Using a participatory action research framework, we analyze the evolution of agricultural community enterprises at the intersection of public, private, and non-profit interests. These interventions – aimed to disarm, demobilize, and reintegrate 350,000 (ex)combatants in postwar Sudan – expose how environmental changes condition emergence and social morphing of economic cooperation among ex-combatants.

Introduction

War produces social disequilibria (Durkheim, 1897) which unravel social structures and disempower norms, regulation, or habits. These disequilibria can be exploited by opportunists to provoke further unrest and delay or at times discourage post-conflict reconstruction: violence is “significantly reshaped by a highly differentiated terrain of local social tensions and cultural currencies” (Lubkemann, 2005: 504). Communities which had experienced social disorder by way of extreme violence and displacement in the theatre of war have been shown to struggle for subsistence, moral understanding, and the reclaiming of social structure (i.e. North Uganda, Finnström, 2008). Although some view business interest at odds with peace-building, several recent studies have argued that economic activities that “promote economic development, allow external evaluation of their affairs, and build a sense of community both within the company and in the wider society can in fact make a great contribution to fostering peace” (Fort & Schipani, 2004: front cover). Although the role of businesses and managerial and entrepreneurial practices in restoring peace remains underexplored, theoretically and empirically, a growing number of reports emphasize its practical relevance (e.g. Gwartney, Lawson, & Gartzke, 2005).

“Perhaps the most overlooked and yet the most powerful force for catalyzing widespread peace is commerce. [...] As it has done for millennia, the marketplace facilitates not only the exchange of goods and services, but also of ideas, beliefs, and customs, including music, food, and fashion. The bridges built between people and cultures through the marketplace foster understanding and peace. [...] Economic growth fuelled by commerce leads to increased standard of living, which

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1 Because the authors contributed equally, the order of authorship is alphabetical

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creates internal political stability, which highly correlates to peaceful relations with geopolitical neighbors.”

Our study contributes to the growing interest in when and how commerce can foster peace and reduce the likelihood of conflict (Fort, 2007; Oliver & Williams, 2008). Peace-building in the aftermath of war requires collective action; cooperative structures offer one promising approach to post-conflict reconstruction (Emmanuel & MacPherson, 2007). Success stories encourage experiments in the direst of circumstances (e.g. Aceh, Muhammad, 2007; Nepal, Shima & Ghale, 2007) and often provide quick wins in the recovery stage (Milford, 2007; Whittman, 2007). The process of setting up collective structures is rife with myths, set-backs, and historical baggage (MacPherson, 2007; Kiriwandeniya, 2007); we know far more about the onset and the consequences of cooperative movements (Madane, 2007) than we know about their emergence and early evolution (Smith, 2005).

We set out to explore the social processes that precede, condition and catalyze the emergence of economic cooperation in postwar contexts by drawing on insights from community-based enterprise (Peredo & Chrisman, 2006), pro-peace enterprise-centered development interventions (Emmanuel & MacPherson, 2007; Stevens, Seedat, Swart & van der Walt, 2003) and enterprise design in heterogeneous and tumultuous environments (Sarasvathy, Dew, Read, & Wiltbank, 2008). Unpacking the duality of social context and emerging enterprise complements growing research on indigenous entrepreneurship in developing countries in general (Tung & Aycan, 2008) and entrepreneurial activity in Africa (Jackson, Amaeshi & Yavuz, 2008). It also extends the growing research on social entrepreneurship (Christie & Honig, 2006) by more carefully fleshing out the emergence, incidence and growth of non-traditional forms of social enterprise under conditions of scarcity and conflict (Peredo & Chrisman, 2006).

Our core premise is that cooperative forms of economic activities, including but not necessarily limited to community enterprises, can jumpstart the process of stabilization and recovery (Bateman, 2007). The emergence, development and success of such cooperatives provides role-models for action in a context rife with opportunity and constraint which makes hard to anticipate or choose templates for action (Sarasvathy et al., 2008); yet these role models may prove misleading and are often plagued by inefficiencies and rigidities that at times defeat their goals of societal stabilization and economic reconstruction.

Our primary contribution aims to explore whether, when and how new forms of economic cooperation can help redress societal disruption and unrest in post-conflict zones. Our study is set in post-war Sudan -- a charged, history-laden context scarred by profound disruptions in traditional livelihoods patterns (Abdelnour, Badri, Branzei, McGrath, & Wheeler, 2008). We followed a participatory research approach which involves “shared ownership of research, community-based analysis of social problems, and an orientation toward community action” (Kemmis & McTaggart 2000: 560) to explore the onset and early evolution of the Disarmament, Demobilization and Reintegration (DDR) process. This voluntary process was the key security component of the Comprehensive Peace Agreement (CPA), signed between the Government of Sudan (GOS) and the Sudan People’s Liberation Movement/Army (SPLM/A) on January 9, 2005. This agreement marked the end to what had been Africa’s longest running civil war. The CPA was based on the following core principles: self-determination, security arrangements, wealth sharing (including natural resources, namely oil) and power-sharing.

Our investigation focuses on one component of the DDR process: the effort to design cooperative forms of economic activity to provide pro-peace livelihood alternatives to child soldiers, women and disabled combatants. We sought to fill a void in our theoretical understanding of the social processes

underpinning the emergence and early evolution of economic cooperation in war-torn areas, by studying the multi-level dynamics associated with the emergence of community-based enterprises. We were specifically interested in mapping the co-evolution of economic and social structures in the aftermath of conflict, and exploring the enabling role of economic activity in peace building. Initial research involvement in mapping grassroots development interventions in post-war Sudan (Abdelnour, Babiker, El Jack, Wheeler, McGrath, & Branzei, 2008) was met with open sharing of sensitive and confidential information by several key organizations involved in the DDR process, and was followed-up with requests for neutral, critical feedback that would facilitate real-time learning and adjustment.

Our research approach involved iterative stages of field observation, theory-building and archival searches that helped question, triangulate, and validate our findings. Our investigation was informed and guided by the concepts of environmental isotropy – heterogeneity in various aspects of economic activity that heighten uncertainty yet can be generative of novel social action and innovative enterprise designs, (Sarasvathy et al., 2008) – and community-based enterprise (Peredo & Chrisman, 2006). We deliberately focused on the interface of environmental changes and the new or evolving forms of cooperative engagement because we were interested in understanding “the making” and the morphing of cooperative enterprise in turbulent social structures. As the work unfolded, we were particularly intrigued by an early increase in innovative cooperative designs despite the paucity of feasible or locally-fit templates and a slowdown in indigenous experimentation as role-models became more and more accessible. Our action research approach offered practice-based insights into this paradoxical observation by probing the relationship between environmental isotropy and the emergence of indigenous forms of economic activity. We start by introducing core concepts and then describe the research context and its relevance for indigenous emergence and evolution of economic cooperation in post-conflict zones. Our analyses iterate between longitudinal case narratives and data organization tables that trace the evolution of cooperative structures to develop a theory-based framework and three qualitative propositions.

Forms of Economic Cooperation

Recent studies have emphasized the importance of building new theory and practice that support grassroots value creation through local business development initiatives; community-based solutions to scarcity, poverty and conflict have been studied in Latin America (Branzei & Dutkiewicz, 2008), Asia (Ayudurai & Sohail, 2006), and Africa (Branzei & Peneycad, 2008); extensive research on cooperatives and their function in post-conflict reconstruction has also attracted growing research and practitioner interest (Emmanuel & MacPherson, 2007; Oliver & Williams, 2008), with two important caveats: First, while the heterogeneity of case-based example offers a rich base of practice-based insights, there are few systematic studies that emphasize common threads; we seek to contribute by articulating the linkage between environmental turbulence and the emergence of indigenous forms of economic cooperation building on contrasting sets of practices and their evolution over time. Second, despite the richness of observation across vastly different contexts, from Southern Europe (Bateman, 2007) to Aceh (Muhammad, 2007), there has been a paucity of theoretical constructs that can scaffold new theorizing. Traditional concepts of entrepreneurial action assumes the primacy of economic goals in new value creation (Chrisman, Bauerschmidt & Hofer, 1998), while anthropological work in developing markets emphasizes the priority of indigenous norms and practices over economic considerations (Peredo & Chrisman, 2006).

Community-based enterprise

We rely on Peredo and Chrisman’s (2006: 310) notion of community-based enterprise (CBE), which describes “a community acting corporately as both entrepreneur and enterprise in pursuit of the common good. CBE is therefore the result of a process in which the community acts entrepreneurially to
create and operate a new enterprise embedded in its existing social structure. Furthermore, CBEs are managed and governed to pursue the economic and social goals of a community in a manner that is meant to yield sustainable individual and group benefits over the short and long-term”. CBEs have several distinguishable characteristics. They build on available community skills, and do so resourcefully in ways that leverages multiple skill-sets. They seek a multiplicity of goals which reflects the diversity of local needs, and only aim at profits ‘insofar as profits are instrumentally effective in achieving other community goals” (Peredo & Chrisman, 2006: 320). The restoration of a sense a community takes precedence over economic gains; providing employment and harnessing collective energy in forms valued by the community is particularly important, and long-term social goals often guide short-term decisions concerning economic activity. The concept and function of community-based enterprise is particularly meaningful in the context of the DDR process following the North-South war. The disarmament, demobilization and reintegration of formerly active combatants required the creation of community structures that would simultaneously foster economic self-reliance and nurture a sense of community. The cooperative structures set up in the Blue Nile region were deliberately designed to create social, economic, environmental and cultural value: as we describe in greater detail below, they sought alignment to traditional livelihood patterns and experimented with alternative structures that would either substitute or supplement the often fragmented social relations and collective norms.

By exploring the formation and evolution of these indigenous CBEs, we complement current theorizing concerning the role of multinationals (Dahan, Doh & Guay, 2006) and NGOs (Bellows & Miguel, 2006), which have been shown to play critical roles in postwar reconstruction and peace-building, both as standalone promoters or testers of new institutions and systems and as integrators which pilot-test system-wide solutions to crises and conflict (Pantuliano, 2005). The complex interactions between CBEs and NGOs in the creation of global value (Teegen, Doh & Vachani, 2004) are a critical part of a postwar stabilization eco-system. CBEs interface and intermediate between market and non-market strategies both through their own practices and through selective diffusion of their practices to for-profit and governmental organizations (Abdelnour & Branzei, 2008). Our study expands our understanding of how indigenous CBEs form and evolve under conditions of extreme turmoil and scarcity. Because crises amplify the community orientation and the CBEs’ social inheritance and responsibility (Peredo & Chrisman, 2006: 320), the weaving of the community-based enterprise helps revitalize the traditions and culturally-rooted values that have played an important part of communal life (King, 1995). By bringing this sense of community to the fore, CBE activities empower community members (Zimmerman, 2000) and foster a sense of participation and ownership (Bendick & Egan, 1995), which helps tighten the community’s stand-alone ability to generate sustainable value (Branzei & Peneycad, 2008).

Peredo and Chrisman (2006: 320) note that “cultural tradition can become the launching pad for new enterprise, but, conversely, the presence of [CBE] can strengthen or create local social and cultural systems”; as the CBE matures, more formal structural and administrative systems emerge and adapt to changing needs. Their success may inspire other CBE in geographically proximal areas and often provides a foundation for entrepreneurial skills on which individual entrepreneurship may begin to flourish (Abdelnour et al., 2008; Branzei & Peneycad, 2008; Bygrave & Minniti, 2000).

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4 The United Nations defines the three components of DDR as follows: “Disarmament is the collection, control and disposal of small arms, ammunition, explosives and light and heavy weapons from both combatants and the civilian population. Demobilization is the process by which parties to a conflict begin to disband their military structures and combatants begin the process of transformation into civilian life. Reintegration refers to assistance measures provided to former combatants that increase the potential for the combatants and their families to rejoin civil society both economically and socially.” (UN DPKP, 1999: 15).
We extend current theorizing on CBEs by looking at the how CBE emerge when the cultural fabric is absent and social relations are strained. Here we draw on two theoretical assumptions. First, that CBEs as forms of economic cooperation are transmissible, such that the successes and failures of specific initiatives systematically change the odds of engaging in entrepreneurial activities by increasing the perceived feasibility and likelihood of success of economic activity (Pero & Chrisman, 2006: 322). Second, that CBEs are socially adaptive, in that they can resourcefully build upon the fabric of social relations in ways that increase social resilience and self-reliance (Bygrave & Minniti, 2000). We use the transmissibility and socially-adaptive organization of CBEs as deliberate inputs into their ongoing design. Our core premise is that new communities can “borrow and build” by grafting CBE principles on their own idiosyncratic social ties and social strains. Our study systematically examines multiple sources of CBE principles, as they change over time, including governmental programs, local recommendations, and NGO-driven interventions. Figure 1 maps the changes in sources of CBE over time, tracing the roots of collective action templates to pre-war collective social structures, and emphasizing the growing incidence of CBE success and failure stories after the signing and implementation of the DDR clause of the CPA.

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**Nafeer: Traditional collective social structures.** Several social structures underpinning collective action in pre-modern civil war Sudan have been documented. In the 1918 inaugural edition of *Sudan Notes and Records*, a leading African scholarly journal on Sudanese studies, the editorial committee highlighted in one contribution that “the Sakia in Dongola shows what a highly organised system of cooperative farming this purely native institution represents.” (1918: 49). While early accounts highlighted the strengths and capacity of collective native social structures, many such social systems were uprooted during various conflicts in Sudan, especially the multi-staged long-running civil war between the northern GOS and southern opposition forces. Various communities suffered greatly as they were attacked during war campaigns, or were uprooted for their resources or political affiliations, both of which led to massive displacements. The denial of indigenous land rights and access – often tied to initiatives for state-led mechanization of farming – and the inflicting of human atrocities against non-aligned or resistant communities led to widespread socioeconomic devastation and the structural inability of communities to practice traditional communally-organized livelihoods (Komey, 2007). Still, the spirit of community in Sudan remains strong. One cultural tradition often referred to in Sudan is the concept of *Nafeer*, or collective work (Abd al-Halim, 2007).

The Blue Nile communities included in our study often referred to nafeer as a means of many people working together for the purpose of providing help or assistance; it is an expression of voluntary community action and behaviour. The Blue Nile region has a history of collective livelihoods (James, 2007). Recent archaeological research suggests that the geography of the Blue Nile region may have served to contain and protect indigenous tribes and their communal way of life over the past 4000 years: “The closeness of a forested and rugged mountainous region may have been a powerful attraction as a refuge area to small independent groups that combined an egalitarian social system and their general linguistic affiliation with the Nilo-Saharan language phylum.” (Fernández, 2003: 419). West African nomadic tribes, some originating from as far away as Nigeria and traveled through the Blue Nile en route to Mecca, settled in or continue to seasonally migration through the region. In 1979, the Blue Nile Province was divided into El Gezira – the historical location of many large-scale agricultural interventions in Sudan – and Blue Nile states. Government officials and politicians became increasingly emulated as GOS processes of state building and large-scale mechanized farming imposed national political and economic structures onto the complex and interlaced layers of local social, religious and cultural formations, overshadowing native legal, political and economic systems. This activity deemphasized “the older pattern of alliance, trade and religion, and emphasized the significance of
bureaucracy, politics, and religious movements” (Fruzzetti & Östör, 1990: 13). Not unlike many other areas of Sudan, conflicts between pastoral and nomadic tribes – often resulting from increased agricultural activity due to mechanized farming – and between nomadic tribes are compounded by competition over access to land and water resources.

Cooperatives had been first used by the colonial British Administration as a tool for the reintegration of retired Sudanese defence forces who participated in slave trade abolition in Ethiopia and Sudan in the 1920s. A small number of agricultural sites were located along the east riverbank of the Blue Nile; seeds and other agro inputs were provided (Bemal, 1997). Post-independence, cooperatives in Sudan were created in large numbers and supported heavily under the government of Gaafar Nimeiry during the years 1969-1985. This ‘golden era’ of cooperatives began to collapse after Nimeiry was ousted and the new regime became preoccupied with the priority of a new war and the implementation of structural adjustment policies in the 1990s.

**The DDR process.** The agreement for the commencement of DDR activities was signed between the various Sudanese government and UN partners on June 25, 2005 (UNDP, 2005). Approaches to the implementation of the DDR process varied from the onset. While the United Nations advocates for an individual-oriented DDR program, the North Sudan Disarmament, Demobilization and Reintegration Commission (NSDDRC) – a mandate of the Office of the Presidency of the Republic of Sudan – began experimentation with agricultural cooperatives for the inclusion of large numbers of combatants. NSDDRC made collective agriculture enterprise a priority and structured their first wave of interventions around food security; their intervention went against UN DDR stipulations which call for individual-based incentives for demobilization (with allocations of US $800 per individual), and over a four-year staged transition from conflict to peace. The NSDDRC has since pressed the UN DDR to accept that the massive demobilization requirements of Sudan, perhaps the world’s largest, could not be addressed by the individual-focused DDR efforts. NSDDRC positioned DDR as DDR-plus, the ‘plus’ signifying that reintegration was in fact a generational crisis requiring a broader developmental approach. The NSDDRC was able to successfully negotiate and secure US $3000 per combatant for the support of a longer-term and inclusive demobilization effort. As a result, NSDDRC and UN DDR have proceeded separately with very distinct approaches to demobilization. Aimed to explore mechanisms for social and economic stabilization, the cooperatives were intended to serve as a model for the reintegration of hundreds of thousands of demobilized combatants across Sudan.

**Designing community-based enterprises in isotropic environments**

Designing CBEs in the aftermath of war proved particularly challenging; despite the appeal of traditional livelihoods, many ex-combatants had gradually lost the skills and motivation to restore collective structures and practices. We drew on the notion of environmental isotropy to deepen our qualitative investigation of these formative processes. “Isotropy is a problem even when the future is relatively predictable and the goals are clear” (Sarasvathy et al., 2008: 337); however, it is particularly problematic when there is no a priori limit to what information is relevant to the entrepreneurial decisions and the environments in which entrepreneurs operate (Sarasvathy et al., 2008). The concept is useful for understanding strong environmental heterogeneity in post-conflict zones, where current and future opportunities and constraints are simply unpredictable. Under environmental isotropy, agency and experimentation become essential (Stevenson & Greenberg, 2000). Individuals and organizations learn through trial and error as they seek to harmonize individual and collective values and goals (Emirbayer & Goodwin, 1994) with evolving environmental demands. Experimentation becomes a necessity for incumbents as well as new players (Dougherty, 2008). The transmissibility of past social structures is questioned. With fewer alternatives available, communities have to engage in trial and error learning; they visualize and contrast new templates of economic cooperation, often improvising with and around emerging structures for collective action (Sarasvathy, 2001).
Method

To explain how indigenous forms of economic cooperation emerge and flourish under environmental turbulence, we used participatory action research methods. The study draws on archival research, retrospective interviews and ethnographic interviews over a two-year period of enterprise activity targeting ex-combatants in the Blue Nile region. Action research attempts to “bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people” (Reason & Bradbury, 2001: 1). It “builds descriptions and theories within the practice context itself, and tests them through intervention experiments” (Argyris & Schon, 1991: 86, italics original). We chose this approach because it facilitates, through frequent interaction and critical introspection, a deeper understanding of socially laden practices and how these practices are being (re)shaped by tradition and discourse; it provided us with an opportunity “to explore alternative ways of doing things in settings where the impact of [social] movements is otherwise unclear or uncertain” (Kemmis & McTaggart, 2000: 591).

We started with a team-based consultation with the NSDDRC in April 2007; this meeting involved Sudanese and Canadian faculty members and representatives of various initiatives by NSDDRC, including implementation partners, and arms-length consultants. Archival accounts of the early enterprise interventions, including financial projections, social structures, and a discussion of successful and unsuccessful steps in the pilot programs were shared with the team. Based on analysis and feedback provided by the team, and extensive research of the history of conflict and community enterprise in the Blue Nile region, the authors engaged a second wave of data collection and analysis in July-August 2008.

The field data included 23 semi-structured probing interviews conducted with key players directly or indirectly involved in the planning or development of Blue Nile CBEs or had influence and knowledge of the enabling institutional environment in the region. Of the 23 interviews, 2 were conducted in Khartoum and 21 were conducted in the Blue Nile state. All were conducted on site in offices or at a cooperative farm. The interviews were audio and video recorded whenever possible; to verify live translations, all recorded interviews were translated by research assistants at Ahfad university; extensive verbatim notes were taken by the first author during the interviews which could not be tape recorded at the participants’ request. Our study presents an integrative, longitudinal account linking insights from the three waves of study.

Research context: The Blue Nile

The modern Blue Nile state contains approximately 45,844 km² (or 17700.5 square miles) of land with an estimated population of 800,000, of whom 75% are said to reside in rural areas (CMI, 2008). Located in central east Sudan bordering Ethiopia and with its state capital Ed-Damazine, the Blue Nile is abundant in agricultural and mineral resources. It has also been a location of strategic military and economic importance because of the Roseries dam – Sudan’s main hydroelectricity generating facility and only one of four serving the entire country (GOS, 2008). As a result, the Blue Nile had been a direct front of war between the northern GOS and southern SPLM/A forces. It became a continuous and intense theatre of conflict as opposing factions captured, succumbed and recaptured key positions, such as the strategic town of Kurmuk which is close to the Ethiopian border and a current SPLM stronghold. Known as a ‘transitional state’ – neither officially aligned with the GOS or the Government of Southern Sudan (GOSS) due to heavy presence and influence by both forces and their supporting communities. The cessation of active war left the state with stark realities: communities with disrupted social structures, a devastated economy, and a dangerously concentrated highly heterogeneous population of fighters with conflicting claims. During our research, international agency activity in the Blue Nile numbered...
approximately 10 UN agencies, 6 international NGOs, and 4 Sudanese national NGOs; this in contrast to the hundreds of active international and national NGOs in Darfur.

Similar to most rural areas of Sudan, traditional farming in the Blue Nile region consists of smallholder family farms. Villagers either work on small farms or run their own traditional farms. Most have traditionally also engaged in related livelihood activities, including livestock. Three forms of village-based farming include: Mauora, a small and possibly individual farm or large plot located around a house; Jubarik, a larger farm still located around a house but requiring more labor; and Bildet, a larger farm. Villagers plant in the rainy season, and the crops grow with weeds. Depending on the size of the farm and the size of the family which holds the farm, family labor or wage labor for larger farms, is used for weeding. A villager can cover a large area using local tools such as the gerraia for sowing and mutabab for weeding. The smallholder traditional farms in the Blue Nile has had consistently higher crop yields per feddan (in Sudan, 1 feddan equals 4200 square metres (m²) or 1.038 acres) than mechanized farming.

Private farming began to emerge in Sudan in the 1970s, during the peacetime phase of the civil war. Two types of modern private farms emerged: individual/family and commercial. The majority of the private individual/family farms used modern equipment such as small tractors, which could cover an area of 10-50 feddans. Many such farms are in the process of re-establishing themselves post-CPA peace, often using refurbished equipment from the 1970s. Commercial and large-scale agriculture – often formed as partnerships between the GOS and other countries and international development agencies – also emerged in the 1970s due to the break in civil war. These used large-scale tractors and machinery. Examples of commercial agricultural ventures in the Blue Nile region include: the Sudan Arab Agricultural Company, and the Sudan Egypt Agricultural Company. International development initiatives included the USAID and World Bank-funded Western Sudan Agricultural Research Project which operated between 1979 and 1986 (WSU, 2004). After the peace agreement, new large agro ventures were formed with international, regional and national partners.

Data Analysis

We followed Lincoln and Guba’s (1985) systematic four-step approach: (1) purposive sampling; (2) inductive data analysis; (3) development of grounded theoretical insights; and (4) projection of next steps. We initiated our purposive sampling by collecting archival information about alternative models of community-based enterprise operating in the region; we then used this information to compare and contrast their structure and organizational principles. Next we tabulated the characteristics of four distinct types of community-based enterprises and tracked their evolution over time. For each of these models we used archival information, ethnographic observations and on-site interviews to develop detailed, longitudinal case narratives. We solicited internal documents, reports, and observed group meetings and presentations. We asked members, government representatives and staff of local and international NGOs to reflect on the evolution of these community-based enterprises from their own vantage point. Follow-up interviews were conducted with several key protagonists to probe further into the causes of observable mutations, to elicit reflections on anticipated changes, and to probe further into the triggers and consequences of each model.

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5 International attention and resources to the Darfur conflict have seen incredible growth since the beginning of the Darfur humanitarian crisis in 2003. For example, international development aid to Sudan – mainly targeted for the Darfur relief effort – tripled between 2003 and 2005, from 609.8 to 1787.2 million US$; USAID portion increased six-fold over the same period, and eleven-fold from 2001 to 2005, after a seven-year absence. As a result of the increased resources, hundreds of NGOs have opened offices in Khartoum in an attempt to attract resources for their programming. The presence of large numbers of development organizations and the resulting competition among them is a phenomenon which is sometimes referred to as the ‘NGO economy’ (Abdelnour & Branzei, 2008).
Table 1 contrasts the characteristics of four distinct clusters of community-based enterprises, organized according to the institution governing their emergence and governance: the national government (NSDDRC Community Security and Reintegration Cooperatives), the state government (Blue Nile State Government and Women’s Cooperatives), international NGOs (Practical Action Sudan Blue Nile) and national NGOs (Mubadaroon Blue Nile). Mubadaroon started first, in 2005; followed by NSDDRC, Practical Action Blue Nile and then the Blue Nile State Government and Women’s Cooperatives (Figure 1). These models informed and cross-pollinated each other’s evolution, triggering sequential mutations in their organization and governance, which are shown in Figure 2.

NSDDRC: Community Security and Reintegration Cooperatives

Cooperative enterprises were first suggested in a Community Security Assessment Mission Report which was presented to NSDDRC in 2006. The report recommended collective agricultural and related-industry cooperatives as a mechanism for improving the security of war-affected communities. It also suggested that the cooperatives would serve to improve the rural economic system which had been distorted by the long civil war. Initially, the agricultural cooperatives were viewed as an opportunity to improve community security in the politically-tense war-ravaged Blue Nile state (not reintegration, which became a goal later in the process).

Twenty five community security cooperatives were launched by the NSDDRC in the Blue Nile. The first cooperative was organized and launched with an implementing partner, the Sudanese national NGO Mubadaroon in May 2006 (see Table 2: 2a), registered as a Community Based Organization (CBO) with the Humanitarian Aid Commission (HAC), GOS, Blue Nile office (see Table 2: 1a). NSDDRC took over the Mubadaroon-created cooperative in February 2007. A standard structure was adopted for the other 24 cooperatives (see Table 2: 2b), which were formed with assistance from the Department of Cooperatives of the Blue Nile. NSDDRC provided tractors and implements to each of their cooperatives, and supported their activities by supplying seeds and the facilitating of financing through the Agricultural Bank of Sudan.

These community security cooperatives have integrated ex-combatants with host community members. Their membership includes fighters from a variety of armed groups including Popular Defence Forces (PDF), SPLA, Sudan Armed Forces (SAF), other armed groups (OAGs). Community leaders, some active members of the Native Administration (see Table 2: 1b) have been absorbed into these cooperatives as a way to provide legitimacy (see Table 2: 1b, 2b, 2c). Each cooperative operates independently; the cooperatives are connected officially through the Union and interact informally through regular meetings held between the elected Executives.

In April 2008, NSDDR launched a new cooperative program targeted specifically as a reintegration package for ex-combatants. Five cooperatives were created as part of this program with members from the SAF (see Table 2: 2c). The program was created with a strategic objective to decrease tensions and resulting protest from SAF members who are located in Khartoum and other main towns and are frustrated with not having received pensions and other expected compensation. Those involved in the reintegration-specific cooperatives are all verified registered combatants who have been officially demobilized and disarmed. The SAF cooperatives are structured similarly to the community security cooperatives. As a result of close ties and strong organizational and management capability and open exchanges of information, these five SAF cooperatives have created an environment of ‘friendly competition’ among the members of different cooperatives. Such friendly competition has long been used
by the SAF and other armed groups for improving productivity of soldiers. Cooperative members now plan to expand the cooperative operations into enterprises that would cater to the specific needs of their cooperatives, including distribution of parts for the maintenance of tractors. Applications have been made to local municipalities for land to build their own residential communities.

**Blue Nile State Government: Women’s Cooperatives**

Inspired by the activities of the NSDDRC, the Commissioner of the Blue Nile – herself a long time educator and advocate for the empowerment of women – began to investigate the viability of creating women-focused cooperatives in the state. One of our interviewees, a teacher and youth trainer, had been appointed to develop a plan for launching the cooperatives and a program for training women in methods of cultivation. Planning commenced in late 2007 and the first of 53 cooperatives were launched in February 2008 with war-affected women from various Blue Nile communities. NSDDRC provided initial training for women in cultivation techniques. The cooperatives currently operate without the use of mechanized equipment such as tractors also receive little ongoing support in terms of seeds, training and agro inputs. Structural constraints prevent women members from accessing credit.

**International NGO: Practical Action Sudan Blue Nile.**

Practical Action Sudan in an international NGO which has been operating in Sudan consistently since the late 1980s. It began activities in its Blue Nile office in April 2007, with the official launch in June 2007. Practical Action’s program is heavily focused on food security for the conflict-affected communities of the Blue Nile. Much of its activities have been informed by the huge successes it has realized in Darfur and Kassala. Practical Action seeks to understand and mobilize local and community dynamics. They legitimize indigenous structures, implement programs and work for long-term sustainability, growth and program extension. One of the main pillars of Practical Action’s work in Blue Nile is the formalization of traditional village structures (see Table 2: 3a) after careful assessment of existing community structure and strategy. These structures are democratic, representative, embedded within the community and serve to address a variety of community needs through sub-committees for women, education, livestock, land and water. To date, 19 villages have been registered as CBOs (see Table 2: 3b) in the Blue Nile and one Community Development Centre (CDC) was built to facilitate for training of community members and to increase inter-community communication and organization of the community CBOs with national and international NGOs. CDCs have space for offices, training rooms, and storage of seeds and equipment. Practical Action has also provided seeds and tools, and has also launched a revolving livestock scheme targeted to the extremely poor members self-selected by the community. Families with many young children and elderly receive preference due to the increased benefit of having available milk. Furthermore, a number of paravets and community health workers have been trained to address animal and community health needs. Practical Action helped to organize community development farms, and through the Women’s Development Associations (WDAs) they have helped to formalize they have begun to facilitate for the development of women-focused community farms. They are currently exploring the potential of the provision of tractors to address the disparity in productive capacity between community CBOs and NSDDRC-supported cooperatives. Due to low literacy levels in the Blue Nile, Practical Action trained 19 facilitators to provide literacy training based on traditional and local practices, a program brought to Sudan and implemented by other Practical Action offices.

**National NGO: Mubadaroon Blue Nile**

Mubadaroon began its operations in 2003, opening its Blue Nile office in 2004. It classifies itself as a voluntary national non-profit organization, and has over 160 volunteers working through its programs in the Blue Nile alone. Program themes include small arms control and community peace building. Its
partners include various branches of the UN, FAO, WFP, UNHCR, UN DDR, WV, IRW, GOS and NSDDRC. Working as an implementation partner of NSDDRC, Mubadaroon experimented with the development of an ex-combatant cooperative in the village of Duma. There, it created a small arms control project, which included peace building workshops, public campaigns and the provision of agricultural training and inputs. Using tribal and community leaders, including teachers and police, Mubadaroon formed a conflict resolution committee consisting of ex-combatants. This committee eventually formed a group of 350 members with 20 leaders and developed the objectives of operating as a cooperative (see Table 2: 2a). The main role of Mubadaroon was to help in organization of the cooperative, the provision of agricultural, administrative and finance training, and the provision of agro inputs such as seeds. In May 2006, the cooperative was formed and formally registered as per the requirements of NSDDRC. Mubadaroon chose to register the cooperative as a CBO with the Blue Nile office of the HAC (see Table 2: 1a). On February 1, 2007, Mubadaroon handed over the cooperative project to NSDDRC, but remained involved in selective training and equipment provisions. Aside from the main agricultural activities, 14 members were trained in fishery, fish drying and net making, and 2 members in boat building. NSDDRC provided a tractor and seeds. Mubadaroon has plans to launch another cooperative for a much larger group of up to 500 members (see Table 2: 3c).

**Indigenous Enterprise Emergence in Post-Conflict Environments**

Our analyses indentified three sequential stages focused respectively on enabling macro-structures, micro-patching and indigenous modeling. The first phase started in January 2005 with the UN DDR partnership and wrapped up in early 2006 with the publication of the security report recommending the formation of cooperative structures (Figure 1 has additional details on the chronology; Table 2 lists the key dates and events). The registration process and structural requirements were proposed during this first phase. The second phase began with efforts to cross-pollinate learning between Mubadaroon’s first CBO-registered cooperative; it included NSDDRC’s acquisition of this first cooperative and its subsequent attempts to alter the structure and governance of its 25 community security cooperatives, i.e. mid-2006 through April 2007.

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**Insert Figure 2 about here**

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The third and last stage was ushered in by the hand-off by Mubadaroon to NSDDRC in February 2007, which launched a flurry of activity surrounding cooperative development. During this time, Practical Action had initiated operations around food security, with the initial intention of replicating the success in scaffolding social restructuring from its operations in Darfur and other parts of Sudan. In a trial to encourage CBE activity by facilitating the formalization and registration of large numbers of traditional village structures, the Practical Action adopted the CBO approach; having an international NGO validate this simple structure (initially introduced by Mubadaroon, a national NGO), increased the scope and salience of the local experimentation between Mubadaroon and NSDDRC. The Blue Nile Commissioner capitalized on the momentum around CBO activities to spearhead the development of the women’s cooperatives which began to launch exactly one year after Mubadaroon’s hand-off of the initial cooperative to NSDDRC (i.e. in April 2008).

The launch of distinctive indigenous cooperative structures capitalized on the cross-pollination efforts ongoing in the micro-patching stage (mid-2006 through 2007) but was also marked by increased attention to (forgotten) traditions; all four types of community-based enterprises deliberately revived the methods and discourse associated with much earlier successes (e.g. the Gezira scheme). Combat traditions introduced additional variability in the indigenous forms of community-based enterprises; for example,
the principle of friendly competition emphasized productivity whereas the principle of integration emphasized social connectivity and reintegration. These combinations of practices fostered differentiation among community-based enterprises, and achieved two additional outcomes. First, they made salient distinct set of social needs among the (highly varied) ex-combatant community – this fostered dialogue among various cooperatives; comparison and contrast enabled transmissibility of some practices by surfacing cause and effect connections between specific needs/norms and the emerging patterns of economic activity.

Second, the emerging structures offered a mirror to the social structures underpinning economic activity; this awareness came gradually, with the launch of different types of cooperatives. ‘Failures’ in economic activities were seen as temporary set-backs rather than design flaws; they were framed and processed diferentially by local and national government organizations and by the national and international NGOs. However, each organization linked the economic practices to the fragmentation, tension, and then gradual mending of social relations among ex-combatants. The associative discourse which pegged economic and social connectivity closer together offered at first a substitute for social structuring; as the social structures emerged, they prompted attention to various sets of needs and norms which fostered distinct connections. This differential growth in social structures informed and shaped the emergence of indigenous community-based enterprise practices; their increased variety created a space for dialogue around social restructuring and the implications of social connections for the success of CBEs and the security of the community.

Our model in Figure 2 suggests a two-way interaction between multilevel interventions fostering CBE activities and the degree of environmental isotropy. Macro-structures promoted social initiation – introducing often ad-hoc groups of ex-combatants to basic structures of peaceful community interactions. The launch of the first cooperative brought a high degree of environmental isotropy – making the future ‘unpredictable’ by bringing about a sharp disconnect between prior war-time practices and economic activity. Although this period of social initiation was rife with tension and ‘failure’, environmental isotropy fundamentally altered the perceived incentives, offering a socially-desirable alternative to ex-combatants. As small groups of ex-combatants began experimenting with these cooperative structures, environmental isotropy stabilized – members inferred cause and effect relationships and began comparing emerging practices against traditional livelihood patterns; this gradually changed the reference points from combative to cooperative interrelating encouraging progressively closer attention to community norms and livelihood patterns. As members began morphing and validating CBE social structures attuning them to their social needs, they validated a range of indigenous models; although morphing continued, the availability of increasingly transparent and transmissible templates for collective action reduced the perceived environmental isotropy, making opportunities for success (and failure) more clearly discernible and manageable by new coops.

**Proposition 1:** There is a reverse reciprocal relationship between social interventions and environmental isotropy, such that social interventions change the level of environmental isotropy and the level of environmental isotropy stimulates or hinders social interventions.

**Proposition 2:** There is an asymmetrical curvilinear relationship between social interventions and environmental isotropy, such that social initiation rapidly heightens isotropy; social experimentation stabilizes isotropy, and social validation gradually reduces isotropy.

**Proposition 3:** Variability in indigenous models strengthens the reverse reciprocal relationship between social intervention and environmental isotropy, such that changes in environmental isotropy become more likely to encourage social interventions and vice-versa as distinct alternatives emerge because this increases the selective transmissibility of successful indigenous practices among community-based enterprises.
Discussion

Our findings contribute by exploring the emergence and evolution of community-based enterprises in post-conflict zones, when the social fabric from which CBE draw their unique strength is fragmented and fraught with social tension, and few templates of successful templates for collective action are available. By fleshing out the reciprocal relationship between environmental turbulence and four different types of interventions – national and international NGO and regional and national government agencies, we develop new insights into the early origins of cooperative movements (Kiriwandeniya, 2007; MacPherson, 2007; Madane, 2007; Smith, 2005). We specifically contribute by specifying a nuanced, reciprocal relationship between environmental turbulence and the (re)design of indigenous structures that support collective action.

Theoretically, our study reiterates the importance of understanding the non-traditional role and function of entrepreneurial activity, especially the role of community-based enterprise in conflict attenuation and poverty alleviation; we help articulate some of the feedback loops that constrain or enable the transmissibility of indigenous CBE practices – a timely and relevant but so far underexplored areas in community and enterprise studies (Peredo & Chrisman, 2006). Our theoretical framework and propositions also extend current theorizing on the role of social connections in particular and social connectivity more broadly as important antecedents and moderators of entrepreneurial action (Bygrave & Minniti, 2000). Researching the coupling between social context and entrepreneurial action contributes to the mainstream understanding of indigenous entrepreneurship (Tung & Aycan, 2008) and social entrepreneurship (Christie & Honig, 2006) and the growing attention to African enterprise (Jackson et al., 2008) by unpacking the co-evolution between environmental turbulence and enterprise emergence. Although prior studies have begun to map the dynamics of (fragile) social connections in restoring economic self-reliance in poverty-afflicted (Branzei & Peneycad, 2008) and conflict-disrupted regions (Abdelnour & Branzei, 2008), new theorizing and better informed interventions are needed to simultaneously foster social connectivity and economic development.

Our study surfaces and explains the paradoxical counter-variation of environmental turbulence and enterprise activity, showing how an increase in environmental isotropy can encourage community-based enterprise and how a decrease in turbulence can (temporarily) stall experiments towards more socially-attuned forms of economic cooperation. The paradoxical observation that enterprise often flourishes in spite of crises builds on earlier theoretical and anthropological insight (Peredo & Chrisman, 2006), but requires additional unpacking. We relied on action research to develop one explanation, at the interface between environmental turbulence and community-based enterprise. Our hope is that the grounded propositions put forth in this study will encourage future studies using quantitative methods to more precisely track the incidence and consequence of enterprise at various degrees of conflict.

Implications.

The 2005 peace agreement stipulates that over 350,000 combatants are to be demobilized in Sudan; about 45,000 combatants will begin demobilization in 2008/2009 alone. The UN DDR program is committed to demobilize 90,000 individually, while national Sudanese DDR efforts are to manage the demobilization of over 200,000 combatants. Compounded with the immense challenges of post-CPA reintegration and peace building, Sudan faces ongoing humanitarian crisis in Darfur and a paucity of action templates for fostering social stabilization and pro-peace development. Yet despite growing interest in indigenous social entrepreneurship practices in Africa we know relatively little on how communities can re-organize and restore their social fabric and traditions as they transition from war to peace (Abdelnour & Branzei, 2008; Abdelnour et al., 2008). Our study sheds new light on the origins of community-based enterprises by exploring how different types of interventions seeded a cycle of social experimentation and validation that helped generate new forms of economic cooperation. We specifically
show how the counter-variation between environmental turbulence and social intervention encourages the gradual, sequential emergence of indigenous practices. Our findings have two important practical implications: first, environmental turbulence can set a strong impetus for action even when few templates are available; second, social interventions at first heighten environmental turbulence creating greater social and economic tension – however, this tension is generative of indigenous variations. It enable new communities to gradually differentiate their social and economic needs and then selectively borrow emerging structures and practices to improve their cooperatives; this micro-patching encourages incremental variability that helps form causal explanations for success and failures and (temporarily) stabilizes environmental turbulence.

Conclusion

Taken together, our action-based research suggests that efforts to reduce or disguise environmental turbulence might be counterproductive when the key goal is the development of indigenous models; our narratives further show that entrepreneurial activities regulate environmental turbulence. Our model also explains why initial macro-structures that provide rough structures for collective action are a necessary first step to overcome the rapid increase in environmental isotropy: although initial recipes may prove unfit, they seed collective experimentation; this experimentation in turn gradually surfaces, though trial and error, the social norms and connections that are most enabling of community-restoring economic activity. To sum, our model suggests that careful nurturing of indigenous enterprise may provide a necessary step towards post-conflict reconstruction, which intermediates between the initial onset of guiding macrostructures and the later emergence of indigenous models of economic cooperation.
Figure 1

Chronology of NGO, Government, Traditional and Private Agro-Enterprise Activity in the Blue Nile

- **1925**
  - Larger farms emerged in the 1800s using waged labor; slave labor used until the abolition of mainstream slavery practices

- **1925**
  - Various forms of traditional farming (including multiple structures of small family farms) flourished in the region for thousands of years and are still found today

- **1955**
  - British colonial administration launch the world’s largest agricultural cash crop project—known as the ‘Gezira Scheme’

- **1972**
  - Sudan Civil War Phase 1 (war); independence from British colonial rule in 1956

- **1983**
  - Sudan Civil War Phase 2 (peace); NSDDRC takes over National NGO ex-combatant cooperative

- **2005**
  - Agro cooperatives used in early reintegration efforts related to abolition of slavery

- **2005**
  - Mubadaroon (National NGO) launches CBO-registered cooperative of ex-combatants

- **2006**
  - Many peace-time government-sponsored agro projects launched including cooperatives, often these were mechanized farming initiatives

- **2007**
  - Training of women 2 year timespan

- **2008**
  - Many private (small individual and large corporate) agro initiatives started during peacetime; this period saw the launch of large international agro partnerships, many between the GOS and Arab governments

- **2008**
  - NSDDRC launches 25 Community Security cooperatives

- **2008**
  - Blue Nile Commissioner begins launch of women’s cooperatives

- **2008**
  - NSDDRC launches 5 Sudan Armed Forces cooperatives

- **2009**
  - NSDDRC takes over National NGO ex-combatant cooperative

- **2009**
  - Practical Action (International NGO) begins operations including registration of village CBOs and the development of community farms and women’s development farms

- **2010**
  - Blue Nile Commissioner begins launch of women’s cooperatives

- **2011**
  - Sudan Armed Forces cooperatives

- **2012**
  - Many private (small individual and large corporate) agro initiatives started during peacetime; this period saw the launch of large international agro partnerships, many between the GOS and Arab governments

- **2013**
  - Many peace-time government-sponsored agro projects launched including cooperatives, often these were mechanized farming initiatives

- **2014**
  - Agro inputs to coops

- **2015**
  - Training of women 2 year timespan

- **2016**
  - Many private (small individual and large corporate) agro initiatives started during peacetime; this period saw the launch of large international agro partnerships, many between the GOS and Arab governments

- **2017**
  - NSDDRC takes over National NGO ex-combatant cooperative

- **2018**
  - Practical Action (International NGO) begins operations including registration of village CBOs and the development of community farms and women’s development farms

- **2019**
  - Blue Nile Commissioner begins launch of women’s cooperatives

- **2020**
  - NSDDRC launches 25 Community Security cooperatives

- **2021**
  - NSDDRC launches 5 Sudan Armed Forces cooperatives

- **2022**
  - Many private (small individual and large corporate) agro initiatives started during peacetime; this period saw the launch of large international agro partnerships, many between the GOS and Arab governments
Figure 2

Indigenous Cooperation: A Social Contingency Model of Community-based Enterprise
## Table 1

### Postwar Planned Interventions in the Blue Nile

<table>
<thead>
<tr>
<th>Founding/Leading Organization</th>
<th>Organization</th>
<th>Details of activity</th>
<th>Partners (partnership date)</th>
<th>Key Dates</th>
</tr>
</thead>
</table>
| NSDDRC                        | Government of Sudan, Office of the Presidency | Organizing and facilitating the launch of 25 agricultural joint community and ex-combatant cooperatives as part of a ‘community security cooperative’ project. Organizing and facilitating the launch of 5 ex-combatant cooperatives from the Sudan Armed Forces (SAF). Provision of tractors, implements, training and agricultural inputs such as seeds. Arranging for financing with the Agricultural Bank of Sudan. | Mubadaroon (early 2006),497### Table: Postwar Planned Interventions in the Blue Nile

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<tbody>
<tr>
<td>NSDDRC</td>
<td>Government of Sudan, Office of the Presidency</td>
<td>Organizing and facilitating the launch of 25 agricultural joint community and ex-combatant cooperatives as part of a ‘community security cooperative’ project. Organizing and facilitating the launch of 5 ex-combatant cooperatives from the Sudan Armed Forces (SAF). Provision of tractors, implements, training and agricultural inputs such as seeds. Arranging for financing with the Agricultural Bank of Sudan.</td>
<td>Mubadaroon (early 2006), UN DDR (2005)</td>
<td>A 2006 community security assessment in the Blue Nile recommended the creation of DDR agro cooperatives. 25 cooperatives created in May 2007. 5 SAF cooperatives created April 2008.</td>
</tr>
<tr>
<td>Commissioner of the Blue Nile</td>
<td>Blue Nile State Government</td>
<td>Facilitating the development of Women’s Small Agricultural Cooperatives. The cooperatives range in size and enterprise activity. Some women were trained in cultivation NSDDRC.</td>
<td>NSDDRC (early 2007), Ministry of Agriculture (2007)</td>
<td>Initial plans began in late 2007, and the first of 53 cooperatives were launched in Feb. 2008 with women from various Blue Nile communities.</td>
</tr>
<tr>
<td>Practical Action, Blue Nile office</td>
<td>International NGO</td>
<td>The registration of traditional village structures as Community Based Organizations (CBOs), the building of Community Development Centres (CDCs), and programs aimed at strengthening food security and reducing livelihood vulnerability through the provision of seeds, training and livestock. Community and women’s development farms have also been facilitated the community network.</td>
<td>FAO, EU</td>
<td>Blue Nile operations started in April 2007, with the official launch July 2007. Operating in Sudan consistently from the late 1980s.</td>
</tr>
<tr>
<td>Mubadaroon, Blue Nile office</td>
<td>National NGO</td>
<td>Organizing cooperative enterprise for ex-combatant and registering it as a CBO as an implementing partner of NSDDRC, provided training in farming and fishing. Allocated agricultural inputs such as seeds and fishing equipment as an implementing partner of various international and national agencies.</td>
<td>NSDDRC (early 2006), UN including UN DDR, FAO, WFP, UNHCR, WV, IRW, GOS</td>
<td>Blue Nile operations started in 2004. Launched cooperative in May 2006, with hand-over to NSDDRC in February 2007. Operations in Sudan since 2003.</td>
</tr>
<tr>
<td>War-affected communities, ex-combatants</td>
<td>War-affected communities</td>
<td>Ex-combatants</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Table 2

Social Morphing of Blue Nile Cooperative Structures

1a. Humanitarian Aid Commission (HAC)  
1b. Native Administration  
1c. Department of Cooperatives: Macro-Structure

2a. Mubadaroon National NGO: Initial Cooperative (CBO)  
2c. Sudan Armed Forces (SAF) Cooperative Structure

3a. Traditional Village Structure  
3b. Practical Action Village Development Committee (CBO)  
3c. Mubadaroon National NGO: Planned Cooperative
References


