in northern Guinea-Bissau have increasingly challenged Diola villagers' ability to provision themselves through the wet rice cultivation practices that have long defined them as a people. These environmental factors have combined with neglectful and disadvantageous government policies and programmes regarding rural development, difficult marketing conditions, and diminished labour capacity due to out-migration of youth, which all have worsened conditions in rural rice-growing regions of the country. By the time I arrived in Guinea-Bissau in 2001, most Diola villagers' granaries were empty. Many people regularly told me 'We used to be able to do this', referring to the complex technical, social and ritual system by which Diola produce, consume and revere rice. 'Now we cannot.'

### *Rice as a Total Social Phenomenon*

Sacred rice is, above all, the idiom through which Diola talk about rice. Translated into anthropological terms, rice for Diola is a total social phenomenon in the classic Maussian sense. It mediates all social spheres and holds together the contradictions across them. It is the means through which people present themselves to themselves and others. In some senses, rice as a total social phenomenon could reflect one of the hallmarks of African agriculture more generally: the 'intense dependence of a people on a single crop' whatever that crop may be (Harlan, De Wet and Stemler 1976). That is, whether it is yams, sorghum, millet, or rice, the people cultivating these crops tend to be singularly and intensely focused on them.

African agriculture is characterized by a rather unusual number of dominant crops. In Arabic *'aish* means 'life,' and in the Sudanic savanna the word is applied to sorghum – the staff of life, the source of sustenance. Life without sorghum is unthinkable. To the north in the Sahel, *'aish* means 'pearl millet.' Life itself depends on pearl millet and pearl millet alone, in that ecological zone. To the west around the Bend of the Niger, the word may be applied to rice by some Arabic speakers. Certainly in West Africa, from Senegambia to central Ivory Coast, a meal without rice is considered no meal at all. The same intense dependence of a people on a single crop is found in the yam zone. Existence itself depends on yams. In different parts of the continent other dominant crops are ensete, tef, and fonio... The current dependence of some people on maize and others on cassava indicates that dependence on single crops does not take long to establish. (Harlan et al. 1976: 14; see McCann 2005 for more on maize in Africa)

Diola villagers regularly invoke a recent past in which their mode of production yielded an abundance of surplus paddy rice, often stored for decades and used in great quantities for ceremonial purposes. The decrease in rice stores has already had significant consequences for Diola ritual activities. Most shrine ceremonies require copious paddy rice expenditures: ‘sack rice’ (as Diola call imported rice), even if it could be purchased in sufficient quantities, would not be acceptable in most ritual contexts. Beyond its impact on ritual life, diminishing crop yield has led to changes in what might be called the Diola social security system, particularly with regard to vulnerable segments of Diola society like widows. Given the already strained situation of monogamous households providing for their members, the levirate (*botunabu*) practice in which a widow and her children are customarily absorbed into her husband’s brother’s household has all but disappeared, leaving increasing numbers of widows to fend for themselves on the margins of society.<sup>3</sup> And at the most basic level, decreased rice in Diola-land has contributed to increased anxiety around sustenance, so that many Diola villagers face a worrisome quotidian experience and a more intense working life in what was already a taxing labour regime.

In some ways, questions about Diola and their dominant crop are in the same scholarly vein as other studies of the rise of particular crops and the way they shape desires and dramatically shift economic and political structures (Mintz 1985; Kurlansky 2002; McCann 2005).<sup>4</sup> These writers focus on the role of a single crop and its power to transform social, economic and cultural conditions across vast and previously less connected parts of the globe.<sup>5</sup> Other scholars have provided rich portrayals not just of sugar, salt and maize, but also of the power of rice in particular, both across the globe and within specific regions. The history of rice is often told with a focus on its abundance and adaptation across various ecological and political landscapes. Within West Africa too, scholars have focused on the importance and innovation of rice in enabling societies in this region to survive and often thrive (Carney 2001; Hawthorne 2003; Fields-Black 2008). Such accounts solidify the historic roots of rice in the Upper Guinea Coast and attest to the sophisticated technology that supported its growth as the region’s dominant crop. They are, for the most part, rice success stories. The Upper Guinea Coast is cast as a site of agricultural and social innovation, whether in Hawthorne’s (2003) account of how, in the face of the Atlantic slave trade, a stateless society had the resilience to develop the internal social institutions that enabled it to increase rice production; or in Carney’s (2001) epic portrayal of the contribution of West Africans – especially women – to the Americas through their ‘rice knowledge system.’

It is now well established that West Africans domesticated and cultivated rice for thousands of years, long before the arrival of the Europeans who were assumed to have brought both the seeds and know-how of rice agriculture to West African coastal peoples. The last several decades have seen a flourishing of

influential studies of rice in Africa and in Atlantic studies more broadly, rectifying many of the biased assumptions in previous understandings – both scholarly and popular – of rice’s origins and importance as located exclusively in Asia. A considerable literature now attests to rice’s important role in shaping societies on both sides of the Atlantic. The weight of evidence – historical (Pélessier 1966; Lauer 1969; Alpern 2008), botanical (Portères 1970, 1976; Harlan et al. 1976), climatological (G. Brooks 1985), geographical (Cormier-Salem 1999), archaeological (Linares 1971, 2002), linguistic (Fields-Black 2008), political-ecological (Richards 1985, 1986) and genealogical (Carney 2001, 2004) – restores rice history to its proper place in West Africa, even if the extension of such accounts across the Atlantic into New World systems continues to be debated (Eltis, Morgan and Richardson 2007). That rice was grown 3,500 years ago in the Niger delta; that it diffused to two secondary centres; that both the plant and the people adapted to particular saline, insalubrious, unpredictable conditions to thrive in a challenging landscape and develop a range of rice planting methods; that rice production even increased, in some cases, in spite of the ravages of the Atlantic slave trade (Hawthorne 2003) – all of this is now, unlike the semiaquatic rice plant itself, on terra firma.

Carney’s (2001) watershed study consolidates such evidence to demonstrate Africans’ roles in developing both the domesticated rice plant, *Oryza glaberrima*, and the highly sophisticated water management systems, cultivation techniques and trademark tools involved in successfully growing the crop in a tricky and unpredictable environment, long before European influence in the area. Building on Wood (1974) and Littlefield (1981), Carney breaks the narrative of African rice out of its relegated confinement to West Africa as something of ‘local importance and antiquarian interest’ (Sauer 1993), and provides African rice with a travel narrative as compelling as the more familiar accounts charted for the Asian cultigen. As in Asia, African people moving across the oceans to different ecosystems – whether of their own volition or not – brought with them both the seeds and the skills to transform environments, economies and societies anywhere they went (and anywhere they left behind).

Putting aside her more controversial extension of this argument, which focuses on the influence of this indigenous African ‘rice knowledge system’ in the Americas via the Atlantic slave trade,<sup>6</sup> I want to take up a point emphasized by Carney and others writing in her wake regarding the development of rice agriculture in West Africa, and ask about its implications today. Carney (2001), Hawthorne (2003) and Fields-Black (2008) each emphasize the *innovative* qualities of rice cultivation in the Upper Guinea Coast as a technologically ingenious approach in a challenging mangrove ecosystem, particularly in terms of its sophisticated *cruel/décrué* method of water management (Carney 2001: 40–46; Fields-Black 2008), and its socially innovative responses to the pressures of the Atlantic slave trade (Hawthorne 2003). Whereas these authors aimed to establish

a solid historical basis for rice-oriented cultures and their continual adaptation to myriad challenges – Mandinga expansion, European slave raiding, colonially enforced cash cropping, shaky transitions to independence and throughout all, a fluctuating set of environmental conditions and unpredictable pattern of rainfall – my experience as an ethnographer among Diola rice cultivators in postcolonial Guinea-Bissau leads me to ask: what now?

For the past ten years I have seen Diola respond to the decrease in rain and rice in varied, mostly highly individualized ways. The average household is able to produce only enough rice to last three months, and when you ask most Diola how they get by, they respond by saying ‘kuji-kuji, son’, referring to what chickens do to find insects and grubs for their day-to-day survival. They scrape together what they can to buy a kilo of imported Asian rice, which, though it cannot be used for ceremonial purposes, has become acceptable to eat. Another common strategy among adult Diola – those with families to care for – is to work harder and to scold (and often punish) those who shift their primary allegiance away from rice cultivation and towards other livelihood strategies (see Davidson 2009). Some Diola have invested in spirit shrine ceremonies to contract for more rain. Others have sought new religious identities and institutions – Catholic and Protestant are the two options available in the area – that enable both access to new resources and a religiously sanctioned opt-out from ‘traditional’ strictures that require exclusive devotion to rice.

Increasingly, Diola families invest in schooling for their children and pin their hopes for the future on their children’s academic success. But in Guinea-Bissau, school is a fragile thing to pin one’s hopes to. Some unexpected hurdles have complicated the practice of sending adolescent girls to schools outside the village: most have come back as pregnant drop-outs. Meanwhile, boys’ studies are often interrupted by political turmoil or lack of economic wherewithal, and as they wait around in the capital for a resumption they not only cannot contribute their much-needed labour back home but also become far more likely to lead precarious lives, particularly in a nation where drug trafficking is ever more entrenched and offers one of the only viable economic alternatives to an arduous (and food-insecure) rural life and a paralyzed (and unfulfilled) postsecondary school urban life.

All of these strategies reflect efforts among the Diola to confront their collective dilemma: who are we without our rice? For now, Diola are hungry – some of them literally so, as they struggle to feed themselves and their families; others more metaphorically, as they search for new paths to social security through schooling, new religious institutions and escape. Comprehending this hunger as it connects the physical body to the social body contributes to our understanding of the complex dynamics of agrarian life. But beyond a mere academic exercise, this understanding has implications for development policies and practices targeted at Diola and other agrarian populations on the Upper Guinea Coast and

beyond. The interpenetration of rice across all social domains requires any development response – particularly in increasingly food-insecure regions – to take into account the totalizing quality of rice agriculture. The concomitant challenge for scholars is not just to articulate this complexity, but to do so while pragmatically engaging both the anxieties of present-day rice farmers and an agricultural development discourse that is disproportionately focused on efficiency and quantity.

## **Part Two: The Institutional History of Rice Science and Agricultural Development**

The outlook on the future of rice in West Africa must, of course, go hand in hand with a historical view of the decreasing self-sufficiency of what was once called the Rice Coast, which leads to an examination of the shift from staple to cash crops during the colonial era in Africa, and the continued de-emphasis on agricultural development in the postcolonial period. Once defined by its abundant rice production, the Upper Guinea Coast has seen a dramatic increase in rice imports over the past half century. Colonial policies shifted African agricultural efforts away from food crops for local sustenance towards cash crops for European consumption. Newly independent African nations in the 1960s and 1970s declared their intention to attain self-sufficiency in food production, framing such a goal as a pragmatic approach to meet the demands of population growth and address Africa's marginal position in the international market on the one hand, and as a political and symbolic reversal of the colonial project on the other. But since independence, the increased influence of the cash economy, combined with rapid demographic shifts and a concomitant focus on urban development, have conspired to keep rural development efforts in a marginalized position vis-à-vis large-scale improvement schemes, and food imports have only increased. The trend of importing basic staples, especially rice, accelerated rapidly in the early 1970s owing to two main factors: the Sahelian drought, and the availability of cheaper rice on the international market due to surplus yields in Asia – the fruit of the new intensive approaches and high-yield seed varieties of the Green Revolution. Thus, in the independence era, 'the amount of rice imported into West Africa increased from 276,000 tons/year in 1960–1964 to 496,000 tons/year in 1970–1974, an increase of 80%, at a time when total world rice exports were unchanged' (Aw 1978: 71). Despite Guinea-Bissau's stated commitment to boost rice self-sufficiency (Da Silva 1978), its rice imports have steadily increased since independence (Temudo 2011).<sup>7</sup>

To answer post-independence Africa's call for self-sufficiency in rice production, the West African Rice Development Association (WARDA), based in Monrovia, Liberia, was established in 1971 and later joined the Consultative Group for International Agricultural Research (CGIAR). WARDA, one of several agri-

cultural research and development centres dedicated to improving the yields of African farmers, was the only one focused exclusively on rice. Since its establishment in 1971, WARDA has been a moveable feast, relocating from Liberia to Côte d'Ivoire to Mali and finally to Benin in response to the eruption of violent conflicts across this swath of West Africa. In 2009 it officially changed its name to Africa Rice Centre (AfricaRice). Tracing WARDA's movements across West Africa, as well as its shifting position within the wider world of international agricultural development, would illuminate much about the politics of postcolonial development in West Africa, although such an exploration is beyond the scope of this chapter.

Though conscious of the particularities of the environmental, political and cultural factors that condition rural development work in West Africa, WARDA largely follows the model of other agricultural research and development entities by focusing on the technical aspects of growing rice. The characteristic approach of agricultural development since the Green Revolution, and even before, has been to apply the latest innovations in agricultural science – especially plant breeding, fertilizers and irrigation – to impoverished rural communities across the world, and move agricultural production from sustenance to surplus to sale. Generally couched in the development discourse of poverty eradication and food security, the goals are primarily quantitative – higher yields, more crop per drop – and even though the latest iteration of the Green Revolution for Africa has incorporated the language of sustainability and gender into its rhetoric, the creation of high-yield seeds continues to be the holy grail of rural development.

WARDA's chief contribution in this vein has been the development of New Rice for Africa (NERICA) varieties – the first successful hybrids of *Oryza sativa* and *Oryza glaberrima* – which are being distributed to rice cultivating populations across the continent. NERICA was first named 'wide crossing' to highlight the achievement of bringing together two rice species from widely divergent sources (Walsh 2001). It also reflects a shift in attitudes towards African indigenous rice, long considered inferior and marginal by rice breeding programmes. As Walsh explains, looking back on several decades of rice breeding efforts, WARDA scientists realized that their gains had been limited by the concentration on imported grains, so they began to 'reclaim *glaberrima*' – analysing the long-ignored indigenous rice species to see what could be learned from its long history and adaptation to West African conditions (Walsh 2001). A senior plant geneticist at WARDA described the process as 'time consuming, but ... worth doing because eventually we are going to get an interspecific hybrid that will combine important traits between *glaberrima* and *sativa*' (Walsh 2001: 65). And it did indeed pay off, at least in terms of scientific recognition, when WARDA won the prestigious King Baudouin International Agriculture Research Award for NERICA in 2000. Hopes began to soar regarding the possibility of revitalizing rice production across the continent.

In some senses, NERICA brings the epic journey of rice full circle. It is now generally accepted that *Oryza sativa* and *Oryza glaberrima* shared a common progenitor, and that the genus *Oryza* originated on the Gondwanaland supercontinent before becoming widely distributed across the tropics. From this image of a common origin in a geologically conjoined world, followed by a long history of independent domestication and cultivation to the point of attempted crosses between the two species – *O. sativa* and *O. glaberrima* – that proved sterile, and to a subsequent ‘colonization’ of African rice by the Asian variety in *glaberrima*’s homeland, we have finally circled back to a conjoining (though of a different kind, conjured in the laboratory) that brings Asia and Africa together again in the microcosm of a single grain, rhetorically touted as the ‘best of Africa mixed with the best of Asia’, on which hopes of feeding a hungry world are pinned. ‘The NERICA rice varieties,’ states a recent comprehensive publication on rice, ‘offer great hope to the next generation in Africa’ (Badawi et al. 2010: 404).

It is precisely this hope that is fuelling a major set of international development initiatives directed squarely at rural Africa: the New Green Revolution for Africa. The remainder of this chapter will explore some of the premises, programmes and players that constitute this reincarnation of the Green Revolution.<sup>8</sup> Drawing on the previous sections that developed a Maussian understanding of rice in Diola and other agrarian societies, I will outline some of my concerns about this new – and rapidly expanding – trend in development policy and practice for postcolonial Africa.

The recent revitalized focus on agriculture is framed as a corrective to the largely failed urban-based rapid-modernization approach that has dominated international donor policy and practice for many decades. Spearheaded by former UN Secretary General Kofi Annan and funded by philanthropy giants such as the Gates Foundation, the architects and planners of the New Green Revolution for Africa seek to fulfil Africa’s post-independence promise of self-sufficiency and turn Africa’s image around from a ‘basket case to a breadbasket’ (Cartridge and Leraand 2006: 109).

Gates programme officers and Alliance for a Green Revolution in Africa (AGRA) officials speak enthusiastically about this New Green Revolution’s potential to succeed in Africa, where so many other development efforts have failed (AGRA-Alliance 2014). In one AGRA plant geneticist’s recent summation: ‘For a long time, I don’t think we knew how to solve Africa’s agricultural problems. But the answer is a second green revolution’ (Rieff 2008: 30). African Green Revolution planners have attended to some of the more egregious errors of the last Green Revolution and integrated some general changes in public consciousness and development practice since the 1960s and 1970s into its goals and methods. For instance, far more attention is paid to environmentally sustainable practices, the stated objective of focusing on women and the stated intention to ‘learn from farmers’. Almost every document and speech on the Green Revolution in Africa

is careful to point out the ‘specifically African’ challenges in undertaking such efforts, often emphasizing Africa’s ‘diversity’ and ‘complexity’ of seeds, soil and climate. Other ‘uniquely African’ challenges are often compiled into a laundry list featuring drought, global warming, water shortages, lack of finance, local conflicts, political neglect, unfavourable trade conditions, unstable governments, fragile economies and infrastructure, technological stagnation, a weak private sector, the HIV/AIDS epidemic, a harsh and often inhospitable climate and environment, and low levels of foreign investment and aid. Despite this long (albeit incomplete) list and the repeated recognition that Africa’s challenges are ‘extraordinarily complex and profoundly different’ from those that confronted Asia and Latin America, the core principles and models of the previous Green Revolution remain intact for the ‘genuinely African’ Green Revolution: high-yield seeds, better and more fertilizer, access to markets (AGRA-Alliance 2009).

I am concerned about this substantial investment in Green Revolution projects in Africa on a number of levels. On the surface, I am hopeful that renewed attention to rural Africans could be beneficial, especially given the increasing challenges I presented at the beginning of this essay and the long-standing neglect of African smallholders in national, international and NGO development priorities. But I am worried that much of the New Green Revolution rhetoric echoes some of the more problematic (and ultimately dangerous) assumptions of past Green Revolutions and other attempts at agricultural change in Africa and elsewhere.

At the most basic level, African Green Revolution documents tend to treat rural development in Africa as a *tabula rasa* and demonstrate very little concern with (or even knowledge of) the abundant analyses and attempted (and largely failed) interventions into African rural poverty in the past. Only negligibly do they acknowledge the wealth of scholarship – concentrated in the 1980s – on how post-World War II Africa lost its capacity to feed itself, and more generally on how larger colonial and postcolonial international economic and political systems were among the causes of Africa’s current agricultural problems. Quite the contrary, leaders of the New Green Revolution come across as impatient with such ‘background information’. Jeffrey Sachs and Pedro Sanchez of the Earth Institute – called on by AGRA to develop some of the intellectual muscle for the African Green Revolution – have continually pressed for urgent action rather than deliberate and methodical discussion. Sachs emphasized recently that ‘Africa needs its Green Revolution and it can’t wait. Africa can feed itself if farmers get the inputs they need – what theory are we waiting for? ... We have the tools to get the job done’ (Cartridge and Leraand 2006: 122).

This general impatience is reminiscent of an earlier era of agricultural development work. Buttressed by the belief that rapid widespread action not bogged down by generative criticism or participatory methodologies was justified, given the otherwise imminent starvation of a rapidly increasing population, previous

agricultural development experts were dismissive of the particularity and complexity of farmers' expressed needs and desires, often retorting that 'beggars ought not to be choosers' (Richards 1985: 124). But rural Africa is littered with the failed schemes of such hurried approaches to agricultural development.

### *Teleological Development, Again*

Besides failing to do their homework and dismissing critical perspectives, African Green Revolution adherents repeat a faulty teleological understanding of development. The premise behind Green Revolution programmes is that a productive agricultural sector will lead to national economic growth. This is often bolstered with historical evidence from eighteenth-century England, nineteenth-century Japan and twentieth-century India (Hazell and Diao 2005; Båge 2008). Kofi Annan emphasized this point in his speech to the delegates at the 2007 African Green Revolution conference in Oslo: 'Virtually no country in history has achieved economic progress and improved the lives of its people without first advancing agriculture. That certainly applies to our continent' (Annan 2007). The proceedings from the first Oslo conference put it even more starkly: Africa is 'Trapped' (in poverty) and in 'Trouble' (cannot feed its people), and its 'Time has come. After decades of failed attempts at economic and social development, agriculture has been declared the engine of economic growth and poverty reduction in Africa ... Africa has no time to waste' (Cartridge and Leraand 2006: 28; capital letters in original).

The argument, then, is that every successful society has had to pass through some kind of agricultural transformation, and that previous development efforts in Africa failed because they played leapfrog over agriculture and attended to industrial and urban development before their time. In the 2006 Oslo proceedings, a caption underneath a photograph of two African men driving a tractor through a large cultivated field reads: 'Agriculture is commonly considered a locomotive for economic growth in Africa...' (Cartridge and Leraand 2006: 42). Africa remains 'a predominantly agricultural continent', and 'neglecting this overarching importance of agriculture' accounts for Africa's status as the worst-off continent on the planet (ibid.: 41). So, the thinking goes, if you get agriculture right, the rest (ending hunger and poverty, modernization, economic growth, etc.) will follow. New Green Revolution advocates criticize previous development efforts that have tried to 'impose a post-agricultural revolution strategy on Africa before its own agricultural revolution has happened... The lessons from Asia and elsewhere seem clear: Africa needs a concerted effort to accelerate smallholder-led agricultural development ... only then can the transition to industrialization be expected to succeed' (Hazell and Diao 2005: 25).

This teleological approach reinforces an evolutionary development narrative in which each society must pass through the phases that supposedly more 'advanced' ones withstood on the road to progress. Not only is this historically

inaccurate, but it misrepresents Africa as an entire continent ‘not ready, not yet, not quite’ for other kinds of development efforts. Instead of recognizing a ‘full house’ of variation (Ferguson 1999), New Green Revolution leaders insist that ‘as African countries develop and diversify, the other sectors will become important sources of tradables output and agriculture’s role as the primary engine of growth will diminish. But other sectors are not yet ready to play that role on the scale required’ (Hazell and Diao 2005: 29). Africa must therefore stick to the linear progression of social change: agriculture first, then industry. ‘As countries develop and labor becomes scarcer relative to land and capital, [this leads to] a *natural* transition towards larger farms and an exodus of small farm workers to towns and nonfarm jobs’ (Hazell and Diao 2005: 29; emphasis added).

There is nothing ‘natural’ about this transition. Such thinking not only repeats outmoded clichés of the move from traditional to modern, rural to urban, subsistence to monetized economy, but also ignores a recent trend in the so-called advanced or ‘post-agricultural’ societies that challenges this linear development model. Faced with increasing evidence that ‘natural’ transitions from small-scale farming to large-scale industrial and commercial agribusiness contribute significantly to environmental degradation, food scares and public health epidemics of obesity and other chronic diseases, Europeans and North Americans are ever more dissatisfied with large-scale food production. A spreading movement to return to alternative agriculture is visible in the growth of community-supported agriculture, the Slow Food movement, locavores, the celebrity-like popularity of Michael Pollan and other such trends. Perhaps this is an agricultural revolution in the other sense of the word; that is, coming full circle to an appreciation of local tastes and practices, environmentally sensitive farming and other characteristics that have long been prominent among the rural African peasantry.

### *Means and Ends; Techniques and Contexts*

Another problematic aspect of the ‘agriculture-led economic development’ paradigm is that it subsumes agriculture as a *means* to a more desirable *end*, denigrating the value of agriculture in and of itself. A more productive agricultural sector supposedly paves the way to a post-agricultural world (as if such a thing could really exist). As a USAID official noted: ‘If a process like an agriculture revolution works, it explicitly gets people to leave agriculture. It does! You are creating jobs that are more attractive...’ (quoted in Cartridge and Leraand 2006: 103). To be sure, many farmers in Africa and around the world have hopes for their children that include nonfarm jobs. But why preclude the possibility that agriculture itself can be desirable? The assumption that agriculture is something to be left behind on the road to progress – something you work your way out of – reinforces agriculture’s low status on the evolutionary ladder and recapitulates the very image that for so long made rural smallholder concerns look ‘unsexy’ to global development agendas (a view that New Green Revolution advocates claim

they are trying to reverse). From my own work among Diola rice cultivators, it is clear that although Diola farmers often complain about their declining capacity to sustain their households, they are proud of their continued hard work in the rice paddies. Even those with supposedly more desirable jobs, like teachers, identify first and foremost (and proudly) as farmers. By regarding food production as ‘unspectacular’, Green Revolution proponents continue to ‘misunderstand the nature of both the agriculture and the politics of communities where food production is a major interest’ (Richards 1985: 116).

Agriculture is not only devalued as a means to an end but reduced to a set of techniques, as something to be tinkered with and fixed. Although not sexy to developers, agriculture is like sex in the Foucauldian sense of the care of the self: it is a practice that can be practised (i.e. improved). With the right inputs – science and technology, seeds and fertilizers – agriculture can be transformed. The overriding approach of the Green Revolution (past and present) is primarily biological and technological, and operates under the assumption that agricultural processes can be extracted from their political and social contexts. This view is encoded in Green Revolution discourse, institutions and practices. Most of its leaders – donors and practitioners alike – are economists or agricultural experts (or both); there are few if any social scientists (let alone anthropologists, let alone small-scale farmers) in their ranks.<sup>9</sup> Their approach to agricultural transformation ignores the long history of social and political circumstances that help explain why African agriculture is experiencing difficulties, even as it occludes a picture of agriculture embedded in complex modes of social organization, moral economies, arrangements of power and religious beliefs and practices. As we have seen for Diola – and as has been documented for other agrarian groups – agricultural work is not simply a means of sustenance but is integrally tied to conceptions of personhood, social relations, ritual obligations and collective cultural identity. Tinkering with any piece of their cultivation practices has significant ramifications for all of these realms.

Agriculture is necessarily a biological and social process, but the Green Revolution’s exclusive emphasis on research and technology sets the social side of this equation aside. This bias is built into the elitist research culture of the Green Revolution. In the Asian and Latin American iterations, International Agricultural Research Centers concentrated the brightest talents in a single place equipped with the best research facilities, and in so doing removed them from exactly the geographical and sociological contexts where they would be most connected to the needs and realities of farmers, and in which they were meant to implement their scientific discoveries. Such practices are replicated in Gates’s support of Cornell and other seed research centres and even showcased on AGRA’s website in images of African scientists surrounded by the accoutrements of modern, high-tech scientific legitimacy: white lab coats, safety goggles and pristine laboratories lined with neatly labelled beakers. But these environments insulate Green

Revolution practitioners from the real-time agricultural environment and on-farm knowledge, practice and experience (both biological and social). They also obfuscate the social and political aspects of agrarian change (e.g. land reform, the social organization of labour and national price setting, to name just a few). This may have the unfortunate consequence of repeating the problems and failures of previous applications of ‘pure science’ to agricultural challenges.

Beyond seed science, one of the innovations New Green Revolution leaders are most excited about is the development of a corps of agro-dealers to bring high-yield seeds and improved fertilizer – what used to be called the biological package – to isolated, rural farmers.<sup>10</sup> Replacing the infamous extension agent as the travelling salesman of the Green Revolution, these agro-dealers would be culled from the existing merchants who peddle their wares in outlying villages, thus solving (or at least circumventing) the problems presented by the lack of an African transportation infrastructure. But the assumption that the existing petty-merchant class can sell new seeds and other agricultural products (and even train farmers how to use them) exposes a serious misunderstanding of social and ethnic relations in parts of rural Africa. In the Upper Guinea Coast, farming populations generally regard the petty traders who would be recruited into the agro-dealer corps with deep misgivings and mistrust, and certainly do not recognize them for their knowledge of agriculture. I was often told a well-known rural legend about sneaky peddlers (they are always Fula in the Guinea-Bissau version of this story) who sold glass marbles to gullible rice cultivators, claiming that if they were planted and tended to, they would grow into coveted glass bottles after the rainy season. This anecdote is often told to highlight the naiveté of ‘traditional’ and ‘backward’ farmers, or to explain the roots of the enduring animosity between landowning farmers and itinerant merchants, or to prove that such merchants are inherently untrustworthy – or, usually, some combination of these. Many similar stories abound, testifying that relations between farmers and would-be agro-dealers are already tense. Any investment of funding and expectations in agro-dealers as the conduits through which newly developed high-yield seeds, fertilizer and agricultural know-how will reach rural farmers and transform agricultural productivity further exposes the naiveté – or at least the lack of attention to on-the-ground social relations – of Green Revolution architects.

### *Scientific and Indigenous Knowledge*

One of the key resolutions of the first African Green Revolution conference in Oslo is to ensure ‘targeted research and transfer of Science and Technology to farmers’ (Oslo Conference 2006; capital letters in original). Other resolutions, redressing previous Green Revolution gaps, include commitments to crop diversity and the role of women in agriculture. But the emphasis is unmistakably on bringing science and technology to the ‘unknowing’ African smallholder. Again, such an approach carries forward the perspective in which African farmers occupy

an earlier stage of evolutionary history, and claims that ‘the key to agricultural development in Africa lies in “technology transfer” – the importation of “appropriate” agricultural inputs from tropical regions held to be more “advanced” on the evolutionary scale’ (Richards 1985: 43).

Along with the prejudicial implications of such a view, the continued belief that laboratory science leads agricultural innovation is countered by countless examples of agricultural researchers reinventing traditional African agriculture by, for instance, ‘discovering’ the value of West African farming techniques like ‘bush burning’, integrated use of valley and upland holdings, intercropping and land-rotation fallowing. Science has often followed such innovations rather than led them. As Paul Richards notes, ‘high technology’ initiatives throughout the colonial and postcolonial era had minimal and often counterproductive impact, and their failures were remedied – in numerous cases from Nigeria, Sierra Leone, Liberia, the Gambia and Senegal – by reinstating local cultivation practices (Richards 1985; see also Richards et al. 2009; Nuijten et al. 2009; Offei et al. 2010).

The reincarnation of the Green Revolution for Africa has attended to some of the previous biases against indigenous knowledge in its commitment to ‘listen to farmers’. As an AGRA programme officer states,

There is also a lot to be learned from the farmer. You develop ideas about what you think the farmer should do to solve their problem, but maybe that is not the farmer’s problem. ... So, for us agriculturists, we may be telling the farmers what chemical to use or how to control the storage pests or how we can develop a resistant variety, but the farmers know what they have been doing and they may have abandoned a method that works. ... So if you have an interaction between you and the farmer, you will come to learn what the farmer really wants. (AGRA-Alliance 2009)

While these lessons learned from the hubris of the previous Green Revolution reflect what I believe are sincere intentions to incorporate indigenous knowledge and smallholders’ concerns into agricultural development projects (even though, as mentioned above, other dynamics of Green Revolution culture and practice militate against this very process), such a bland and general intention to ‘learn from farmers’ exposes yet another naïve assumption on the part of Green Revolution agro-economists: that indigenous knowledge is ripe for the picking, readily available to whichever plant geneticist or grant portfolio manager might ask about it. But one of the reasons behind the continuing stereotype and misrepresentation of the ‘conservative risk-averse farmer’ is that agrarian communities have ‘often misled outsiders into thinking that not much was going on’ (Richards 1985: 111). It is often to farmers’ advantage to keep a low profile and maintain the image of a subsistence backwater: such a projected image fends off the tax

collector and others interested in taking a share of what is often a thriving trade in foodstuffs (see Richards 1985).

Even more so, some agrarian societies have deeply ingrained formal and informal communicative strategies that make access to agricultural knowledge – or really any relevant knowledge regarding farmers’ circumstances – extremely difficult to obtain. Various rice farming groups expend a great deal of time and energy managing knowledge about themselves and about the natural and supernatural world (Ferme 2001; Sarró 2009; Davidson 2010). Their commitment to a particular scheme of information flow – based largely on secrecy, evasion and restraint – challenges even the most culturally sensitive development policies and practices, and certainly makes ‘learning from farmers’ more complicated than the AGRA programme officer would lead us believe.

## Conclusions

My goal in outlining some of my concerns with the New Green Revolution for Africa is not to dismiss efforts to reach out to African farmers or, more broadly, address pressing problems of entrenched rural poverty in Africa. Rather, I want to point out some ways in which current well-funded, powerful efforts to shape the agenda for accomplishing these aims might benefit from a closer analysis of the assumptions underlying such endeavours, whether encased in the rhetorical, institutional or programmatic aspects of African Green Revolution initiatives. Although the language is more sophisticated, these New Green Revolution approaches smuggle in many of the last Green Revolution’s teleological and evolutionary models of social change, and – despite regular references to ‘local knowledge’ and ‘political will’ – continue to treat agriculture as a set of techniques outside complex social, political and religious contexts.

As Pedro Sanchez from the Earth Institute confirmed: ‘The African Green Revolution is not a proposal, it’s on, it’s happening now. Agriculture is back on donors’ and governments’ agendas and it is being acknowledged as one of the key factors in Africa’s future’ (Cartridge and Leraand 2006: 109). Given that the train has already left the station, the question then becomes how anthropologists and others concerned about the more problematic aspects of Green Revolutionary practice can engage it constructively – particularly when interlocutors are resistant to criticism and eager to claim the moral high ground of poverty eradication – without being either relegated to the role of naysayers or mired in the ‘ineffective particularities of ethnographic detail’ that continue to make anthropologists ‘bystanders in the wider arena of discussions about “Africa”’ (Ferguson 2006: 3). Will social scientists once again be consigned to the task of documenting the validity of indigenous knowledge for an audience that is enamoured with (and has the resources and power to bring about) change through technology, ‘pure science’ and market access? How can we best bring anthropological and historical

knowledge to bear on what will be significant changes – and perhaps major opportunities or high-stakes follies – for rural Africans?

The story of rice and rice-oriented societies on the Upper Guinea Coast invites us to take a very long view of historical change. Rice was domesticated 3,500 years ago as an innovative response to a drying climate. Mangrove rice cultivation in particular represents an ingenious way to engineer an otherwise inhospitable landscape. Even the pressures of the Atlantic slave trade catalysed – in some cases – the consolidation of otherwise dispersed populations and led to an increase in output of rice. As Ohnuki-Tierney notes for the Japanese, ‘rice paddies objectify *time*’ (1993: 133). They evoke seasonality in the rhythms of planting and harvesting, they speak to cyclical patterns of rain and drought, and they express the history and memories of ancestors in their lineage-based tenure and their well-maintained ridges. What they will look like and represent in the future is unclear, especially given the odds of climate change, geopolitical marginality and a skewed globalized economy.

As stated above, one of the goals of the African Green Revolution is to turn Africa from a ‘basket case to a breadbasket’ (Cartridge and Leraand 2006: 109). Rather than being ‘genuinely African’, this aims to make Africa more like Iowa. An immediate countermeasure would involve shifting our attention away from old chestnuts like the impressive ‘adaptive’ strategies of rural smallholders and towards a better understanding of the conditions in which agricultural innovation thrives, by building on Paul Richards’s call to ‘stimulate vigorous “indigenous science” and “indigenous technology”’ (Richards 1985: 12). But a next step would involve moving beyond a science narrowly conceived on the basis of the origin of the scientist. A ‘genuinely African’ Green Revolution is not about enabling Africans to occupy positions in pristine laboratories, but it could be about reconceptualizing the character of science itself.

The nature of the science that has undergirded Green Revolutions from eighteenth-century Europe to 1970s Latin America and Asia is a classic example of Scott’s (1998) notion of high modernism in science. It is characterized not only by its constant confidence that science and technology (and resolute reliance on the expertise of scientists and bureaucrats) will attend to problems in the natural and social world, but also by its indifference to cultural, historical and social complexities and particularities. By narrowly focusing on a single problem (agricultural production), black-boxing uncertainty and complexity, and generally overlooking or externalizing negative by-products, high-modernist science has continually shown itself to be irrelevant, inapplicable and ultimately resulting in failure more often than not (see S. Brooks 2010). It is also a deeply antipolitical approach to agricultural development (Ferguson 1994). If we opt not to follow that script for another chapter in Africa, perhaps Scott’s call for a ‘*métis*’ vision of practical knowledge points us in the right direction. The experiences of Diola rice farmers and the totalizing quality of rice in their societies remind us that Af-

rican agricultural transformation requires a commitment to engage in agriculture not as a means to an end, but as a practice integrally linked to and informed by culture, ecology, politics, social organization and other dimensions of agrarian life not readily encapsulated by the tunnel-vision goals of a high-modernist and antipolitical approach to development.

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## Notes

1. This essay is a revised version of an article published in June 2012 as ‘Basket Cases and Breadbaskets: Sacred Rice and Agricultural Development in Postcolonial Africa’, *Culture, Agriculture, Food and Environment (CAFÉ)* 34(1): 15–32.
2. Many rice-cultivating people consider rice sacred in different ways (see Grist 1959; Ohnuki-Tierney 1993; United Nations Office at Geneva 2004).
3. The dynamics around shifting levirate practices and the status of widows are quite complex, and I do not have room in this chapter to detail them. For now, what is important is to acknowledge that decreasing rice supplies play an important part in the changes in social organization concerning widows.
4. McCann’s (2005) study of maize provides further evidence in support of the observation that a hallmark feature of African agriculture is its loyalty to a single crop, even one of recent provenance.
5. I am inspired by, and hopefully building upon, such works. But my similar focus on a single crop – rice, in this case – does not lead me to the same type of dramatic, far-reaching arguments about the transformation of civilizations and geopolitical order across multiple continents. Although my background discussion of rice – its origins, travels, widespread use and future expectations – does touch upon some of these themes, my aims are perhaps less ambitious and more intimate by comparison.
6. Eltis et al. argue against Judith Carney’s ‘black rice’ thesis (and against Peter Wood’s and Daniel Littlefield’s work, on which Carney’s builds) by insisting that ‘there is no compelling evidence that African slaves transferred whole agricultural systems to the New World; nor were they the primary players in creating and maintaining rice regimes in the Americas.... Furthermore, a close look at the slave trade from an Atlantic perspective suggests no evidence that the rice culture of South Carolina, Georgia and Amazonia was any more dependent on skills imported from Africa than were its tobacco and sugar counterparts in the Chesapeake, the Caribbean, and Brazil. The evolving transatlantic connections, the age and sex composition of the slave trade, the broad shifts over time in transatlantic slaving patterns, and the structure of slave prices are all largely explained without reference to a supposed desire on the part of rice planters for slaves with rice-growing expertise developed in Africa’ (Eltis et al. 2007: 1335, 1357).
7. As Temudo (2011: 309) notes, ‘In recent years, rice imports in the sub-region have been increasing from an annual growth rate of 5.54 per cent in 1991–2000 up to 10.51 per

- cent in 2001–2005. Despite research and development efforts focused on the selection and diffusion of modern varieties, rice consumption has been increasing faster than production and the self-sufficiency ratio decreased from 0.78 in the 1990s to 0.58 from 2001 to 2005’.
8. Much of the agricultural research on tropical food crops for the Latin American and Asian Green Revolution was carried out under the auspices of an international research network coordinated by CGIAR and funded largely by the Rockefeller and Ford Foundations, with additional financing from the World Bank and multinational corporations. Known as the CG System, it comprised ten International Agricultural Research Centers, some of which are continuing their work with new injections of financing and purpose for the African Green Revolution.
  9. See Cernea (2005) for an excellent analysis of the ‘uphill battle for social research’ in CGIAR centres, as well as the lively discussion (‘Special Section’ 2006; Fernando 2007) in the wake of Cernea’s article.
  10. See Koopman (2012) for another critique of this approach, as well as other problematic aspects of AGRA’s efforts. See also Mittal and Moore (2009) for a report on African farmers’ responses to AGRA.

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