

DEVELOPMENT WITHOUT INTERVENTION: A SUCCESSFUL SELF-RELIANCE INITIATIVE OF RURAL DEVELOPMENT AND URBAN GROWTH IN THE SUDAN*

MOHAMED BABIKER IBRAHIM and LEO CHARLES ZULU

ABSTRACT. We investigate the complex relationship between small-scale farming, urban-rural remittances and rural development. We highlight a successful, innovative self-reliance approach in which traditional farmers changed their mode of production, improved their income, and enhanced rural development, including urbanization, in Shubbola village of western Sudan. The major initial driver was investment from remittances by family members who had migrated to urban centers, thus overcoming the problem of access to credit/capital. Consequently, the increased use of tractor technology helped farmers overcome agricultural labor shortages, and increase their farm size and productivity. Increased income from remittances and farming broadened economic and social improvements, including lifestyle and the built environment. In the process, Shubbola has grown into a viable and vibrant town, providing its residents with diverse socioeconomic services and modern infrastructure. This case illustrates the potential of development from within with minimal direct input from the government, nongovernmental organizations, and international donors. *Keywords:* self-reliance, remittances, rural development, urban growth, Sudan.

Most food production in Africa derives from small-scale farmers who practice subsistence agriculture. Today, these small-scale farmers face a number of challenges: environmental, socioeconomic, political, limited capital inputs, food insecurity, and climate change (Stringer and others 2008). Different viewpoints have emerged among agricultural planners about the future of small farms and their role in development, especially in developing countries. At one end of the spectrum, skeptics see no significant potential for the small farm, because young people have abandoned small-scale agriculture to the point of “deagrarianization” or “depeasantisation” (Bryceson 1996, 1999). In addition, commercialization of agriculture means small farmers cannot compete effectively with the changing nature of a global supply chain dominated by the supermarket (Reardon and others 2003; Collier 2009). At the other end, proponents have argued that small-scale agriculture may play a central role in development. They believe that the small farm is efficient, allows the farmers to retain equity, and so reduces poverty and generates development (Hazell and others 2007; Diao and others 2010). With access to appropriate resources and infrastructure,

*This study is a part of a larger research project about socioeconomic changes in rural Sudan that is funded by Hunter College of the City University of New York. We would like to thank the editor Bimal Paul and two anonymous reviewers for their valuable constructive comments. We also want to thank Sara McLafferty, David Simon, Rick Bein, Len Berry, Philip Gersmehl, and Jack Davies for their valuable comments on an early version of this paper. The hospitality of Sayed Hitala in Um Rowaba and Mirghani Awad Bashir in Shubbola is greatly appreciated. Thanks also to Dana Reimer and Henry Sirotin for their help.

✉ DR. IBRAHIM is an assistant professor of geography at Hunter College, New York, New York 10065; [mibrahim@hunter.cuny.edu]. DR. ZULU is an associate professor of geography at Michigan State University, East Lansing, Michigan 48824; [zulu@msu.edu].

the initiative and self-reliance of small-scale farmers can fuel improvements in social and economic well-being.

Most small-scale farmers in Africa are very poor and lack access to resources, including credit and aid, needed to invest in and improve agricultural technology and productivity. In Sudan, small-scale agriculture remains critical for rural communities to provide food and support livelihoods and for the national economy as contribution to gross national income—23 percent in 2008 (Bank of Sudan 2008). Yet, declining small-scale agriculture and escalating poverty since the late 1980s due to a combination of factors, have increasingly forced rural communities to turn to self-reliance strategies for survival. First, the smallholder agricultural sector had historically been neglected since Sudan's independence (Alredaisy and Davies 2001). Second, structural-adjustment programs undermined early gains from neoliberal market policies and reforms introduced in 1992, which had liberalized agricultural markets and minimized government control of produce prices, and distribution of seed and fertilizers. The ensuing crisis weakened government support for agriculture, which had employed more than 80 percent of the labor force, and reduced its share of the national budget to 2 percent (Bank of Sudan 2004; Ibrahim 2008). This nearly destroyed irrigated agriculture and exacerbated rural poverty (Abbadı and Ahmed 2006; Ezarig 2009). Third, declining and, later, cessation of international aid worsened the dire economic situation (World Bank 2003; Wiggins and others 2010). Fourth, drought, civil wars, and political instability worsened agricultural productivity and swelled the ranks of the poor. Finally, poor access to capital and formal credit is well understood to be a major obstacle to agricultural advancement for small-holder farmers—and to rural development in general—as it prevents the investment of necessary agricultural inputs, including labor, technology, fertilizers, and improved seed (Barham and others 1996; Basu 1997). Further, there was limited access to group-based microcredit (Coleman 1999; Menkhoff and Rungruxsirivorn 2011). These factors made self-reliance one of the rarely realistic development options available to the poor (Binns and Nel 1999; Nel and others 2000). Such development from below can promote more efficient utilization of local resources—land, water, labor, and capital—and effectively advance popular participation and development (Fonchingong and Fonjong 2002).

The contention of this study is that remittances sent back from Africa's rapidly growing cities by migrant family members can be the fuel for a self-reliance approach to agricultural and rural development by enhancing agricultural productivity and enabling farmers to take advantage of other opportunities, including better access to markets, advanced infrastructure and other advantages of broader rural development, offering a truly viable alternative approach to "orthodox development." In fact, there has been growing interest in remittances among development theorists over the last few decades (Bakewell 2008; Kunz 2008; Taylor and Lopez-Feldman 2010). We argue, and recent studies in

Egypt, Morocco, and Pakistan demonstrate (Adams 1991,1998; De Haas 2006), that migrant remittances can improve rural agricultural productivity, household incomes, and living standards in Sudan, instead of being used purely for consumptive (rather than productive) needs as earlier studies suggested (Lipton 1980; Taylor and others 1996).

Understanding the role of urban-rural remittances in rural development requires a detailed understanding of the role of small farms in economic development processes and the increasingly complex links between rural and urban centers. The ever-increasing rural-urban ties, and the growing flows of people and resources between them, mean that challenges of small-scale agriculture in Africa have to be examined in concert with migration, urbanization, agriculture, rural development, and notions of “self-reliance,” not in isolation (De Haan 1999). This paper contributes to these debates using Shubbola, a rural community in Sudan, as an example.

THE SELF-RELIANCE THEORETICAL FRAMEWORK AND URBAN-RURAL REMITTANCES

There is no coherent theory or universal definition of self-reliance (Binns and Nel 1999). However, Thomas Biersteker (1980, 233) defines individual self-reliance as “acceptance of responsibility for one’s own basic needs,” in this case agricultural inputs (capital, labor, and technology), food, incomes, and reasonable shelter. The notion reflects the paradigm shift in international development from orthodox top-down, state-dominated development approaches to bottom up, grassroots, and people-driven development. The ensuing “development from within” approach (Taylor and Mackenzie 1992) emphasizes self-sufficiency and dependence on local resources, indigenous knowledge, and creativity; local empowerment and control; inclusive local decision making and participation in development activities; and a focus on basic needs (Gooneratne and Mbilinyi 1992; Binns and Nel 1999; Stock 2013). Self-reliance inverts the dynamism and scale of “modernization” from national development interventions, policies, and technologies whose benefits have largely failed to “trickle down” to the rural poor in developing countries or have done so very slowly and unevenly, to more appropriate local scales, technologies, and development interventions whose cumulative impacts aggregate into regional and national benefits (Schumacker 1973; Stock 2013). “Putting the last first” in a reversal of roles, local people take control of the development process, including problem analysis, decision making, and action planning and implementation, while the “experts” listen, facilitate, and support the process through capacity building and community empowerment for self-reliance (Chambers 1983, 1997).

Remittances offer a fast-growing source of external financing for socioeconomic advancement, and the major link among migration, self-reliance, and development in the global South (Agesa and Kim 2001; Garip 2012). However, empirical analysis has focused more on formal international remittances or on returning urban migrants than on the less visible and poorly documented but

more prevalent internal remittances from urban-rural, regional, and seasonal migration (Rapoport and Docquier 2006). For instance, international remittances to Africa quadrupled between 1990 and 2010 (reaching US\$ 31 billion for sub-Saharan Africa in 2012), exceeding aid and only behind direct foreign investment in external financing sources (World Bank, 2013).

While the socioeconomic development benefits of both international and urban-rural remittances are mainly at macro level, causal empirical links are generally inconclusive or negative (Ghosh 2006; Singh and others 2011). In contrast, local impacts of such remittances, particularly in poor rural areas with limited access to credit, are generally more pronounced. Local benefits often include improved savings, local investment, education and health improvements, and reduced poverty (Singh and others 2011). Recent studies in Egypt, Morocco, Latin America, and Pakistan confirm that remittances can improve agricultural productivity, incomes, and local development, contradicting common concerns that remittances are not used in productive investments, but only for short-term survival or conspicuous consumption, which reportedly causes long-term dependency on remittances, labor shortages, and agricultural “de-intensification” (Adams 1991, 1998; De Haas 2006; Taylor and Lopez-Feldman 2010). In reality, remittances have cut poverty in Uganda by 11 percent (World Bank 2006). They can double African recipients’ savings (IFAD 2009).

A self-reliance approach, however, is no panacea. Processes are often slow, path dependent, and reliant on effective nonlocal “change agents” (Burkey 1993; Nel and Binns 2000), and are “unlikely to achieve more than small sporadic victories for the disadvantaged majority” (Stock 1995, 363). Although local development is an inherently political process in which unequal power relations mediate access to resources and decision-making processes (Friedmann 1992), development is often depoliticized as a technical issue, and the impact of power and social differentiation as its operational currency is neglected (Cooke and Kothari 2001). The reality of this power-disparity issue can make self-reliance actions and strategies unpredictable—more about politics than policy—and can make consensus building slow if not stymied (Taylor and Mackenzie 1992). Finally, while self-reliance work has examined how community members in particular rural localities mobilize their resources or gain access to external ones as they try to survive (Taylor and Mackenzie 1992), “survival and a more efficient use of resources are a necessary but not sufficient condition for development. . . government intervention of some kind is probably necessary to facilitate development in the long run” (Spalding 1993, 696–697). Self-reliance analysis should also address how the state enfeebles or strengthens local development.

The current study mitigates some of these weaknesses. Our focus on individual or household self-reliance sidesteps many negative, power-driven impacts of community-based self-reliance. Weak as the direct role of the state and international aid were when compared to conventional rural development

approaches (Barrett and others 2001), we still recognize the role of the state in supporting the recent expansion of the transportation and telecommunications infrastructure, which have enhanced small-scale farmer access to regional and national markets and facilitated remittance transfers through cell-phone technology. Remittances sent back by increasing numbers of rural-urban migrants (Bilborrow and DeLargy 1990) provided sufficient and stable financing to lay the investment cornerstone for enduring rural development based on a resurgent, more commercialized, self-reliant agriculture.

METHODOLOGY

This research is based on in-depth interviews, focus-group discussions with local farmers in the village of Shubbola in western Sudan, and observation, and supplemented by secondary data review. The fieldwork represents a continuation of a previous study carried out by the lead author in the same study area (Ibrahim 2008). A pilot survey was initiated in January 2008 and the main fieldwork was completed in January 2011 at Shubbola central village. The main method of investigation was interviews with seventy systematically selected farming households. The wide, straight street running through the center of the village/town, the predominantly linear pattern of settlement, and Shubbola's relative small size made systematic sampling appropriate. Using the street as a transect, we selected one out of every three households whose heads were available at the time that the research was conducted. Seventy heads of households were selected and interviewed. They were all males.

Ages of the respondents ranged between thirty and seventy years. All of them had attained at least elementary education. Houses/homesteads that were unoccupied at the time, or whose head was unavailable, were replaced in the sample by the next household along the street transect. To know more about the extent of socioeconomic changes in the village and the influence of the village on its hinterland, a focus-group discussion was conducted with ten farmers from adjacent villages at Shubbola's weekly market. Another focus-group interview was conducted with the youth and younger farmers at Shubbola evening club.

Farmers were asked a series of semi-structured questions concerning receipt of remittances and investment in agricultural production. Questions included the following: Have you received money from your migrant son(s) or not? What kind of crops do you cultivate? What is the size of your farm? Has the farm size increased in the last ten years? Do you use a tractor to help with farming; if so, since when? Has your crop production increased? If it has increased, how do you use or invest any additional income? Farmers were also asked if they had renovated their houses, and what materials they used, along with other questions. This study is primarily descriptive, as the methods and nature of data collected reflect. Therefore, statistical analysis was limited to basic descriptive statistics (frequency distributions and averages) within the IBM SPSS software package. Otherwise, information from key informants, focus groups, and personal observation was

analyzed qualitatively to provide descriptive contextualization and establish associations involving the role of remittances—among other factors—in agricultural and broader socioeconomic development in Shubbola. Observation as a research technique was also used, as were photographs. Limitations of this research included lack of data on income, remittance flows of migrants, and updated secondary data on socioeconomic conditions in the Sudan.

BACKGROUND

The study was conducted in Shubbola, a village in northern Kordofan State in the area known as Mahalyiat Um Rowaba, formerly known as the East Kordofan District (Figure 1). Shubbola had approximately 5,000 people in 2011 in a district of 634,718, according to the 2008 census. East Kordofan is also called Dar Gawamaa, after the largest ethnic group. The Gawamaa are sedentary cultivators—traditional or small-scale farmers who cultivate sorghum and millet as staple foods, and sesame, karkadi, groundnuts, and gum arabic as cash crops. However, wheat, largely imported because only small amounts are grown in other parts of the country (not Shubbola), is gradually replacing sorghum and millet as a staple food. The growing dependence of farmers in the study area on the market for their supply of wheat flour is one sign of the changes reflecting socioeconomic transformation in the study area.

The study area within which Shubbola lies is known for its rich natural resources, including generally adequate water supply and rangeland. It receives

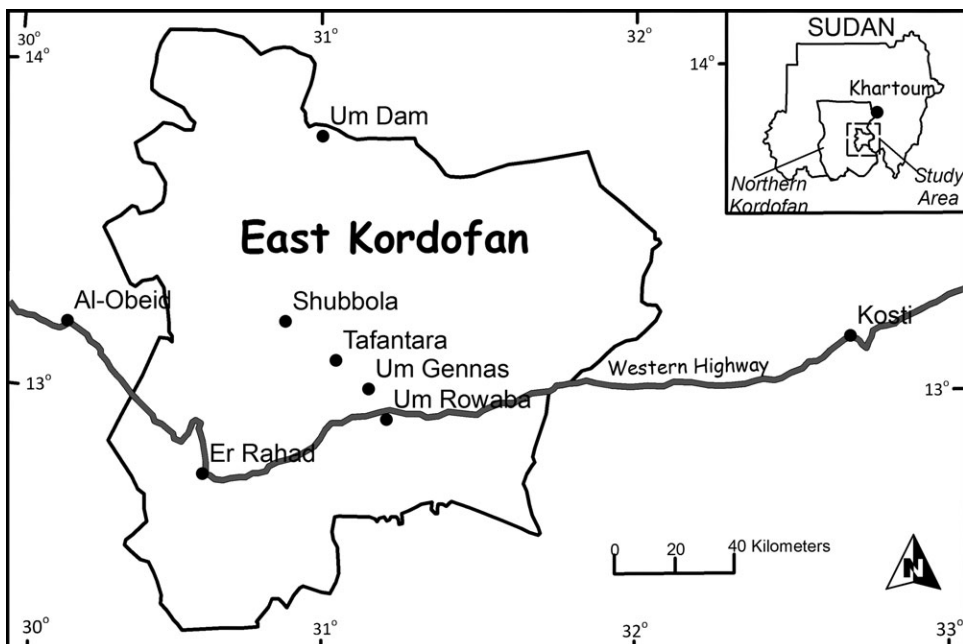


FIG. 1—Map of East Kordofan

rain in summer from June/July to September/October. Rainfall is moderate to low, but adequately supports the growth of diverse crops. Mean annual rainfall is relatively higher in the southern part of East Kordofan—for example, an average of 372 millimeters at Um Rowaba Town—and lower in the northern part of the district, for instance 263 millimeters at Um Dam (see Figure 1). The rich pasture also supports livestock production. However, members of the Shanabla tribe, who are historically pastoral nomads, mostly do this. They rent land from Shubbola's farmers for cultivation, while some of them work as shepherds who take care of the animals of Shubbola's farmers.

Close proximity of the study area to Khartoum, Sudan's capital, provides the inhabitants of Shubbola and East Kordofan district with a safer environment than other insecure areas of the Sudan, such as Darfur, southern Kordofan, the southern part of the Blue Nile State and eastern Sudan. This safety is a basic but crucial requirement for uninterrupted and enhanced productivity. However, belonging to a homogenous society that belongs to the same ethnic group (Gawamaa) also strengthens social networks, and kinship and family ties that reduce social conflicts in Shubbola and the immediate neighborhood.

FINDINGS

RECENT SOCIOECONOMIC CHANGES

We contend that the economic success and transformation of Shubbola into a budding small town has been a “bottom-up” process that did not result from government policies and institutional intervention, but from a self-reliance initiative and innovations triggered by availability of remittances from migrants and catalyzed by improvements in farm technology. While remittances were not the only driver of agricultural development and socioeconomic transformation of Shubbola, they provided the agricultural investments that among other things increased access to and the use of tractor technology, which in turn allowed increases in farm sizes and consequently agricultural production and productivity. These remittance-driven improvements allowed the poor farmers to take advantage of other opportunities, including availability of and/or improvements in road and telecommunications infrastructure, medical and marketing services, and clean water supply to enhance incomes and livelihoods, allowing further impartment of village infrastructure and services including education. Remittances were the most important factor that spurred such economic change and transformed the mode of production from a subsistence to a more commercialized economy, and from rural to more urbanized settings.

REMITTANCES OF MIGRANTS

Small-scale farmers in Shubbola have realized that increased agricultural productivity requires capital, mainly available through formal credit. Since most farmers do not satisfy the requirements for credit from formal financial institutions, some had been forced into exploitative borrowing arrangements from local merchants,

including loan sharks, and many have recently turned to remittances of migrants as a viable alternative. Remittances are the capital sent on a regular basis by migrants to their families in Shubbola and adjacent villages in cash or kind, including food, clothes, and appliances. There is an established local system for transferring the remittances. Two trusted businessmen living in Khartoum known as *Sofara* (ambassadors), collect and deliver money to a local authorized person who distributes it to recipients in East Kordofan District every other Thursday. The *Sofara* retains 10 percent of the value of the remittance as a fee. In a few cases migrants send money through mobile money transfers (MMT, see Brown 2011) by cell phones to the authorized person (generally a rich merchant in Shubbola) in the village who, in turn, distributes it to recipients and also retains 10 percent of the money. Table 1 shows an example of remittances sent by migrants to their families in Shubbola during December 2010. It should be noted that these remittances are sent on a regular basis for living expenses and they increase at the beginning of the rainy season to cover the additional cost of farming inputs. We found remittance amounts to range between Sudanese Pound (SP) 50 (approximately U.S. \$22.12) and SP 500 (U.S. \$221.23) per month. Respondents reported that these amounts covered most of their annual living expenses and farming expenditures. Data provided by the authorized money transmitter in the village/town of Shubbola showed that between 700 and 1000 migrants sent remittances each month to their families (Table 1). The migrants represent about one-fifth of the total population of Shubbola.

The majority of migrants send remittances during the growing season (June to October) when money is most needed to cover the expense of hiring a tractor for plowing, weeding, and sowing seeds. An earlier study found that 72 percent of farmers received remittances from sons to finance the rental of a tractor for crop cultivation, while 28 percent relied entirely on family labor (Ibrahim 2009). The use of remittances to support mechanization of agricultural practices illustrates how income diversification serves as a livelihood strategy to further increase small-scale farmers' income (Bryceson 1999; Barrett and others 2001; Ellis 2005).

The income diversification triggered by remittances in Shubbola has gone beyond improved agricultural productivity and ensuing incomes to transforming the household division of labor manifest in changes in livelihood practices, gender relations, and social reproduction. Functions and responsibilities have

TABLE 1—REMITTANCES SENT BY MIGRANTS TO SHUBBOLA VILLAGE IN DECEMBER 2010 (N = 700)

NO. MONEY SENDERS	PERCENT OF SENDERS	AMOUNT OF MONEY (SUDANESE POUNDS)*
140	20	<100
490	70	100-200
70	10	200-500

*In January 2011, USD 1 = 2,261 Sudanese pounds

Source: Khalis Mirghani Awad, the authorized local dealer who collected and distributed remittances in Shubbola, January 2011.

been redistributed among members of households. Our findings showed that unlike in the past, and based on the size of the household, between one and three sons now generally migrate to cities specifically so that they can send home remittances. The money that they send back provides further incentives for others to migrate, too. One son often stays behind in Shubbola to take care of physical works, including house building and renovations. The rest of the household members, including women, are involved in farming during the growing season. In most cases, families hire a tractor to perform the heavy work of field preparation—plowing and weeding—and sowing, freeing much-needed household labor for other productive, livelihood, and social-reproductive (mainly women) activities. Household members, sometimes including migrants who temporarily return during the growing season, carry out the easier duties, such as the second weeding and the harvest.

TRACTOR TECHNOLOGY

In focus-group discussions there was consensus among local participants that remittances had increased access to tractor technology, and consequently efficiency and productivity. Increased agricultural productivity is generally a prerequisite for enhancing rural development (Schultz 1963; Tripp 2001). In the past, most small-scale farmers depended on a large number of paid agricultural laborers who were usually available (Ibrahim 1985). In recent years, agricultural laborers are becoming scarce because more young Sudanese prefer to migrate to cities and towns. Availability of remittances has helped increase productivity by resolving the problem of acute shortage of agricultural labor at the beginning of the season through increased access to hired tractors. Farmers were asked whether they use tractors or not. Almost two thirds of them answered “yes.” It was found that the percentage of farmers who used tractors has increased steadily over time from 12 percent in 1995 to 65 percent in 2010. Tractors, brought from adjacent states along the Nile where the soils are hard clays and farming is impossible without the use of tractors, are now readily available for rent by the farmers of Shubbola and other villages with mainly sandy soils. Tractors have proven to be more efficient and cheaper than hiring agricultural laborers.

INCREASES IN FARM SIZE AND SESAME PRODUCTION

The technological gains from increased use of tractors made possible by remittances have led to agricultural intensification and extensification through increases in average farm size, an additional source of income for further production improvements. In 1977, more than three-quarters of the surveyed farmers cultivated less than ten mukhamas (7.3 hectares or 18 acres; see Table 2). By 2010, the share was less than a quarter (24.3 percent) while the share of farmers who cultivated more than ten mukhamas increased more than threefold from one fifth (21.8 percent) in 1977 to three-quarters (75.7 percent) in 2010. The

TABLE 2—CHANGES IN SIZE IN SHUBBOLA, 1977 TO 2010

FARM SIZE (IN MUKHAMAS)*	1977		2010	
	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE
3-9	43	78.2	17	24.3
10-19	10	18.2	41	58.6
>19	2	3.6	12	17.1
Total	55	100.0	70	100.0

*1 mukhamas=0.73 hectares or 1.8 acres

Source: Ibrahim (1977); Fieldwork, January 2011.

increase in farm size is likely explained by the fact that in the past cultivation of more than ten mukhamas was only possible if the farmer had resources, such as a large family (labor) or money to hire agricultural laborers. Today, remittances and money earned from the sale of surplus crop yields have enabled farmers to rent tractors and hire more labor in order to expand their land under cultivation.

The improved incomes, access to technology and change in diets from locally grown sorghum to imported wheat staples also account for the remarkable increase in the productivity of sesame, now the main cash crop, and a precipitous decline (almost the reversal) in the growing and production of sorghum and millet. Average sesame production increased from 4.5 sacks per farm in 1977 to 16.7 sacks in 2010 (an average sack of sesame weighs 77.8 kilograms), a phenomenal production increase of 371 percent. Respondents also indicated (perception based) that the productivity of this cash crop per unit area had increased. They attributed the gains largely to the increased use of tractors which addresses a significant labor problem, in addition to expansion of cultivated farm area since the late 1990s. As production increased, more farmers had the incentive to produce sesame for the commercial economy.

In addition, there has been significant financially beneficial change in the marketing of sesame in recent years, thanks to the implementation of modern communication methods. Traditionally, because of lack of access to banking services and formal loans—a major obstacle to agricultural advancement—farmers would borrow money from local merchants and moneylenders, and pay the loans off in the form of produce after harvesting, a practice called *shail*, which is common in central Sudan (Kevane 1993; Elhiraika and Ahmed 1998). Because of the large supply of sesame at harvest, prices would be at their lowest, and loan repayments at that time meant the farmers would lose more than 50 percent of the real price of their crops (Kevane 1993; Elhiraika and Ahmed 1998). The major benefit went to the moneylenders, who had the ability to store sesame and resell in the city market when prices were higher.

Now, farmers in Shubbola have developed methods of maximizing their profit by storing grain in their own homes and using cell phones to communi-

cate monitoring information on crop prices throughout the year. Farmers use remittances and enhanced farm incomes derived from remittance investments in agriculture to purchase cell phones. When prices are high they call crop merchants, equipped with trucks, to pick up limited amounts (up to five sacks). This has prevented a glut in the market and stabilized prices, while eliminating the moneylending middleman, thereby allowing farmers to retain a much larger share of the improved exchange value of their crops. There was general consensus, evident in the various new investments (described later) in agriculture, in nonfarm enterprises, and in personal/household improvements in standards of living, that average household incomes have increased significantly. Many respondents emphasized marked decreases in poverty levels. Interviews revealed that one-third of the people of Shubbola (34.2 percent) are locally considered wealthy farmers, 15.7 percent as emerging wealthy farmers—considered a significant improvement relative to the past—while only 31 percent were considered to be poor farmers.

Unlike most African small-scale farmers, the current high demand for sesame locally and nationally has protected small-scale farmers from fluctuations in world markets and prices. They sell their crops for good prices in local and regional markets. It should be noted that Shubbola farmers find no difference between prices at the village level and those in Um Rowaba, the nearest city. Farmers can sell their crops to local merchants at 85 to 90 percent of the value they would obtain in the city, a small loss that is more than compensated by the avoided expense of transportation, time, and effort in marketing their product in Um Rowaba. Because of the high demand for sesame, out of thirty sesame-oil mills in the nearby processing center, Um Rowaba, only two are functioning. Nationally, due to the unmet demand, and in order to prevent shortage of vegetable oil made from sesame and groundnuts, the government of the Sudan imported vegetable oil worth \$250 million in the first half of 2010 (Kamil 2010). This suggests that the financial incentives for expanded sesame production will remain strong at least into the near future, and continue to benefit local farmers.

IMPROVEMENTS IN INFRASTRUCTURE AND SOCIAL SERVICES, SOCIAL CHANGE, AND URBANIZATION

Our findings showed that remittance-based agricultural and rural development has allowed local farmers to better take advantage of existing or improved government-provided social services such as education, safe and adequate water supply, health services, and particularly infrastructure. Key infrastructure includes the nearby highway and cell-phone technology. Another major factor driving remittance-based agricultural and rural development is the growth of a regional market for agricultural produce. These factors are not only key drivers of the positive transformation of the village into a nascent, vibrant viable small town, but they are also indicators of such change. For decades, Shubbola has

had both primary and intermediate schools to provide education for its children and the children from surrounding villages. Safe drinking water is also available for Shubbola and adjacent areas (within a twenty-five kilometer radius) through a water yard (a borehole, equipped with a pump and a diesel engine) located on the eastern side of the village. Within this area, water is carried by tank trucks to people and animals in the small villages and camps of pastoral nomads near their grazing grounds, providing a basis for human and agricultural development. Agriculture-based development of Shubbola and its transformation into a virtual town has also recently spurred improvements in health services. The village clinic, opened in the 1980s, was promoted to a medical center in 2000 when two additional rooms were built to accommodate emergency patients from adjacent villages.

Farmers used to lose as much as half of the real value of their production because of lack of transportation and of knowledge of prices of crops in different localities (Ibrahim 1985). As shown in other studies, rural roads generate the largest impact in terms of rural development and income growth (Barrios 2008). With increasing numbers of trucks available since the mid-1990s partly in response to increased agricultural production, farmers are now able to market their products more easily. At least fifteen to twenty trucks per day, loaded with crops, livestock, and people, move from Shubbola or areas located north of Shubbola to Umm Rowaba market, or join the national highway that has serviced Um Rowaba city for some fifteen years, to take their produce to more distant regional markets (Figure 1). During the post-harvest period, from mid-October to early January, the number of trucks loaded with agricultural products increases to an average of fifty per day. The corresponding rise in number of truck drivers and their assistants illustrates the way in which changes in crops and rising yields can increase employment of rural people in sectors other than agriculture, including transportation, thus generating additional income to reduce poverty and rural inequality.

Socioeconomic growth and urbanization in Shubbola has continued throughout the last fifteen years, especially from 2005 to 2011. This has led to the growth of other villages along the Shubbola–Um Rowaba axis, such as Tafentara and Um Gunnas (Figure 1), chiefly because of improved transportation and communication efficiency, spurring increased agricultural productivity. Increased availability of information about crop prices and the greater availability of transportation give local producers better knowledge of and access to market prices, placing them in a better bargaining position. One of the greatest advantages of information and transportation is that it reduces the opportunism of intermediaries who seek to buy from farmers when prices are lowest, and helps local agricultural producers to take advantage of differences in local, regional, national, and international market prices, and to maximize benefits from their labor. An earlier study showed that improved information was one of the major factors accounting for increased farmers' income in the study area

by more than 100 percent, building on the remittance-driven increases in agricultural production (Ibrahim 2008).

IMPROVEMENTS IN TELECOMMUNICATIONS

A remarkable socioeconomic indicator and further instrument of the transformation from village to small town needs special mention: the extension of cellular telephone service to Shubbola in January 2009. Telecommunications and telephones are frequently equated with modernity (Hahn and Kibora 2008). A cellular telephone antenna mast was built on a hill in the southwestern part of the village in 2008 (see Figures 2 (top right) and 3). This immediately tied the village into national and international communication networks, and to expanded access to produce-price information, mobile banking, and money-transfer services. Cell phones are nothing short of a technological revolution that has allowed poor and rural African's to skip the landline and access telephone services. The people of Shubbola now own hundreds of cellular telephones, in striking contrast to the popular idea about the alienation of the "poor" from the information society (Richards 2004). In addition, cellular telephones have expanded people's social and marketing networks, an important element of social capital. Many respondents also indicated that cell phone use



FIG. 2—Signs of urbanization in Shubbola village: planned streets and a cell phone antenna mast - top-right corner (Photo by first author August 2008).



FIG. 3—Newly built houses at the center of Shubbola (Photo by first author January 2011).

had increased the efficiency and reduced the cost of transmitting information/messages in the form of saved travel expenses and time. Table 3 shows that almost two-thirds (61.4 percent) of sampled households in Shubbola own at least one cellular telephone, and more than half of them (35 percent) own two, one for the father and the other for the mother. A few have more than two cellular telephones, providing contact for other members of the family. Although the data did not allow empirical analysis to link the two causally, respondents and focus-group participants nearly unanimously attributed the surge in cell phone ownership from virtually nothing a few years earlier to the levels observed in 2011 to remittance-driven improvements in their financial status (Table 3).

Cellular phones also facilitate financial transactions between individuals, in particular mobile money transfers, which has enhanced levels of remittances without needing to pass through local banks. Access to banking services, especially credit, has been a major obstacle to agricultural and rural development (Stark 1980). Further, owners of large herds of animals use cell phones to communicate with shepherds responsible for watering animals. When animals need watering, the shepherd can be directed to the closest working water yards. This promotes animal health by reducing the distance animals have to walk to water. Caring for animals is the essence of commercialization, since healthy

TABLE 3—NUMBER OF CELLULAR TELEPHONES OWNED BY SHUBBOLA HOUSEHOLDS

NUMBER OF CELL PHONES	HOUSEHOLDS	
	NUMBER	PERCENTAGE
None	16	22.9
1	18	25.7
2	25	35.7
3	6	8.6
4	4	5.7
5	1	1.4
Total	70	100.0

Source: Fieldwork, January 2011.

animals can be sold at high prices. Without remittances and consequent increases in farm incomes, poor farmers would lack the money to take advantage and maintain the benefits that use of the cell phone technology offers. Our findings showed that phone-service costs to the user, including phone-charging, were the equivalent of U.S. \$20.00 a month. Because of the lack of easily available electricity, about 90 percent of cell phones must be recharged commercially using diesel-powered electric generators. A fully charged cell phone enables an average owner to use it for only three consecutive days. One cost-saving strategy was to charge telephones only when they are needed to maintain contact with family members and others in different localities within developed informal social networks or to learn about the prices of crops and animals in the nearby towns as far as the capital, Khartoum. Further, the phone-charging services provide more business and income opportunities for the local providers, generating more economic benefits that boost Shubbola's development.

There are also subtle signs of modernization in downstream benefits. Farm machines, cellular phones, better roads, easily accessible water, and increased incomes have one thing in common: they all save time and effort that can be used in other productive activities. This is clearly reflected in the general physical appearance and outlook of Shubbola. Many older buildings, once made of nondurable materials, have been improved with more durable materials. Streets are cleaner, animals are healthier, and fields are tidier. In addition, some Shubbola people now cultivate flowers to decorate their homes, a further sign of modernization. However, although people can afford the cost of irrigating these flowers, they do place stress on the use of groundwater available for human and animal consumption.

ELECTRIFICATION OF RURAL AREAS

Remittance-driven agricultural and broader rural development including infrastructural enhancements have also strongly positioned Shubbola residents to take advantage of an important upcoming electrification program for rural areas. At

present, only a few households in Shubbola and the villages located on the Shubbola–Um Rowaba axis enjoy the use of diesel-powered electric generators to light their homes, run their televisions and radios, recharge their cellular phones. An even smaller number sell electricity to neighbors in the evening. Electricity from the new Merowe Dam project will provide cheaper power to both rural and urban centers. By January 2009, electric power lines had reached Um Rowaba town (the main city in the study area) and extended westward to Al-Obeid. Merowe electricity will further enhance socioeconomic development and environmental conservation. Besides providing personal comfort and convenience, it is expected to provide power for pumping water in water yards and developing small industries in rural areas. The use of relatively inexpensive electricity for cooking will reduce villagers' reliance on wood as the major source of fuel, and reduce deforestation and the associated environmental degradation and negative health effects from wood or charcoal smoke. The electricity is also expected to expand local industrial activity including oil-seed processing industries given expanding markets for locally produced sesame and groundnuts. Investment in oil-seed industries in 2009 amounted to 2.6 percent of the total state service and economic investment budget of Northern Kordofan, and this is likely to increase considerably (Al-Ray-aam Daily Newspaper 2009).

CHANGE IN FOOD HABITS AND TASTES

Our findings show that remittances, by increasing income directly and through increased farm income, have allowed people in Shubbola to join the socio-cultural transition in diets that has taken place nationally from sorghum and millet as the staple food to bread made of wheat. Wheat is not grown locally (except small quantities grown along the Nile River) and is largely imported. The vast majority (more than 90 percent, we estimate based on our knowledge of the area) of the people of Shubbola now eat bread produced from seven local bakeries. The diet of this majority of the people of the village has been changed by eating bread made from wheat flour instead of *dura* (sorghum) or millet. Culturally, eating bread made from wheat instead of *dura* and millet is considered a sign of modernization, and it is now widely accepted that the majority of the urban population in Sudan eats wheat bread. This change in dietary habit began during the 1970s when the country began to receive free American flour as food aid for drought victims and others (Ibrahim 1990). Production of wheat in the irrigated areas of the Sudan has increased in recent years (Table 4) to meet increasing demand. National production still falls well short of consumption, and the Sudanese government has had to supplement it with imported wheat flour.

FUNCTIONAL CHANGE OF SHUBBOLA

During the 1980s, as an educational, economic, and administrative center, Um Dam village in the northern part of the study area was the node of develop-

TABLE 4—WHEAT PRODUCTION AND CULTIVATED AREA IN THE SUDAN FOR THE PERIOD 2001–2006

YEAR	CULTIVATED AREA (IN FEDDANS)*	PRODUCTION (IN METRIC TONS)
2001	275,000	247,000
2002	321,000	330,000
2003	432,000	398,000
2004	407,000	364,000
2005	433,000	416,000
2006	728,000	669,000

*One feddan=1.038 acres.

Source: Compiled from Bank of Sudan annual reports for the period 2001 to 2006.

ment in the region (Figure 1). However, Um Dam has gradually lost its importance to Shubbola partly because of Shubbola's location. One of the main reasons is that, environmentally, Um Dam is located in a marginal semiarid area while Shubbola is located in an ecologically richer zone (Ibrahim 1985). Economically, Shubbola is located at the core of an agriculturally productive region. As a result, it has become an important marketing center for crops and livestock. In the postharvest period, hundreds of tons of crops and thousands of animals are sold at Shubbola's weekly market (Bashir 2011). In addition, Shubbola is much closer to Umm Rowaba city (Figure 1), so transporting agricultural produce to the city or to the national highway is much easier, more efficient and inexpensive.

As incomes of Shubbola households have increased, farmers have more money to invest, spurring greater productivity and incomes. High agricultural productivity also increases food security, reduces poverty and reduces inequities among people. Improvements in the availability and quality of educational and medical services have made Shubbola more attractive to people of the region. In sum, remittance-driven agricultural advancement combined with improved infrastructure, better economic opportunities, and social services, have greatly improved the well-being of people in Shubbola, and the regional significance and function of Shubbola.

GROWTH OF THE TOWN AND IMPROVEMENT OF BUILDINGS

Higher incomes and an increased standard of living are reflected in the improvement of Shubbola buildings since 2000. These developments prompted the government to design a professional (urban) plan for the village in 2005, an important step in the transformation of Shubbola into a town and the sense of an urban entity. No doubt, the grid of straight streets fifteen to twenty meters wide confirm the feeling of living in a town, further reinforced by housing improvements through renovation and modernization (Figures 2 and 3).

As a sign of the higher incomes and improving standard of living, three-quarters (74.4 percent) of the sampled Shubbola residents had made some

improvements to their traditional houses since 2000, 42.9 percent of them by incorporating durable materials such as baked bricks, hollow cement blocks, or cement and paint in all rooms of the house, and on the outside walls (Table 5). Hollow cement blocks are preferred over baked bricks because they are cheaper and locally made from cement and sand. Baked bricks are more expensive because they have to be transported from Um Rowaba city, forty-two kilometers away. Having modernized their houses, many also variously added modern appliances, including electric generators, refrigerators, cellular phones, and televisions.

Almost one-third (31.4 percent) of those undertaking home renovations have taken the first step in the transformation from traditional huts made of nondurable agricultural materials (wood and millet straw are still used by 18.6 percent of respondents, see Figure 2) to ones made of more durable materials incorporating locally made sun-dried mud bricks. They construct the lower part with sun-dried bricks, while the upper part is constructed of wood and millet straw called *durdor* (singular). Houses/huts constructed this way are called *dradir* (plural), transitional houses often found in new extensions of towns/cities throughout the Sudan. Most *dradir* will likely be reconstructed with durable materials within two or more years as most people transform their building style gradually. Besides increasing affordability, one of the reasons for this change was that seventy-seven huts belonging to twenty-six households were destroyed by fire in February 2009. *Durdor* reduces the risk of fire.

Some of the housing improvements (7.1 percent of respondents) include investment with the new-found surplus incomes in property development on newly planned plots of land on the outskirts of the town. The properties are all constructed with baked bricks or hollow cement blocks, and painted. These plots (500 square-meters each) cost about U.S. \$15.00, and were distributed by the local Village Public Committee as part of recent land reforms in rural Sudan. In the past, the distribution of land for agriculture or building purposes was the responsibility of the traditional leader of the village, and in general, land would be given for free. These changes from traditional to modern land management and allocation show the growth of the village into a small town

TABLE 5—RENOVATION AND MODERNIZATION OF HOUSES AT SHUBBOLA SINCE 2000 (N = 70)

TYPE OF IMPROVEMENT	NUMBER (PERCENT)
Houses built with durable materials within the town	19 (27.1)
Part of the house built with durable material (one room, outside gate or wall, washroom)	11 (15.7)
Building of new houses with durable material in outskirts	5 (7.1)
One to three <i>dradir</i> (made of sun dried bricks and Agricultural material)	22 (31.5)
Traditional homes (huts made of wood and millet straw)	13 (18.6)

Source: Fieldwork, January 2011.

and the contrast between old and new styles of construction, reflecting a tendency of the society to move towards modernization.

DIFFERENCE BETWEEN A VILLAGE AND A TOWN

Urbanism refers to the unique social, cultural, economic, and political dynamics that arise in densely populated human settlements. Urbanism is not necessarily confined to cities; urban culture and consumption patterns are frequently found in rural and urban areas alike (Beall and Fox 2009). The primary difference between the residents of towns and villages is that town dwellers are involved in businesses other than agriculture. Businesses and services required by a growing town are available in Shubbola. In general, the morphology (planned and painted settlements), function, and availability of services describe a town in transition from rural to urbanized society, and from a village into a small urban center.

Besides social services, other required urban services and businesses are available. These include agricultural services, construction materials, financial services, light industrial services, livestock trading, food services, consumer goods, and power (Table 6). Such urban features and services are rarely found in other villages of East Kordofan. While wealthy farmers have branched out into providing these services, they have not moved out of farming yet. They have only diversified their economic base to improve their living conditions as small-scale farmers (Barrett and others 2001; Ellis 2005). Farming remains the mainstay of all people of Shubbola, whether rich or poor, but this is likely to change over time.

Village planning, including wide streets, the improved (urbanized) methods of constructing buildings and improvement of old ones, greater availability of public spaces (Figure 3), and enhanced networks of transportation, communications, and public utilities have all laid a foundation for a budding, viable town. Large empty areas around the town are available for contemporary and future development of Shubbola. However, this contrasts sharply with the traditional morphology of earlier Sudanese cities. For instance, the older parts of Omdurman lack planning and public spaces (McLean 1980). The unplanned nature of some Sudanese cities has contributed significantly to the failure of urban planning policies, provision of services, and development in them in the last decades (Post 1995, 1996).

CONCLUSION

We investigated the complex but promising relationship between small-scale farming, self-reliance, agricultural and rural development—including urbanization—of Shubbola village in western Sudan using predominantly descriptive methods and analysis. We have argued and illustrated that remittances formed the heart of the self-reliance approach that has fueled agricultural development and subsequently broader rural development and the transformation of Shub-

TABLE 6—AVAILABILITY OF SERVICES NEEDED BY THE URBANIZED SOCIETY OF SHUBBOLA

TYPE OF SERVICE	DETAILS
Agricultural services	<ul style="list-style-type: none"> – Chisel plows for rent and the sale of seeds – Crop middlemen – Livestock trading in local and regional markets
Construction materials	<ul style="list-style-type: none"> – Transport of bricks, blocks, cement, and steel – Bars and paints from Um Rowaba city – Local small factory making hollow blocks from sands and cement that is used for building new houses with durable material
Financial services	<ul style="list-style-type: none"> – Money transfer through cell phones to and from Shubbola
Telecommunications	<ul style="list-style-type: none"> – Selling and charging of cellular phones – Cell phone network access
Light industrial services	<ul style="list-style-type: none"> – Making iron doors and windows for homes built with durable materials – Making animal drawn carts for local transportation of water and goods
Food services	<ul style="list-style-type: none"> – Bakeries and grain mills
Consumer services	<ul style="list-style-type: none"> – Refrigerators for preserving and selling cold beverages and dairy products
Power	<ul style="list-style-type: none"> – Selling of electricity for lighting and little appliances to neighbors from electric generators in the evenings

Source: Fieldwork, January 2011.

bola into a budding, vibrant, small town. Although there were several other positive factors, remittances provided the much-needed initial investment in agriculture that overcame the critical lack of capital and labor, allowing farmers to innovate and mechanize production through increased use of tractor technology. Poor or altogether lacking access to formal credit is a major obstacle to agricultural advancement and rural development (Barham and others 1996; Basu 1997). Remittances were a critical driver of these positive changes; they offered a realistic, accessible, and stable alternative source of income to spur local investments. Farmers were therefore enabled to increase agricultural productivity, overcome labor shortages, and to significantly increase average farm size, total agricultural (mainly sesame) production, and ultimately household incomes. Poverty has therefore declined and the quality of life improved.

Remittance- and farm-income increases directly enabled small-scale farmers to unlock access (though affordability) to, or take better advantage of,

opportunities, external resources, and other enabling factors. These include high demand and markets for sesame, improved road infrastructure to access local and regional markets, and cell-phone technology to more effectively monitor market information to maximize farmer incomes, as well as eliminate income-draining middlemen. The observed remittance-driven agricultural and broader rural development constitutes a self-reliance approach per Taylor and Mackenzie (1992), which was locally driven and depended on mobilization of resources produced by family members who had migrated to urban centers, and on local innovation. The approach subsequently positioned rural farmers to better exploit external (including government provided or induced) infrastructural and market resources without initial or direct input from the government, international donors, NGOs, or other outsiders. Local farmers and communities have been the primary beneficiaries.

Further, the remittance-induced agricultural development had positive economic multiplier effects that broadened the initial socioeconomic benefits into rural development and the transformation of rural Shubbola into an urbanizing society. Both remittances and increased farm incomes supported further investment in agro-based enterprises, including livestock production, service-provision businesses such as bakeries, building-material production, commercial cell-phone charging, electricity selling, and local/regional transportation. These investments in turn created new employment, enhanced incomes, reduced poverty, and generally enhanced the dynamism of household and local economies, further instruments and indicators of broader rural development. Other indicators include modernization of traditional houses, construction of new ones, and improvement of the living environment. Resulting increases in demand for new or enhanced infrastructure and services stimulated further local and external (government and private) investment in upgrading schools and the health clinic, introduction of town-planning services, private-sector investment in a new water-supply system for Shubbola to meet growing water demand, and provision of other services needed by an urbanizing society (Table 6). The availability of a satisfactory level of these social services and associated improvements in standards of living, adoption of more sophisticated modes of production (tractors and cell phones), and changes in dietary tastes have produced both aspirations for modernization and actual transformation of Shubbola from a village into a town.

Shubbola's case illustrates the power of the notion and practice of "development from within" built on remittances. Study findings are in line with Oded Stark's theorization and illustration of the role of rural-urban remittances in spurring agricultural and broader rural development (1978, 1980). Dependence on local resources is pro-poor, inclusive, and relevant for local needs, and enhances empowerment for more sustainable rural development. Findings also highlight the important link between urban and rural areas in advancing rural development. Emergence of Shubbola as an urbanizing and local/regional

development node also reflects the positive relationship between urbanization and development observed in other Sudanese cities and their agricultural hinterlands (El-Arifi 1980; El Agra and others 1986; Ahmad and Abu Sin 1990).

Contrary to common assumptions and concerns that small-scale farming has little to no potential for contributing significantly to agricultural development in Africa because productivity is low and young Africans have deserted farming and migrated to cities causing “depeasantisation” and “deagrarianization” (Bryceson 1996, 1999), our findings suggest that young Africans may well save small-scale agriculture by “strategically” leaving rural areas for urban centers where they can tap external financial resources to invest in agriculture back in the village through remittances. Far from “abandoning” agriculture, many youths remain engaged in agriculture, albeit remotely, in this way. In the case of Shubbola, many families essentially “sent” their sons away into cities, or the sons voluntarily left, precisely to be able to earn and send remittances home for agricultural investment and other needs. Instead of investing their labor directly in farming, they provide capital (remittances) to hire tractors mainly for plowing, weeding, and seed sowing—the most labor-demanding tasks of crop production. Due to its higher efficiency and cost effectiveness relative to hired manual labor, indications are that use of tractor technology more than compensates for the lost labor through outmigration. Our findings point to the need to encourage policies that cultivate and facilitate urban-rural remittances as seed resources for agricultural development and broader rural development.

References

- Abbadi, K. A. B., and A. E. Ahmed. 2006. Brief Overview of Sudan Economy and Future Prospects for Agricultural Development. Paper presented at Khartoum Food Aid Forum, organized by WFP, Khartoum, Sudan, 6–8 June.
- Adams, R. H. 1991. The Economic Uses and Impact of International Remittances in Rural Egypt. *Economic Development and Cultural Change* 39 (4): 695–722.
- . 1998. Remittance, Investment, and Rural Asset Accumulation in Pakistan. *Economic Development and Cultural Change* 47 (1): 155–173.
- Agesa, R. U., and S. Kim. 2001. Rural to Urban Migration as a Household Decision: Evidence from Kenya. *Review of Development Economics* 5 (1): 60–75.
- Ahmad, A. M., and M. E. Abu Sin. 1990. Urban Development in a Rural Context: The Case of New Halfa, Sudan. In *Small Town Africa: Studies in Rural-Urban Interaction*, edited by J. Baker, 247–263. Uppsala, Sweden: The Scandinavian Institute of African Studies.
- Al-Rayaam Daily Newspaper. 2009. Increase of Investments in Northern Kordofan. Khartoum, Sudan. 25 May.
- Alredaisy, S. M., and H. R. Davies. 2001. Food Security in the Sub-Saharan Rainlands: Umm Sial, a Village in the White Nile State, Sudan. *The Arab World Geographer* 4 (1): 19–30.
- Bakewell, O. 2008. Keeping Them in Their Place: The Ambivalent Relationship between Development and Migration in Africa. *The Third World Quarterly* 29 (7): 1341–1358.
- Bank of Sudan 2001. *41st Annual Report*. Khartoum: Bank of Sudan.
- . 2002. *42nd Annual Report*. Khartoum: Bank of Sudan.
- . 2003. *43rd Annual Report*. Khartoum: Bank of Sudan.
- . 2004. *44th Annual Report*. Khartoum: Bank of Sudan.
- . 2005. *45th Annual Report*. Khartoum: Bank of Sudan.
- . 2006. *46th Annual Report*. Khartoum: Bank of Sudan.
- . 2007. *47th Annual Report*. Khartoum: Bank of Sudan.

- . 2008. *48th Annual Report*. Khartoum: Bank of Sudan.
- Barham, B. L., S. Boucher, and M. R. Carter. 1996. Credit Constraints, Credit Unions, and Small-scale Producers in Guatemala. *World Development* 24 (5): 793–806.
- Barrett, C. B., T. Reardon, and P. Webb. 2001. Nonfarm Income Diversification and Household Livelihood Strategies in Rural Africa: Concepts, Dynamics, and Policy Implications. *Food Policy* 26 (4): 315–331.
- Barrios, E. B. 2008. Infrastructure and Rural Development: Household Perceptions on Rural Development. *Progress in Planning* 70 (1): 1–44.
- Bashir, M. A. 2011. A farmer from Shubbola, personal interview, 20 January.
- Basu, S. 1997. Why Institutional Credit Agencies are Reluctant to Lend to the Rural Poor: A Theoretical Analysis of the Indian Rural Credit Market. *World Development* 25 (2): 267–280.
- Beall, J., and S. Fox. 2009. *Cities and Development*. London: Routledge.
- Biersteker, T. J. 1980. Self-reliance in Theory and Practice in Tanzanian Trade Relations. *International Organization* 34 (2): 229–264.
- Bilsborrow, R. E., and P. F. DeLargy. 1990. Land Use, Migration, and Natural Resources Deterioration: The Experience of Guatemala and the Sudan. *Population and Development Review* 16: 125–147.
- Binns, T., and E. Nel. 1999. Beyond the Development Impasse: The Role of Local Economic Development and Community Self-reliance in Rural South Africa. *The Journal of Modern African Studies* 37 (3): 389–408.
- Brown, B. 2011. Mobile Phones: Reshaping the Flow of Urban-to-Rural Remittances. *Sustainable Development Law & Policy* 11 (1): 50–72.
- Bryceson, D. F. 1996. Deagrarianization and Rural Employment in Sub-Saharan Africa: A Sectoral Perspective. *World Development* 24 (1): 97–111.
- . 1999. Africa Rural Labor, Income Diversification and Livelihood Approaches: A Long-term Development Perspective. *Review of African Political Economy* 80: 171–189.
- Burkey, S. 1993. *People First: A Guide to Self-reliant Participatory Rural Development*. London: Zed Books.
- Chambers, R. 1983. *Rural Development: Putting the Last First*. London, New York: Longman.
- . 1997. *Whose Reality Counts? Putting the First Last*. London: Intermediate Technology.
- Collier, P. 2009. Africa's Organic Peasantry: Beyond Romanticism. *Harvard International Review* 31 (2): 62–65.
- Cooke, B., and U. Kothari (eds.). 2001. *Participation: The New Tyranny?*. London: Zed Books.
- De Haan, A. 1999. Livelihoods and Poverty: The Role of Migration—A Critical Review of the Migration Literature. *The Journal of Development Studies* 36 (2): 1–47.
- De Haas, H. 2006. Migration, Remittance and Regional Development in Southern Morocco. *Geoforum* 37:565–580.
- Diao, X., P. Hazell, and J. Thurlow. 2010. The Role of Agriculture in African Development. *World Development* 38 (10): 1375–1383.
- El Agraa, O. A., I. Haywood, S. El-Arifi, B. A. Abdalla, M. O. El-Sammani, A. M. El-Hassan, and H. M. Salih. 1986. The Gezira Region, the Sudan. In *Small and Intermediate Urban Centers: Their Role in Regional and National Development in the Third World*, edited by J. E. Hardy and D. Satterthwaite, 81–130. Boulder, Colo.: Westview Press.
- El-Arifi, S. A. 1980. The Nature and Rate of Urbanization in Sudan. In *Urbanization and Urban Life in the Sudan*, edited by V. Pons, 381–411. Khartoum, Sudan: Development Studies and Research Center, University of Khartoum and Department of Sociology and Anthropology, University of Hull.
- Elhiraika, A. B., and S. A. Ahmed. 1998. Agricultural Credit under Economic Liberalization and Islamization in Sudan. Research Paper 79. Nairobi: African Economic Research Consortium.
- Ellis, F. 2005. Small Farm, Livelihood Diversification, and Rural-Urban Transitions: Strategic Issues in sub-Saharan Africa. *The Future of Small Farms, Research Workshop Proceedings*, 135–149. Wye, U.K., 26–29 June.
- Ezarig, K. A. 2009. Oil and Increase of Poverty. *Al-Sahafa Daily Newspaper*, 17 August.
- Friedmann, J. 1992. *Empowerment: The Politics of Alternative Development*. Cambridge, Mass.: Blackwell Publishers.
- Fonchingong, C. C., and L. N. Fonjong. 2002. The Concept of Self-Reliance in Community Development Initiatives in the Cameroon Grassfields. *GeoJournal* 57: 83–94.

- Garip, F. 2012. An Integrated Analysis of Migration and Remittances: Modeling Migration as a Mechanism for Selection. *Population Research and Policy Review* 31 (5): 637–663.
- Ghosh, B. 2006. *Migrants' Remittances and Development: Myths, Rhetoric and Realities*. Geneva, Switzerland: International Organization for Migration (IOM).
- Gooneratne, W., and M. Mbilinyi, eds. 1992. *Reviving Local Self-Reliance: People's Responses to the Economic Crisis in Eastern and Southern Africa*. Nagoya, Japan: United Nations Centre for Regional Development.
- Hahn, H. P., and L. Kibora. 2008. The Domestication of the Mobile Phone: Oral Society and New ICT in Burkina Faso. *Journal of Modern African Studies* 46 (1): 87–109.
- Hazell, P., C. Poulton, S. Wiggins, and A. Dorward. 2007. The Future of Small Farms for Poverty Reduction and Growth. Discussion paper 42. Washington, D.C.: International Food Policy Research Institute.
- Ibrahim, M. B. 1977. *Man's Response to Drought Hazard in East Kordofan*. Graduate Diploma Thesis. Khartoum, Sudan: Department of Geography, University of Khartoum.
- Ibrahim, M. B. 1985. *Adjustment to Drought Hazard in the Semi-Arid Areas of the Sudan*. Ph.D. diss.: University of Alberta, Canada.
- Ibrahim, M. B. 1990. People and Government Response to Natural Hazard in the Sudan. In *Management of Natural Hazard in the Sudan*, edited by M. A. Abu Sin, 214–233. Khartoum, Sudan: Khartoum University Press.
- . 2008. Globalizing Traditional Agriculture in the Sudan. A paper Presented at the Association of the American Geographers Annual Meeting, Boston, Mass., 15–19 April.
- . 2009. Socioeconomic Changes and Settlement Transformation in Rural Sudan. A paper presented at the Association of the American Geographers Annual Meeting, Las Vegas, Nev., 23–27 March.
- IFAD. 2009. *Sending Money Home to Africa: Remittance Markets, Enabling Environment and Prospects*. Rome: IFAD.
- Kamil, R. 2010. Food Crisis that Threatens Millions. *Al Sahafa Daily Newspaper*, 31 August.
- Kevane, M. 1993. Is the Sheil a Skill? Informal Credit in Rural Sudan. *The Journal of Developing Areas* 27: 515–534.
- Kunz, R. 2008. "Remittances are Beautiful"? Gender Implications of the New Global Trend. *Third World Quarterly* 29 (7): 1389–1409.
- Lipton, M. 1980. Migration from Rural Areas of Poor Countries: The Impact of Rural Productivity and Income Distribution. *World Development* 8 (1): 10–20.
- McLean, W. H. 1980. The Planning of Khartoum and Omdurman in the Earliest Period of British Rule. In *Urbanization and Urban Life in the Sudan*, edited by V. Pons, 135–146. Khartoum, Sudan: Development Studies and Research Center, University of Khartoum and Department of Sociology and Anthropology, University of Hull.
- Nel, E., and T. Binns. 2000. Rural Self-Reliance Strategies in South Africa: Community Initiatives and External Support in the Former Black Homelands. *Journal of Rural Studies* 16 (3): 367–377.
- Post, J. 1995. Selective Intervention in Kassala's Town Center. *Cities* 12 (5): 311–325.
- . 1996. The Politics of Urban Planning in the Sudan. *Habitat International* 20 (1): 121–137.
- Rapoport, H., and F. Docquier. 2006. The Economics of Migrants' Remittances. In *Handbook of the Economics of Giving, Altruism and Reciprocity*, edited by S. C. Kolm and J. M. Ythier, 1135–1198. New York: Elsevier.
- Reardon, T., P. C. Timmer, C. B. Barrett, and J. Berdegue. 2003. The Rise of Supermarkets in Africa, Asia and Latin America. *American Journal of Agricultural Economics (Proceeding issue)* 85 (5): 1140–1146.
- Richards, C. 2004. Information Technology and Rural Development. *Progress in Development Studies* 4 (3): 230–244.
- Schultz, T. W. 1963. *Transforming Traditional Agriculture*. New Haven: Yale University Press.
- Schumacher, E. F. 1973. *Small is Beautiful: A Study of Economics as if People Mattered*. London: Blond and Briggs.
- Singh, R. J., M. Haacker, K. Lee, and M. L. E. Goff. 2011. Determinants and Macroeconomic Impact of Remittances in Sub-Saharan Africa. *Journal of African Economies* 20 (2): 312–340.
- Spalding, N. 1993. Review of Development from Within: Survival in Rural Africa. *The Journal of Modern African Studies* 31 (4): 695–697.

- Stark, O. 1978. *Economic-Demographic Interactions in Agricultural Development: The Case of Rural-to-Urban Migration*. Rome: Food and Agriculture Organization of the United Nations.
- . 1980. On the Role of Urban to Rural Remittances in Rural Development. *The Journal of Development Studies* 16 (3): 369–374.
- Stock, R. 1995. *Africa South of the Sahara: A Geographical Interpretation*. New York: Guilford Press.
- . 2013. *Africa South of the Sahara: A Geographical Interpretation*, 3rd edn. New York, London: Guilford Press.
- Stringer, L., C. Twyman, and L. M. Gibbs. 2008. Learning from the South: Common Challenges and Solutions for Small-Scale Farming. *The Geographical Journal* 174: 235–250.
- Taylor, D. R. F., and F. Mackenzie. 1992. *Development from Within: Survival in Rural Africa*. London: Routledge.
- Taylor, J. E., J. Arango, G. Hugo, A. Kouaouci, D. S. Massey, and A. Pellegrino. 1996. International Migration and Community Development. *Population Index* 62 (3): 397–418.
- Taylor, J. E., and A. Lopez-Feldman. 2010. Does Migration Make Rural Households More Productive? Evidence from Mexico. *Journal of Development Studies* 46 (1): 68–90.
- Tripp, R. 2001. Agricultural Technology Policies for Rural Development. *Development Policy Review* 19 (4): 479–489.
- Wiggins, S., J. Kirsten, and L. Llambi. 2010. The Future of Small Farm. *World Development* 38 (10): 1341–1348.
- World Bank 2003. *Reaching the Rural Poor*. World Bank: Washington, D.C.
- . 2006. Global Economic Prospects 2006: Economic implications of Remittances and Migration. In *Global Economic Prospects and the Developing Countries*. Washington, D.C.
- . 2013. Migration and Remittance Flows: Recent Trends and Outlook, 2013–2016. *Migration and Development Brief 21*. Washington, D.C.

Copyright of Geographical Review is the property of Wiley-Blackwell and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.