

Conflict, institutional changes and food insecurity in eastern D.R. Congo

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The protracted crisis in eastern Democratic Republic of Congo that lasted from 1996 till 2003 aggravated processes of land alienation and reduced market access. Field research conducted in 2005 in three eastern DRC areas shows that these processes made rural households increasingly vulnerable and deepened structural causes of food insecurity. Households adapt their livelihood strategies because of the need to deal with the impact of different adversities and to anticipate various risks threatening their livelihoods. This further erodes the resilience of poorly endowed households and forces them to forsake food security in the long run to avoid acute destitution. Yet, standard food relief interventions often solely focus on direct food availability and fail to address the underlying structural causes for food insecurity such as limited access to land and markets. We recommend a combination of interventions that address both in order to lift rural households in protracted crisis situations out of the food insecurity trap.

Key words: food security, conflict, DR Congo, institutional change

Introduction: Conflict and Food Insecurity in Eastern D.R. Congo

The Democratic Republic of the Congo (DRC) is often represented as a typical example of the natural resource curse: while its abundant natural wealth makes it potentially one of the richest nations on earth, its gross domestic product per head is among the lowest in the world. Decades of economic mismanagement and patrimonial rule, the conversion of economic resources into political resources and profit-seeking activities by the ruling class have caused a total collapse of the country's official economy. Even before the Congolese wars (1996-1997; 1998-2003), the country's population was faced with very low national income figures, limited access to health and education, and decrepit economic and transport infrastructures. The wars further reduced the economic opportunities of the Congolese population and had a devastating impact on what remained of productive capacities, leading to total impoverishment of large parts of the population. GDP per capita was about \$250 in the early nineties, later in the nineties it fell to approximately \$125 whereas during the time of the wars it went down to less than \$100 (IMF in AFDB/OECD, 2005). The situation in the eastern parts of the country, was particularly appalling because of the continuous combination of armed confrontation, displacement and predatory state structures. Average annual income was estimated to be a mere US\$32 per capita in eastern DRC in 2002 (AFDB/OECD, 2005).

The food security situation is a further indicator of the scope and impact of the Congolese crisis and war. In most parts of DRC, since the outbreak of the first war in 1996, food security has worsened and food production and consumption patterns have changed considerably. Even though reliable and up-to-date national statistics for the war and intra-war period are scarce, the few available data reveal that in these regions, chronic infant malnutrition was over 45% for children under five years old in North and South Kivu in 2001 (UNICEF MICS2, 2001). The same survey indicated that 23.5% of women were malnourished in South Kivu in 2001 (measured by Body Mass Index). The poor food security situation during the second war and shortly after it is also evidenced from a study carried out in South Kivu indicating that up to 83.3% of the households limited their food intake to one meal a day during the war (Diobass, 2005). This shows extreme food rationing was practised as a coping strategy. The study further indicates that the food security situation somehow improved after the war. However still more than 40% of households only had one or less meals per day; another 40% was limited to two meals whereas before the war the majority had three meals a day. A more recent food security and vulnerability analysis by the United Nations World Food Program (2007-2008) did not show major improvements in the food security situation (UN WFP, 2009). The situation is particularly bad in South Kivu where an estimated 11.7% of households have poor food consumption, meaning they consume on average less than two meals a day mainly composed of starches with little to no proteins. Approximately 33% of households only have borderline food consumption meaning they consume somewhat more and have a slightly more balanced diet that includes a little more protein and vegetables. These households are moderately food insecure but vulnerable to shocks that affect their capacity to access food. Child malnutrition is problematic in South Kivu with 12.5% of children under 5 suffering severe acute malnutrition and 20.6% of children under five suffering chronic malnutrition. The food security situation in North Kivu is somewhat less dramatic. An estimated 6% of households have poor food consumption and 31% have borderline food consumption in North Kivu. Some 10.6% of children under five suffer severe acute malnutrition and 24.5% of children under five suffer severe chronic malnutrition in North Kivu.

There are several reasons for this deterioration of the food security situation since the Congolese wars. Within its focus on institutions and rural households' livelihood strategies, this article argues that to fully unravel the causes and mechanisms that produce food insecurity, the institutional context needs to be integrated into the analysis. This article therefore explores the links between conflict, the institutional changes it induced and food security in eastern DRC. It concentrates on institutional changes with regard to two regulating structures, i.e. land and markets, which are key structures affecting production, access to and availability of food. These changes have direct implications for households' welfare as they partly define available livelihood strategies and determine their vulnerability context, but also confront households with numerous additional uncertainties on top of those that originated from the crisis itself. It will be argued that, in this setting, insecurity, institutional shifts and the danger of food insufficiency force poorly endowed rural households to deal with the impact of adversities but also to antici-

pate possible risks. As such, many of these households get into a vicious circle whereby they have to forsake food security in the long run in order to avoid acute destitution. This will be referred to as a food insecurity trap, in analogy with poverty traps (Dercon, 2005). Like a poverty trap, a food insecurity trap can be conceptualised as an equilibrium level of food insecurity from which recovery without ‘outside’ intervention is hardly possible. Although we argue that food insecurity traps are partly a result of the conflict, we do not say that food insecurity fuels the continuation of the conflict. Therefore, the existence of food insecurity traps does not imply the existence of a conflict trap, which states that when a country is at war, development will diminish and the likelihood of war continuing will be bigger (Collier et al., 2003).

In this respect, the focus on land and market access mechanisms remains interesting, because it emphasizes the inventiveness of households in ensuring access to livelihood assets and opportunities during protracted food security crises. Yet, it simultaneously serves as a warning against too optimistic accounts that largely deny the underlying structural dimensions of vulnerability and food insecurity. By pinpointing the underlying structural dimensions of vulnerability and food insecurity, important policy conclusions can be drawn. If standard food relief interventions solely focus on direct food availability and access but fail to address the underlying causes of food insecurity such as constrained access to land and markets, and crisis-related risks, these interventions are likely to fail to lift households out of the food insecurity trap.

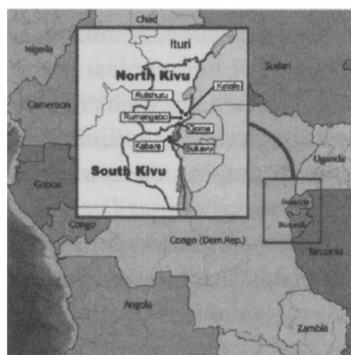


Figure 1: Map of North and South Kivu.

The Institutional Impact of Conflict and Food Insecurity

Recent literature on the political economy of civil war has pointed at the complex interaction of food insecurity and conflict. It is often argued that conflict and institutional variability may cause intensified struggle for access to livelihood opportunities and put existing food systems under stress, turning them from predictable mechanisms of production, processing, distribution and consumption into very volatile, unpredictable and uncontrollable systems of survival (Pingali et al., 2005). Chronic violence and conflict tend to reshape existing mechanisms of food production and food access, distort the available assets and choices of households, and force households into changing their

livelihood systems (Lautze and Raven-Roberts, 2006). These processes may often result in food insecurity, undernutrition or hunger, especially in households with highly sensitive livelihood systems that lack resilience. Other authors (such as Keen, 1994; de Waal, 1997) have argued that food insecurity is a political phenomenon that is not caused by lack of food production nor by market regulations, but by political powerlessness. It is the wider political and institutional context that explains why those hit hardest by famine are people who are the politically most vulnerable. Rather than strengthening the availability of food and people's access to food political famine theory proposes that interventions should focus on state reconstruction, good governance and accountability (Keen, 1994; de Waal, 1997). These recommendations would also apply to food insecurity situations, because, as Keen (1994) has stressed, "a lack of lobbying power within national (and international) institutions" is the main reason for food insecurity in many weak states and conflict environments today.

Food insecurity is a situation in which people are at risk of not having adequate physical, social or economic access to sufficient food that is both safe and meets their dietary needs and food preferences for an active and healthy life (FAO, 2003; Barrett, 2002; Maxwell *et al.*, 2008). Moreover, it is the product of political structures, institutions and processes. Structures, institutions, organizations and processes, or the wider governance environment that regulates household's access to and use of assets, define their livelihood strategies. When looking at the interaction between food insecurity and conflict, this is an important aspect to consider. According to Pain and Lautze (2002), in complex political emergencies (COPE), violence not only influences the availability of resources and possible options and choices of households; it also has an impact on the existing institutional context through which households negotiate the use of assets and the configuration of livelihoods strategies. "[T]hese influencing factors play a key role in mediating access to resources, shaping the context of vulnerability, and setting opportunities or constraints to pursuing various livelihood strategies" (Pain and Lautze, 2002, p. 15). Hence, this institutional context constrains households' strategies and thus plays a dominant role in people's access and entitlement to food in conflict situations.

The same focus on policies, institutions and processes is also echoed in recent studies on governance in contexts of protracted conflict in Africa. Contrary to the popular discourse that tends to portray institutional processes in Africa as a-historical pathologies and contrary to the normative perceptions in policy discourse of 'failing' or 'collapsing' states, these recent studies illustrate how in situations of conflict, the collapse of (state) institutions does not necessarily mean the collapse of society (see special issue on 'Governance without government in African crises', *Afrika Focus*, 21/2, December 2008). Conversely, in a number of situations, the interaction between institutional breakdown and conflict has contributed to the transformation or emergence of non-state centres of authority that apparently become consolidated around alternative patterns of "profit, power and protection" (Ballentine and Sherman, 2003; Le Billon, 2001; Menkhaus, 2004; Vlassenroot and Raeymaekers, 2004). In some instances, these polities even seem to be

more economically beneficial and authoritatively accountable than the preceding (predatory and repressive) state structures (Pingali *et al.*, 2005). However, in many cases, these processes induce an environment in which most households are exposed to a set of persistent, systematic and significant social, political and economic uncertainties.

Recent research into conflict environments suggests that violence does not necessarily lead to a complete withering of social cohesion, but in fact involves a great deal of individual and collective response. An increasing amount of literature points to the fact that societies in crisis situations develop a wide range of risk management and coping strategies (Levine and Chastre, 2004; Korf, 2004; Pain, 2002). The inventiveness of households to try and ensure access to livelihood assets during protracted crises, however, does not necessarily lead to greater household resilience. While in some cases, violence can create a number of new opportunities also at a grassroots level (Korf, 2004), in other cases households continue to be blocked by various mediating structures that negatively influence the diversification of their livelihoods and coping mechanisms. A valuable method for gaining insight into these processes is Collinson's (2003) political economy approach to conflict, which looks at the interrelatedness between livelihood opportunities and the broader political economy. This approach seeks to understand "both the political and the economic aspects of conflict, and how these combine to affect patterns of power and vulnerability" (Collinson, 2003, p. 10). The analysis is concerned with the interaction of political and economic processes in a society, which include the distribution of power and wealth between different groups and individuals, and the processes that create, sustain and transform these relationships over time.

Institutional Shocks and Households Strategies

Conflict-induced shifts in the institutional environment, which is defined as a set of formal and informal mechanisms, processes and practices, thus not only define people's access to assets but also have a considerable impact on households' vulnerability. In this context, the term vulnerability is understood not just in terms of material deficiencies, risk exposure and difficulties to cope with these and recover from adversities, but also as (political and economic) powerlessness (Maxwell *et al.*, 2008; Alwang *et al.*, 2001; Chambers, 1989). Vulnerability, therefore, is determined by "the dynamic social production of resilience, or the capacity to manage, adapt to, cope with or recover from risks to livelihoods" (Pingali *et al.*, 2005).

Often, only one internal aspect of vulnerability, which can be defined as the people's inability to effectively deal with risk or shocks, is considered. Valuable insights into the different responses of people and households to food insecurity caused by protracted crises can be gained from looking at coping strategies that deal with food insecurity. These are defined as "short-term, temporary responses to declining food entitlements, which are characteristic of structurally insecure livelihood systems" (Davies, 1993). The coping strategies index (CSI), a tool for locating food insecure households and assessing the intensity of their insecurity, for example, incorporates elements of vulnerability and responses of households faced with food insecurity (Maxwell *et al.*, 2003). It measures

four categories of coping strategies: dietary change strategies, food seeking strategies, household structure strategies and rationing strategies. In many cases, the CSI has revealed that what people do in crisis situations is not unrelated to their strategies in other difficult situations. In other words, there is a continuum starting from coping strategies used in ordinary situations to strategies developed in protracted crises (Seddon and Adhikari, 2003). Short-term coping strategies might in turn indicate the first phase of a wider process that includes the development of longer-term adaptation strategies of livelihoods to crisis situations. But it can also point to a continuing vulnerability to external shocks. Similar changes in consumption and production patterns may indicate a problematic access to land, for example, which forces people to flee or seek for alternative sources of income.

Households not only adopt strategies to cope with the consequences of shocks, and to smooth consumption after shocks have occurred. The risk of future food insufficiency or the lingering threat of shocks, like the re-emergence of violence or land seizure, also forces households to adopt ex-ante risk management strategies to avoid even more serious hardship and destitution in case shocks actually occur (Morduch, 1995; Alderman and Paxson, 1994). When reliable credit and insurance mechanisms are absent or deficient, poorly-endowed households are observed to adopt risk-management strategies to reduce the precariousness of their income generation process by spreading risk, through income diversification for instance; by avoiding risk through engaging in low-risk production activities; or by self-insuring through savings (for an overview of the relevant literature, see Barrett (2002) and Dercon, 2005). These strategies have important implications for food security because diversified and low risk activity portfolios often generate lower mean returns than more risky activities and asset portfolios (Barrett, 2002; Dercon, 2005; Rosenzweig and Binswanger, 2003). Barrett (2002) emphasises that the allocative efficiency losses of these second-best strategies can be quite substantial and impede longer-term food security. But measures of food insecurity narrowly focusing on coping strategies generally ignore these ex-ante risk management strategies and may underestimate the extent to which food insecurity affects livelihood strategies.

Next, to repeat the argument of Pingali *et al.*, (2005), the livelihoods' responses to food insecurity in protracted conflict situations are to a great extent influenced by the institutional framework in which they are developed. Likewise, Barrett (2002) refers to the third generation conceptualization about food security which places food security in a broader framework of individual behaviour in the face of uncertainty, irreversibility, and binding constraints on choice. This thinking is inspired by Sen (1981) and the literature on the political economy of food security (e.g. Keen, 1994; de Waal, 1997). One of the major challenges of contemporary livelihood analysis and food security evaluation in protracted crises, therefore, consists of understanding this link between risk management strategies, coping strategies, longer-term adaptation strategies as well as the "policies, institutions and processes" that determine household access to assets and conversion factors. In this regard, particular attention should be paid to the role of institutions and mediating structures that facilitate access to assets, define the available strategies to

turn these into sustainable livelihoods but also determine part of the risk exposure. In protracted crises in Africa (and elsewhere), these mediating structures often include clientelist gatekeepers that determine access to assets, such as customary landlords, local strongmen and state administrators, but increasingly also armed elements and militias. Rather than assuming a simple 'coping' or withdrawal into subsistence of poor households, there is increasing leeway for an analysis that concentrates on the political and economic context that forms part of the local development complex, of which institutions are an important aspect.

Food Insecurity in Eastern DRC: a Political Economy Approach

A political economy approach and a qualitative research design are the most appropriate to study rural households' livelihoods and food insecurity in the protracted crisis situation of eastern DRC (Collinson, 2003). Data was collected from October to December 2005 in North and South Kivu (eastern DRC), more particularly in villages in Walungu, Masisi and Lubero. It goes without saying that the conclusions of this paper only apply to these specific sub-regions. The areas of research were selected because they were previously important food producing areas whereas their local food systems changed considerably over the conflict period. These areas are also interesting because they characterize particular local mechanisms of land and market access that have changed in different ways over the conflict period. More specifically, prior to the wars, Walungu in South Kivu was a key provider of food to the provincial capital Bukavu and had several large export-oriented plantations producing for export and substantial numbers of livestock. Existing mechanisms of land access, however, have been seriously disrupted by demographic pressure, legal uncertainty and the Congolese wars which have led to intensified competition for land and a growing number of landless households. Masisi (North Kivu) was an important centre of livestock and agricultural activities before the war but has witnessed regular struggles over land. Particularly since 1993, when land issues provoked armed confrontations between different communities, Masisi has suffered from ethnically-motivated violence and militia activities that have caused massive displacement and brought agricultural activities to a virtual standstill. The improved security situation since 2002 has brought a modest return of livestock and agricultural activities, but the struggle for land between local ethnic communities continues to be a significant source of tension. The central highlands of Lubero in North Kivu used to be among the main food production centres of North Kivu, providing urban centres (including Kinshasa) with crop products and meat. Partly as a result of the war, the area has experienced increasing population density, a reduction in market opportunities and increasing competition over land.

Data collection for this study followed a pattern of participatory and deductive research methods. In each of the selected areas (i.e. Masisi, Lubero and Walungu), specific information was gathered on land and market access, the food security situation and changes in livelihood strategies. In Lubero, a total of fourteen focus group discussions were held in nine villages, concentrating on detailed questions regarding people's access to land and markets. Participants were selected at random among members of

agricultural cooperatives. In principle two sessions per village were organized in which the purpose was to acquire an idea of institutional factors influencing people's access to land- and market-related livelihoods, as well as external food security interventions. The setup of these participatory sessions consisted of a collective mapping exercise, followed by a collective ranking of problems relating to both questions. The factors influencing agricultural production were identified as: climate (e.g. drought, excessive rain), environment (e.g. erosion), demography (population pressure, lack of family planning), access problems (i.e. distance and access to arable land), and institutional factors (e.g. lack of a state framework, political interference). With regard to agricultural revenue, the following factors were identified as the most important: price (i.e. what price for what product, what price in which season), the quantity put on sale, market organization (i.e. direct sale or sale through intermediaries/cooperatives), taxes (including harassments by the military and other 'negative forces'), means of transport, means of conservation and transformation. With regard to markets, this information was then triangulated with crude price information on regional markets (mainly of bulk crops such as cassava and maize), and interviews with key informants such as agricultural cooperatives, local administrative bodies and NGOs. Logistical support was provided by VECO-Congo (local representative of the Flemish NGO Vredeseilanden-Coopibo) and their local partners. A similar participatory and qualitative methodology was developed in Walungu and Masisi. In both areas, a number of villages were selected, where upon three to four focus group discussions were held with different stakeholders and where a number of interviews were conducted with local authorities, farmers groups, civil society associations and church leaders.

The selection of villages was based on several parameters including local presence of markets, ethnic composition of the population, presence of armed groups and patterns of land distribution. Bideka's suffering from the war has been limited but it is faced with very strong demographic pressure and high levels of land insecurity. Mugogo used to be the main pre-war commercial centre of Walungu and connected the city of Bukavu to Kivu's hinterlands, but since 1998 has witnessed a sharp decrease in trading activities. Walungu-centre, which was characterised by a strong demographic pressure and land scarcity before the war, between 1998 and 2004, has had to deal with the presence of local armed groups and high levels of insecurity. Until recently, Burhale was controlled by Rwandan Hutu militias. Here, land access patterns have been disrupted mainly as a consequence of displacement and insecurity caused by the FDLR. In Masisi, four villages were selected (Kitchanga, Kiningi, Kibabi and Masisi-Centre) that represent the different local dynamics of conflicts over land. Kitchanga is part of the Bashali collectivity and is populated by Hunde, Hutu and Tutsi. Since the war, its population has seriously expanded because many internally displaced persons (IDPs) were installed in this area. In this village, availability of land is limited by the presence of large cattle ranches. Kiningi is part of the Muvunye-Kibabi group (Hunde collectivity) and was during the time of research mainly populated by Hutu farmers. Kibabi (Hunde collectivity) houses Hunde, Hutu and Tutsi

households and has witnessed several conflicts over land. Masisi-centre is a zone 'extra-coutumier' and is populated mainly by Hunde and a minority of Hutu farmers.

Focus group discussions consisted of two different exercises. The first exercise aimed at acquiring a better understanding of the shifts in local patterns of land use and land distribution, for which mapping and wealth ranking methodologies were used. The second exercise focused on household strategies and the impact of food security interventions. Participants were asked to identify the main constraints to their food production and access to markets, to discuss the different short-term and long-term strategies that were developed to deal with the negative effects of land-scarcity and insecurity, and to evaluate the impact of external interventions. These changes can include responses to food insecurity risks, conflict-related risks and institutional shifts that affected access to land and markets. In several villages in each area, focus group discussions with 20 to 30 rural household members were conducted and qualitative data collection tools, including semi-structured group interviews, participatory maps on land use, seasonal agricultural calendars and problem trees, were used (Pretty *et al.*, 1994; Laws *et al.*, 2003). Information gathered during focus group discussions was triangulated through semi-structured interviews with key informants. The information on changes in households' livelihood strategies on the one hand reveals the coping strategies that households adopted. On the other hand, it also shows households' risk management strategies that may be used to deal with potential future food insufficiency or risks induced by conflict or via institutional shifts. By enumerating and classifying the observed coping and management strategies of households in each area, an evaluation of the food security situation and vulnerability context of households in the studied areas was possible.

To learn more about the institutional context regulating access to land and to markets, information about prevailing norms and regulations, the 'rules of the game' for accessing land and markets, and the respective gatekeepers was collected. In addition, information on conflict-induced shifts in institutional context was gathered, using a political economy approach (Collinson, 2003). Focus group discussions and semi-structured interviews with stakeholders, which include representatives of development organizations, farmers groups, cooperatives, churches and customary and state administrations, provided first-hand information on the 'rules of the game' and the strategies households use to access land and markets in the selected sites. Data on the local institutional context regulating land and market access was complemented with information gained through interviews with key-informants in Goma and Bukavu, through secondary sources and from previous studies (e.g. Vlassenroot and Huggins, 2005).

After a short evaluation, field work data were compared and confronted on the basis of their common denominators of land and market access in the specific sub-regions. The results from this study should consequently be read as preliminary research findings rather than the outcome of a systematic surveying exercise. Nonetheless, the specific participatory nature of these findings makes it possible to elaborate upon a few interesting observations regarding the gravity and interconnectedness of influencing factors. We will try to summarise these connections in the following sections.

Food Security and the Political Economy of Land and Markets

The worsening of the food security conditions in eastern DRC (e.g. Masisi, Lubero and Walungu) has been caused in part by distortions in the processes, institutions and policies defining people's access to assets and strategies that regulate their access to food.

An important mediating structure that determines households' livelihood opportunities is access to land. Recent research has pointed to the direct links between access to land and food security in conflict environments: it is recognized that "land access constitutes one of the more problematic and volatile facets of societal relations during and subsequent to armed conflict" (Unruh, 2003, p. 352). It is generally acknowledged that shifts in institutional context and governance of land tenure can become a structural cause of poverty, food insecurity and conflict (Broegaard, 2005; Huggins and Clover, 2005; Deininger, 2003). Conflicts tend to modify the institutional framework regulating land access through the introduction of new mechanisms of protection and acquisition, and new strategies of economic control. Moreover, land tenure insecurity, because of contestable property rights or potential confiscation, also contributes to increased risk exposure of households making it also a determinant of food insecurity (Barrett, 2002).

A second important mediating structure in relation to food security is the market. Conflicts, overall insecurity and altered mechanisms of protection also change the rules of the game of the market. These changes seriously affect rural households of whom many engage in agriculture which implies they are both producers and consumers. The availability of food may not be their main problem but rather their access to the market is impeded by excessive transaction costs. This results in deteriorating terms of trade, causing entitlement failures for some (Sen, 1981; Barrett, 2002).

The recent history of eastern DRC offers an account of the dynamics that affect land access for rural smallholder households. Here, more than ten years of crisis and conflict have amplified the effects of a long process of land alienation and increased food insecurity. As in many other parts of Africa, land tenure systems in eastern DRC have undergone a number of changes in recent history. Colonial land policy and the use of land as a political asset to reward members of the ruling political class after independence have led to a structural change in rural society. In the most densely populated areas, this has increasingly limited people's access to land (Van Acker, 2005). This explains why even before the outbreak of violence, large parts of the population in eastern DRC were faced with increased land alienation and impoverishment. As the more privatized form of land ownership led to a growing accumulation of land titles in the hands of a limited number of rural 'capitalists', who often worked in compliance with local ruling elites during the Mobutu administration, most farmers were faced with increasing land tenure insecurity. These dynamics seriously disrupted the traditional structures that provided farmers land tenure security in return for payment of tributes, which explains why households in this context could no longer rely on the protection mechanisms offered by traditional structures (Vlassenroot and Huggins, 2005).

The Congolese wars (1996-1997; 1998-2003) further exacerbated this land alienation process. The conditions created by the war context offered a class of local and re-

gional businessmen, politico-military elites, traditional authorities and land owners opportunities to develop new strategies to increase their control over land. Competition for land between local and regional actors stirred up violent clashes between families, clans and entire ethnic communities and further affected existing mechanisms of land distribution. These dynamics eventually pushed rural households into a very insecure economic position. The protracted humanitarian crisis further increased pressure on the land and disrupted mechanisms of farmers' protection, while abandoning production of cash crops led to considerable reductions in household income. On an institutional level, the customary chiefs' loss of power and of control over land (they are themselves the direct outcome of colonialism and the commoditisation of land under Mobutu) were further reinforced during the war, to the advantage of newly established politico-military leaderships.

The developments in Masisi (North Kivu, eastern DRC), provide a good illustration of these dynamics (Table 1 summarizes the main empirical findings regarding land tenure in our case study areas). In Masisi, customary protection mechanisms were replaced by new methods of private protection under the control of political elites and military commanders during the Congolese war, as in other parts of eastern DRC. Customary land titles thus became less secure and large parts of the land were (illegally) granted to local businessmen and rebel leaders. As a result of shifts in the local politico-military equilibrium, in Masisi land was turned from a 'source' into a 'resource' of conflict. Alternative ways of viewing land were developed to the advantage of non-native ethnic leaderships and their constituencies that were previously excluded from (indigenous) customary land rights. Loyalty to these new local strongmen was rewarded with increased access to land (Vlassenroot and Raeymaekers, 2004). In addition, the same elites tried to seize upon the opportunity to advance their goals of sub-state self-determination, including to the possession of land, which caused the development of multiple, informal normative orders (Unruh, 2003) or overlapping 'tenure niches' (Maxwell and Wiebe, 1999) regulating land tenure and access.

In Masisi, land has been at stake in the conflict and this came at the expense of land access and land use security of local rural household, many of them consisting of semi-subsistence farmers. During and after the war, military commanders and local administrators took advantage of the legal vacuum and undermined the 'customary' tenure system. People were evicted or their land was sold even when they held a customary title, a verbal contract which is easily disputed. This lack of legal protection is further exacerbated by disputes between provincial authorities and customary chiefs. Other but less secure forms of land tenure gained importance. Increasingly, rural households started renting land, often for short terms and paying high rental fees, engaged in sharecropping (bwasa contracts) or bought a plot from someone with a customary ownership (second-degree customary tribute). In addition, high levels of violence led to the displacement of many, who often sold their land at low prices. Later, the return of displaced people caused further disputes over land access. Overall, the security situation in the area has remained

unstable with the sporadic resurgence of violence. Therefore, accessing land for agricultural production is also not without risk due to continuing physical insecurity.

| | Walungu | Masisi | Lubero |
|---------------------------|---|--|---|
| Land availability | <ul style="list-style-type: none"> • population density: 193 inh/km² • increased landlessness • 65% of population <1.5 ha (2004) | <ul style="list-style-type: none"> • population density: 235 inh/km² • 40% to 50% of population <0.3 ha; 20% to 25% 0.3-2.5 ha 20% to 25% >2.5 ha • large landowners (in 1996: 512 families, mainly Banyarwanda elite, own more than 50% of arable land) | <ul style="list-style-type: none"> • population density: 253 inh/km² • high competition for land • erosion of land rights • 31% of concessions (mostly owned by landlords and militia) hold 71.2% of arable land |
| Land productivity | <ul style="list-style-type: none"> • exhausted soil • little availability of farm inputs like tools and fertiliser • land productivity reduced | <ul style="list-style-type: none"> • very fertile land (3 harvests/year) • good conditions for cattle • plots at large distance (10-15 km) • no farm inputs | <ul style="list-style-type: none"> • no fallow land, no grazing land • plots at large distance • no agricultural extension, nor inputs |
| Security situation | <ul style="list-style-type: none"> • pillaging, killing during war, displacement | <ul style="list-style-type: none"> • violence and displacement • during war military enclaves: in these enclaves ethnic and political distribution of land, confiscation of land and pillaging • displacement: distress sale of land at low prices • return of displaced people after security improved leads to disputes • up to 2005: tension between ethnic groups, armed groups still present and still sporadic violence | <ul style="list-style-type: none"> • limited presence of militia |

| | | | |
|-------------------------------------|--|---|--|
| <p>Land tenure situation</p> | <ul style="list-style-type: none"> • rental: sharecropping, tied labour • many short term contracts: only seasonal crops possible • disputes over legal status of land right (worse since war) • land declared vacant without considering local claims (worse since war) • privatisation of customary land (worse since war) • confiscation of land of displaced (since war) | <ul style="list-style-type: none"> • after war: some ethnic groups and rebels take advantage of legal vacuum and undermine 'customary' tenure system: eviction, sale of land although held under customary system • disputes between local and provincial chiefs: less protection as result • land rental: high rental fees, often for short terms and sharecropping (bwasa contracts) • second-degree customary tribute (buying from someone who paid customary tribute) • accessing plots is dangerous: rape, attacks, killing | <ul style="list-style-type: none"> • co-existing legal frameworks • conflicts between local authorities: less secure tenure as a consequence • 'illegal' concessions for large farms, eviction of 'customary' title holders |
|-------------------------------------|--|---|--|

Sources: Authors' fieldwork; Save the Children, 2003; Bahirire, 2004; Vlassenroot and Huggins, 2005.

Table 1: Overview of security situation and changes in the land tenure in Walungu, Masisi and Lubero (2005).

Next, reduced and uncertain access to markets and deteriorated terms of trade as a result of conflict and protracted insecurity can form an important structural constraint to food security, because they tend to force rural households into untenable subsistence. Before the war, local networks of markets connected remote areas with the urban centres. Urban traders exchanged manufactured products, salt and soap in return for raw agricultural produce and ore that were provided by petty traders who travelled from the mining sites and agricultural zones to the market centres. During the Congolese conflict, most of these markets have been dislocated or have witnessed a sharp decrease in activities. Because of the conflict, transaction costs associated with market exchanges have risen considerably as a result of insecurity, collapsed rural infrastructure, proliferation of taxes and disappearance of (informal) credit systems.

The market changes observed in Lubero are a good example of the described dynamics (refer to table 2 for an overview of the main market changes in Walungu, Masisi and Lubero). One of these structural impediments to market access, for example, is the shift in taxation of commercial activities. Prior to the war, taxes were imposed by several 'public' authorities, which substantially influenced the bargaining process between households and state agencies. During the war, however, several additional taxes were introduced by rebel leaderships, representatives of (privatized) administrations and even individual combatants (in the form of roadblocks). In Central and South Lubero (North Kivu), farmers have to confront a plethora of taxes and harassments before reaching the market. These include 'hygiene' taxes, city taxes, military taxes, market taxes and so on. The problem with these various taxes is that they are never exchanged against any form of service or public good. On the contrary, these are mostly pocketed privately by state agents or the military. Besides, the sums levied are not ad valorem taxes but fixed taxes per

market entry. Petty traders therefore lose out disproportionately. For some farmers, such taxes account for half of their gross revenue from the sale of their agricultural produce. Some petty traders in South Kivu report losing up to 25% of trading goods to the various checkpoints along the roads connecting the production zones to the trading centres.

An even greater influence on agricultural income results from the way markets are organized. Lacking the necessary information and contacts, farmers, like those in Lubero, mainly gain access to the market via middlemen. The collection and sale of food and cash crops, for example, is almost entirely controlled by urban intermediary traders who simultaneously act as go-betweens between local and regional (transborder) markets (Raeymaekers, 2004). This situation is not so different from comparable situations with protracted conflict, which mostly work to the benefit of traders who “are willing to take the risk involved”, in operating under such security constraints (Longley, 2003; see also: Collier, 2003). Trading via middlemen theoretically permits farmers to avoid some of the risks and transaction costs of trade that are commonly associated with protracted conflict situations (for example by taking care of the dangerous and time-consuming transport activities). But often this comes at the expense of the prices they get for their produce because they are in a disadvantageous bargaining position vis-à-vis the middleman. Farmers lose much of their surplus value when it comes to cash crops such as coffee: for instance coffee from Lubero is sold on Ugandan markets for five times the farm gate price. A similar trend affects the trade of staple foods such as cassava. Finally, there is a tendency towards barter instead of making cash transactions. This eventually makes households’ commodities less liquid. The latter phenomenon also reduces the possibility of stocking the value of their produce over time buying other goods when the terms of trade become advantageous.

As a result of these processes and shifts in the market as an institution, transaction costs introduce a price wedge between consumer prices and producer prices. This results in higher consumer prices, lower producer prices and a lower volume exchanged. Increased transaction costs, especially transport costs and taxes, reduce the scope for taking advantage of price differentials in spatially separated markets. Local farmer households can be seriously affected by this decrease in market integration as it can lead to plummeting producer prices due to a (temporal) oversupply of locally produced goods, right after harvest for example. In addition, diminished trade activities are likely to confront rural farming households with a considerably lower demand for their produce. The resulting decline in exchanged volume together with reduced producer prices leaves them with trifling turnovers and profit margins. Alternatively, decreased arbitrage reduces supply of goods not-locally produced and is one of the causes of increases in consumer prices. A market survey conducted between the end of 2001 and the end of 2002 by Save the Children (2003) on the Muheto market, Masisi, indicates a (fluctuating) downward trend in prices of locally produced food items and an upward trend in prices of imported goods like oil, soap and petrol. In sum, such market dynamics can only diminish the terms of trade for rural households thus making them more vulnerable to entitlement failures.

| | Walungu | Masisi | Lubero |
|-------------------------------------|--|---|--|
| Food production and exchange | <ul style="list-style-type: none"> • livestock almost depleted during war • mainly production for own consumption, no more cash crops (only vegetables) • South-Kivu: between 1996 and 2004 (data from Inspection Provinciale de l'Agriculture, Pêche et Elevage) <ul style="list-style-type: none"> • cultivated cropland dropped by 29% and by more than 50% in remote areas • food production dropped by 12%, vegetable production by 42%, cereals by 33% | <ul style="list-style-type: none"> • during war: livestock almost depleted; North Kivu: shift from cattle raising to small livestock • production for own consumption • production of cassava (instead of importing), no more bananas • since war: crop diseases and no pesticides • after war: chicken and pig epidemics and no medicine | <ul style="list-style-type: none"> • North Kivu: shift from cattle raising to small livestock like chicken |
| Markets | <ul style="list-style-type: none"> • market network disrupted since 1996 due to decreased purchasing power, insecurity, lack of local production, abolished (informal) credit system, taxes, collapse of infrastructure and road network <ul style="list-style-type: none"> • now small markets and barter • hardly production of cash crops | <ul style="list-style-type: none"> • low purchasing power • consumer food prices up mainly because of taxes • middlemen and absence of cooperatives: low producer prices for staple foods, • poor roads and road blocks • market volume very low • many markets disappeared, trading networks gone (e.g. for meat and other agricultural products to Goma and Kinshasa) | <ul style="list-style-type: none"> • proliferation of 'taxes' by rebel fractions, (private) administrations, road-blocks, city, market, but no services in return • disadvantageous terms of trade for 'petty' producers like (near)subsistence farmers; • middlemen: low producers' price for farmers • high transaction costs=> markets less integrated • tendency to barter |

Sources: Authors' fieldwork; Save the Children, 2003; Bahirire, 2004; Vlassenroot and Huggins, 2005.

Table 2: Overview of changes in markets, food production and food exchange in Walungu, Masisi and Lubero.

Household Responses to the Protracted Crisis and Food Deficiency

As was argued above, rural households in eastern DRC are confronted with conflict-induced institutional changes affecting land and market access. These are structural mechanisms leading to increased risk exposure and vulnerability of rural households in the region, causing entitlement failures to food for many of them. Risks directly related to the conflict, such as pillaging or physical insecurity, are other important determinants of food insecurity. It appears rural households in eastern DRC are exposed to various risks for which they are inadequately insured as formal insurance is basically absent and the capacity of informal forms of insurance are often stretched to the limits and not capable of dealing with co-variate risks brought on by conflict.

To deal with potential entitlement failures to food and other conflict-related risks under these circumstances, rural households in eastern DRC are observed to employ a wide array of coping strategies to reduce variability of food consumption. Food insecurity

rity is in part a function of the range of available coping mechanisms, both because the latter influence the severity of the impact and because some coping mechanisms may threaten future food security (Barrett, 2002), especially when the ability to cope is eroded by prolonged food insecurity. In addition, rural households in eastern DRC are found to adopt ex-ante risk management strategies which are associated with lower levels of risk. But in most cases these offer lower expected returns (Morduch, 1995; Dercon, 2005). Such strategies can therefore be a further impediment to recovering from food insecurity (Barrett, 2002).

Focus group discussions and interviews provided empirical evidence on various risk coping and risk management strategies adopted by rural households in Masisi, Lubero and Walungu. In table 3, the coping strategies adopted by these households are classified according to seven classes: (1) relying on transfers and loans, (2) foraging and wild foods gathering, (3) disposal of non-productive assets, (4) reduced consumption and energy expenditure, (5) selling off productive assets, (6) expropriation of others' resources through theft or refusal to meet normal social obligations, and (7) migration (Barrett, 2002). Both in Walungu and Masisi, households have searched for alternatives for normal food production and consumption. Changed consumption patterns, sale of productive assets, such as livestock, and migration are also mentioned. In Lubero and Walungu, some households were reported to have turned to theft of crops, treason and fighting over plots as direct and indirect ways of overcoming food deficiency.

| Risk coping strategies (ex-post) |
|---|
| 1. transfers/loans (no information) |
| 2. foraging and alternative foods <ul style="list-style-type: none"> • Walungu: use of wetlands, previously viewed as inferior, for vegetable production (trade for staple food) • Masisi: wild food consumption and sale (by poor) |
| 3. disposal non-productive assets (no information) |
| 4. reduced or changed consumption and expenditures patterns <ul style="list-style-type: none"> • Walungu: 'traditional' meal: cassava, milk, meat and vegetables; now only cassava; source of protein formerly meat and milk, now chicken and guinea pigs (formerly not socially accepted) • Masisi: only one child to school (poor); traditional medicine instead of modern and more expensive cures (by poor); changed meal composition: less and less nutritious |
| 5. selling productive assets <ul style="list-style-type: none"> • Walungu: livestock depleted • Masisi: livestock depleted; distress sale of land by people forced to displace in time of conflict; consumption of seed stocks |
| 6. theft, other socially unacceptable practices <ul style="list-style-type: none"> • Walungu: some landless steal crops; encroaching on neighbours' plots (socially unacceptable leading to disputes) • Lubero: fighting and treason over plots (e.g. sowing at night to make claim on plot) |

| |
|--|
| <p>7. migration</p> <ul style="list-style-type: none"> • Walungu: migration to Bukavu and other towns for economic opportunities • Masisi: migration to urban centres and mining areas; displacement during war (for violence) • Lubero: migration to remote areas with available land (but no infrastructure nor services) |
|--|

Sources: Authors' fieldwork; Save the Children, 2003; Bahirire, 2004; Vlassenroot and Huggins, 2005.

Table 3: Risk coping strategies adopted in Walungu, Masisi and Lubero.

While analyzing ex-ante risk management strategies adopted by rural households in Masisi, Lubero and Walungu, a distinction was made between strategies that are meant to reduce risks, to lower risk exposure by diversifying, to lower risk by temporal shifts in risk exposure or to mitigate risk for instance by saving or insuring (table 4). In Lubero, for example, households reduce risk of land confiscation by not leaving land fallow. In all three case study areas, households have lowered their risk exposure by choosing crops that promise quicker returns, and by shifts in timing, for instance, by ignoring the agricultural calendar and prematurely harvesting. Diversification of crops and the tendency to mixed cropping is a risk management strategy households have adopted in all three areas. Also diversification of sources of income is observed. In Masisi, sharecropping was also mentioned as a way to shift the risk of bad or stolen harvests to others.

| Risk management strategies (ex-ante) |
|--|
| <p>1. risk reduction: inputs and production strategies that reduce variability</p> <ul style="list-style-type: none"> • Masisi: poor minimize risk instead of maximize profit by planting maize instead of sorghum • Lubero: land not left fallow and no grazing land (fallow land risk of being seized) • North Kivu (incl. Masisi, Lubero): shift from cattle to small livestock |
| <p>2. risk internalised by others: e.g. tied labour</p> <ul style="list-style-type: none"> • Masisi: rental contracts: sharecropping • Masisi: payment in food (for poor) |
| <p>3. lowering risk exposure: strategies that imply shifts in timing to escape risk</p> <ul style="list-style-type: none"> • Walungu: disappearance of perennial crops, now seasonal crops only (because of tenure insecurity); no more cash crops like coffee; early harvesting to avoid pillaging • Masisi: disappearance of perennial crops, now seasonal crops only • Lubero: not respecting agricultural calendar (e.g. sowing much earlier to avoid risk of land seizure; overexploitation of land) |
| <p>4. lowering risk exposure: diversification (low co-variance)</p> <ul style="list-style-type: none"> • Walungu: multi-cropping instead of monoculture (due to reduced plot size), consequence: reduced land fertility; income diversification: petty trade, migration to urban centres and mining areas • Masisi: seasonal migration; petty trade (low profit margins); farm labour (in 1999: 25% of poor households, in 2002: 50%), some youngsters join militia for income generation • Lubero: production of vegetables close by village, other crops far from village |
| <p>5. risk mitigation: (self-)insurance, savings (no information)</p> |

Sources: Authors' fieldwork; Save the Children, 2003; Bahirire, 2004; Vlassenroot and Huggins, 2005.

Table 4: Risk management strategies adopted in Walungu, Masisi and Lubero.

The fact that rural households in the studied areas have adopted various risk coping and risk management strategies demonstrates they face considerable food security challenges. But it also shows that these strategies very likely have contributed to the increased vulnerability of these households. The combination of restricted access to assets, a continuously unstable and insecure environment, the continued threat of food deficiency and processes of risk coping and risk management pushed a great number of rural households into an equilibrium of low levels of assets, reduced livelihood opportunities and high levels of food insecurity. These households may therefore be caught in a “food insecurity trap”. In the following paragraphs, more arguments for the claim that rural households in the studied areas are caught in a food insecurity trap will be provided. While doing so, it will become evident why it is important to understand this process when one aims to restore food security.

As mentioned before, the use of savings, in the form of livestock, distress sale of land and consumption of seed stocks are coping strategies widely adopted by rural households in the areas under study. The conflict, however, has left most of these households with already seriously reduced stocks of secure assets: assets, such as land, livestock, tools, and seeds have been destroyed or seized, or else the quality of these assets has substantially deteriorated. In addition, more intangible but equally important assets such as social capital have been affected. Mutual support systems are overstretched; networks are diluted due to migration and conflicts and are increasingly shaped along ethnic lines. Moreover, conflict-induced institutional changes in land tenure systems have left many rural households with small, less fertile plots and insecure entitlements to land in the form of short rental contracts, second degree titles or contested customary arrangements. These factors had already limited the scope of the coping strategies available to these households and the need to continue applying such strategies has eroded the capacity of many of these households to recover.

Second, the importance of ex-ante risk management strategies for households in Masisi, Walungu and Lubero is evident from the increased importance of low risk-low return crops like cassava, early harvesting, reduced growing of perennial crops and cash crops, mixed cropping, intensive cultivation on increasingly exhausted soils, deviating from the agricultural calendar and the adoption of diverse off-farm activities. Households opt for low risk crops, diversification to spread risks, intensification to maximize output in the short term and ways to let the risks be internalized by others. Some of the strategies are clearly production decisions that aim to reduce the probability of falling short of income and to avoid future food insufficiencies. Other strategies rather aim at dealing with risks related to violence and to land tenure insecurity. But avoiding acute destitution most likely comes at the expense of accumulation since most of the adopted strategies imply low mean returns in cash and in kind. This means future income will most likely be lower which will force households to trade off between consumption and investment again, potentially further eroding their asset base and further constraining their production choices, all the while eroding chances to improve food security.

Additionally, rural households in Walungu, Masisi and Lubero also increasingly try

to generate income through trade. However, conflict-induced institutional changes in the market in the form of increased transaction costs, less integrated markets and increased importance of barter, have deteriorated terms of trade for local produce. This limits income rural households can derive from market transactions. Also, when rural households decide about exchange strategies as a means of generating income to secure access to sufficient food, they opt for ex-ante risk management strategies. Households limit trade over space and rely on middlemen to avoid risks related to insecurity but see producer prices seriously reduced. Petty trade of non-local produce, where high transaction costs and small quantities traded limit returns, is another low risk-low return exchange strategy mentioned. Households also prematurely sell produce, sometimes even before having harvested the crops. This allows households to avoid the risk of losing the harvest due to insecure land holding, looting, pests or other risks. Strategies such as advance selling might also be induced by an acute need for income to buy food. Avoiding these risks using the latter strategies, however, comes at the cost of lower producer prices for their crops.

It can be concluded that income generated through production and exchange by households in Masisi, Walungu and Lubero is inevitably reduced both as a direct result of the conflict-induced institutional changes and risk exposure, and as a result of risk management strategies. The need to assure sufficient food has very likely brought many into a vicious circle of trading-off consumption and investment, depleting assets thus further constraining production and exchange strategies. These dynamics have pushed many into a food insecurity trap. But to remediate such food insecurity traps, standard food security interventions do not suffice.

Conclusions: Remediating Food Insecurity in Protracted Crisis Situations

Over the last few years, there has been an intense debate about how to build more effective policy responses towards households affected by protracted food crises. This debate has revealed a number of deficiencies of policy responses to food insecurity that correspond to our observations. A first observation is that while food crises are increasingly recognised as complex processes that are deeply rooted in local society, interventions mostly tend to start from blueprint approaches, mainly initiated in a top-down way and limited to a standardised set of responses. Moreover, most donor agencies regard conflicts as an aberration from the normal path of development and neglect the complexity and changing environment of protracted crises (Korf and Bauer, 2002). The main reason for this seems to be the lack of assessment of livelihoods in conflict situations together with a weak link between available information about the crisis environment and policy formulation. In addition, such short-term interventionist frameworks are often narrowly commodity-focused (e.g. provision of 'seeds and tools'), but largely neglect the longer term dimensions of food security (Flores *et al.*, 2005). For example, the so-called 'do no harm' perspective on food assistance has been criticized because it largely neglects possible harmful effects of food distribution in terms of food deficit and destabilization of food systems in general (Doornbos, 2003).

This lack of a longer-term focus is also evident in eastern DRC, where most food security interventions tend to neglect both the risk management and coping strategies of local rural households, and the larger institutional shifts that result from protracted crises. International agencies involved in food security interventions particularly suffer from a ‘livelihoods gap’ (Le Sage and Majid, 2002). Standard relief interventions focus on the direct access to food and other relief supplies, and fail to address “the complex web of spatial and temporal vulnerabilities generated by (...) violent conflict” (Lautze and Raven-Roberts, 2006, p. 388). Very few interventions are actually based on assessments of the food security situation as well as structural or institutional causes of inequality and vulnerability to food insecurity, such as limited access to land and markets and associated risk exposure (see Vlassenroot *et al.*, 2006).

In eastern DRC, most international agencies and their local partners mainly address the direct food security needs of the rural population, via food aid, the support of nutrition centres and the distribution of seeds and tools. Due in part to a lack of participatory planning methods, most interventions in the region concentrate narrowly on food production, without considering the other dimensions of food security that rural households point out to be significant. The only exception are the efforts of a number of local associations that deal with the effects of land scarcity through the introduction of collective fields, microcredit systems, provision of judicial support, and conflict resolution mechanisms. While the first type of interventions might remediate food insecurity in one cycle (for example, by increasing food production), they nonetheless are unlikely to influence more structural causes, such as depleted asset stocks and the need for risk coping and management strategies as substitutes for insurance and credit. Together with the institutional causes that constrain income generation through production and exchange, these structural impediments are the main reasons for the existence of the vicious circle pushing households into a food insecurity trap.

One possible remedy to lift households out of the food insecurity trap might be to work gradually on different fronts at the same time, a strategy that has already been tested in FAO’s twin-track approach (Pingali *et al.*, 2005). On the one hand, this approach illustrates the need for short-term consumption support – so-called consumption smoothing – to avoid further asset depletion. When households no longer have to concentrate on (ex-post) coping strategies, this will reduce their vulnerability by avoiding food insufficiency. On the other hand, households need their assets to be rebuilt to make sure they can generate enough income. This is where the institutional setting plays a particularly important role, because this mediates access to assets and markets and defines the opportunities to turn strategies into sustainable livelihoods. Adequate and secure access to land, for example, can ensure that households would depend less on risk management strategies, so that they are able to adopt higher-return portfolios and deal with associated higher risks. With regard to the market, regulating taxes and improving rural infrastructure appear essential to enable households to benefit from increased storage possibilities and cash that are potentially offered via food security intervention programs. A problem remains nonetheless with the absence of effective insurances against food security crises,

because this leads households to self-insure and adopt both coping and risk management strategies at the same time. Therefore, while certainly acknowledging the utility of short-term support, this article hopefully revealed that interventions aimed at reducing and insuring for risks can complement each other.

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