

# **Drought Preparedness and Response as if Development Matters: Case Studies from Kenya**

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## **Abstract**

Few now question the link between disasters and development. The notion that vulnerability is the root cause of disasters and that it accrues from social processes and human decisions, is no longer contentious. However this convergence has not translated into mainstream practice of either development planning or emergency response communities. Vulnerability analysis and disaster risk reduction remain at the margins. Projects that bridge relief and development do not readily attract donor funding. Some exceptions have been documented. There are development NGOs involved in disaster response, and humanitarian assistance NGOs that have integrated vulnerability reduction in their disaster relief work. This paper adds to this body of literature. Based on field research in two drought prone communities in Kenya it assesses the effectiveness of the efforts of government and NGOs in integrating drought management and long-term development in their community interventions and their impacts on community vulnerability. Key informant interviews complemented review of documents and site visits. The paper concludes that while most initiatives, such as water conservation, livestock rearing, income diversification are successful in reducing short term vulnerability and have the potential for contributing to long-term community resilience, others appear to be creating dependency. They warrant careful study and systematic community involvement in order to develop appropriate and sustainable strategies.

**Keywords:** vulnerability reduction, disaster risk reduction, food relief, disaster preparedness and response

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## **1.0 Introduction**

Until the nineties, response to drought in particular and disasters in general tended to focus on relief. Initiatives to address the underlying roots – vulnerability in all its forms – were viewed as interventions that could be undertaken only after the disaster is over. Due largely to the work of disaster practitioners (e.g., Berke, Kartez, & Wenger, 1993; Buchanan-Smith & Maxwell, 1994; Cuny, 1983; Hay 1986; Lewis, 1999; Sylvester, 2004) and researchers (e.g., Cutter, 1996; Hewitt, 1997; Quarantelli, 1989; Tobin, 1999; Wisner, 1993), few now question the

disaster-development link, and the notion that vulnerability accrues not only from exposure to hazard but equally if not more so, from social processes and human decisions, is no longer contentious. There is consensus that disasters do not result from a hazard event but from the interaction among the hazard event, the physical environment and the population vulnerability.

However, this convergence has not translated into mainstream practice, indeed “the journey has only just begun” (Wisner, 2011, p. 1). Vulnerability analysis and disaster risk reduction remain at the margins<sup>1</sup> and projects that bridge relief and development do not readily attract donor funding (Analysis, 2010). Only 4% of the estimated \$10B in annual humanitarian assistance is devoted to disaster risk reduction (ECBP, 2008).

Many explanations are offered. For Christoplos, Mitchell, & Liljelund (2001) disaster mitigation and preparedness do not have “the allure of directly ‘saving lives’ (p. 185). They add, “It is hard to gain votes by pointing out that a disaster did not happen” (p. 195). Luna (2001) speculates that funding is more accessible for relief because the need is obvious and the impacts very visible. Kyle (2004), writing on Angola and Mozambique, argues differently. He contends that humanitarian NGOs are “ill suited to transition from emergency aid to development work... the skills that are needed for one are not the same as for the other... Getting food and medicine to the most needy as fast as possible... is quite distinct from the longer term goals of agricultural development in which demonstration and transfer of technological improvement is the main goal” (p. 6). Where the NGOs do not have the necessary know-how the shift from free provision of goods and services to one where what is freely distributed is the knowledge embedded in a new technology becomes very difficult, so Kyle argues.

Some exceptions have been documented. There are development NGOs involved in disaster response (Luna, 2001) and emergency NGOs that have integrated vulnerability reduction in their relief work (e.g., Anderson & Woodrow 1989; Benson, Twigg, & Myers, 2001; Christoplos et al., 2001; Remington, Walsh, Charles, Maroko, & Omanaga, 2002)

This paper seeks to contribute to this body of literature. It is based on field research conducted in April and May 2007 in two communities in Kenya – Lodvar on the north and Voi in the south – on the efforts of government entities and NGOs to integrate drought management and long-term development in their community interventions. The study is of additional significance since the communities involved are pastoralists and agro-pastoralists whose livelihoods critically depend on water availability.

In the context of Voi and Lodvar the study asked: (a) in what ways have the Kenyan government and non-governmental humanitarian assistance organisations integrated disaster risk reduction in drought preparedness and response?; (b) how actively do they involve communities and build local capacity in drought management?; and (c) what are the likely impacts on long-term community vulnerability?

The study was undertaken in collaboration with World Vision Canada (WVC), but three other international NGOs work at the research site – Oxfam Great Britain,

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<sup>1</sup> The few exceptions include DFID and SDC.

Christian Children’s Fund (CCF) and Practical Action. Data was collected through key informant interviews with 8 government officials, 13 representatives of NGOs and 14 community members evenly distributed between the two research sites. Additional interviews were held with World Vision staff in Nairobi. This was complemented by review of WVC and Government of Kenya documents. A few agriculture and livestock projects, water conservation and vaccination centers were visited. Most of the community members interviewed were either pastoralists or agro-pastoralists. The interviews were conducted in English with Kiswahili translators, all trusted community members.

In the next section the analytical framework used in the paper is elaborated and key terms clarified. Section 2 provides background information on the research sites. It is followed by a description of the drought related initiatives of the government and NGOs. The level and nature of community engagement in these activities is then discussed. The paper concludes with reflections on the potential impacts of these interventions on the long term ability of the community to deal with future droughts.

## 2.0 Analytical Framework and Clarification of Terms

There is neither agreement on what constitutes a disaster nor on the different phases of disaster management<sup>2</sup> (See for example Berke et al., 1993; IFRC, 2009; ODG, 2004; Kelman 2007; USNRC 2007; Wategama, 2007; Wisner, Blaikie, Cannon, & Davis, 2004). Even where the same terms, e.g., preparedness, mitigation, is used, the definitions can vary significantly (e.g., Benson et al., 2001).

There is agreement, however, that the different activities are more productively conceptualised in a cycle. “The disaster cycle has the distinct merit of highlighting development responsibilities in relation to disasters, as well as the need for post-disaster rehabilitation as a link to development” (ODG, 2004, p. 25).

In this paper *disaster* refers to a severe disruption of the survival and livelihood systems of a community or society resulting from the impacts of a hazard or a combination of hazards, with loss of life and property at such a scale that the local coping capacities are overwhelmed (after ODG, 2004).<sup>3</sup> In Figure 1, we distinguish four phases: *preparedness*, *response*, *recovery/rehabilitation*, and *reconstruction*.<sup>4</sup> The boundaries between the different phases are fluid, more so in the case of slow onset events such as drought.

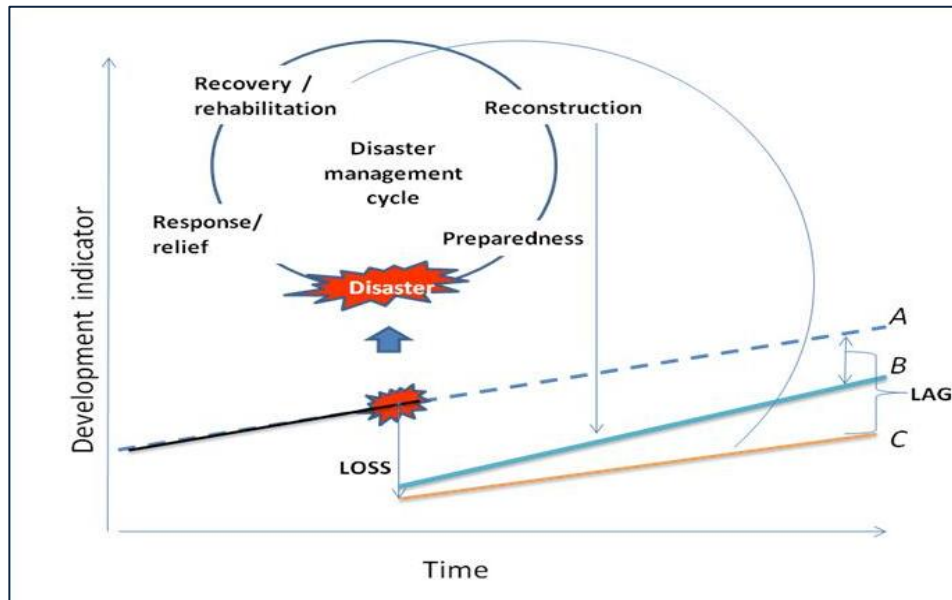
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<sup>2</sup> The U.S. NRC and FEMA for example include activities after a disaster in their definition of emergency preparedness, mitigation, in contrast to that of most disaster researchers who define these as exclusively pre-emergency activities (See discussion in Sutton & Tierney, 2006).

<sup>3</sup> This borrows heavily from the definition in DFID’s Scoping Study (ODG 2004, p. 12) but differs in that vulnerability is not subsumed in the definition.

<sup>4</sup> Other agencies show six phases but different from those of the UN (e.g., Weets, 2006).

Figure 1. Disaster – Development Link



Source. Asian Disaster Reduction Center (2005, pp. 8 & 14).

The disaster management cycle depicted in Figure 1 departs from many UN agency or UN-sponsored disaster literature, which depicts the preparedness phase not as one but three phases: disaster mitigation, disaster risk reduction and disaster prevention phases (See for example Apikul, 2010; UNDP, 2007; Wisner et al., 2004).<sup>5</sup> This paper is influenced by the work of Cuny (1983), Anderson et al. (1989), Lewis (1999), Jones, Longley, Bramel, & Remington (2002), and Wisner et al. (2004). We view disaster management as inseparable from development,<sup>6</sup> defined for the purposes of this paper as a process that leads to secure and adequate basic needs, i.e., food, shelter, health, education, choice and security, or the income to obtain them (after Yap, 1989). We argue that the additional disaggregation (into prevention, risk reduction and mitigation) is not only confusing but also unnecessary. It is confusing since the UNISDR defines disaster risk reduction as “the conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (*prevention*) or to limit (*mitigation and preparedness*) the adverse impacts of hazards, within the broad context of sustainable development” (2004, p. 17). It is unnecessary because sustainability, as defined in Our Common Future, necessarily

<sup>5</sup> For instance, Mileti (1999) defines sustainable mitigation as requiring maintenance and enhancement of environmental protection and quality of life, fostering local resiliency and responsibility and vibrant local economies, ensuring social equity and full participation, while Coppola (2007) says “Mitigation is “sometimes called prevention or risk reduction” (p. 175), and defines it as “any sustained effort undertaken to reduce a hazard risk through the reduction of the likelihood and/or consequence component of the hazard’s risk (p. 176).

<sup>6</sup> Arguing that development still occurs even while a disaster is unfolding Lewis (1999) pictures disaster management as a bicycle with the two wheels representing disaster and development as concurrent processes. The concurrence is acknowledged in Figures 2.2 and 2.3 in Wisner & Adams (2002, p. 19).

implies that disaster risk reduction be systematically and automatically integrated in the design of development interventions.<sup>7</sup>

Figure 1 also differs from that of other scholars, particularly those writing in North American disaster contexts, who characterise the disaster management cycle as unfolding in four overlapping phases – preparedness, response, recovery and mitigation. *Reconstruction* is not a distinct phase (See for example USNRC, 2007), although the term is frequently used interchangeably with “long-term recovery” or “redevelopment” (e.g., Berke et al., 1993).

We do not see mitigation, i.e., “any sustained effort to reduce a hazard risk through the reduction of the likelihood and/or the consequence component of that hazard’s risk” (Coppola, 2007, p. 175), and considered the cornerstone of disaster management by the U.S. Federal Emergency Management Agency, as a significant distinct phase in a developing country disaster context. Mitigation as practiced in industrialized countries, whether active or passive, is not easy to implement because of cost (e.g., flood proofing, or earthquake resistant infrastructure) or because of unenforceability (e.g., building codes and zoning in squatter settlements ubiquitous in developing countries). Cuny captures the dilemma, “... progress towards development is required in order to mitigate, and mitigation is required in order to develop” (1983, p. 207). The conflicting and confusing definitions do not help either. Benson et al. (2002), who studied disaster preparedness and mitigation activities of 22 relief and development agencies, reported that many interviewees “were not comfortable with the terms mitigation and preparedness, particularly the former... The fact that the word mitigation is not translatable or does not have an equivalent in many world languages is significant”. They concluded “In summary, use of conventional disaster terminology may not be particularly helpful. It is open to misinterpretation, can be off putting... The time may have come to discard the term [disaster preparedness and mitigation] altogether” (p. 204).

On the other hand, we see reconstruction as distinct from recovery in important ways. In developing countries disaster context time may bring very significant impacts. The social and political conditions contributing to vulnerabilities can sometimes change quickly (e.g., a change in governing party after a disaster), and human decisions can impact vulnerabilities many years later (e.g., introduction of a new crop variety reshaping, reconfiguring vulnerability profiles). As observed in post-tsunami Sri Lanka and Aceh Indonesia, “Disasters can catalyse structural and irreversible changes by creating new conditions and relationships within environmental, socio-economic, and political structures, institutions, and organisations” (Birkmann et al., 2010, p. 638). Successful reconstruction thus requires a shift in strategy from a past to a future orientation, a different set of skills (e.g., visioning and planning, adaptation to changed conditions), and perhaps different institutional arrangements.

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<sup>7</sup> This is explicitly acknowledged in DFID’s Scoping Study. While depicting disaster management as unfolding in 4 phases – prevention, preparedness, rehabilitation and mitigation, it states “...disaster impacts can be reduced by prevention and preparedness which are essentially development activities...” (ODG, 2004, p. 17). The World Health Organisation defines disaster preparedness as “a programme of long-term development activities whose goals are to strengthen the overall capacity and capability of a country to manage efficiently all types of emergencies...” (Wisner et al., 2002, p. 20).

*Disaster preparedness* includes actions taken in advance of disasters such as establishing early warning systems and training front-line responders. It is the “temporal connector between the pre-impact and post-impact phases” (Sutton & Tierney, 2006). *Disaster response* refers to actions taken in the immediate aftermath of a disaster, to save and protect life, property, and infrastructure. It encompasses dissemination of disaster alerts, and subsequent search, rescue and care of casualties and survivors.

When the immediate physical impacts of the hazard event are over, and search and rescue operations subside, short-term actions are necessary to re-establish essential physical and social systems: finding replacement homes for the displaced, restoring services and re-establishing some local economic activities. The restoration of a semblance of ‘normalcy’ is generally referred to as the *disaster recovery* phase (Berke et al., 1993).

The recovery phase presents opportunities to ‘reshuffle the deck’ since support for radical changes is generally strongest immediately following a disaster. This is seen as a critical phase. “It is the aftermath which will eventually become the context for the next disaster of whatever kind” (Lewis, 1999, p. xvi). Unfortunately, in practice, recovery decisions tend to be subject to intense and conflicting pressure from the affected communities, local governments and not infrequently from the donors, to rebuild as quickly as possible, with inadequate time and resources devoted to complex problem solving (e.g., Berke et al., 1993; Houghton, n.d.; Siddiqui, 2008). Thus Figure 1 suggests that successful recovery enables a community to ‘recover’ its original development trajectory (Line C).

*Reconstruction* or redevelopment is considered achieved when all pre-disaster services and structures, e.g., homes, hospitals, schools, water systems, roads, electric power, local economies/livelihood systems are not only restored but their *quality* and *accessibility* also improved. Many argue that reconstruction should be directed towards improving the conditions and avoiding the recreation of the pre-disaster conditions that helped create the disaster in the first place (e.g., Christoplos et al., 2001; Lewis, 1999; Tobin, 1999; Wisner et al., 2004). Figure 1 suggests that successful reconstruction or redevelopment enables the affected community to pursue a more favourable development trajectory (Line B). This clearly takes years and reconstruction activities generally become indistinguishable from normal economic development projects. In developing countries, reconstruction often becomes dependent on overseas development assistance with all the benefits and the vulnerabilities this implies (e.g., Jones et al., 2002; Siddiqui, 2008).<sup>8</sup>

The very few studies on reconstruction suggest that the key to successful reconstruction lies in a “capacity for embracing error, learning with people, building new knowledge and institutional capacity through action” (Berke et al., 1993), a conclusion echoed in the analysis of the post -tsunami changes in Sri Lanka and Aceh Indonesia by Birkmann et al. (2010). These characteristics were amply demonstrated in the successful establishment of the village Tin Asha among the drought-prone nomad communities in Mali by the American Friends Service

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<sup>8</sup> Donors do not always deliver on commitments for reconstruction made during the height of a disaster. A good recent example is the earthquake in Haiti. More than US\$1.35bn was committed but less than US\$23m had been delivered three months later (MacFarquhar, 2010).

Committee (Anderson et al., 1989), the seed voucher-seed fair seed recovery system in east and central Africa by the Catholic Relief Services (Remington et al., 2002), and the work of a Canadian NGO, CUSO in the hurricane affected community in Monserrat West Indies described in Berke et al. (1993).

### **2.1 Vulnerability, Coping Capacity and Disaster Risk Reduction**

The term “vulnerability” appeared in the disaster literature in the late 70s (e.g., Wisner, 1977) and spread to the development literature in the 80s (e.g., Chambers, 1989; Cuny, 1983). It is now one of the core concepts in climate change and development discourse. Definitions, approaches and indicators used vary depending on the disciplinary perspective and theorized cause (e.g., ecology, geography, sociology), the scale of application (e.g., individual, household, community, regional, national), and nature of the hazard (e.g., flood, drought, hurricane). Although there is no shared definition other than an inference for a potential for loss many suggest a link to coping and adaptive capacity to risks, shocks and stresses (See Cutter, 1996 and Schoon, 2005, for a review of the evolution of the concept and the different definitions).

In this paper vulnerability is used to imply a potential for loss, the extent to which an individual, a household, a community or population, geographic area, service or structure, is likely to be damaged or disrupted as a result of a hazard event. The case studies focus on vulnerability arising from drought recurrence in traditional communities whose livelihoods are heavily dependent on water availability.

The concept of *capacity* emerged in the 80s as a reaction to what was seen as the negative implication of *vulnerability*. Vulnerability implied or was seen to imply disaster affected communities as helpless victims. “People have their own abilities to work and skills and knowledge, social and organizational abilities such as leadership, governance and decision making systems, ties of loyalty to clan and family,... attitudinal and motivational capacities such as shared belief systems...” argued Anderson et al. (1991, p. 47).

Capacities in this paper refer to the “resources and assets people possess to resist, cope with, and recover from the disaster shocks they experience” (after Davis, 2004; Gaillard, 2010) including their access to social and support networks (Wisner et al., 2004). These capacities are enhanced when any of the assets is enhanced, e.g., financial, through for example income diversification, physical, through improved infrastructure, human, through training or education, natural, through environmental protection/resource conservation, and social, through access to supportive social networks and governance structures. Clearly increasing community coping capacities reduce the potential for loss, i.e., vulnerability (See Blaikie, Cannon, Davis, & Wisner, 1994).

Vulnerability and coping capacities are encompassed under disaster risk reduction (DRR) as defined in the UNISDR or by the UK’s Department for International Development (DFID), “the measures to curb disaster losses through minimizing the hazard, reducing exposure and susceptibility, and enhancing coping and adaptive capacity” (ODG, 2004, p. 1).<sup>9</sup>

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<sup>9</sup> Some define vulnerability as a level of exposure and susceptibility” (See for example Schoon 2005)

## ***2.2 Why involve the community***

Disasters vary in scale, severity, and duration, but there is one constant: the impacts are inherently local. During the disaster “there are important decisions to make, some of which – often very crucial ones – belong essentially to the community” (Benini, 1991, p. 4)

Studies in Mozambique and Nepal on community risk perception, however, suggest that the risks highlighted by disaster management authorities may not necessarily be those at the forefront of community concerns. Vulnerability is often defined by the community in socio-economic terms. Cholera, earthquakes, fire, and storms can rank lower than issues of governance and poverty (Yap, 2011). At-risk communities should therefore be involved in assessing disaster risks and risk information, expressed in terms and language meaningful to those at risk, and framed within their overall development aspirations and survival strategies.

Lessons from the work of Cuny (1983), Anderson et al. (1989), Berke et al. (1993), and Remington et al. (2002) strongly suggest that responding to disaster as if development matters requires: (a) meeting the immediate needs following the crisis; (b) using and enhancing the capacities of the affected communities, households and individuals; and (c) understanding and working to change the long-term underlying conditions that have contributed to local vulnerabilities.

## **3.0 The Research Sites**

### ***3.1 Lodwar***

Lodwar is located in the Turkana District of the Rift Valley Province, 740 kilometers northwest of Nairobi. Part of the Arid and Semi-Arid Lands (ASALs), it experiences two distinct rainy seasons with the long rains occurring from April to August and the short rains from October to December (WVK, 2006a). The district receives an average rainfall of 275 millimeters per annum (UN FAO, 2006).

The Nilotic-speaking Turkana pastoralists make up 90% of the population. Other ethnic groups include the Luo who originally settled in Western Kenya and the Samburu who settled in northwest Turkana. The economic mainstay of the area is nomadic pastoralism. According to the 1999 national census, the population of 459, 860 derive 70% of their income from livestock activities. The dominant livestock include shoats, cattle, donkey and camels. Livestock production has been interrupted by inadequate rains. Fishing accounts for 10% of economic activities, agricultural production for 5%, and other activities including petty trades, casual labour and handicraft sales, 15% (WVK, 1999).

In 1997 Turkana was ranked as one of the poorest districts in the country with 74% living below the poverty line<sup>10</sup>, 81% in food poverty<sup>11</sup>, and 62% in extreme poverty.<sup>12</sup> An October 1998 survey indicated that 60% of the families within the

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<sup>10</sup> Poverty line is defined as the minimum level of income necessary to achieve an adequate standard of living.

<sup>11</sup> Food poverty is defined as a condition under which people lack basic food intake to provide them with the energy and nutrients for fully productive lives.

<sup>12</sup> Extreme poverty is defined as living on less than US\$1 per day (WVK, 2006a).



WVK program area were unable to support the education needs of their children; and adult illiteracy level was 97.8 percent (WVK, 2006a).<sup>13</sup>

### **3.2 Voi**

*Voi* is in the Taita Taveta District of the Coast Province, 340 kilometers southeast of Nairobi. This mountainous district experiences two distinct rainy seasons with the long rains occurring from March to May, and the short rains from November to December. The highlands, located 2,300 meters above sea level, receive as much as 1,900 millimeters of rain per annum. The lowlands, located 500 meters above sea level, receive an annual minimum of 440 millimeters (WVK, 1999).

Taita Taveta district has several ethnic groups, the major ones being the Sagallas, Wariangulos, Taita and Durumas. The others include the Kamba, originally from the Eastern province, the Maasai from the northern and southern borders, and the Kikuyu, originally from the central region. The population density ranges from 3 persons per square kilometer in the lowlands to more than 800 in the highlands (WVK, 1999).

The majority of the 250,000 people derive their income from small-scale farming and livestock rearing. Crops commonly grown include maize, cowpeas, cassava and beans. In the lowlands, charcoal burning is also a major source of income, and has contributed to environmental degradation. Other sources of income include off-farm activities such as seasonal labor and remittances from relatives. Seventy percent of the population in *Voi* lives below the poverty line, with women being the most affected group (WVK, 1999).<sup>14</sup>

### **3.3 World Vision Kenya**

World Vision is a Christian relief, development and advocacy organization, currently working in over 60 countries. It has two main divisions – Area Development Projects (ADP) and Humanitarian Emergency Affairs (HEA). ADP offices are responsible for long-term development projects of 10 to 15 year duration, while HEA offices are responsible for managing disaster preparedness and response operations.

In Kenya ADP offices introduced Initial Disaster Preparedness Plans (IDPP) with the purpose of promoting and protecting livelihoods and facilitating post disaster recovery. The HEA offices for their part, integrate peace building and advocacy of human rights into their food relief and HIV/AIDS response work (WVK, 2005). The HEA and ADP offices meet on a monthly basis to discuss updates on food distribution status, coordinate responses initiatives and define responsibilities.

## **4.0 Research findings and discussion**

### **4.1 Government drought preparedness and response**

Perhaps the single most important initiative at the national level in Kenya was the Arid Lands Resource Management Project (ALRMP). Launched in 1995 with the

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<sup>13</sup> The World Vision ADP programming area in Lodwar covers an area of 5, 159 sq km, and only 14% of the population.

<sup>14</sup> The programming area of WVK ADP in Voi targets 22,000 people.

financial support of the World Bank ALRMP sought to enhance food security and reduce livelihood vulnerability in drought prone areas and marginalized communities in 21 arid and semi-arid districts in Kenya (GoK, 2003).

The first phase supported community-driven initiatives to reduce widespread poverty and food insecurity. The second phase started in 2003 and aimed at addressing the root causes of vulnerability by fostering economic growth and reducing poverty within the framework of Kenya's Poverty Reduction Strategy.

ALRMP follows the International Institute for Rural Reconstruction's Drought Management Cycle – *Normal, Alert, Emergency* and *Recovery* Stages, to coordinate drought management activities. Under *Normal* conditions, ALRMP encourages NGOs and governments to train communities in sustainable management of natural resources and integration of traditional coping mechanisms. Where three successive rainy seasons have failed (*Alert*), ALRMP staff work with NGOs and local governments to encourage pastoralists to sell some of their livestock ("off-take"), to convince them that it is better to have a small healthy herd as opposed to a large unhealthy herd. At this stage ALRMP rehabilitates existing boreholes and shallow wells. If rains continue to fail, *Emergency* is triggered and the focus shifts to saving human lives and livestock. ALRMP and NGOs distribute food and provide supplementary feeding for children under five years old, administer livestock vaccinations, treat livestock diseases, and continue to rehabilitate existing boreholes and shallow wells. At the height of emergencies, ALRMP delivers water to communities and schools. To avoid creating dependency, emergency activities are reportedly conducted only on a short-term basis. If the rains return, *Recovery* activities are launched, including livestock restocking and Food-for-Work (FFW) (e.g., irrigation schemes on farmer's own land).

There are some implementation challenges. The ALRMP has 21 district offices for managing project activities. District Steering Groups (DSGs) comprised of government officers, NGO representatives and community elders, implement project activities. Each district office is required to collect monthly data on drought indicators including accessibility to water resources, precipitation levels, livestock conditions including incidence of animal diseases, quality and quantity of harvest, malnutrition rates, and livelihoods trends of community members. These are published in monthly bulletins.

Because the technical abilities of the ALRMP staff vary from district to district the quality of the data collected and the bulletins timeliness also vary. The frequency of the ALRMP District Steering Group (DSG) meetings varies, as does the attendance. Involvement in the District Steering Group is voluntary and members tend to attend only when emergencies occur or when it is convenient. With such sporadic attendance it becomes difficult for members to adequately discuss, much less learn about on-going food security issues, drought management opportunities and challenges. Plan-of-actions are frequently not followed through.

## ***4.2 Community Drought Preparedness and Response***

### **Traditional drought coping strategies**

During *normal* conditions in Lodwar, the Turkana preserve meat and milk and harvest wild fruits. They avail of veterinary services, and in anticipation of drought, diversify their livestock and during drought split herds, and mobilize in search of water and forage. But these traditional drought preparedness and coping

mechanisms are under stress from recurrent droughts, increased human and livestock populations, frequent outbreaks of livestock diseases, competition and threat from wildlife. Heightened security concerns have also led to constraints on pastoralist movement in search of forage and water sources.

In Voi, community members rely on individual household efforts to prepare for drought. When clouds do not form for an extended period of time, certain trees shed their leaves and there are no flamingos, a drought is predicted and community members build silos to store their maize, and look for casual labour at a nearby gem stone mine and on neighbouring farms. Some sell their livestock at throw away prices, and produce and sell charcoal. During drought periods community members do come together and share their resources with one another. They also come together in dealing with human-wildlife and livestock-wildlife conflicts.

### **4.3 External DRR Interventions**

In Lodwar the ALRMP and the NGOs divide the Turkana District into separate areas of operations. Oxfam GB covers Northern Turkana, WVK Central Turkana, and CCF, Western Turkana. But the division is not static. NGOs often work together on projects when facing similar challenges. For example, Turkwel River runs through Central and Western Turkana. WVK and CCF work together on irrigation schemes along the riverines (WVK, 2006a).

Both CCF and ALRMP staff encourage pastoralists to de-stock at the onset of a drought and restock when consistent rains return. CCF attempts to locate buyers who will give pastoralists fair prices for their livestock. During re-stocking interventions, CCF works with WVK Lodwar ADP in introducing the fast-reproducing Galla goats. The Galla goat is quick to mature, heavy in body weight, and integrates well with local species so the introduction of the Galla goat has apparently been rather successful.

Through its Area Development Project Initial Disaster Preparedness Plan (ADP-IDPP), World Vision Kenya encourages local governments and NGOs to use local crop varieties and local construction materials (WVK, 2003).

World Vision's ADP-IDPP in Voi also calls for a multi-sectoral and multi-hazard approach to disaster management. The situation in Voi is complicated in that while some parts of the Taita Taveta District experience water scarcity, others experience water excess. This means some communities face drought, famine, fires and windstorms while others face floods and human-wildlife conflict (WVK, 2004b).

The area around Lake Jipe experiences extensive flooding because it is fed by an extensive drainage system, which includes snowmelt from Mount Kilimanjaro and runoff from Lake Chala, Crater Lake, River Luni and Njoro Swamp. Siltation is particularly high in areas that have been overgrazed and have had the sandy soil distributed. When heavy rains come, the loose sandy soil is washed away, and flows into the drainage system carving out huge gullies. Some gullies are as large as 2 m deep and 30 m in diameter. Overgrazing and the development of gullies have resulted in declining soil fertility and decreasing water retention capacity.

To control siltation, the central government's Water Resources Management Agency (WRMA) monitors and maintains riparians along riverbanks. To ensure

that the riparian is a least 3 meters from riverbanks, the WRMA constructs silt traps and check dams upstream of River Luni to prevent enlargement of existing gullies and development of new ones. The WRMA encourages farmers to plant giant bamboos as a means to stabilize riverbanks. Bamboo not used for riverbank stabilization is used as construction material, and production material for paper and ornaments. To deal with overstocking issues, the WRMA, along with the District Department of Livestock, encourages farmers to sell their livestock at auctions or to slaughter houses. As with the Turkana pastoralists, the Massai are highly resistant to off-taking but the Taitas are keen on selling their livestock; they see it as a means to acquire consumer goods.

In addition to managing flooding and silt loading, government agencies are promoting water management schemes. The District Coast Water Service Board partners with NGOs in constructing boreholes, shallow wells and water pans. The water pans, measuring 10 to 20 cubic meters, are typically used for livestock drinking purposes but when water is scarce people boil the water and use it for drinking. To supplement water from boreholes and water pans, the CWSB and local NGOs promote rainwater roof catchments at schools, dispensaries, and homes. They also construct irrigation canals to improve drainage.

With the Divisional Agriculture Extension Office, WVK's HEA office in Voi has also successfully promoted *zay pits* to improve crop production in dry areas in the lowland. Typically 2 feet deep and 2 feet in diameter, *zay pits* maximize the available moisture and harvesting runoff from spaces between pits. One and half feet of the pit is filled with dry grass and the rest is filled with compost manure and the dug out topsoil. A rim of topsoil is constructed around the *zay pit*. Seeds such as maize are planted in the pits. Depending on the seed variety used, 5 to 9 maize kernels can be planted in one *zay pit*. Since manure and fertilizer are not lost through surface runoff, soil fertility is enhanced. With water pans and *zay pits* farmers have two cost effective water conservation and harvesting techniques that can significantly increase crop yields.

### **Community involvement**

In Lodwar the NGOs and the World Food Program engage the communities in water resource management and food distribution activities.

Oxfam GB encourages communities to form water committees and provides these committees training on how to manage the *Afridev* hand pump. WVK Lodwar HEA works with communities to develop boreholes, shallow wells, water pans, and irrigation schemes. WVK provides machinery and equipment and the communities contribute labour, local materials and funds for repairs. Practical Action mobilises communities to construct water pans and shallow wells. CCF and WVK Lodwar ADP promote small scale irrigation along the riverines on the Turkwel River, one of Turkana's major seasonal rivers.

All these organisations engage the communities in selecting the beneficiaries to target for the Food-for-Asset (FFA) projects. Community members come together to decide on the selection criteria (e.g., households headed by orphans or females, or households with the smallest plot of land), identify households that meet the criteria, select the most vulnerable, and fit the number of households with the program resources. To ensure that the most vulnerable are indeed identified and ensure unbiased selections, funding organizations verify the selection list.

In Voi WVK HEA's Food-for-Assets (FFA) program aims at building community assets that have a direct impact on food security levels. Communities decide which food security related assets will be developed. Once a community has identified the assets it wants developed, the HEA technical team assesses whether the asset is viable and whether it will contribute to improved food security levels. For example, if the community proposes that a road be built, the HEA would recommend that the road connect to a viable market where produce can be sold. The communities are also encouraged to develop assets that will directly improve crop and livestock production such as shallow wells for irrigation and water pans for livestock.

But there are reportedly some inconsistencies. Community members noted that when rains are consistent, funding organizations seek their participation. For example, WVK would conduct needs assessments with community, and together with the community, decide which development projects would be pursued. WVK would also hold meetings with the community to discuss program issues and assess whether the program is making any difference. However at the height of a drought, WVK and organizations such as USAID, UNWFP and the Government of Kenya often provide relief food without community involvement in designing the logistics of food distribution, and in deciding what foods and seeds would be distributed. In some instances, the seeds distributed were said to be inappropriate because the varieties were not tolerant to the erratic rain patterns of the area. Community members said that had they been consulted, they would have recommended quick maturing and drought tolerant varieties such as sorghum and millet.

### **Enhancing community coping capacities**

#### *Human resources*

To assist communities in seeking diverse sources of funding, the NGOs provide training in proposal writing and project management. In 2006, thirty five community leaders received training on leadership, project management, WVK policies and procedures, networking and collaboration techniques (WVK, 2006a). Practical Action offers project management training and helps literate pastoralist in writing comprehensive proposals and *Memorandum of Understandings*. It also provides training on current government by-laws and policies on livestock. WVK provides training on land preparation techniques, construction of *zay pits*, and water harvesting techniques (e.g., allowing fruit seeds to germinate in basins and construction of water trenches).

#### *Natural resources*

Training on rain water harvesting and conservation agriculture is offered by Regional Land Management Unit to farmers and Ministry of Agriculture extension staff. These include the cultivation of quick maturing and drought tolerant crops such as sorghum, green and yellow grams, cowpeas, millet, cassava, composite maize and sweet potato (Ngure, 2007). Farmers also receive training in caring for Galla goats. Agricultural extension workers also introduced oyster mushroom for cultivation. Recognizing that mushrooms are not traditionally cultivated or eaten in Taita Taveta, trainers emphasize the drought tolerance and high nutritional value of these mushrooms.

The Kenya Institute of Organic Farming provides training on organic agricultural practices, educating farmers on natural and sustainable agricultural methods and

discourage intensive use of chemical fertilizers and pesticides (Ngure, 2007). The trained farmers are encouraged to demonstrate their agronomic skills and exchange information on new agriculture technologies during farmer field days.

Kenya's National Environmental Management Agency (NEMA)'s offers training on environmental conservation and sustainable use of natural resources. In contrast to those of the others, these courses elicit low participation from the communities. Discussions with community members suggest that many view NEMA's environmental awareness training as a means to deny them access to natural resources.

#### *Financial resources*

In both Lodwar and Voi, the NGOs promote micro-credit programs as a means to support the diversification of livelihood options and community development. WVK promotes the WVK KADET micro-enterprise program to increase the asset base of poor farmers.

The KADET programs in both Lodwar and Voi provide loans on a group basis and also seek to instill an enterprising culture among the borrowers. After going through a 8-week training, applicants receive group loans of up to 1,000 Kenyan Shillings. (approximately US \$15). Groups use the loans for marketing livestock, food production and basket weaving. KADET loans have helped farmers diversify their income with small kiosk businesses and the production and sale of aloe lotions and soaps.

In addition to the WVK KADET micro-enterprise programs, farmers in Voi can also borrow from *Ngu Mlambo* (Coming Together) Development Trust (NMDT) Community Based Organization on a group basis. Farmers have used their loans to process and sell honey, sunflower oil, yogurt and sun dried foods, to provide printing and photocopying services, and to start up *matau* (private bus) services.<sup>15</sup>

In Lodwar, CCF, WVK Lodwar ADP, Oxfam GB and Tupado Community Based Organization encourage pastoralists to diversify their livelihoods with agricultural production and fishing. WVK for example promotes fishing and gold mining as a means of diversifying pastoralist livelihood options (WVK, 2003). Oxfam GB implements cash-for-work (CFW) activities that require beneficiaries to participate in construction or development projects in exchange for cash. Cash-for-Work is favoured over Food-for-Work activities because in Oxfam's view money increases the buying power of beneficiaries and allows beneficiaries to choose how to spend the money.

#### **4.4 Food relief and the issue of dependence**

Three NGOs are involved in temporary provision of food aid in Lodwar. WVK Lodwar (ADP and HEA), UN World Food Programme and CCF all acknowledged that distribution of food has caused dependency amongst the Turkanas but argue that it is needed to save lives. While there have been efforts to transition from relief back to development, some activities have been stuck in the relief mode.

World Vision Kenya has maintained an HEA office in both Lodwar and Voi since the inception of its Area Development Project in early 2000. Because of this

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<sup>15</sup> The repayment rate for loans provided by NGOs is unknown.

permanent presence in these two communities, food aid distribution is done not only during droughts but also during non-emergency periods.

According to the Voi ADP IDPP, worst case scenarios occur when long rains have failed completely, human and livestock are dying, and human and livestock disease, widespread (WVK, 2004b). The Lodwar ADP IDPP adds that these conditions can further deteriorate when adverse malnutrition rates are experienced, stores have little food available, rural populations are displaced, and pastoralists migrate in search of water and forage (WVK, 2003). These worst case scenarios are reportedly experienced by Lodwar and Voi each year and so food aid has always been a part of World Vision Kenya's ADP programming and HEA response. The food assistance rations varies from 100% of individual daily food requirements for a year in Lodwar, to 50% of maize, beans and oil requirements for a year in Voi (WVK, 2004a; 2006b and 2006c).

Some organisations seek to limit dependency. UN WFP for example is planning to have a more permanent presence in communities and to facilitate community focused development projects. WVK Lodwar HEA asserts that after implementing relief activities for 6 months, it conducts an evaluation to assess whether response is still needed. If food security levels have improved, WVK Lodwar HEA would phase out relief and begin FFA projects. In Voi the collaborative efforts of governments and local NGOs in organic farming, rain water harvesting, mushroom cultivation, improved drought tolerant crop production, and *Galla* goat rearing appear to have improved community food security levels and decreased dependency on food aid. At the end of 2006, the Voi HEA office conducted an impact evaluation of its food relief activities. It revealed that there was little improvement in food security and that households were beginning to become dependent on the assistance. In May 2007, WVK Voi HEA decided to shift to FFA programming.<sup>16</sup>

The Lodwar HEA office on the other hand decided to continue with its food distribution activities, arguing that unlike the Taitas in Voi who have various income sources such as farming, livestock production, casual labour and remittances, the Turkanas in Lodwar are heavily dependent on pastoralism. With rising land use conflicts, increasing frequency of drought and fluctuating livestock prices, the pastoralist way of life is difficult to sustain. Food aid allows the Turkanas to maintain their livestock.

Perhaps not surprisingly, when community members were asked if their level of risk or vulnerability has changed, the responses were mixed. Some commented that their vulnerability to drought has decreased because they now know how to conserve and harvest water with *zay pits* and water pans, allowing them to harvest enough seeds for the following planting season. They also now know how best to pool their resources together. However, more respondents claimed that their risk level has not changed since they continue to depend on NGO assistance; they are still subsistence farmers who are heavily dependent on rain fed crop production which is becoming "unfruitful and unreliable". Other community members commented that the food aid not only fosters dependency but has also eroded their

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<sup>16</sup> The decision to undertake FFA programming is distinctly different from undertaking FFW programming. That is, initiating FFA programming requires a paradigm shift that moves the emphasis of FFW from employment generation to one of community management of assets.

traditional coping mechanisms. One community member contended that “Because of the assistance received [from NGOs], the community’s standard of living has increased and now we are dependent on NGOs to provide us the means to maintain our higher standard of living.” Some in the communities have grown so accustomed to receiving hand-outs (food and seeds) that a sense of entitlement has been established.

## **5.0 Conclusions**

In Lodwar and Voi NGOs are systematically involved in a wide range of resource management, income diversification and asset building activities aimed at sustaining livelihoods under water scarce and drought conditions. They are developing resource raising capacity – e.g., training in project development.

Food and seed distribution is complemented with food-for-work, food-for-assets and/or cash-for-work activities. The NGOs are collaborating with each other in equipping both nomadic and settled communities with the knowledge and skills in managing scarce water resources and improved farming and livestock rearing techniques. All engage the communities in making decisions in relation to the Food-for-Work and Food-for-Assets programs, respecting and validating indigenous leadership in the process.

WVK in particular is enhancing community capacity by creating opportunities for learning by doing – e.g., zay pits. It provides training and technical assistance and invests in building community support and organizing community. The targeted food aid to vulnerable groups is a good example.

These interventions appear to have reduced vulnerability in the short term, and have the potential to build resilience in the long term. Nevertheless the impacts of some activities on the long-term vulnerability of the communities warrant careful study and appropriate response.

Continued food aid is one such activity. If the frequency and intensity of drought events increase as predicted in some climate change scenarios, then pastoralist mobility becomes even more critical for reducing strain on the environment and conserving livestock inputs. However, given the realities of increased human and livestock population and heightened security concerns, unencumbered pastoralist mobility may be neither feasible nor sustainable in the long term. Pastoralists need new response options to cope effectively with the local ecological impacts of climate variability and change. Pastoralist ‘traditional’ drought early warning and coping strategies and arrangements need to be better understood. Specialists are needed (Pratt, 2002).

Irrigated farming is another. In arid and semi arid lands, agriculture is not sustainable outside riverine areas. It can stress already limited water sources, and reduce water availability unless groundwater recharge and extraction rates are sufficient to support the additional demand. If they are, the question becomes for how long. For seasonal rivers like the Turkwel, irrigation may have particular impacts on downstream water users and potentially lead to conflict. Land clearing also eliminates browsing flora around permanent water sites. This is not to say that agriculture cannot be practiced in these areas. In good rain years, rain-fed farms are able to produce good grain harvests. But if markets exist with favourable livestock to grain exchange rate, it may be more advantageous to trade livestock



for grain. Linking livestock producers to markets may be a more sustainable strategy in the long-term.

These changes will not be easy to bring about as they touch upon strongly held beliefs, and practices with immediately visible benefits. Developing the changes needs to be informed by science but will require systematic engagement of community leaders if they are to be successfully implemented.

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