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Combating Desertification in Kenya

Emerging Lessons from Empowering Local Communities

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AEZ	Agro-ecological zone
AEZ IV	Agro-ecological zone four
AEZ V	Agro-ecological zone five
AEZ VI	Agro-ecological zone six
ASAL	Arid and semi-arid lands
CAP	Community action plan
CBO	Community Based Organization
CDF	Constituency Development Fund
EIA	Environmental impact assessment
ICT	Information and communication technology
NAP	National action programme
NETFUND	National Environmental Trust Fund
NGOs	Non-Governmental Organizations
PEI	Poverty and Environment Initiative
TOT	Training of trainers
UNDDD	United Nations Decade for Deserts and the Fight against Desertification
UNCCD	United Nations Convention to Combat Desertification
WDCD	World Day to Combat Desertification
WUA	Water Users Association

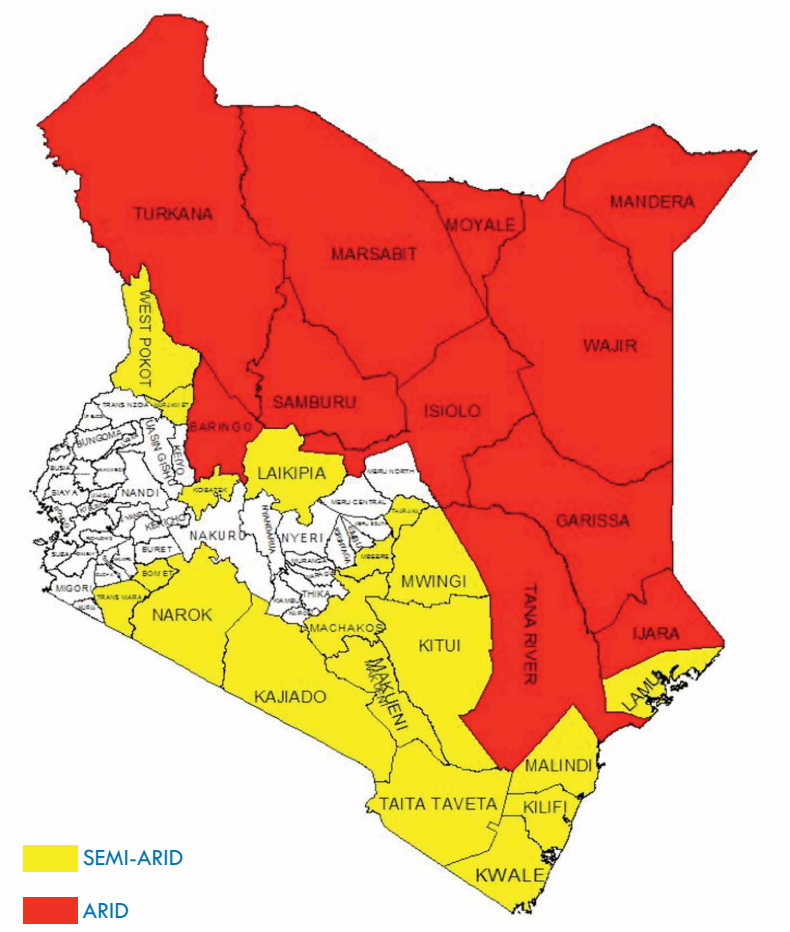
Arid and Semi-Arid lands and their challenges

1.1: The Arid and Semi-Arid lands

The Arid and Semi-Arid lands (ASAL) constitute about 80% (467,200 sq. km) of Kenya's total land mass and is grouped into geographical zones including the Savannah covering most of the North-eastern and South-eastern parts, the Coastal region, the North Rift Valley, the Highlands and the Lake Victoria Basin. The ASAL host about 35% of Kenyas population (13 million people) and over 60% of its inhabitants live below the poverty line, subsisting on less than one US dollar per day.

Arid lands: The arid lands are characterised by high ambient temperatures with a wide diurnal range. In most areas, evapo-transpiration rates are more than twice the annual rainfall. These areas receive low and erratic bimodal rainfall that is highly variable both in space and time. In most cases, rain falls as short high intensity storms that produce considerable runoff and soil erosion. Average rainfall figures are deceptive in these circumstances because there tends to be a few years of rainfall well above the average, whilst three out of four rainfall events have below average rainfall. Average annual rainfall in the arid lands ranges from 150-450 mm. The soils are shallow, highly variable, and of light to medium texture. The soils are also of low fertility and are subject to compaction, capping and erosion. A few areas have volcanic soils and alluvial deposits which are suitable for crop production. Heavy clays are found in these areas also, but cultivation is difficult on them due to their poor workability as well as salinity problems. Water availability and accessibility is highly variable and is a considerable constraint to agricultural production. Arid lands are mainly inhabited by pastoralists and agro pastoralists. Large areas are suitable only for nomadic livestock production. These pastoralists/agro-

pastoralists own about 50% of the national cattle and small ruminant herd and 100% of the camel population. Pastoralist systems contain huge amounts of critical human (language, indigenous technical knowledge, culture) and natural (uniquely adapted breeds of plants and animals) capital.



Map of Kenya showing ASALs (Government of Kenya, 2012)

Disclaimer: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations

Semi-Arid lands: The lands receive between 500 and 850 mm of rainfall annually and are categorized as follows:

- • Semi-arid areas with mixed rain-fed and irrigation agriculture and high economic and political disparities
- Semi-arid areas with encroaching agro-pastoral use by marginalized smallholders
- Semi-arid areas with predominantly pastoralist use in the economic and political periphery
- Semi-arid areas that include game parks and reserves and their surroundings. Examples include Kajiado, Narok and Transmara, Laikipia, Baringo, parts of Samburu, parts of Marakwet and West Pokot, parts of Meru north and central, Tharaka, Mbeere, Mwingi, Kitui, Machakos and Makueni. Also covered under this category are parts of the coast, except Tana River district and a small part of central Kenya. These districts fall into two agro-ecological zones (AEZ); AEZ IV (mixed crop-livestock production farming system) and AEZ V-VI (maize/cowpea/pigeon pea farming system).

1.2: Natural, physical, financial and social capital

ASALs are well endowed with stocks of natural capital e.g. diverse range of flora and fauna, with a comparative advantage for livestock and wildlife production based on natural pasture. Mining and quarrying activities also take place in the ASALs. Due to years of neglect, ASALs suffer from lack of physical capital – roads, schools and health facilities. With scattered and mobile settlements and low purchasing power, markets are poorly developed. ASAL districts also lag behind

in terms of access to safe drinking water, electricity and telecommunication facilities. Owing perhaps to their continuous exposure to hardship and distress, ASAL communities maintain a strong social system of resource sharing, borrowing, lending and gift-giving. Pastoral communities own little financial capital and much of what they own is in form of natural capital, especially livestock, which is regarded as both a "living bank" and a medium of exchange.

Human capital is poorly developed in ASAL areas (UNDP, 2010). For instance, the literacy level in Kajiado and Mandera is 3% compared with a national average of 79.3%. Several reasons have been attributed to this low human capital development:

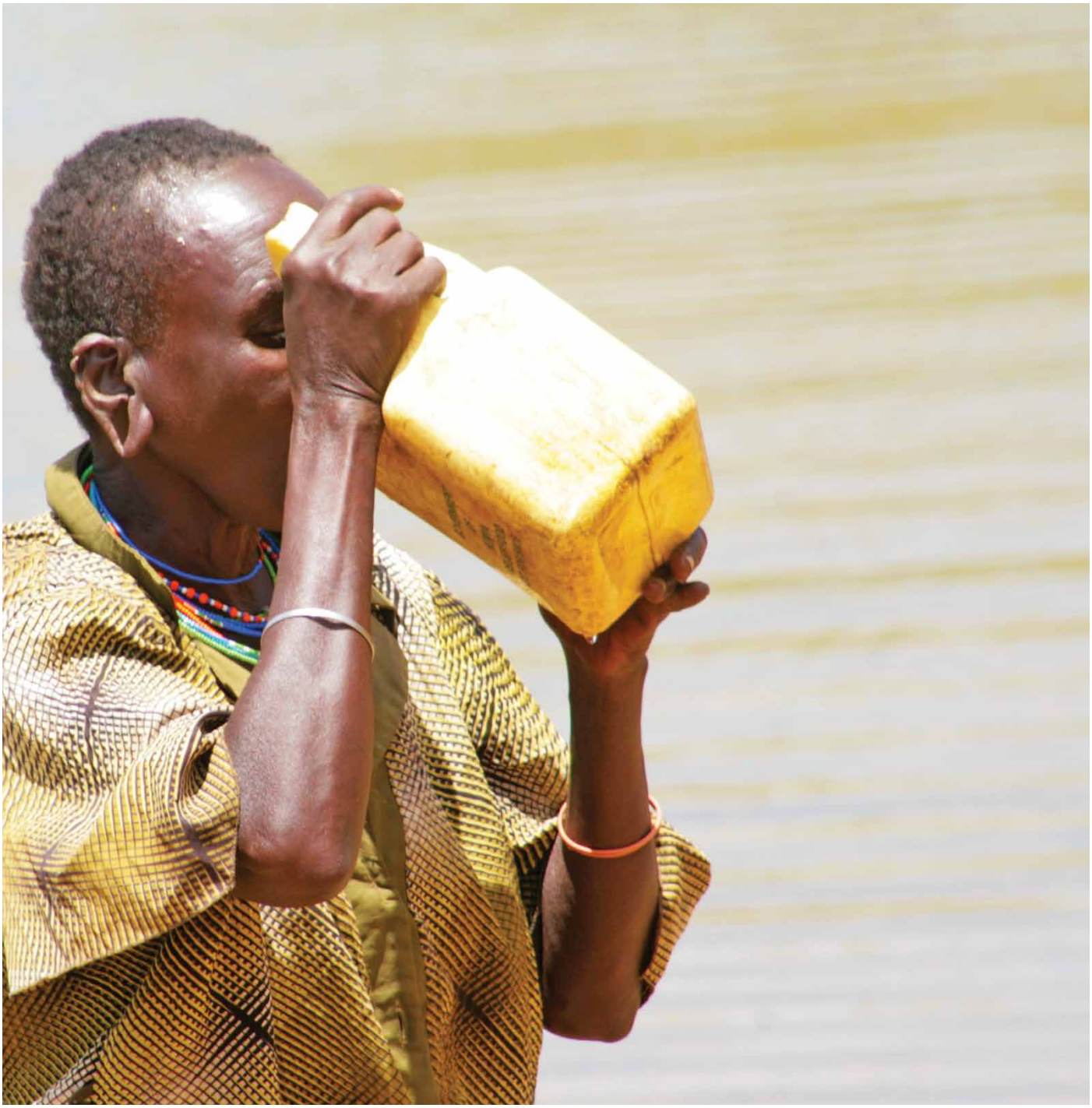
- There is a general lack of schooling facilities for both children and adult learners. In addition, the available facilities are not sensitive to the nomadic lifestyle of the inhabitants
- Most of the pastoral communities are usually not willing to send their children to school. They prefer instead to send their children to look after the family's stock of wealth, i.e. livestock. Even where parents allow their children to attend school, they usually prefer educating boys to girls
- Early marriages and traditional rites of passage increase school drop-out rates
- Apprehension among the pastoralists that once their children go to boarding schools they are usually reluctant to return to their traditional lifestyles after graduating.

1.3: Livelihood systems

Pastoralism: Those in which 50% or more of household gross revenue comes from livestock or livestock related activities.
Agro-pastoralists: These are more settled pastoralists with permanent crop fields close to their homesteads. They also keep livestock, which enable them to survive when crops fail, as it so often happens.
Fisher folk: Confined to lakes and rivers such as Lake Turkana, Tana and Athi Rivers. Problems include diminishing fish stock levels in the natural water bodies and high siltation due to soil erosion causing turbidity and low fish productivity e.g. Lakes Baringo and Turkana, and River Tana.
Pastoralists in transition: With the increasing population in arid areas, pastoral families can no longer cope with a purely meat and milk diet. Cultivation, land adjudication and wildlife management have also contributed to a continuous decline of dry season grazing areas, and as a consequence decrease in possibilities to subsist on the pastoral system.
Urban destitute/Urban populations and reliance on trade: An increasing number of ASAL populations living around urban centres are turning to trade in such centres to supplement their income.
Periodic hunters and gatherers: In periods of extreme drought, a few communities turn to wild fruits and leaves in a bid to cushion themselves from starvation.

1.4: Droughts and flood

Drought is a common occurrence in the ASALs, and is exacerbated by climate change (Carvajal-Escobar et al., 2008). Caused by rainfall deficit, it leads to shortage of water and unusually higher temperature. Droughts reduce vegetation cover and affect the nutritive quality and quantity of rangeland vegetation. Shrinking water sources increase competition between animals and threaten populations of aquatic life. Droughts occurring in areas with dense vegetation also increase the risk of wildfires. These changes inevitably alter the structure and size of pastoral herds and affect cropping in semi-arid areas. Flooding in some areas like river-plains is a natural and important occurrence. Excessive flooding can however cause lasting damage. Like droughts, extreme flooding can impact an ecosystem by eroding the surrounding soil and uprooting the vegetation. Floods can also leave behind toxins and pollutants picked up along the way. The floods that occurred in the 1998/99 El Nino season wreaked havoc in the ASALs, causing loss of grazing land and livestock. This resulted in severe human suffering and death, and the stagnation of the ASAL economy. The arid areas are usually the most vulnerable to droughts, floods and insecurity which undermine the long-term viability of development initiatives in these areas.



Combating desertification and drought

2.1: World Day to Combat Desertification

The World Day to Combat Desertification (WDCD) is observed every year since 1995 on 17 June to promote public awareness on the dangers of desertification. The day is also used as an opportunity to inform the local and international community about the implementation of the United Nations Convention to Combat Desertification in those countries experiencing serious drought and/or desertification, particularly in Africa.

The General Assembly resolution on the observance of the Day invites all States to devote the WDCD to promoting public awareness through the publication and dissemination of documentaries and the organization of conferences, round-table meetings, seminars and expositions relating to international cooperation to combat desertification and the effects of drought and the implementation of the provisions of the UNCCD. It also invites all relevant United Nations bodies, within their mandates, and non-governmental organizations to promote WDCD.

The objectives of the WDCD observance include:

- • Sensitising and educating the public on the negative impacts of desertification and drought
- Supporting community initiatives in combating desertification and drought
- Bringing together development partners including potential donors and local communities with a view to building partnerships with the affected communities
- Building local capacity to address issues related to sustainable land management and desertification

2.2: United Nations Decade for Deserts and the Fight against Desertification

The United Nations Decade for Deserts and the Fight against Desertification (UNDDD) is another international framework that recognizes the need to conserve and rehabilitate degraded land for enhancement of socio-economic wellbeing of the more than 2 billion dryland inhabitants worldwide. The launch of the framework on 16 August 2010 marked the beginning of a decade (2010-2020) long strategy seeking to raise awareness and action to improve the protection and management of the world's dryland ecosystems. World leaders have echoed the UNDDD as an instrument for laying strategies required for supporting sustainable management of natural resources. For example, while launching the strategy during the Second International Conference on Climate, Sustainability and Development in Semi-arid regions, the UN Secretary-General Ban Ki-moon reiterated vulnerability of drylands to acts of degradation and climate change. This affirms the centrality of human dimension on matters of desertification and drought.

2.3: Kenya National Action Programme – A framework for combating desertification

Kenya ratified the United Nations Convention to Combat Desertification (UNCCD) on 24 June 1997. UNCCD, adopted on 17 June 1994, is an international legal agreement for action to combat desertification and mitigate the effect of drought in arid, semi-arid and dry sub-humid zones. One of the main commitments of the affected and developing country Parties to the Convention is to develop national action programmes (NAPs),

which serve as guiding frameworks for the implementation of the convention. In Kenya, the NAP was developed in 2002 through a popular consultative process, using a bottom-up approach that culminated in the First National Forum. Consultation workshops were conducted at local and national levels for the stakeholders to deliberate and make recommendations on NAP. The recommendations form the bulk of the NAP document, which has been subjected to stakeholders' review and adoption. The document is divided into three parts; background, priority areas and implementation strategies.

The Kenya NAP aims at reclaiming severely degraded areas, rehabilitating partly degraded areas, reducing further degradation of affected areas, and conserving areas that are not yet degraded. These goals will be mainstreamed into the national objectives of sustainable development that focuses on poverty alleviation, enhancement of food security, and environmental conservation. The specific objectives of NAP include:

- Develop mechanisms for effective implementation of activities identified under NAP process in a flexible and iterative process
- Mainstream the identified NAP priority areas into major national development initiatives and frameworks
- Facilitate active participation of all stakeholders, particularly the local communities in the NAP process
- Establish a spirit of partnership among cooperating institutions
- Strengthen coordination by putting in place relevant policy, legal and institutional frameworks
- Ensure sufficient and sustainable financial resources and mechanisms.

2.4: Commemoration of the World Day to Combat Desertification in Kenya

Commemoration of the World Day to Combat Desertification (WDCD) in Kenya involves grassroots communities. Every year the National Steering Committee develops criteria for involving Community Based Organizations (CBOs) affected by desertification to host the event to mark the day. The WDCD initiative in ASALs of Kenya support local communities to adapt and build resilience by seeking to:

- Increase food security through enhancing the drought resilience of local agricultural practices
- Reduce poverty through diversification of enterprises to improve livelihoods
- Facilitate the integration of adaptation to drought into Kenya's sustainable development plans and policies
- Undertake measures to reduce the vulnerability of inhabitants of ASALs to vagaries of drought
- Illustrate how national policies through NAP may be influenced and modified based on lessons from the field.

Table 1: WDCD commemorations in Kenya, 1995 to 2012

Year	Venue	Theme	Activities
1995	Nairobi	Initial awareness creation on the (UNCCD) Convention	Poster session at UNEP and field trip to Elangata Waso, Kajiado District
1996	Nairobi	Bridging the gaps between public and private stakeholder participation	Private sector, community members, youth and policy makers workshop
1997	Maralal, Samburu District	Building sustainable partnerships in combating desertification	Support selected CBOs on Community Action Planning in Samburu District
1998	Ngurunit, Marsabit District	Supporting communities to combating desertification	Support CBO in Ngurunit, Samburu District, to construct a water reservoir and to protect a water source (Ndarawai Springs) for livestock and human use
1999	Morulem, Turkana District	Empowering communities to combat desertification	Provision of management skills & basic tools to Morulem community of Turkana District to enable them to sustainably manage a community irrigation scheme
2000	Kitobo, Taita-Taveta District	Community capacity -building for participatory resource management	Support to community initiatives: Majengo Irrigation Scheme/ Kitobo Water Users Association, and training Lukuudo Kwa Wose Women Group on energy conservation methods
2001	Kimu, Mwingi District	Combating desertification through enhancing Food Security	Support to local community initiatives, particularly on soil conservation
2002	Meisori, Baringo District	Promoting alternative livelihoods to combat desertification	Support towards land rehabilitation and expansion of Marti Earth Dam and community training on participatory planning methodology
2003	Langobaya Location, Malindi District	Controlling land degradation through improved use of water	Support towards land rehabilitation, expansion of water project and improvement of crop and livestock production
2004	Ongata Naado, Narok District	Reducing land degradation and mitigation of human-wildlife conflict	Support to community to up-scale environmental activities towards improvement of livelihoods

2005	Guguf CBO, Wajir District	Promotion of energy efficiency by improving traditional kilns to reduce excessive destruction of trees	Support for sustainable use of natural resources
2006	Mandate the Future Youth Initiative, Isiolo District	Highlighting the beauty of deserts and reducing desertification."Don't desert desertification"	Support for establishment of trees and shrubs e.g. *Gum arabica, Aloe vera,* and *Jatropha* for conserving the environment while promoting income generation for poverty-reduction
2007	Kailer CBO, Marigat, Baringo District	Desertification and Climate Change – One global Challenge	Support community initiatives towards poverty reduction while adapting to climate change
2008	Gitughi Youth Group, Taita -Taveta District	Combating land degradation for sustainable agriculture	Promotion of diversified agricultural systems for improving livelihoods of rural communities
2009	Nuru CBO, Kinango District	Conservation of land and water for future generations	Realization of food security through diversified income generation activities for poverty reduction and environmental sustainability
2010	Naitushurr Womens CBO, Narok District	Ensuring rich soils for better community livelihoods	Support to control declining vegetation cover due to deforestation, extensive monoculture, and overgrazing
2011	Nyakonya CBO, Suba Disrict	Role of forests in keeping drylands working	Support to community homecraft development, rain water harvesting and tree planting
2012	Kipini and Mapato CBOs, Tana River District	Importance of ensuring healthy soils in sustaining life – and reduction of land degradation to zero	Promotion of afforestation, riverbank protection, and rehabilitation of Lake Shakababu

Source: File records, Poverty and Environment Initiative (PEI), Kenya

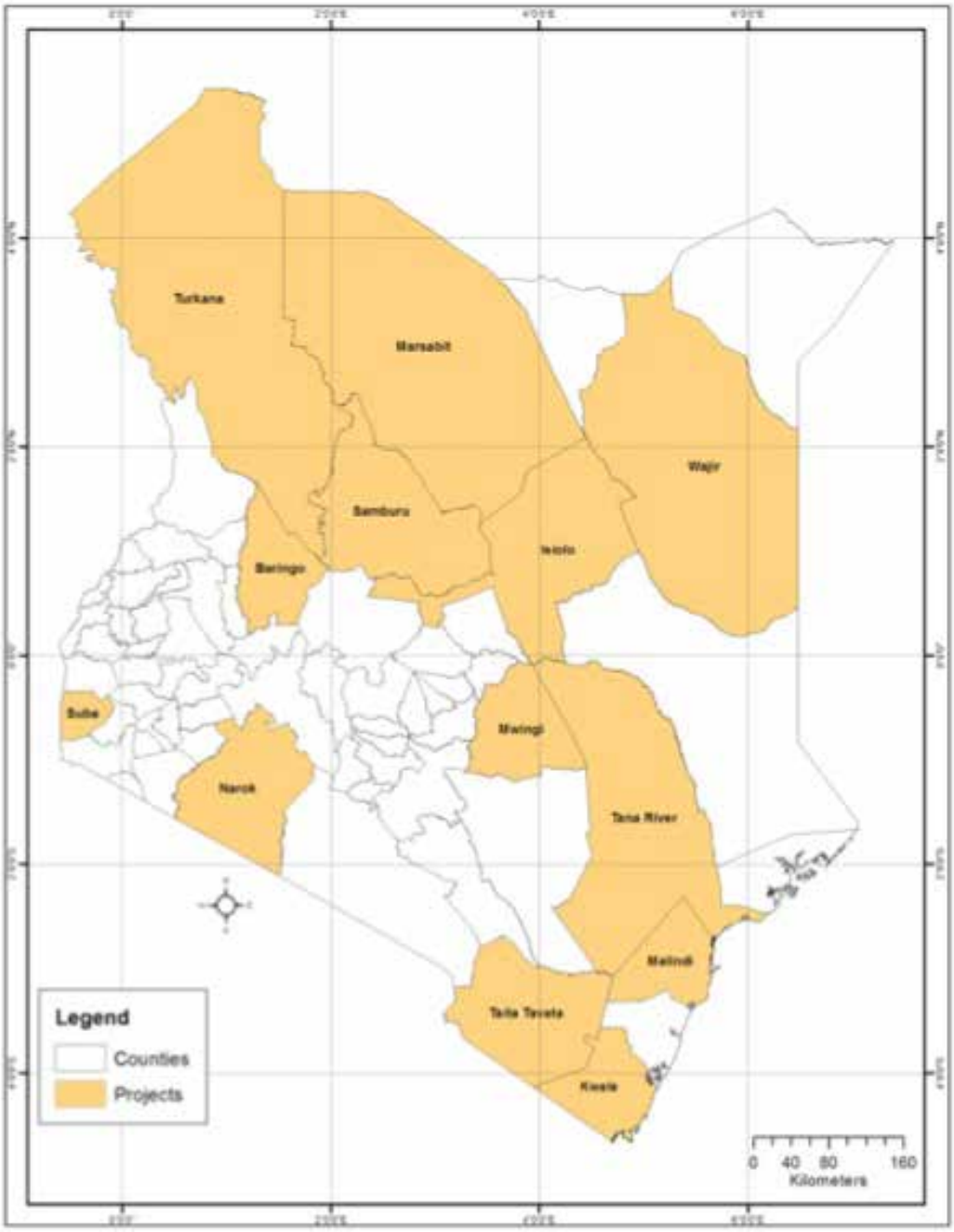


Figure 2: Map of Kenya showing sites of WDCD commemorations in Kenya, 1995 to 2012 (Source National Environment Management Authority)

Disclaimer: The boundaries and names shown on this map do not imply official endorsement or acceptance by the United Nations.

Case studies from local communities in arid lands

Case study 1: Meisori community based organization, Baringo

The Meisori community is pastoral and experiences frequent drought. It is based in Baringo County, and is composed of 25 community groups with about 8,000 members. They engage in improved livestock production, improved crop production and seed multiplication, livestock feeds production, rangeland management, and building and maintaining water pans. With UNDP support, the CBO mobilised additional resources to improve their livelihoods. The progress made includes:

- Purchase of 15 private fields in every village for feeding livestock during the dry seasons
- Construction of 26 embankments to prevent soil erosion in the villages
- Formation of 10 women groups that have continuously multiplied a variety of crop seeds
- Initiation of a livestock fattening project. More than 15,000 livestock comprising of 9,000 goats and 6,000 cattle have been marketed through the initiative, fetching better prices. The money is used to meet household needs and is re-invested in agricultural production
- De-silted a water pan that now holds more than 1.2 million litres of water which can last up to 3 months in the dry season. This has led to 300% increase in capacity of the communal watering point for the livestock and reduced drought related deaths of livestock by up to 65%
- Bee keeping using improved (Langstroth) beehives. By 2011, more than 200 improved beehives had been acquired by farmers who preferred it over the traditional log hive. High quality honey production has increased five-fold from one to five kg per harvest per beehive

- Reduced soil erosion through establishing and maintaining grass strips in private fields. This has also led to more stable soil, and less siltation of the water pan
- Higher income from improved seed multiplication at small scale has attracted youth and women into farming
- Continuous learning is taking place. Skills gained by group members through training and exchange programmes are being transferred to others

"I have personally planted more than 600 trees on my farm of which 420 have survived and they hold the soil together. After making contour terraces, I harvest more vegetables and now fruits are coming up. My cattle benefit from the water pan and I now have a bigger and healthier herd that is fattened before marketing"

Veronica Lempakamy (Meisori)

Case study 2: Naitushurr Enkolia Widows Group, Narok

Deforestation and land degradation was advancing at an alarming rate in the local community, which led to malnourished cattle. This was compounded by deaths of household heads due to HIV/AIDS. In response, Naitushurr Enkolia Widows Group was started by 30 widows to tackle the challenges. It was formed to provide moral support to widows, improve literacy, engage in improved beekeeping for higher income generation, and lobby for private land tenure for better access to and control of land resources by women. Support from UNDP propelled the CBO ahead through their engagement in:

- Construction of 30 improved traditional houses (Manyattas) that were more confortable
- Establishment of private fields to supply more fodder to livestock. The extra grass is sold

and land degradation has been reduced by 30% in those fields

- Acquisition of 25 improved beehives where members use the honey for domestic consumption including medicinal purposes, as well as selling it to generate higher income
- Tree planting. Each member planted at least 25 trees in their homestead, that increased tree cover in the village by 40%
- Dressmaking using beeds as an alternative enterprise to charcoal making has reduced tree cutting by 50% in the local community

"My livestock are healthier than those of my neighbours and I now sell my goats at USD 75 each compared to my neighbours who sell theirs for USD 40. Last year, alone I earned USD 300 from selling grass and I now earn USD 50 a month from my kitchen garden".

Eunice Laipoloi (Naitushurr)

Case study 3: Mandate the Future Youth Initiative of Ngaremare Division, Isiolo

This youth initiative was established by 35 members in 2005, and its registered membership has now grown to 55. It also has 150 non-registered members and its commercial activities benefit about 1,750 community members. The main reason for the formation of the group was to engage the youth in income generating activities that would help arrest land degradation and deforestation.

Following UNDP support, the youth group leased a training centre and acquired resources for various enterprises. Some of the key achievements of the youth group include:

- A five-fold increase from 27 to the current 135 household members actively involved in harvesting Gum Arabica from trees. Training in small enterprise development has

enabled group members to extract high quality product that fetches good prices

- Construction of a collection and marketing centre for Gum Arabica in 2008, that is able to serve 250 members
- Improved beekeeping where 75 Langstroth beehives were purchased, tripling high quality honey production compared to the tradition log hives
- Intensive horticultural production involving the cultivation of onions and tomatoes, and construction of simple greenhouses that has resulted in triple income from the enterprise
- Commercial production of various types of tree seedlings that are sold in Isiolo town. Between 2008 and 2011, the youth managed to sell over 10,000 tree seedlings
- Increased local tree cover by 9% following free distribution of seedlings to households willing to participate in environmental conservation efforts
- Introduction of Aloe Vera production for environmental conservation and income generation. In the last 3 years, the group has expanded its cultivation to over 13 acres, and harvested more than 1,000 kg. Innovative utilization of this crop is underway where it is processed to produce medicines and soap for the local market
- Introduction of Jatropha as a new cash crop for biodiesel production. Production of this crop has been going on for two years now and has a ready market once harvesting commences

"I have made tremendous financial gain because I now earn at least USD 70 from honey sales, USD 350 from resin, and USD 120 from tomato and onion farming annually".

Peter Losu Loyan (Mandate the Future)

Case study 4: Nuru community based organization, Kinango

The Nuru community has a population of 26,000 people. The ecosystem is deforested with widespread land degradation. Nuru is an umbrella CBO established in the year 2000, and consists of 30 registered community groups with

1,800 beneficiaries. The Nuru Community has made tremendous development over a 3 year period. Implementation of the community action plan has led to the following achievements:

- Establishment of a community information and communication technology (ICT) centre that consists of a multipurpose hall. It has computers, printers, internet facilities, satellite television, radio, public address system and projector
- ICT training and certification of more than 800 community members, with employment co-benefits where 6 permanent and part time employees manage the centre
- Establishment of tree nurseries that have supplied over 600,000 tree seedlings. The tree cover on farm has increased by about 4% and community members have now come up with their own tree planting timetables during rainy seasons
- Strengthening local agricultural extension for improved agronomic practices, that has lead to realization of higher yields e.g. of maize from 2 to 6 bags per acre
- Capacity building on natural resources management. More than 600 community members have undergone various capacity building workshops to assist Nuru community conserve the environment
- Community water supply to 400 households, with a target of 1,000 households in the next two years
- De-silting the community water pan, enabling it to accommodate 5 times more water than before and keep over 15,000 livestock watered for at least 3 months during the dry season. A major tree nursery is now located adjacent to the pan and currently has over 5,000 seedlings
- Aloe Vera development as a commercial and environmentally friendly crop
- Adult and early childhood classes for reducing the high illiteracy level
- Initiating savings and credit schemes to spur entrepreneurship for the women and youth
- Improved livestock husbandry and marketing by households through controlled stocking and fodder development
- Kitchen gardening to produce fruits and vegetables for household consumption and income generation

"I now earn a combined total of USD 950 from horticulture, cereals, Aloe vera cultivation and livestock in a year. I have planted 300 trees on my farm and occasionally use the water for irrigating my kitchen garden. I use the Nuru community centre for computer training, and occasionally watch television"

Mariah Mwatsahu (Nuru)

Case study 5: Morulem Community Irrigation Scheme, Turkana

The Morulem Community Irrigation Scheme was established in 1978 with the aim of providing the Turkana agro-pastoralists an opportunity to cultivate crops and keep livestock on a settlement scheme with limited migration. It has 3,000 members and the community population has risen from 13,500 in 1978 to the current 18,000 due to immigration of internally displaced persons into the scheme. Water from Kerio river is used for irrigation and each member has 2.5 acres of land for crop cultivation. There is a Scheme Management Committee that is supported by functional committees with grassroots representations which have the mandate of coordinating cultivation of crops, repair of infrastructure and de-silting of the water conveyance system. It is divided into five blocks, supervised by five committees. The committees ensure day-to-day operations and maintenance work, as well as looking into the farmers' welfare. The impact of the irrigation scheme activities is summarised as follows:

- • Job creation where over 500 people have been directly employed in the Scheme
- On average annual cereal production per acre has increased from 8 to 13 bags, and 30% of the families have food for 12 months except during extended drought period
- As a result of expansion of the scheme, a viable alternative to livestock production for household survival has been created
- Most farmers (90%) have been trained on improved agronomic practices and use their knowledge on farm. They also disseminate it to local community members
- Scheme members are processing land title deeds for the land. This may set a precedent for farmers on similar schemes elsewhere
- Vegetables and fruits are now produced and earn each member over USD 10 per month
- The consumption of vegetables and fruits amongst local community members has more than doubled. Mothers have been taught basic health and human nutrition, and there is 50% reduction in child mortality in the area
- A private tree nursery was started as a result of the scheme activities. Over 300,000 trees have been planted in the past 7 years by the community adjacent to the scheme, and 10,00 multipurpose trees have been planted within the Irrigation Scheme Land
- Multipurpose trees that fix nitrogen have reduced fertilizer use by 10% over the past 10 years

- Over 2,900 local community members have undergone training in either irrigation farming, or management and leadership skills. There is substantial human capital improvement in the scheme
- Water borne disease incidences have dropped by 75% in the past 10 years alone. So far, more than 12,000 members of the community now have access to safe clean drinking water
- Environmental sanitation has improved and construction of very improved pit latrines has increased by 80%

"I expanded my farm to 3.5 acres from half acre. I started harvesting 20 bags of maize, 4 bags of sorghum and finger millet, several kilos of vegetables and plenty of fruits and pulses per acre of land. My annual income from crop production shot up from USD 65 to USD 700, and I decided to reduce the number of livestock I possessed from 3,000 to only 250 in order to live a more sedentary life. I also have a tree nursery from where I have sold over 100,000 multipurpose trees and donated over 10,000 seedlings for free to fellow farmers in the neighbourhood".

Erebon Ewoton (Morulem)

Case study 6: Kitobo community based organization, Taita-Taveta

Kitobo is an umbrella CBO based in Taita-Taveta. The area experienced frequent conflicts from livestock keepers and crop farmers over water resources. In addition, it faced growing deforestation and

overgrazing. In order to deal with these problems, the umbrella CBO was established in 1998 with membership drawn from 15 community based organizations. Project implementation enabled the community to achieve the following:

- Develop a community action plan every 5 years which outlines community objectives, activities and targets for improved livelihoods
- Formation of a Water Users Association with a membership of 240 people from the community, led by a Water Committee. It has enabled judicious use of water for households, livestock and crop production
- Enabled 22,000 community members to benefit from the water supply project by having access to safe and clean water
- Reduced water borne disease incidences by 70% leading to a more healthy and productive community
- Since 2005 when the first phase of the water project was completed, there has been a 35% rise in school enrolment by girls, attributed mainly to the water supply system that freed time they spend in fetching water
- Reduction of water related conflicts between livestock keepers and agricultural households by 90%
- Increased small scale production of horticultural crops by 80%. This has led to an increase in household income by USD 100 per acre of land per household
- The community now has appreciated the importance of participatory action in environmental management. They therefore volunteer labour services and other resources to support the Kitobo group initiatives
- More than 650,000 tree seedlings have been produced, distributed and planted by households to conserve the environment since 2005
- There is a higher level of environmental awareness because of educating local community members. More than 4,000 community members have undergone training on various issues including environmental management, improved agricultural production, education, and basic health care.

"I joined the other women and men in identifying community needs and priorities. All pointed to one thing; water! Our group used the funds to embark on construction of a water treatment and supply plant at the foot of the valley where the community permanent springs originate. The UNDP money was used to purchase an electric pump, get power supply line and fence off the water pumping station. We also received additional funds from the Constituency Development Fund (CDF) and other donors that were used for laying the initial water supply pipeline".

Annastansia Kinyoda (Kitobo)

Emerging lessons and challenges

4.1: Lessons and best practices

The best practices were developed in a participatory and inclusive way, enabling local community members to be actively involved, committed and own the process, leading to substantial impact. They can be scaled up and also implemented in local communities elsewhere.

4.1.1: Community acceptance and active participation in development of action plans and subsequent implementation of community projects is key to their success

The projects in Narok, Baringo, Turkana and Taveta demonstrate how an integrated approach that brings together the provision of improved knowledge of agronomic practices, greater access to farm inputs and water resources, income diversification, environment friendly practices, and the engagement of policy makers can strengthen

the capacity of rural Kenyans to cope with drought today and in the future. Planning and implementation of the WDCD projects was done through participatory processes which empowered the local communities in the selected ASAL areas to identify their own needs and priorities. Where proper coordination and development partner support was sought, it was relatively easy to convince and mobilize members of the local community to implement community action plans (CAPs) and requisite activities.

4.1.2: Both livelihood improvement and environmental management projects should spur the community to support and participate in project implementation

Activities aimed at supporting improved livelihoods and those that protect the environment reinforce each other. This was vividly demonstrated in the projects in Narok, Baringo, Turkana and Malindi. For example, reduction in the livestock herd size, construction of terraces and the creation of grass fields not only provided enough food for the livestock and the community but also improved soil conservation. In most of the CAP activities implemented across the CBOs in the various regions, it was clear that those projects that recorded better successes involved community members either practising agroforestry (a mixture of tree planting and crop cultivation, or fruit tree cultivation). The implication was that as members of the community sought to regenerate their degraded environments, they also sought economic, social or environmental returns.

4.1.3: Efficient utilization of development partner/donor resources complimented by community inputs such as provision of labour is essential for the success of participatory community projects

A significant number (75%) of the CBOs funded by UNDP for the intended project outputs contributed to project implementation. Success was achieved by the well-organized democratically elected CBO leadership which in turn mobilized local communities to solve local problems. For example, CBOs in Malindi, Taveta, Turkana and Narok quickly implemented CAPs.

4.1.4: Drought mitigating projects have greater chances of success in the ASALS because drought is a major challenge to improvement of the livelihoods of local communities

There was a strong orientation towards projects that provided an opportunity for the community to mitigate against the effects of drought, control of environmental degradation and support to improving livelihoods.

4.1.5: The use of indigenous knowledge catalyses achievement of project outcomes

The CBOs were found to be conscious of natural resource management. They have 'traditional' practises that point to a certain consciousness about the desire to protect the fragile ASAL environments. For example, in Narok, the groups ensured that livestock were grazed on rotation which in essence meant that certain areas were 'fenced off' to regenerate fodder before livestock were allowed in to graze there again. In the meantime as the animals moved into these exclusion zones, the overgrazed zones were

then fenced off for several months to allow them to regenerate again. Communities have traditional knowledge and practices on how to protect their environments and therefore only need a 'little push' to become better environmental managers.

4.1.6: The more innovative communities had higher chances of success with projects that improved livelihoods

The CBOs demonstrated innovativeness in mobilization, use and expansion of sources of funding. It was observed that community unity in ASAL areas came about because of their unique challenges requiring innovative solutions. This had a positive impact on commitment levels of the CBOs. For example, communities in Baringo were mostly united due to the prolonged drought and the need to construct a water pan that would end their drought-related miseries.

4.1.7: Democratic and visionary leadership is essential for CBO success in the implementation of its activities

Democratic governance and visionary leadership of CBO affairs was the norm amongst successful cases in project implementation. Such groups consulted both government agencies and non-governmental organizations (NGOs) on issues that required technical in-put in accordance with the UNCCD provisions of a participatory bottom-up and consultative approach. It was observed that in some cases where there was lack of harmony within the CBO management, it took very little time before such organizations collapsed. Harmony within CBOs and other community groups can be attained if elected officials are transparent and accountable to their members.

4.1.8: CBOs and groups that used improved technologies realised better transformation that those that rigidly maintained traditional lifestyles/practices

Local communities were keen on integrating local knowledge in WDCD projects. In Baringo for example, both the Kailer and Meisori CBO members use kitchen gardening where crop rotation and intercropping provided livestock feeds from crop residues. At a household level, women use improved food management practices where scientific principles are followed in preparing food and preserving the same for future use.

4.1.9: Support from development partners and the government unlocks potential in local communities

Communities in ASAL areas still heavily rely on government agencies and other donors to implement various projects/programmes especially in natural resources management and in capacity building towards improved livelihoods. The ASAL communities require an initial "push" that can eventually jump start them into implementation of sustainable development initiatives.

4.1.10: Youth development initiatives face more challenges

Youth initiatives have shown greater failure rates than others. Various reasons have been given including the dynamic nature of the youth who shuttle between the rural community and urban centres in search of better education and job opportunities. Another reason is their low managerial capacity that leads to CBO mismanagement. It was also found that most of the youth initiatives had autocratic leadership that resulted in embezzlement of funds meant for community project implementation.

4.1.11: Continuous monitoring by development partners and the government as key stakeholders in the development process is essential for successful community projects

Continuous monitoring of UNDP supported CBOs should be encouraged as much as possible to enable beneficiaries provide timely feedback. This will help in undertaking corrective actions to align implementation with set out objectives of the projects. Relevant government agencies should follow same norm. Many of the CBOs indicated that they would appreciate regular communication from development partners and the government during project implementation.

4.1.12: Leadership of CBOs should consist of local community members and not outsiders

Membership and leadership of CBOs should be limited to local community members who have common interest and understanding and face similar challenges. This leads to more commitment by members and therefore ownership of the activities. CBO leaders are not supposed to be strangers to the local community because this leads to mistrust.

4.1.13: Traditional cultural practices need to be taken into account when deciding on interventions

Pastoralist communities such as the Masaai are very traditional and as such could hardly embrace improved beekeeping. They considered bees as wild animals that could not be domesticated, and honey could only be harnessed through the traditional practice of raids on beehives. In view of the migratory lifestyles of such communities, they cannot implement environmentally friendly activities such as tree planting. There is therefore need for development of community action plans that take into account the unique socio-cultural perspectives of the community.

4.1.14: Environmental Impact Assessment exercises (EIA) need to be undertaken in some local communities before project implementation

There is need for undertaking thorough EIA exercises to determine the short, medium and long term impacts of introducing particular plant species to certain areas. This is because some tree species such as the cactus and *Prosopis juliflora* that were rejected by majority of CBOs citing their harmfulness to people, livestock and the environment, were nevertheless introduced in these environments, leading to substantial negative impacts on the environment and livelihoods of the people.

4.1.15: Baseline surveys need to be done before introducing any interventions at local level

A good example is the Naitushur CBO where lack of bee fodder like flowers and lush vegetation as well as water in the catchment led to low beekeeping uptake. The community members decided to use sugar to induce honey production which didn't work, and had to be taught improved beekeeping techniques. It is therefore necessary for various interventions to be considered if there are resources to make them succeed.

4.1.16: Movement of livestock during drought and subsequent concentration of large cattle populations within watering points is responsible for increased conflict in local communities

The water pans that were constructed for agro-pastoralist communities were meant to help them cope with droughts through provision of a centralized watering point. However, the well-intended activity has created conflict whereby competition for the water by various groups has often resulted into fighting. In future, water projects meant for various communities need elaborate management and user strategies to forestall conflicts.

4.2: Mapping out challenges faced in implementation of CBO activities

4.2.1: Poor monitoring mechanism at local levels

Although a local framework for monitoring community action plan activities had been put in place, there were challenges in relation to the actual monitoring of these activities by partner organizations. There was hardly any follow up communication or feedback mechanism to understand the extent to which planned activities were efficiently and effectively implemented on the ground.

This hampered efforts by main development partners to know the impact of their support to local communities. Community leaders who had been given the responsibilities of using the monitoring tool during implementation of the CAP did not have a good understanding of its importance.

4.2.2: Inadequate financial support

The actual budgets prepared by host CBO communities and submitted to NETFUND and UNDP were hardly ever funded in full. It posed significant challenges to the CBOs and led to significant cuts in the proposed budgets to accommodate the resources provided. This has been reflected in the limited impacts of some project activities in some of the communities. In fact some of the CBOs are still shopping for additional funds to implement pending activities.

4.2.3: Limited awareness and capacity building initiatives

Capacity building initiatives and awareness campaigns were limited, resulting in low levels of understanding of the importance of community participation. It also made some communities to take long before accepting the projects.

4.2.4: Socio-cultural barriers

Certain cultural values and perspectives prohibited some CBOs from achieving positive impact when implementing CAPs. For example, nomadic lifestyles hampered crop farming activities. Similarly such nomadic communities were hardly successful in natural resources management, including planting of trees in afforestation programmes.

4.2.5: Gender discrimination

Gender prejudice and gender imbalance in CBO activities in the ASAL areas was notable. This prevented women from participating in certain critical decisions regarding income generation activities and environmental management, yet the women played a major role in the destrucion of the environment through collection of firewood.

4.2.6: Inaccessibility of project sites

Logistical challenges prevented partner organizations from accessing remote regions where most of the CBOs were based. There was therefore hardly any physical follow up action to understand the extent to which the CBOs were making progress in implementing activities.

4.2.7: Sustainability of the projects

Due to limited financial and technical support, limited awareness and socio-cultural barriers, some of the project activities may not be sustainable. This is because rampant charcoal making is still on-going in ASALs, worsening the deforestation and land degradation problem.

Conclusions and recommendations

5.1: Conclusions

A significant number of CBOs implementing the UNDP funded CAPs for combating desertification were successful in achieving desired results. A comparison of the background situation with that prevailing after project implementation leads to the conclusion that these CBOs attained different levels of success. They did this through a variety of activities including afforestation, tree nursery and community forestry management, water resources management, reduction in burning of charcoal, and use of improved livestock husbandry practises. Alternative economic livelihood activities were adopted by diversifying crop and livestock production to enhance food security and generate income. Certain ASAL communities in the coast, Rift Valley and northern Kenya regions adopted mixed farming, flood irrigation, bee keeping for honey production and horticultural farming. Other income generating activities include basket making, tailoring and making forest products. All these success stories came about through joint efforts to combat desertification at the community level.

The CBOs that were not able to successfully implement their CAPs had similar characteristics. In most cases, leadership and financial management failures were the most common characteristics. However, other aspects that were characteristic of these community organizations include lack of gender balance in organizational management and decision making process, and lack of a democratic process in electing office bearers. Some of these CBOs were mainly youth initiatives that were formed without a common goal, and became unsustainable in the long run due to migration of the youth from their rural communities to urban centres and tertiary institutions in search of employment and training.

For future engagement of CBOs in CAP implementation, it was observed that UNDP, NETFUND and government agencies involved in community partnership activities needed to put into place more stringent guidelines for selection of CBOs for funding. In addition, regular monitoring and evaluation of CBO activities is needed to increase accountability and transparency in their operations. Also, a number of CBOs received a fraction of the required funds from the development partners, and this led to redundancies in the implementation of various CAPs. Overall the partnership between the UNDP, NETFUND, government agencies and local communities achieved a high level of success in implementing the activities resulting in the improvement of community livelihood conditions and combating desertification.

5.2: Recommendations

5.2.1 UNDP Kenya

Most CBO members observed that financial constraints significantly hampered implementation of CAPs. There should be concerted effort by donors to increase the levels of funding to meet the minimum threshold for implementation of activities to combat desertification and improve livelihoods. Once funds have been allocated, there is a need to incorporate a more robust monitoring process to track the implementation, provide feedback mechanism and corrective action in order to achieve more success with majority of the CBOs. To ensure sustainability of the WDCD projects, development partners should make budgetary provision for continued capacity building, especially through training of trainer (TOT) programmes. This will increase the ability of CBOs and communities in building the required knowledge base to be self-sustaining. Lastly, while the communities acknowledged support to a single CBO, they believed that funding provided to more CBOs in a given area during WDCD would have a greater impact and net benefit flows to a large number of community members. This would reduce vulnerability of the people and increase environmental conservation within the area.

5.2.2 Government of Kenya

The government should formulate a comprehensive environmental policy that defines specific actions in ASALs. Although various legislations address issues related to development of ASALs, lack of a coherent environmental policy has led to ad hoc decisions on implementing environmental conservation activities. Such policies can only be implemented with provision of financial support, which should be included in annual budget estimates prepared by the government. The current government support targets short term activities that don't provide an avenue for sustainability. In addition to setting aside finances, there is

a need to post technical staff in the remote parts of ASALs where most of the CBOs engaged in combating desertification are based. Lack of adequate personnel in these regions has left the communities with less awareness of the links between poverty and environment, and has therefore led to rampant destruction of the natural resource base.

5.2.3 WDCD National Steering Team

While acknowledging the importance of local ownership of the projects, the CBOs proposed specific ideas that need attention. There is need to enhance water access by sinking of boreholes and supporting locally viable water treatment methods. Where water is available, there is need for expertise to enable farmers engage in horticultural production. In addition to these, there is need to promote diverse income generating activities such as bead-based dress making and improved beekeeping using improved beehives. The steering committee should not just limit its activities to the WDCD celebrations, but make a step further by partnering with ASAL communities in other areas where WDCD has not been commemorated. This could be done through specific capacity building initiatives and shared learning forums where views are exchanged and innovative ideas from stakeholders are passed onto community members.

5.2.4 Beneficiary Communities and CBOs

Beneficiary CBOs should sensitize their members to give maximum cooperation and support towards the implementation of CAPs for greater chances of success. Communities should be actively involved in the formation of local CBOs and indeed in the election of office bearers who are more accountable and transparent in using donor funds meant for community development projects. In addition, members of CBOs and their leaders should initiate TOT programmes to increase the number of knowledgeable and skilled people who can effectively conserve the natural resource base. It was clearly noted that most community members lacked basic environmental management knowledge that was essential in combating desertification. Only those households that associated themselves with particular CBOs had some knowledge on the subject matter. If a whole local community could get trained using a variety of methods including farmer field schools, then implementation of CAPs would be more successful. Further success can also be achieved when CBOs mobilize resources by developing skills of their members in writing project proposals for submission to various funding organizations. This will reduce over reliance on UNDP and its partners, and will lead to attainment of a sustainably managed environment beneficial to local communities.

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