Deconstructing Notions of Resilience:
Exploring coping strategies and resilience in post-conflict Uganda

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Resilience and humanitarianism in the face of recurrent crisis and fragility: A resilience approach to humanitarian development response

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Abstract

This paper discusses the circumstances under which international humanitarian development interventions may unintentionally compromise and exacerbate community's vulnerability rather than enhance its resilience capacity. It concerns humanitarian interventions that target specific social systems with the aim of systemic change so as to improve their resilience to current as well as future stresses and shocks. Mercy Corps' (MC) resilience approach to relief, recovery and development in recurrent crisis and fragility settings provides a case for examining the implication of its Revitalisation of Agricultural Incomes and New Market (RAIN) project implementation in Lamwo District, Northern Uganda.

The paper is based on a review of RAIN's publicly accessible online project resources, and qualitative data collected through interviews and observation between September 2017 and April 2018. Two analytical perspectives are employed, that is, determining the 'critical loop' or 'triggers of change' of a system and their 'feedback mechanism'; and interpreting the feedbacks generated by the system prior to and during the intervention. The findings reveal that MC identified 'market' as 'trigger of change' particularly in addressing poverty and adapted a light-touch facilitative approach to market system development. In the course of RAIN's implementation, significant progress was registered particularly in addressing the distorted and unstable market as it became more robust and resilient. On the contrary, as market in Lamwo witnessed swift expansion, becoming more robust, stable and resilient, the local population were equally experiencing regression in their ability to cope with, and becoming increasingly less resilient to, shocks and stresses that they would otherwise have been able to cope with.

Introduction

It is increasingly becoming clear that events related to climate change, violence and conflict are an almost inseparable phenomenon. The likelihood that one will occur in the same settings as the other has been witnessed to increase exponentially with the occurrence of the other, particularly that of conflict and war. There are several examples that corroborate these relationships between violence and conflict and the natural environment such as, the northern Uganda conflict between the 1980s and early 2000s; conflict in eastern Democratic Republic of Congo; and the current crisis in South Sudan as examples of conflicts characterised by unsustainable exploitation of natural environment including the destruction of forests. Yet, the globally emerging trend of violence and conflicts paints a picture that they are increasingly becoming protracted (UNHCR, 2016, 2015).

Insecurity or incidences of violence and conflict; lack of investment in communities or poor infrastructure; incidences of extreme climatic variability; and other natural disasters all combine to impair progress in community development and often pushing them to their limits. As erratic climatic, deteriorating security situations and other social conditions conspire to compound socio-economic and ecological systems, it is inevitable that the next crisis lurks around the corner. As such, enhancing communities' capacity to withstand and cope with uncertain occurrences is progressively being advanced as one viable way of equipping communities with the wherewithal necessary to overcome these barriers and inequalities. The last few years have seen an increase in the application or adoption of the notion of resilience building/thinking to development practices, policy, and humanitarian aid responses as well as in a range of academic disciplines. This is particularly informed by the understanding that the many but serious recurring problems relating to natural resource management or utilisation is a consequence of an intricate linkage between the ecosystems and the social systems that use and depend on them (Falke et al., 2010).

This paper focuses on recent humanitarian interventions that target specific social systems aiming for systemic change to improve the resilience capacity of such a system(s). It uses Mercy Corps (MC) Uganda's post-crisis development project in Lamwo District, Northern Uganda, and in particular experiences emerging from its implementation of Revitalisation of Agricultural Incomes and New Market (RAIN) project to examine its implication for the general coping mechanism of the population. Most importantly, it draws on lessons from practices to further academic debates around the topic of resilience and its application within the development and humanitarian responses. Particularly, attention is placed on examining the circumstances under which resilience based international humanitarian development intervention may unintentionally compromise and exacerbate communities' vulnerability to shocks rather than enhance its resilience capacity.

Two particular areas of interest are discussed in this paper. The first regards the identification of what resilience thinking refers to as the "critical loop" or 'triggers of change' of a system and its "feedback mechanism". The second concerns the interpretation of the feedbacks generated by the system in the course of response, particularly the negative one. As will be explained in more details in the following section, it is the negative feedback loop which helps flag out the difference between the desired behaviour of a system and its current state of affairs in order to initiate corrective actions. MC's experience in Lamwo suggests that interventions focusing on both the demand and supply side dynamics of a system simultaneously avoid negating the effects of interventions counteracting feedback loops that resist change. As Gharajedaghi (2011, p.115) points out that 'discovering the pattern of behaviour for our system of interest is the key for recognising the hidden order that is locking the system into its present course, this paper demonstrates that this hidden feedback must still be clearly understood and interpreted correctly. Otherwise, navigating those negative feedbacks without explicitly understanding and correctly deconstructing risks the current negative feedbacks being presented by the system outliving interventions no matter the good intentions (Gharajedaghi, 2011). Yet, confrontation and identification of the 'trigger of change' and the interpretation of feedback mechanism in a conflict or post-conflict setting presents an even greater challenge due to the unstable nature of the context being dealt with.

In the subsequent sections, the paper offers a contextualised definition of resilience as a concept and its core components within the frame of its discussion. The paper then contextualises the crisis in question in regards to the conflict and post-war context. This is then followed with a discussion of MC's humanitarian development response in Lamwo. The paper then discusses its findings before finally drawing some key lessons in the conclusion.

Defining Key Concepts

Resilience:

Despite the dominance of resilience thinking in the ways and frequency of its application within academic, policy and practice, in recent years, it has so far failed to generate one universally accepted definition. This in itself might not necessarily be a weakness as it gives room for different disciplines, groups or organisations to tailor its understanding of this concept in accordance to their distinct needs and interests (Walker et al., 2004). Nevertheless, there are generally two strands of definition that can be seen to emerge in regards to resilience. The first strand focuses on the stable state of socio-ecological systems that perceives resilience as the ability of systems to absorb disturbances and reorganise while undergoing changes and still retain essentially the same function, structure, identity, and feedbacks (Singh et al., 2016; Cooper and Wheeler, 2015; Folke, 2006). The second strand perceives socio-ecological systems as a complex and dynamic one or from a transitional pathways point of view. This group of scholars, practitioners and policy makers understand resilience not necessarily through attainment of a state of stability but rather

as requiring some form of interplay in all the three attributes of a complex SES, that is, resilience, adaptability and transformability capacities respectively (Bartlett and Satterthwaite, 2016; Béné et al., 2014; Pelling, 2010; Geels and Schot, 2007; Walker and Salt, 2006).

The grouping of the several strands of resilience definition into two is not intended to obscure the fact that resilience is only one of the many dynamic components of any SES. Of the many components, this paper only concern with the three components, that is: resilience, adaptability and transformability (Walker et al., 2004). Where resilience is defined as the capacity of social (including political), ecological and economic systems to absorb disturbances and reorganise whilst undergoing changes so as to still retain essentially the same functions, structure, identity, and feedbacks. Adaptability on the other hand, refers to the capacity of actors within SES to adjust responses to changing external drivers and internal processes thereby to allow for development along current trajectories or stability domain. In other words, adaptability as the capacity of actors within a system to influence resilience (Walker et al., 2004). Meanwhile, if the existing system presents untenable feedbacks, the capacity to create a fundamentally new system when the ecological, socio-political or economic conditions are untenable is what is referred to as 'transformability' (Walker et al., 2004).

It is important then to note that, as Walker et al., (2004) present in their research, that whereas the default characteristic feature of a complex adaptive SES is to self-organise without intent, individuals and groups in this system exhibit intent that may intentionally or unintentionally impact the system. The collective capacity of individuals and or group of actors to manage or influence resilience intentionally determines whether or not they can successfully avoid crossing into undesirable systems' regime, or succeed in crossing back into a desirable one (Levin, 1998). In addition, although resilience practitioners do not in any way present a single, coherent field of thought, there are enough similarities in much of resilience programing that, in what follows, I will use shorthand "resilience thinking" to refer to those that borrow or align with Walker et al., (2004) and Walker and Salt (2006).[1]

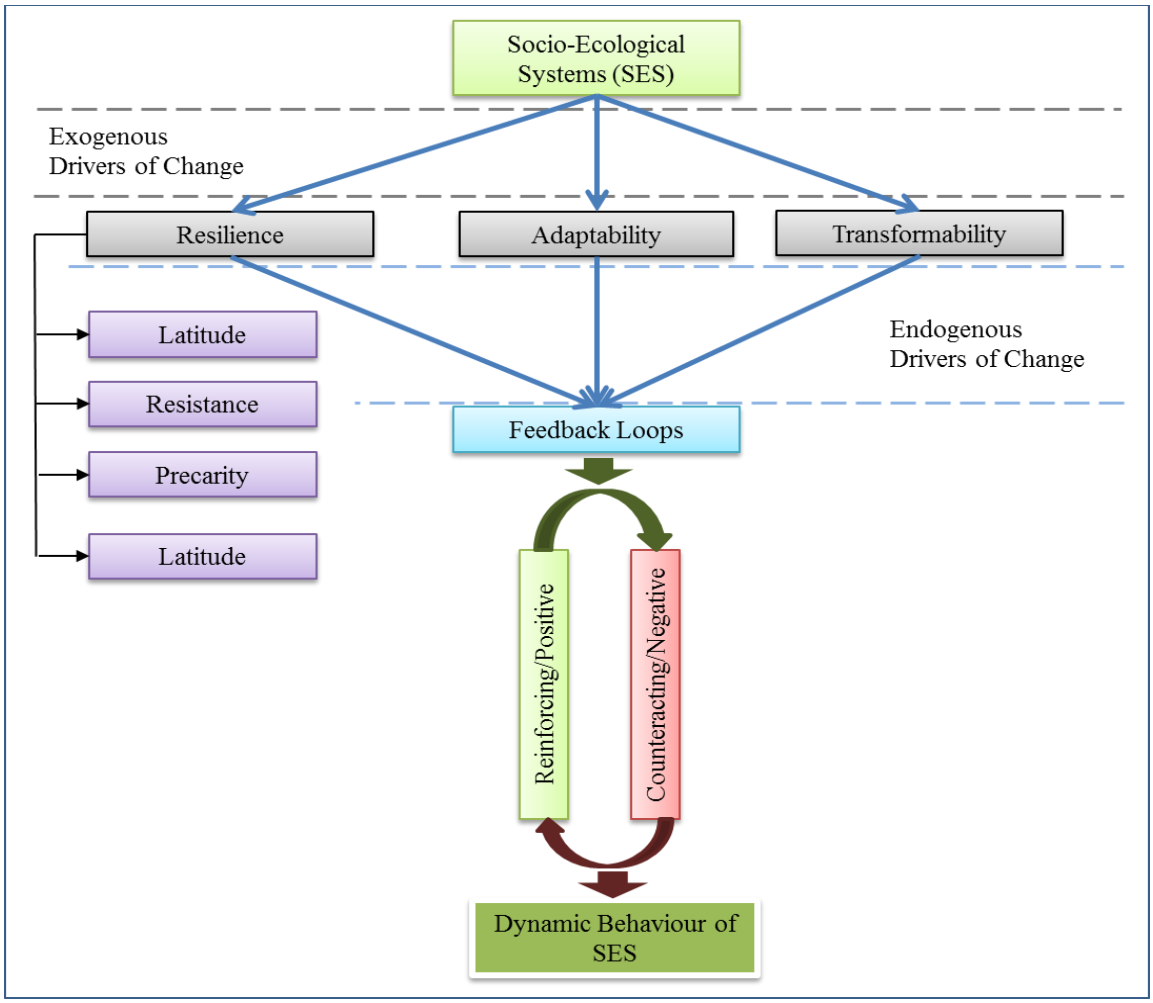
The capacity of actors within the SES is particularly critical due to the fact that actors are required to understand, measure, and influence the four most important elements of resilience – latitude[2], resistance[3], precariousness[4] and panarchy[5] in order to enhance resilience capacity of a system (Walker et al., 2004). Resilience thinking goes on to assert that the three SES' attributes of resilience, adaptability and transformability must function simultaneously in any intervention in

[1] With caution of running the risk of over generalisation, resilience thinking is a form of integrative framework for thinking about complex systems attributed to Resilience Alliance.
[2] The maximum amount a system can be subject to change before losing its ability to recover
[3] The ease or difficulty of changing a system
[4] Current trajectory of a system , and how close it currently is to a limit or 'threshold' beyond which, if breached, makes recovery difficult or impossible.
[5] Due to cross-scalar interaction, the resilience of a system is dependent on the influence from states and dynamics at scales above and below them.

order to boost its survival. For any resilience based intervention to successfully alter the existing social system, it must actively understand the stability or risk landscape and how it impacts on this landscape (Mitchell, 2013; Walker and Salt, 2006; Walker et al., 2004;). In other words, interventions must understand how a given society functions in each context. Secondly, interventionists need to determine at what particular layer of society those risks are best managed. Lastly, a certain set of resilience principles must be applied in order to strengthen the system's capacity to absorb shocks, adapt and transform so as to be less exposed to shocks. The issue here is whether the risk landscape is changing at the same pace as the existing social system or the pace of change in the risk landscape is long and significant enough to force change in the existing social system.

As in Figure 1 below, the interaction between resilience, adaptability and transformation produces the dynamic behaviour of any SES or what I refer to as the feedback loops of a system, for instance, robustness, vulnerability, or risks. The feedback of any SES is a product of two forces of reinforcing (positive) and counteracting (negative) feedback loops which are responsible for creating and producing counterintuitive behaviour of any system (Gharajedaghi, 2011; Walker et al., 2004; Beisner et al., 2003).

Figure 1: Socio-Ecological System Regulation Mechanisms



Source: Based *on Walker et al., (2004) and Gharajedaghi (2011)*[6]

It is particularly the negative feedback loop that helps flag the difference between the desired goal of a system and its current status to initiate corrective actions aimed at bringing the system closer to its goal (Gharajedaghi, 2011). Walker et al (2004) particularly point out that it is the negative feedbacks that define the regulatory mechanisms of a system and because of this; it is more common that most SES systems evolve at the edge of chaos or at the edge of a basin of attraction, a seeming consequence of selection for maximum efficiency. In Gharajedaghi's own words, "…to map the dynamic behaviour of a system is to capture the interaction of positive and negative feedback loops. These interactions, in essence, define the interdependencies, which in turn are responsible for nonlinearity in the system." (Gharajedaghi, 2011, p. 115).

In the context of this paper, the capacity of SES actors to read effectively and efficiently and correctly interpret impacts on the nature and the form of oscillation (behaviour of a system). For instance, unexpected oscillation is a consequence of a delayed response function. That is, a delay between the times a discrepancy is observed and a corrective action taken will result in an oscillation of a system, say increased land conflict, gender based violence, and malnutrition in the case of MC's intervention in Lamwo. The case of Lamwo demonstrates that some of these have got far greater consequences than others.

Market System

By definition, New Institutional economics (NIE) presents 'markets' as a form of 'institution' or mechanism that facilitates exchange; co-ordination and allocation of resources; goods and services between buyers and sellers; between producers; and intermediaries and consumers (ADB and DFID, 2005, 2003). Like Neo-classical economics (NCE), the NIE draws its understanding from a perspective that competitive 'markets' can provide 'efficient' co-ordination by reducing the cost and risk of carrying out transactions, can encourage business development and also help to achieve broader economic objectives (Bernstein and Oya, 2014, p. 8). However, unlike NCE, NIE position emanates from the questions it directs towards NCE's assumption of an existence of competitive or efficient market (North, 1990, 1986). NIE then points that there is hardly ever such a thing as perfectly competitive market in this world, never mind in developing economies (ADB and DFID, 2005, pp. 3–4).

NIE argues that a 'well-functioning markets can co-exist with widespread poverty, since distributional and equity issues are not directly dealt with by the market system' (ADB and DFID, 2005, p. 3). Lindblom (2001) argues that whilst interchanges or acts of buying and selling constitute markets, some societies with these characteristics may not necessarily constitute a market system. A market system exists only and only when markets proliferate and link with each other in a particular way to organise, coordinate and facilitate many of the day-to-day activities

[6] Especially Chapter 6 – *Dynamic Systems: Dealing with Chaos and Complexity*

of that society. Lamwo District in this case would fit this category in the sense that, despite their participation in transactional exchanges in what seems to resemble a market, market is not the major organiser or coordinator of communities' day-to-day activities or coping mechanism and social interactions.

The Crisis in Context

Northern Uganda between the 1980s and the first half of 2000s were engulfed in over a two-decade-long armed conflict fought between the Government of Uganda (GoU) and the Lord's Resistance Army (LRA). A war that saw more than 20,000 children kidnapped and recruited as child soldiers and/or sex slaves by the LRA (IRIN, 2005). In addition to LRA's activities in the region, the Karamojong (a nomadic pastoralist tribe in north eastern Uganda) and the government soldiers equally pillaged the population of their cattle, goats, sheep and other livestock[7]. To sustain the rebellion, the LRA abducted mainly women and young children who were forcefully conscripted as child soldiers, porters, servants and sex slaves (Meier, 2013; Lomo and Hovil, 2004). The GoU, embarked on a different approach but with similarly far reaching humanitarian consequence for the population to win the war. In the guise of a military tactic for winning the war, the government sought to cut the supply and the rebel-civilian links through a systematic and militarily harsh strategy. Government forcefully relocated the population into internally displaced peoples (IDP) camps with more than 90% of the population reported to have been displaced (MoH, 2005; Van Acker, 2004).

Overcrowding, limited access or total absence of social services such as health care, water and sanitation, education and family support system, violence and insecurity characterised the camps (Van Acker, 2004). The implication for the population was that the day-to-day coping and survival mechanism they had built during the several years of LRA conflict prior to the encampment was disrupted or destroyed.

Mercy Corps' Market Systems Development Approach to Humanitarian Development Response in Lamwo District

MC is a global non-governmental, humanitarian aid organization operating in transitional contexts that have undergone various forms of economic, social and political, and environmental instabilities. Operating in more than 40 countries worldwide, MC is driven by the understanding and conviction that communities are the best agents of their own change (MC, 2018, 2017a, 2016, 2015a). They are also driven by the understanding that the driver or the best locomotive of social or community change or long-term recovery is the local market (MC, 2011). They work in places

[7] For details, see regarding Acholi War Debt Claimants.

characterised by fragility and crisis, where the impacts of shocks and stresses threaten people's ability to thrive (MC, 2016, p. 3).

Through what it refers to as shared analysis, learning and action, MC adapts and operationalizes a market oriented resilience approach aimed at helping affected communities identify and address underlying vulnerabilities, minimize exposure to risks and strengthen resilience capacities to achieve positive, inclusive change (MC, 2016, pp. 4–5). It calls this approach Market Systems Development (MSD) (MC, 2018, 2017a, 2017b, 2015a, 2015b). In its resilience approach to humanitarian development, MC seems to fuse the two strands of resilience perspectives presented earlier into one single definition. That is, on one side, MC views resilience from the stable state of SES perceiving it as the ability of systems to absorb disturbances and reorganise whilst undergoing changes to retain essentially the same functions, structures and feedback. On the other, it also blends in the conceptualisation of SES from a transitional pathway. It defines resilience "as the capacity of communities in complex socio-ecological systems to learn, cope, adapt, and transform in the face of shocks and stress".

In Uganda, the organisation has been operating since 2006, helping to rebuild communities in northern Uganda emerge from decades of conflict. Between 2011 and 2015, with the funding from the U.S. Department of Agriculture, the organisation implemented a market facilitation programme titled "Revitalising Agricultural Incomes and New Markets (RAIN) in Lamwo District. RAIN sought to improve food security and economic growth in target areas through a focus on the agricultural sector. Whereas MC Uganda's goal is to catalyse change in the Uganda private sector, civil society and government relationship so as to create economically dynamic, healthy and secure communities, its RAIN project aimed at enhancing smallholder farmers production and profitability; improving agri-business performance in input and output markets; and expanding access to financial services in rural areas (MC, 2015a, 2014).

So what is MSD? To MC, MSD is a method of working through public and private sector actors to address the underlying systemic constraints that hinder target populations' access to, and participation in, the market (MC, 2017a, 2017b, 2015a, 2015b). MSD targets the supply and demand for goods and services to support economic growth and improve social outcomes by identifying and addressing barriers to market development. To achieve these objectives, MSD identifies and develop partnerships with local, national and regional actors critical to addressing market constraints and creating the right condition for market to prosper and to deliver improved sustainable productiveness (MC, 2017a).

The organisation perceives poverty as a systemic consequence of a distorted and dysfunctional local market, one which can only be solved through a system approach aimed at transforming it in to a stable resilient one, capable of facilitating sustainable and equitable economic growth. In other words, RAIN aimed at a market system that provides room for the most vulnerable segment of the community to participate and enhance their vulnerability in the short, medium to long-

term. Through a facilitative approach, the organisation set out to identify leverage points within the communities of Lamwo in order to induce a positive impact onto an existing SES without creating a new one dependent on their programme (MC, 2015b, p. 5).

But because market facilitation requires utilising, creating or manipulating existing social networks as opposed to direct service provision, the organisation primarily implemented their intervention by utilising existing or facilitating the establishment of new partnerships. It embarked on cultivating and establishing commercially oriented chain-link relationships with the private and public sector players. Typical members of these networks ranged from large established companies and financial institutions (who had not, historically worked with smallholder farmers in the program areas) to smaller savings and credit cooperatives (MC, 2015a, p. 5).

Locally, the organisation targets local agent networks of mobile traders, small retailers, Agricultural extension workers and other service providers as fundamental actors in facilitating the adoption of RAIN's approach and vision of the new market. For instance, the new market system would encompass new, more efficient and effective farming practices, such as improved seeds and pesticides. Additionally, the project engages donors whilst recruiting process-oriented staff to build partnerships; assist public and private actors in overcoming market constraints and perceived risks in order to help farmers and communities capitalise on their potentials.

Based on our earlier definition of a market system, for a market to support communities' coping and recovery mechanisms from stresses and crisis it must stretch beyond the simple demand and supply of goods or the physical household survival. In addition, a market must involve complex interactions with supporting functions such as financial services, transport and communication and other infrastructures; energy, natural resources; and culture, norms and regulations. In Lamwo as in many parts of Acholiland, whilst there is and have always been exchanges in goods, the area has historically been disproportionately underdeveloped when it comes to the enabling functions and environment needed to transform simple demand and supply market into a complex market system. This situation was further aggravated by over two decades of war. MC therefore faced a daunting task of creating a market system never mind one capable of supporting communities coping with and recovering from stresses and crisis.

Presentation of Findings

The Reinforcing/Positive Feedback of RAIN

In the course of implementation, RAIN capitalised on sesame, an agricultural product in the area previously produced for domestic consumption at household level, expanding its productivity, monetary value and its links and appeal to the market system. However as pointed to in the earlier discussion of the market system, Lamwo had no such thing as a self-sustaining market system and, because sesame was an existing product in this setting, to open up this new market

opportunity linkages had to be established with market systems outside Lamwo. This links also improved input supplies and the market development catalysed new wealth in northern Uganda leading to a sesame boom.

Consequently, there were positive feedbacks loops suggesting progress towards the intended market as agricultural productivity in terms of output (sesame) and its resulting incomes registered significant increase. This indicator is corroborated by data from agricultural commodity buyers reporting nearly US $10 million in purchase from farmers which reflects how much farmers were putting into the production of sesame. In its 2015 project report, the organisation posted an estimate of 36,000 households in the north as having had their annual income increased beyond the global poverty line or from a tad over a dollar a day to two dollars a day.

Whilst the statistics highlighted here appeal to audiences outside the project area, to the local communities this representation may not necessarily reflect what or how they envisage themselves. For instance, while conducting a strategic resilience assessment (STRESS) for Acholiland, the research team intended to facilitate focus group discussion (FGDs) with different cohorts in each of the selected areas. The cohorts were 'wealthy households', 'poorer households', 'off-farm livelihoods', 'women', 'young women', and 'young men' (MC, 2015a, 2014). MC's monitoring, evaluation and learning manager[8] recollected that the STRESS team faced a daunting hurdle in determining which potential participants would participate in the wealthy or the poorer households FGDs. The problem was aroused when the team tried to come up with locally accepted definitions of what it meant to be wealthy or poor. On a macro scale, widely accepted definitions of wealth and poverty allow programmes and organisations such as MC to work on similar projects towards a common goal. But the challenge is that these kinds of definitions are extremely daunting to tease out at micro level as the STRESS team soon experienced. The team came to realise that, in Acholiland, few households would self-identify or even identify others as being poor simply because they do not have money or finances.

This is due to the fact that in the absence of income or capital, most have access to resources through various networks of support, that is: family, clans, and communities. Conversely, the local definitions of wealth often differs from the macro definition and do not necessarily include monetary wealth. This is of course from an external perspective, but even Acholi from outside the village sphere would invariably contradict their own understanding of what it is to be poor. To an outsider, a lack of cash and readily useful capital defines poverty while the opposite defines wealth (MC, 2016, 2015c). The application of robust analytical tools such as STRESS is said to help MC capture and reconcile such contradiction as they may arise at individual, household,

[8] In an interview in January 2018, Kampala - Uganda

community, and system levels. However, the macro scale feedback will only have meanings if it reflects real change at the micro scale.

Nevertheless, the market chain-linkages, especially between local farmers, the financial institutions, agricultural input supplies and the agricultural product buyers, improved. For instance, the organisation reported 5,000 farmers in 2013 to have purchased inputs through networks facilitated by the organisation. This number more than doubled in the following year to 11,022 smallholder farmers (MC, 2015a). By the end of RAIN project in 2015, the number of smallholder farmers purchasing improved inputs increased to 33,000 and the local input dealers meeting this supply needs were registered at 151 (MC, 2015c). The organisation also runs an initiative which leverages the financial partnership to extend credit to local businesses in the area. The financial partnership is said to have facilitated market expansion, especially agricultural (sesame) markets, as well as an increase in savings with 70% of households reportedly saving more consistently larger amounts in 2015.

MC facilitated the establishment of specialised storage facilities, providing a platform for organising local harvests; agricultural produce clean up, packaging and storage in one single roof where external buyers efficiently access markets that had previously been scattered amongst dozens or hundreds of smallholder farms. The establishment of a one-stop centre for agricultural produce is presented as having driven down the cost of doing business especially for the business companies. A company called 'Gulu Agricultural Development Company (GADCO)', a large agribusiness driven by the lucrative global prices of sesame cohort smallholder farmers as suppliers. The additional advantage of specialized storage facilities in addition to bulk centres for marketing which act as a hub for farmers to access market information and training also enhanced networking for smallholder farmers. The engagement with the local farmers and the guaranteed return on sesame drove up the demand for sesame and land to accommodate increasing production.

Spurred by a growing global demand for sesame, GADCO's investment helped catalyse a local sesame boom moving from about 2,000 UGX (0.54USD) to 4,320 UGX (1.16USD) per kilogram in 2012 to 2014 respectively (MC, 2015b, p. 8). There were over 17,000 farmers registered with GADCO, representing a third of all farmers in Lamwo in 2015. In the 2014–2015 seasons, GADCO purchased 3,168 tons of sesame, valued at about US$3.1 million (MC, 2015a, p. 8). For a single growing season, it was a dramatic injection of capital, and equivalent to almost half of RAIN's four-year budget. Another reinforcing feedback loop emerging from the intervention in addition to the product boom is the expansion in the cultivation of new farmland. Households who once planted one or two acres of sesame, as a response to the boom in sesame, were reported to be planting twice or several times more with yearly average acreage increasing from 4.5 to 6.5 acres of new farmland in 2014 and 2015 respectively. In addition to the boom, increased competition among input suppliers as well as buyers and the ensuring decline in prices of agricultural inputs and

improved services to local communities is also pointed as contributing to the expansion in productivity.

The Negative Feedback Loops of RAIN

As earlier pointed out, positive feedback loops are those system behaviours that reaffirm the state of a system as heading closer to the desired goals. It is assumed that these reinforcing feedback loops produce exponential growth (Gharajedaghi, 2011) as a function of abundant resources, which is not necessarily the case. The strain on resources as a reality impedes exponential growth which is furthered by the delay function (the difference between the time a disruption in a course towards a desired goal is observed and a corrective action is taken) resulting in unexpected oscillation or counterintuitive behaviours of a system (Gharajedaghi, 2011). In other words, a negative feedback loop of a complex system is a product of two functional realities, that is: resource strains (materials and immaterial) and the delay functions combining to produce oscillation.

The implication for both policy and programming is that the negative feedback becomes the fundamental regulatory mechanisms of any complex SES that one must navigate to understand the current state of any complex system. Whilst incomes and productivity growth, emergent innovation, increased opportunity, and growth in the agricultural sector more broadly can be linked to RAIN's goals, the equally unintended negative feedbacks emerging from the same system becomes a crucial point through which we can evaluate the systems evolution or progress. It is also this very negative feedback that is telling of the capacity of actors within this system and their ability to navigate the three components of an SES (resilience, adaptability and transformability). In the case of RAIN in Lamwo, by 2015 it became clear that, whilst market facilitation had significantly boosted household incomes and opportunities, promoted new innovation and catalysed measurable growth in the agricultural sector, RAIN had to some extent failed to translate into improvement in community's susceptibility to shocks.

Higher levels of under-five undernourishment persisted amongst the population with community members attributing it to parents working prolonged periods in potentially distant sesame fields, leaving children on their own (MC, 2015a, p. 10). However, as opposed to enhancing the existing survival mechanism of the population, the persistent food insecurity and the ensuing malnutrition can to an extent be attributed to RAIN's distortion of communities' existing coping mechanisms. For instance, whilst the community had been planting sesame long before MC's intervention, its production was primarily for household consumption.

In the region, sesame is one of the most important food crops in the day-to-day diet of an average household serving not only as food, butter, oil (cooking and baby products) but also as a financial safety net as surplus is sold or exchange for other commodities. It was and still is in some areas used in spiritual and ritual ceremonies. However, the commodification of sesame,

commercialisation of its production, and the financialisation of the agricultural sector by the organisation exponentially increased profitability of the product. The implication for the household is that it distorted their calculations and priorities as their view of what was previously a food crop primarily for household consumption shifted to a cash crop oriented one.

In some instances, sections of society were priced out of the emerging market as they could no longer afford to pay for the new prices. For example, among the low grade salaried civic workers[9] interviewed (primary and pre-primary teachers, nurses and support staff), a number of them complained that sesame had become too expensive and they have been forced to resort to cooking oil for vegetables that would otherwise require sesame like '*boo'*. They blame the inflated prices on external players (buyers from outside the district) who have introduced the bulk centre which has replaced the local distribution channels and priced out a good number of local populations.

In some cases, households cut cultivation of vegetables and other food crops for domestic consumption in order to meet the labour demand for sesame production. This is partly due to the fact that the technology used in the production of sesame did not move at the same pace as the expansion of the market and production (acreage) demands. Trade-offs therefore had to be made between matching of dietary needs to ensuring food security for households by producing food crops and meeting the new market demands for sesame. Whilst this confirms the argument that resource strains impedes the realisation of systems goals, the upsurge in undernourishment among children in the project area raises the issue of it being a consequence of delay function or a complete failure to respond to unexpected oscillation. In other words, bringing into question the capacity of actors to manage the mechanism illustrated in Figure 1.

Different proponents, especially the market-system-oriented neoliberals, may present an alternative perspective arguing that with the increased income, households are better placed to meet other basic needs or dietary requirements as they can utilise earnings from sesame for such purpose (Tiffen, 2003). This perspective resonates from their basic assumption of the market system that producers use the earnings from the exchange of their commodity in the market to reproduce themselves (Tiffen, 2003, pp. 1346–1348). That is, they use their earnings from the sales of sesame to replace and perhaps expand their means of production as well as buy their means of consumption.

As NIE argues, 'well-functioning markets can co-exist with widespread poverty, since distributional and equity issues are not directly dealt with by the market' (ADB and DFID, 2005, p. 3). It is worth remembering that prices, as earlier mentioned, are already distorted and higher than what the local population can or are willing to pay, driven by the global market for sesame. From what the local community were used to as prices increased by more than 100 percent. The

[9] The nature of their work does not afford them time to cultivate their own making them reliant on market accessibility and affordability.

locals who did not grow sesame and would want to consume from the local market would now have to pay heavily. Equally to those farmers who will have sold almost all of their produce and would like to purchase from the local markets for consumption will find the market prices too high as well. Sesame, a commodity previously affordable in the local market is now beyond the reach of the local population, never mind the very poor.

Scholars of agrarian reforms in Africa present that most interventions attempt to make the survival of smallholder farmers compatible with the growing expansion of global agribusiness. In African agriculture, for example, interventions tend to be presented in some form of 'win-win' scenarios (Bernstein and Oya, 2014, p. 11). These 'win-win' solutions must however navigate the tensions between improving 'market access' and introducing non-market drivers that stifle competition in addition to a new set of vulnerabilities. In Lamwo, by employing the MSD approach, MC had to navigate a similar terrain. The success of its intervention becomes a matter of how effectively the organisation can deploy and accurately utilise the SES regulatory mechanism illustrated in Figure 1. In other words, its capacity, first, to effectively influence existing systems without tipping it over the threshold into chaos and, secondly, build the capacity of other actors to cause and manage the desired changes in the SES.

The project also reports a rise in domestic and gender based violence and new set of conflicts experienced among households. One key informant argued that the increase in income came as a huge surprise and rather too quickly for the farming households as they were less prepared for such drastic shifts in their earnings. Based on analysis of returns filed by different bulking centres in the district, up to UGX 8.2 billion shillings in revenue is said to have been generated from the sale of sesame alone in 2013 (equivalent of USD $2.2 million) (Labeja, 2014). This, according to the district chairperson, was a huge increase from the UGX 2.2 billion (USD 0.59) in 2012 (Labeja, 2014). Although this figure seems not to be far off the USD $3.1 million to GADCO as earlier pointed out, it is however difficult to corroborate as the 2017 investment profile of the district published by Uganda Investment Authority (UIA) neither presented sesame as the core revenue generating crop nor the revenue generated by the crop (UIA and UNDP, 2017).

Yet, rather than investing this new income in productive assets as market based thesis would assume, instead, alcohol sales and consumption increased together with its encompassing negative consequences for households and community. The District Chairperson in an interview pointed out rising alcohol consumption among farmers as threatening progress, a problem his executive has identified and were drafting ordinances to regulate. What this indicates is that in Lamwo, market functions quite differently and perhaps in a more controversial manner generating feedbacks quite contrary to those assumed.

MC presents this as partly due to limited investment options. For instance, if a farmer wanted to construct living structure (iron sheet-roofed house), productive materials and its suppliers were not present in Lamwo. Whilst this perspective holds, it perhaps underlines a particular problem

inherent in MSD, particularly their choice to base their intervention on a single agricultural product (sesame). The development of sesame market did not necessarily entail the development of other aspects of market retrospectively as might have been assumed by MSD. Problems associated with a lack of diversification not only on the financial, demand and supply side per se but also on the tradable products would still have to be negated. Essentially, the marketing period in Lamwo was not embraced quick enough by other actors as was assumed would happen in order to counteract these imbalances associated with an undiversified market. Yet big beer companies such as Nile and Uganda Breweries, beverage companies such as Coca Cola and Pepsi Cola, and medium sized companies dealing in local spirits from central region surrounding Kampala easily introduced their product into the same market.

Whilst the organisation attributes the domestic disputes and other gendered violence to the financial benefit accruing from participation in the project, on the contrary, the paper finds evidence of unintended oscillation and new set of vulnerability linked to RAIN. For instance, in Acholiland, women are traditionally responsible for household duties with men supporting. However, in the period following the war's end, several researches (Adams et al., 2013; Omona and Aduo, 2013; Oosterom, 2011; Sengupta and Calo, 2016) indicate overwhelming numbers of men increasingly abandoning their traditional roles, contributing very little to household duties. What RAIN does to the existing social power dynamics is that women are forced into taking on additional responsibility, that is, the responsibility of producing the additional acreage of sesame, working extremely long hours in the farmland. This consequently results in a double burden for women.

Yet, RAIN does not alter the traditional perspectives of men and the position they occupy in society as men still hold key decision making powers and control over household finances. Market, whose development promised prosperity, inclusive participation and improved standards of living for women, on the contrary, for some, increased vulnerability to gender related violence. A research by Uganda Women's Network (UWONET) in the district reveals that the most common acts perpetrated against women included denial of control over productive resources and control over benefits from productive resources, among others (UWONET, 2011, p. 3). The research further highlights that these situations escalate significantly "during harvesting season mainly due to the struggles between partners on how to control and manage the sales of harvests"(UWONET, 2011, p. 3).

As the education performance statistics for the district reflect, in particular, the number of children dropping out of school and those not attending school[10] to help relieve this burden likely means that many women are forced into relying on their children to fill the extra labour demands. These young girls and boys are taken out of school to help in the garden; care for the young ones;

[10] There are of course several factors impacting school attainment that do not relate to parents but rather attributed to the policy and government's shortcomings.

and help with other household chores. The education statistics for Lamwo indicates that up 6,361 (14.9%) of persons aged 6-15 years (male and female) were not attending school. Statistics also indicate that of the 25,041 (79.8%) children aged 6-12 years enrolled and attending primary school, only 5,401 (26.6%) go on to attend secondary education (UBOS, 2017, p. 21). The intervention's contribution in this case comes from the fact that it increases rather than reduces women and children's vulnerability and exposure to shocks and stresses – particularly that of girls due to the already skewed power dynamics.

The reported increase in the average household's farmland attributing it to the boom in sesame, does not put in to account the relatively high number of land related disputes and conflicts in the same period (MC, 2015b, 2014). Although earlier research (Hopwood and Atkinson, 2015) indicates that of the seven districts of Acholi sub-region, Lamwo had the least total land disputes registered in the six months to data collection in 2012 at 136 cases. This is in comparison to 496, 452, 388, 251, 249 and 139 for Gulu, Agago, Pader, Kitgum, Amuru and Nwoya Districts respectively (Hopwood and Atkinson, 2015, p. 6). However, it is the percentage of land dispute with violence relative to the total number of cases registered in the same period that Lamwo posts the second highest percentage in the region at 32.4 percent. That is, Nwoya (35.3%), Lamwo (32.4%), Gulu (30%), Amuru (18.1%), Pader (15%), Kitgum (12.4%) and Agago with the least (6.7%) of land dispute cases with violence (Hopwood and Atkinson, 2015, p. 6). Instead it attributes this to poor land management paired with the itinerant nature of planting and the acceleration of non-sustainable cultivation as aggravating territorial tensions among neighbouring families and communities. MC attests the foundations of such land disputes to years of conflict-driven displacement.

Earlier research on mass population return from the IDP camps talks of a complete loss of social capital and an understanding of socio-cultural norms around which the society functioned (Hopwood, 2017; UWONET, 2011). A generation with a total lack of the basic knowledge and understanding of how to cultivate crops, or utilise the basic farm tools (MC, 2017b, 2015a) emerged in the post-war Northern Uganda. Yet they are vulnerable to the inadequacy of formal institutions responsible for protecting their property rights and against the risks from increasing urbanisation (Hopwood, 2017; Hopwood and Atkinson, 2015). These considerably undermine communities' respect for the cultural authorities responsible for mobilising, organising and managing mechanism that ensures the security of persons and property as well as the management of risks accessed in some kind of kin base setting. This could to some extent explain the percentage of land disputes with violence in relation to the total number of cases reported posted by Nwoya and Amuru and Lamwo as these three districts did not have a resident magistrate's courts at the time[11].

[11] In 2012, I was working in the region providing technical support to the Justice Law and Order Sector's (JLOS) Institution on the Justice for Children programme.

Whilst these findings corroborate MCs explanation in regards to the incidence of conflict, other studies seems to contradict its explanation. Studies undertaken from 2011 onwards show remarkable comeback in community's social systems ability to managing and resolving land related disputes, seen in the number of cases handled and a decline in new cases (Hopwood and Atkinson, 2015; Burke and Egaru, 2011; Pham and Vinck, 2010). On one hand, the reduction might be an indication that, once again, the social system had made a comeback from the GoU-LRA conflict and displacement but, on the other, scholars note that high resolution rates may not necessarily connote fair decision-making on the side of authority. Rather, they might instead be achieved through consistently finding resolutions in favour of stronger parties (Leonardi and Santschi, 2016; Hopwood and Atkinson, 2015).

Of particular interest[12], is a recent research finding on land along the Uganda-South Sudan's borderland by Leonardi and Santschi in which they present that

> "… land has always had productive, moral, social and spiritual value. New forms of value ascribed to land have been emerging since the 1990s, whereby land has acquired a real or potential commercial and monetary value. These new forms of value are the result of overlapping processes of population return and urbanization, new population densities, development, investment, resource exploitation and land grabbing" (Leonardi and Santschi, 2016, p. 140).

These findings present an implication for RAIN in the sense that "… the progressively rampant boundary conflicts in Acholiland do not reflect ancient tribal conflicts. Rather, the conflicts are a product of new factors: government decentralization combined with the unprecedented value of land and natural resources" (Leonardi and Santschi, 2016, p. 140). RAIN, whether seen as only playing a facilitative role in the MSD or not, to some extent contributes to these factors driving change especially in the imagined value and new ways of utilising land presented as fuelling land disputes. Exacerbated by the absence of a functional formal state institution for ensuring and protecting private property rights particularly that of the most vulnerable groups in widows, disabled and orphans means such understanding is critical in the programing of interventions.

Discussion of Findings

Sceptics of the resilience concept point out that the most fundamental problem with resilience thinking is its failure to address issues regarding distribution of benefits and risks or the unwanted consequence that might accrue with such benefits. In doing so, it ignores justice issues (Coaffee and Lee, 2016; Weichselgartner and Kelman, 2015; Cretney, 2014; Forsyth, 2014; Cote and Nightingale, 2012;). In other words, while MSD may succeed in establishing a resilient self-sufficient market system in Lamwo, a community that had previously survived without such a

[12] It is of interest because Lamwo falls within the same borderland

system, distributive issues such as poverty, inequitable income and resource distribution, unhealthy power and gender relations may continue to persist. If this perspective is applied to MC's intervention in Lamwo, then the unintended oscillation or negative feedback loop emerging from the site such as surge in child malnutrition, domestic and gender related violence, communal land driven violence and conflict, and unhealthy power relations only help confirms the flaws in resilience driven approach to humanitarian development interventions.

On the contrary, with the acknowledgement that, perhaps, the emergent negative feedback loops presented above may not necessarily be exclusively a RAINs generated problem but rather part of and exacerbated by a scope beyond its capacity to influence, then we move towards a perspective forwarded by resilience scholars such as Walker et al. (2004) and Gharajedaghi (2011). This group of scholars argues that at any time and point in the life of a SES, or at any particular scale, the system is always a sub-system of the whole panarcy resilience of a system is therefore influenced by events happening in the panarchy at the scales above and below the scale of interest. In other words, as in Figure 1, the behaviour of SES at any time is influenced by both the exogenous (global market prices, regional demand, supply and prices, political environment) and endogenous (capacity of actors) drivers.

Placing this particular perspective of resilience thinking in the context of RAIN, the counteracting feedback loops from RAIN might not necessarily conform to or depict failure of a resilience based development intervention. For it is the negative feedback loops which helps flag the difference between the desired goal of a system and its current status to initiate corrective actions aimed at bringing the system closer to its goal (Gharajedaghi, 2011). Rather than acting as an indicator of intervention failure, negative feedback loops plays a crucial role in the regulation of any complex system, that is: the dynamic behaviour of a system or the nonlinearity of a system is a functional interaction of the positive and negative feedback loops.

However, as earlier noted, for any intervention to be able to influence actors in any SES, interventionists must have good understanding of why actors in the SES do what they do (Gharajedaghi, 2011). Interventions must go beyond information and knowledge, where information deals with the what question, knowledge deals with the how question, and understanding with the why questions. The assumption here is that, with sufficient understanding, the challenges for interventions like RAIN are not only to do with negating the feedbacks generated by other actors which directly or otherwise impact the outcomes of their project but also correctly interpreting these feedbacks. In addition, they also must deal with projecting and understanding the possible outcome of their project to better deal with the unintended outcome of the project during implementation. Whether or not this is something possible within the current international humanitarian development framework is one that scholars such as (Duffield, 2016, 2015) would find it hard to believe.

In Lamwo, MC came to the realisation that successful market facilitation through a MSD approach may not necessarily translate into a resilient society. Upon experiencing particularly the negative feedback loops, it became clear that "in northern Uganda, building resilience is stymied by problems beyond the scope of any program or NGO" (MC, 2015a, p. 12). Governance challenges such as incoherent development plans, inconsistent or poor regulation and poor infrastructure investments all impact on the outcome of interventions. For instance the organisation points out that, "…expanding supply chains and building market linkages will mean little if, during the annual rainy season, the roads are flooded and goods cannot get to the market. Or if poor regulation routinely undermines investment." (MC, 2015b, p. 12). They therefore acknowledge that the ability of societies to withstand a crisis is rooted not in the household but in the societal collective capacity as a whole. This therefore conforms to the academics' argument that at any given time and point in the life of any complex SES, the system is always a sub-system of the whole panarcy. As such, resilience of any system is therefore influenced by events happening in the panarchy at the scales above and below the scale of interest.

The implication for RAIN as they soon found out is that interventions focusing on both the demand and supply side dynamics of a system is no guarantee for avoiding negating the effects of interventions counteracting feedback loops that resist change. In other words, "… expanding supply chains and building market linkages will mean little, if for instance, when legitimate drug suppliers are squeezed by a black market in smuggled and expired drugs that Uganda's National Drug Authority has, to date, been unable to police" (MC, 2015a, p. 12).

Whilst this is crucial for the survival of the market, these facilitative aspects of the market required by RAIN in themselves presents several threats to the survival mechanism of societies. For instance, most recently the entire community consisting of three clans in 'Madi Opei' Sub County is pointed to as having violently engaged with GoU resisting the construction of Gulu-Acholibur-Musingo trade route through their community (Labeja, 2016). Whilst the road is present as potentially bringing new dimensions to the newly established market and providing greater good for the society, to the affected clans in Madi Opei it would dispossess families from their land – the primary sources of livelihood without a viable alternative. The new road would not only radically alter the day-to-day coping calculation, but also successfully eliminate those dispossessed from participating in the very market it is intended to link. This therefore results in the introduction of new set of vulnerabilities and a potential destruction of their resilience.

Questions would, for example, be asked as to how the 'critical loop' of a system and its feedback mechanism is identified in the first place? Experience from RAIN indicates that it is almost impossible to start everything up-front due to the limited resources and capacity of actors within SES. Rather, interventions ought to 'start simple and grow in complexity' in its approach to resilience. Whilst the 'start simple and grow in complexity' notion may appear simplistic at first glance, the practitioners' face-to-face encounter with this approach highlights two key caveats

critical to this approach. The first condition requires that we 'act' and 'observe/pause/learn iteratively' so as to increase our sequential understanding. The implication of this first precondition is that we can only understand a system in action to reveal its dynamics as illustrated in Figure 1 (Gharajedaghi, 2011; Walker et al., 2004).

This is not entirely the case as caution must still be put on the extent to which one can concentrate on the day-to-day dynamic behaviour of a system as this may undermine ones understanding of historical dimension that have contributed to the current system. Time dimension of a system is as crucial as the current functioning of the system for one very important reason, that we acknowledge the possible regressive characteristics of a system(s). We can use the Walker et al. (2004) "adaptive cycles and cross-scale effect to map out the different scenarios that the first condition become ineffective in providing explanation as to why those scenarios play out. Yet, the answer to the shortcoming of the 'adaptive cycle' metaphor can be found in the understanding of a system in action.

This is particularly true for the failure of 'adaptive cycle model' to explain the possibility or reason for a system's stagnation at the 'edge of chaos' without moving back to the 'conservation' or progressing to 'reorganisation' or the 'growth and expansion' phase for that matter (Walker et al., 2004). As reflected in this paper, crucial as it is, the historical aspects of a system is extremely daunting to understand let alone interpret. It requires time and attention to be invested: 'time dimension', a commodity that is particularly scarce within the international humanitarian development intervention context. Yet it is one constant variable that is the most important of them all, when it comes to interventions. RAIN's experience exposed that in order to pull a community through a crisis, policy and programs seeking to intervene should seek to integrate across programmes and systems, to harmonise efforts and knowledge of local communities, governments, the private sector, donors and NGOs. This would require changing what is done, and how it is done and most importantly, the capacity to understand and manage the interplay between the negative and positive feedback loops. That is, rather than simply defining goals at the outset, and pursuing them without reflection, the mechanism in Figure 1 requires the capacity to understand, anticipate unforeseen challenges (negative feedback) and opportunities (positive feedbacks) in a quick and flexible manner. The biggest question in regards to time then is that how can organisation achieve all this within the very short project timeframe given by donors?

Even when all this is taken into account, interventions must still overcome the politics within resilience resulting from what critiques refer to as the "rise of inhabitation in the form of widespread withdrawal of international aid workers into gated-complexes and fortified aid compounds" (Duffield, 2016, 2015; Evans and Reid, 2014). The consequence of this 'defensive retreat' as Duffield (2016) calls it, is that, aid-industry beneficiaries are encouraged to embrace the development potential of risk at the same time as they are being effectively abandoned to uncertainty. That is, how do you engage the local community and their knowledge; understand,

anticipate unforeseen challenge or opportunity in real time to address them as SES regulatory mechanisms dictates when programme staff are based in Kitgum Town and Kampala rather than Lamwo? The problem of identifying the 'critical loop' of a system and the misinterpretation of the problem at hand therefore comes from the disconnect between the interventionists and the beneficiaries due to the remote distance between them. *"While aid beneficiaries live in permanent emergency, aid elites manage this condition from a distance"* (Duffield, 2015, p. 139) aiming to ensure that the poor and vulnerable have options and opportunities to become fully integrated into the system. But this is done with persistent susceptibility to contextual naivety on the side of aid-workers.

The disconnect and the remote nature of aid-organisations' operation and their inability to fully understand or correctly interpret how systems support communities infers that the intended interventions come short in navigating uncertainty and unpredictability inherent in both the system and their intervention. RAIN, initially intended to enhance communities' capacity to cope and deal with adversaries but unintentionally unsettled their existing equilibrium making them even more vulnerable to shocks than they already were. This was in spite of the reported success in the project development of the market. NIE presents that market, as an institution exists to facilitate exchange; that is, 'they exist in order to reduce the cost and risk of carrying out transactions' (ADB and DFID, 2005; Porteous, 2004), rather than addressing, poverty, socio-political and distributive issues. In other words, market only serves to better those sections of society already better off at the detriment of the poor, bringing into question the relevance and appropriateness of MSD as a tool for addressing poverty and inequality.

In any case, once the two caveats concerning the resilience capacity of a system is addressed in the perspective stipulated in the first and second conditions above, the next and equally fundamental issue regards the question of how the feedback of a system is read and interpreted. Yet, as the paper has demonstrated, identification of the 'trigger(s) of change' and the interpretation of feedback mechanism in a conflict or post-conflict setting present even tougher challenges due to the nature of the context being dealt with.

Conclusion

This paper has highlighted that, in the course of implementing RAIN in Lamwo District, MC witnessed significant progress particularly in addressing the issues relating to underdeveloped market. Agricultural productivity increased and the market chain-linkages especial between the producers (farmers), the financial institutions, and agricultural supplies improved. In other words, the market became more resilient. However, there were equally other unintended negative outcomes and feedbacks being experienced from the intervention. For example, domestic and gender related violence experienced among participating households increased; land dispute and conflict related to land increased majorly attributed to the expansion in agricultural production areas and the anticipated property value; cases of malnutrition in

children under five and food insecurity increased even though production of sesame was on the increase.

The organisation came to the realisation that market in itself does alleviate poverty, if for example, governance issues are not conducive enough to provide an enabling environment; such as good infrastructure investment or institutions that can regulate and ensure the protection of property rights. And most importantly, knowledge and understanding of local knowledge and the capacity of local actors and their engagement is also crucial. In other words, whilst the market was expanding and becoming more robust, stable and resilient, there was regression on the side of community's resilience capacity.

The broader implication relating to policy and programing for interventions towards crisis and societal vulnerability is that once a 'critical loop', as key locomotive to redressing vulnerability or recurrent crisis, is identified the following must be considered. The first steps require a comprehensive understanding of how the system functions within its internal environment but also its interaction with its external environment: in other words, market as an independent system and market as part of a whole in the case of RAIN. For instance, if distortion, poverty and inequitable income distribution, dysfunctionality and instability are identified as some of the feedback being given by the market system prior to intervention, the question to ask would be what this feedback tells us about, first, the market as a critical loop; and secondly, about its interaction with other systems.

If the goal of the intervention is to rid these set of undesirable characteristics, and improve day-to-day people's standard of living in Lamwo by establishing a self-sustaining market through a MSD approach, the capacity of actors to correctly and effectively identify, accurately interpret and efficiently understand the systems' feedbacks is key. That is, the ability to understand early on that market in itself is a variable sufficient enough to addressing issues regarding poverty in the first place as it perpetrates inequitable income and resource distribution.

Secondly, in the case of negative feedbacks, the issue would be whether or not a policy or programme is cautious of the narrative that intervention projects that are intended to enhance the capacity of communities to cope and deal with adversaries may unintentionally unsettle the existing coping mechanism of such societies, making them even more vulnerable. And whether policy or programmes takes on approaches that tend to minimise or avoid negative feedbacks; or whether they take on the understanding that negative feedbacks are more telling of the dynamics of the system than just the distortion of its function that ought to be embraced and used to the advantage of the policy or programme success. For instance, if actors within the SES have the appropriate capacities to effectively manage the SES regulatory mechanism, the negative feedback loop would only act to trigger corrective action within the shortest possible time or, better still, anticipated and counteracted early on.

The delay function is therefore dependant on the capacity of the systems' actors to effectively and efficiently identify the nature of the feedback being given by the system, to interpret correctly and promptly take appropriate corrective actions so as not to deviate from the current course to the desired goals. The implication for RAIN is that the overwhelming and persistent negative feedback loop such as domestic and gender related violence experienced among participating households; land related dispute and conflict; cases of malnutrition in children under five; and food insecurity bring into question not just the capacity of actors but also the appropriateness of the critical loop identified.

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