

Improving Market Access for Dryland Commodities in East Africa

Synthesis Report

Acknowledgements

This publication is a synthesis of several baseline assessment reports prepared during the inception of the Market Access Project. The separate assessment reports included natural resources, participatory technology development, institutional capacity and gender, conflict management, and market research. The key contributors were Isabella Masinde, Anthony Njogu, Jecinta Abenyo, Dominic Ruto, Mohamud Adan, and Francis Muchiri, all of ITDG East Africa, and Michael Mbaka and Mumbi Macharia of Family Concern International. The activity was supervised and facilitated by a UNDP DDC team that included Albert Mwangi, Verity Nyagah, Sarah Anyoti, and Ruth Mwathi.

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Abbreviations and acronyms

AMREF	African Medical and Research Foundation
ALRMP	Arid Lands Resource Management Project
AWF	African Wildlife Foundation
CLOUT	Centre for Livelihood Opportunities Unlimited and Technologies
DDC	Drylands Development Centre
EAC	East African Community
KAKUTE	Kampuni ya Kusambasa Teknolojia Rahisi
MVIWABU	Mtandao wa Vikundi vya Wakulima na Wafugaji Bonde la Ufa
SNV	Netherlands Development Organisation
UNDP	United Nations Development Programme
VSF	Vétérinaires sans Frontières (Belgium)

Executive summary

A. Background to baseline survey

1. This report is based on the findings of a baseline survey carried out in four cross-border sites of global biodiversity significance in East Africa: to the north, the Loima hills of Kenya and the Moroto hills of Uganda, inhabited by peoples of the Karamojong cluster; and to the south, the Namanga hills of Kenya and the Monduli hills of the United Republic of Tanzania,¹ inhabited by Maasai peoples (box 1). Inhabitants are typically pastoralists and agropastoralists. The dryland montane forests of each area provide water and dry season grazing for both livestock and wildlife.
2. The aim of the survey was to establish which dryland commodities might have sufficient market potential to lead to an improvement in livelihoods, while enabling sustainable natural resource development; and to identify processes by which this might be achieved.
3. The themes investigated included:
 - (a) Natural resources policy landscape;
 - (b) Study of existing technologies;

¹ The United Republic of Tanzania will henceforth be referred to as Tanzania in this report.



- (c) Capacity needs assessment and gender analysis;
- (d) Conflict analysis;
- (e) Market research analysis.

4. Currently, the dryland communities rely largely on natural resources for their livelihoods, but endure biophysical, social, economic and institutional constraints that frustrate development. Institutional capacity is often poor, and the policy and legal framework unfavourable to progress in production and marketing of dryland products. Possible measures to improve market access will include capacity-building and training of communities and local institutions in such areas as natural resource management, participatory technology development, product development, marketing, information linkages, policy advocacy and conflict resolution. Improved access to credit facilities would support livelihood initiatives.

5. The survey established a great potential for production of dryland commodities. The communities were enthusiastic in identifying potential products that could be considered for marketing locally, regionally and globally.

B. Market access project

6. The survey will form the basis of a three-year project, by the Drylands Development Centre of the United Nations Development Programme (UNDP-DDC) in collaboration with selected partners, that aims to improve market access for dryland commodities, leading to

Box 1. Project sites

The study looked at four communities in two cross-border sites: Loima hills, Turkana District, Kenya, and Moroto hills, Karamoja District, Uganda; and Namanga hills, Kajiado District, Kenya, and Monduli hills, Monduli District, Tanzania.

Moroto

The Moroto hill area is one of several dry mountain forests in the Karamoja District of Uganda. These forest islands have been gazetted as central forest reserves in view of their importance as water catchments. The forests are gradually being degraded through overexploitation by the local populations and by Karamojong people from the surrounding plains. Further threats to sustainable livelihood emanate from overgrazing, insecurity and conflict between nomadic groups, natural and anthropogenic bush fires, encroachment for cultivation and human population increase.

Loima

The Loima hills, in Turkana District, Kenya, have similar environmental characteristics and problems to the Moroto hills. Threats to biodiversity include the use of mercury in artisanal gold extraction, and hunting of wildlife for meat.

Namanga

The dry mountain Namanga forests are situated in Kajiado District, Kenya. They are a wildlife dispersal area for Amboseli and Ngorongoro, though occurrence of animals such as elephant and rhino is increasingly rare. Major threats to conservation include uncontrolled felling of trees for building materials and charcoal production, overextraction of medicinal plants, overgrazing within the forest (especially during the dry season) and disruption to natural water sources.

Monduli

Monduli District in Tanzania has ten forest reserves, seven of them gazetted and three proposed village forest reserves. This district faces threats ranging from deforestation and illegal harvesting of natural resources to population increase, poverty, low awareness on the value of natural resources and inadequacy of implementation of laws. However, there is interest at village level in the establishment of wildlife management areas.

livelihood benefits for dryland populations while managing natural resources sustainably. The project will strengthen regional cooperation by addressing transboundary policy issues affecting natural resource conservation and utilization, production and marketing, and conflict resolution. The main target groups are the pastoralists and agropastoralists of the study areas, with gender and youth issues being given particular focus. The anticipated number of direct beneficiaries is approximately 24,000 (6,000 per site), with further numbers benefiting indirectly through dissemination of successful technologies and ideas.

7. The project builds on the East Africa Cross-Border Biodiversity Project, which was funded by the Global Environment Facility through UNDP and was implemented in the three East African countries of Kenya, Tanzania and Uganda through their ministries of environment and natural resources. The aim of the East Africa Cross-Border Biodiversity Project was to reduce the loss of biodiversity at cross-border sites of global significance by introducing strategies to support the conservation and sustainable utilization of their natural resources, for example by establishing alternative livelihood interventions to reduce pressure on conservation areas. Interventions included modern bee-keeping, development of jatropha as a biodiesel, pasture management, diversified handicrafts and introduction of energy-saving technologies.

8. The East Africa Cross-Border Biodiversity Project did not include a strong component for assisting communities to access markets for their products; hence the need for the proposed market access project.

C. Thematic structure of the report

9. The present report is a synthesis of the information provided in the annexes dealing with specific themes, which may be summarized as follows:

1. Theme 1: Natural resources policy landscape

10. Theme 1 presents an assessment of how the national, regional and international policy and legislative framework impacts on natural resource conservation and development. Particular attention is paid to provisions for management of transboundary resources.

11. The study established that the communities at the project sites depend on the natural resources around them to meet a wide range of communal and individual needs. Unsustainable practices, however, continue to erode the natural resource base, leading to increased poverty.

12. Kenya, Tanzania and Uganda all have policies related to environmental matters in place or being developed, and all have set up environmental agencies to coordinate environmental issues and to integrate them into national planning processes. In addition, the treaty establishing the East African Community (EAC) commits its member states to “harmonize their policies and regulations for the sustainable and integrated management of shared natural resources and ecosystems”.

13. Despite this hopeful progress much remains to be achieved in integrating management of natural resources in East Africa, particularly at the grass-roots level, where incorporation of

traditional management systems into more formal systems seems a promising way forward.

2. Theme 2: Study of existing technologies

14. Theme 2 attempts to assess existing levels of technological development in the study sites in order to establish which technologies hold promise for future development, and which technology gaps need filling. Through a process of participatory technology development, local communities would participate fully in evaluating selected technologies, put into practice improved techniques and identify information-sharing pathways to facilitate adaptation to changing circumstances.

15. The study included an environmental assessment, recognizing that technological development may negatively impact the environment, undermining the community's resource base.

16. Current technologies identified at the four study sites are typical of dryland areas, in that they are based on the limited agricultural potential of the land, and on resources available naturally: livestock and livestock products; grain crops, including sorghum; honey; tree and vegetable products, including aloe, incense, gum arabica and jatropha; minerals, including garnet and ochre; and handicrafts, included wood carvings and beaded artefacts.

17. The livelihood interventions of the East Africa Cross-Border Biodiversity Project, including pasture management, handicrafts, ecotourism, bee-keeping and household energy technologies, have already established some momentum of progress in the study areas, and will prove a useful foundation on which to build in future. Recommendations of the current study include further appraisal of potential technologies, building capacity in sustainable production and marketing, and partnership building.

3. Theme 3: Capacity needs assessment and gender analysis

18. Theme 3 looked particularly at institutional, stakeholder and sectoral capacity in the study areas, assessing their current roles and their potential to link with each other and with UNDP to bring about sustainable development. In addition, the relevance of gender issues to capacity-building was considered.

19. In all sites it was found that a large number of local, national and international organizations were already active in such areas as marketing, conservation, health and poverty alleviation. It was realized, however, that organizations did not always link effectively, were prone to lapse into dormancy and often lacked the skills to function efficiently. As a result huge gaps remain to be filled in water provision, market development, implementation of appropriate technology and provision of credit facilities.

20. Traditional roles in the four study sites are typically gender specific, with men responsible for livestock, decision-making, asset ownership and most money transactions, and women responsible for domestic matters, fetching water, and tillage. Such rigid lines of demarcation are preventing both sexes from fulfilling their full potential.

21. A number of organizations and institutions were identified in the study sites that could play a significant role in future development, working with each other and with UNDP-DDC. Community environment committees, for example, have been established in all areas, but many were struggling to operate effectively and would benefit from capacity-building to enable them to support production and marketing initiatives. Gender mainstreaming would be a crucial component of this process.

4. Theme 4: Conflict analysis

22. Theme 4 considers how conflict has been a severe constraint to the production and management of dryland products, with particular reference to Turkana and Karamoja. The survey discovered that conflict manifested itself in a number of forms, including local political unrest, disagreement over ownership and utilization of natural resources, cattle raiding and banditry. The increased use of firearms gave rise to concern. Major factors in the escalation of conflict were found to be the diminishing role of traditional conflict management institutions, inadequate law enforcement and policy failure.

23. The results of conflict included population displacement, severe disruption to the mainstay livestock industry, increased production and marketing costs, and inaccessibility and closure of markets.

24. The survey recommended a series of initiatives that might aid conflict reduction, including cross-border cooperation, dovetailing of traditional conflict resolution methods with state law enforcement methods, peace dialogues, disarmament, discouragement of belligerent cultural practices, and income-generating development initiatives.



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5. Theme 5: Market research analysis

25. Theme 5 aimed to analyse existing market access, identify further marketing opportunities and look at ways in which they could be realized. Background factors, such as the poverty profile of the community, infrastructure and credit availability, were also considered.

26. The study commenced with an inventory of dryland commodities currently available, and some prioritization of which presented opportunities for sustainable development and effective marketing. Products identified as having the potential to strike a balance between income generation and biodiversity conservation, while matching the comparative advantage profile of dryland communities, included livestock and livestock products, handicrafts and ecotourism services, and high-value tree products such as incense and gum arabica.

27. A number of constraints in accessing local, national and international markets were identified, including poor infrastructure, lack of credit, deficient business and marketing skills, and lack of gearing to specific market requirements, such as health regulations. Particular focus was given to the potentially lucrative livestock industry, still very much run along cultural and traditional lines with little attention as yet paid to the commercial possibilities it presents.

28. Recommended approaches include more effective group dynamics and partnerships, development of more professional production and marketing skills, more precise orientation of product to market, and training of community technical experts.

D. Constraints

29. A number of cross-cutting constraints were identified that relate to most study themes:

- (a) Knowledge of external markets and of marketing skills is limited, allowing exploitation by market intermediaries;
- (b) The three East African Governments have policies and legislation related to most aspects of natural resource utilization and conservation, but lack of harmonization hinders transboundary management;
- (c) Lack of knowledge of production techniques, for example propagation methods for high-value trees, makes it difficult to scale up production and fully exploit market potential;
- (d) Further study is needed of how traditional technologies can be improved for modern production, and to what extent they can be augmented by new technologies;
- (e) There is still further need for assessment of the natural resource base to determine its capacity to support resource-based enterprises;
- (f) Conflict in Turkana and Kajiado severely constrains market development between Kenya and Uganda;
- (g) Lack of water is a major obstacle to development.

E. Methodology

30. Approximately five hundred people participated in the baseline survey (40 per cent men, 35 per cent women and 25 per cent young people). They were mainly drawn from the community environment committees that were formed during the East Africa Cross-Border Biodiversity Project and who are the entry points for the proposed market access project. Government representatives from relevant ministries participated as resource persons. The survey mainly used focused group discussions involving the community environment committees. The discussions were structured as follows:

- (a) Introductory remarks, including words of welcome from local leaders;
- (b) Objectives of project outlined by lead consultant and programme coordinator;
- (c) Government representatives from relevant ministries described how their departments would benefit from and contribute to the process;
- (d) Views of community representatives sought: these were always positive, allowing the survey to proceed;
- (e) Themed discussion, including identification of natural resources that have market potential, mapping of resources, technology assessment, prioritization, institutional and gender analysis, market opportunities, conflict analysis and needs identification. Constraints were assessed using the sustainable livelihoods framework approach, and priority areas of need established as they relate to human, social, natural, physical and financial capital;

(f) Following the plenary session, focused group discussions and questionnaires were used to gather sectoral knowledge of current technologies, constraints and environmental impacts. Additional information was collected using secondary data, personal interviews, observations, supplier diagnostics and partial subsector analysis.

31. The sectoral reports are attached as annexes:

- (a) Improved management and utilization of natural resources: Natural resource practices;
- (b) Participatory technology development;
- (c) Institutional capacity and gender analysis;
- (d) Conflict analysis;
- (e) Market research.

I. Natural resources policy landscape

A. Introduction

32. The causes of natural resource degradation are complex and are related to a broad range of macroeconomic, political and social factors. It is therefore difficult to pinpoint which factors are operating within a particular locality, and to devise measures to combat resource degradation. The difficulty is compounded in transboundary locations, where different policy and legislative measures may be applied to the solution of very similar problems. In such instances two key approaches seem to be harmonization of measures between neighbouring states; and devolution of decision-making to local communities and institutions.

B. Background relevant to study sites

1. Policy and legislative framework

33. Table 1 shows policies relevant to natural resources that have been developed by the three East African countries. These policies are indicative of the will to manage and conserve the natural resource base throughout the region, though lack of consistency in guidelines and implementation have inevitably given rise to conflict in such matters as access to genetic

Table 1. Selected policies related to natural resources in East Africa

Kenya	Tanzania	Uganda
<i>National Environment Policy 1999</i>	<i>Agriculture and Livestock Policy 1997</i>	<i>National Environment Management Policy 1994</i>
<i>Water Policy 1999</i>	<i>National Environment Policy 1997</i>	<i>National Water Policy 1995</i>
<i>Draft Forest Policy 2000</i>	<i>National Forest Policy 1998</i>	<i>Wildlife Policy 1996 (revised 1999)</i>
<i>National Water Policy 2004</i>	<i>Tourism Policy 1998</i>	<i>National Wetlands Management Policy 1997</i>
<i>Draft Arid and Semi-Arid Lands Policy 2004</i>	<i>Wildlife Policy 1998</i>	
	<i>Policy on Women in Development 2000</i>	

Table 2. Selected legislation related to natural resources in East Africa

Kenya	Tanzania	Uganda
<i>Forest Act 1962 (revised 1982 and 1992)</i>	<i>Wildlife Conservation Act 1974</i>	<i>Forest Act 1964</i>
<i>Water Act 1962 (revised 1972)</i>	<i>National Environment Management Act 1983</i>	<i>Water Act 1995</i>
<i>Wildlife Conservation and Management Act 1977 (revised 1985)</i>	<i>Land Act 1999</i>	<i>National Environment Statute 1996</i>
<i>Local Authority Act 1986</i>	<i>Forest Act 2002</i>	<i>Local Government Act 1997</i>
<i>National Environment Management and Coordination Act 1999</i>	<i>Environmental Management Act 2004</i>	

resources and charcoal burning. All three East African countries now have environment policies in place (Kenya 1999; Tanzania 1997; and Uganda 1994), as well as policies related to a number of environmental sectors. The enactment of laws based on these policies is at a number of different stages: as regards forestry, for example, Kenya is in the process of enacting a further revision of its Forest Act; Tanzania has in place its Forest Act of 2002; and Uganda is revising its long-outdated Forest Act of 1964 (table 2).

34. The poverty reduction strategy papers for all three countries have been written and adopted. They describe the incidence of poverty, problems in addressing poverty reduction, and strategies to reduce poverty. It is to be hoped that their three-tier consultation approach – national consultative framework, district consultative framework and community-level consultation – facilitates devolution of planning and budgeting to poor dryland communities.

2. Transboundary conservation

35. Given that natural resources do not, by their nature, recognize national boundaries, the East Africa Cross-Border Biodiversity Project was implemented to assist in the coordinated management of resource-rich transboundary locations.

36. Some progress has been made in the region in this respect. The Uganda Forestry Policy (2001), for example, states that “Uganda’s forest diversity will be conserved and managed in support of local and national socio-economic development and international obligations”. These obligations include collaborating with Kenya and Tanzania in managing protected areas. The 1994 National Environment Management Policy also recognized the complexity of transboundary environmental issues and the need for regional and global cooperation

in resolving such issues, and subsequent policies have encouraged wider consultations to promote cross-border biodiversity management.

37. In Tanzania, national policies related to the environment, forestry, bee-keeping, wildlife, tourism and agriculture all refer to cross-border biodiversity conservation. Most specifically, the National Environment Policy (1997) states that “environment problems do not recognize national boundaries of sovereignty. Global and transboundary resources, especially the atmosphere, the ocean and shared ecosystems, can be managed effectively only on the basis of a common purpose and resolve, when all affected countries are part of the solution.” In addition the National Wildlife Policy (1998) seeks to “cooperate with neighbouring countries in the conservation of transboundary ecosystems”.

38. In Kenya, wildlife and forestry policies are under review, though the process has been slow to address emerging transboundary issues in the management of natural resources. However, the National Environment Management and Coordination Act (1999) does recognize the transboundary nature of natural resources such as wildlife, forests and water and calls for international cooperation. The revision of environment and natural resource policies is expected to provide appropriate institutional frameworks for addressing transboundary issues.

3. Devolution of decision-making to local communities

39. Whatever the wider causes, at the local level deforestation and other environmental degradation leading to resource scarcity and declining livelihoods often stems from the activities of the inhabitant community. Importance should therefore be placed on involvement of local communities in environmental management encompassing improved livelihoods.

Given that the United Nations Convention to Combat Desertification emphasizes local action, it is important to improve governance for natural resource management in dryland areas; any plans for better use of resources must ultimately be put to use within communities.

40. In Uganda, for example, the 1994 Decentralization Policy has brought devolution of environmental management to the lower levels of government, based on the democratic election of political leaders from village to district level. Government response to environmental problems has, however, been hampered by uncoordinated policies and programmes and lack of information sharing; for example, responsibility for flora and fauna rests with separate departments. Also, due to lack of capacity, local government institutions have been slow to devise ordinances and by-laws to address local problems, although empowered to do so by the Local Government Act of 1997.

41. In Tanzania, to ensure community empowerment, the 1998 Forest Policy, supported by the 2002 Forest Act, has introduced a joint management system, which is based on the authority of the national and local governments to share management rights and responsibilities for their reserves with forest-adjacent communities. The Forest Act also gives power to district authorities and village governments to enact by-laws for forest conservation.

42. In Kenya, devolution policies are under consideration in the ongoing constitutional review process. Encouragement of public participation is most clearly enshrined in the environment-related policies of Tanzania, and Uganda has made considerable progress in this direction since the 1960s.

C. Survey findings

43. The survey revealed that there are several opportunities at regional, national and local levels that can be exploited to improve the management of shared ecosystems in East Africa. The revival in 1999 of the East African Community (EAC), and the formulation of the New Partnership for Africa's Development (NEPAD) in 2001, help provide the regional organizational framework within which natural resource management initiatives can operate.

1. East African Community (EAC)

44. The EAC treaty was designed to foster economic and sustainable development among its partner states. Articles 111, 112 and 113 of the treaty deal specifically with management of the environment and natural resources. The treaty provides opportunities for considerable regional cooperation on environmental matters, including cross-border management of shared ecosystems; the adoption of common regional benchmarks to inform policy formulation, legislation and institution building at the national level; inventory and environmental audits of shared ecosystems; and monitoring and evaluating the impacts of regional programmes.

45. The Sectoral Committee on Environment and Natural Resources is an in-house committee within the EAC framework responsible for matters related to the environment and natural resources. Four working groups have been formed to advise EAC on environmental issues and on sustainable development of shared ecosystems and to assist in the implementation of approved recommendations. These working groups have as their remits terrestrial ecosystems; aquatic ecosystems; pollution matters; and policy, legal and institutional frameworks.

2. New Partnership for Africa's Development (NEPAD)

46. NEPAD seeks the self-led renewal of the African continent; its primary objectives relate to poverty eradication, sustainable development, integration into the global economy and empowerment of women. Its recent Environment Initiative seeks to prioritize the root causes of environmental degradation through sustainable projects with a high degree of national ownership, and addresses cross-cutting and transboundary issues.

D. Recommendations

47. Integrated management of natural resources in East Africa is currently being slowed by deficiencies in grass-roots involvement and in the policy and legislative frameworks. Given the challenges faced, certain recommendations can be made:

- (a) Develop guidelines for the management of natural resources at the grass-roots level, in close consultation with community environment committees;
- (b) Recognize traditional management systems and incorporate them into the formal system, especially when demonstrating interventions;
- (c) Through EAC, lobby governments to harmonize conflicting laws, implement the effective provisions in existing laws and strengthen weak policies, especially those on licensing and granting permits.

48. Interventions that might assist the process include:

- (a) Carry out an assessment of resources to determine distribution and abundance;

- (b) Increase production through propagation of potentially high-value crops, for example aloe and gum arabica, to ensure availability and sustainability;
- (c) Carry out joint demonstration projects aimed at informing policy change regarding the management of transboundary issues;
- (d) Develop participatory joint management plans incorporating traditional knowledge.



II. Study of existing technologies

A. Introduction

49. Agricultural research and development projects have often used a transfer of technology model whereby communities are recipients of technical solutions rather than innovators working creatively with public and private service providers to implement technologies. Such a top-down approach can be difficult to change when it is mirrored in a country's system of governance. There has therefore often been inadequate recognition of innovations emanating from dryland communities that need to be supported, documented and shared for sustainable dryland development to take place.

50. The goal of this component of the baseline survey was to involve community members in assessing existing technologies, products and processes at each of the project sites, and identifying areas of technological advancement with potential for sustainable community development and improved livelihoods. This would constitute the first stage of participatory technology development, an interactive process whereby a multidisciplinary team of innovators, extension agents and beneficiaries targets and evaluates selected technologies, puts into practice improved techniques and identifies information-sharing pathways that enable adaptation of the techniques to changing circumstances.

51. The survey included an environmental assessment, recognizing the fact that technology innovations may increase demand for environmental services (energy, waste absorption and provision of raw materials), which may impact negatively on the environment. However, it would be envisaged that appropriate environmentally friendly technologies would utilize resources more efficiently and sustainably, reducing this negative impact.

B. Background relevant to study sites

52. In its latter stages the East Africa Cross-Border Biodiversity Project, working with community environment committees and resource user groups in the Loima hills (Turkana, Kenya), the Moroto hills (Karamoja, Uganda), the Namanga hills (Kajiado, Kenya) and the Monduli hills (Monduli, Tanzania), implemented various livelihood interventions, including pasture management, handicrafts, ecotourism, bee-keeping, household energy technologies and ethno-veterinary knowledge. These groups were the target of this survey.

C. Survey findings

53. Table 1 summarizes the technologies identified in each study area having potential for development, and the technology gaps that need to be filled for that potential to be realized. Water was identified as the overarching most important resource in most areas, scarcity of which limits exploitation of all other resources. The limited number of water sources concentrates cattle in particular areas, leading to uneven patterns of pasture utilization; in addition, subdivision of group ranches has left some homesteads remote from water sources, requiring long treks to water cattle and fetch water for domestic use. Increased provision of water sources is a priority in all study areas.

Table 3. Summary of technologies

Technologycategory	Products					Potential areas for technological advancement
		Loima	Moroto	Na-manga	Monduli	
Agriculture: Livestock	Livestock, meat (cattle, sheep, goats)	√	√	√	√	Pasture management skills, grazing methods, stocking capacities Fodder-growing techniques, Traditional and cultural beliefs and practices Security in range areas, Breed improvement, diversification Animal health skills and services, tsetse fly control, Animal husbandry techniques Cross-border disease surveillance, Cattle dip functionality Marketing structures, standardization procedures
	Hides and skins Bones	√	√	√	√	Pre-slaughter skin production technologies, e.g. ectoparasite control, branding Processing skills, tanning methods, tanning capacity Storage technologies Market identification, information gathering Marketing, standardization technologies Bones: Livestock supplement processing equipment, marketing
	Dairy products		√	√	√	Skills in dairy cattle rearing, Fodder provision, housing technologies Technologies to even out milk production, Hygiene in milk handling Efficient and hygienic processing of milk (and ghee) Diversified milk processing technologies, including yogurt production Marketing channels, strategies and capacities
	Manure			√		Use of manure in soil nutrient cycle as component of pasture management Use of manure in crop production
	Poultry				√	Breed maintenance and improvement, Disease control, Housing technologies Marketing of eggs and other poultry products
	Bee-keeping		√	√	√	√

Technologycategory	Products					Potential areas for technological advancement
		Loima	Moroto	Na-manga	Monduli	
Agriculture: Crops	Grain crops			√	√	Provision of seeds, cost of seeds, Fertilization techniques Production techniques and costs, Management of pests and diseases Post-harvest management skills
	Sorghum	√	√			Provision of seeds, Production techniques Post-harvest management skills
	Water harvesting for rain-fed crops and irrigation farming	√	√	√	√	Access to water for irrigation, Equipment for water harvesting and distribution Skills to harvest water, Market orientation of crops
	Tree nurseries			√		Seed acquisition skills, Propagation skills and technology Management skills and technology, Marketing opportunities and skills
	Vegetables		√			Vegetable propagation methods Information on soil nutrient cycle, Crop protection techniques, Pest and disease management Water harvesting and irrigation methods, Preservation of perishable crops
	Aloe extract	√	√	√		Aloe propagation and planting technologies, Harvesting and processing technologies and equipment Storage and preservation methods
	Gum arabica	√		√		Production capacity, Harvesting technologies Skills in sustainable harvesting, Value-adding skills and Market structure
	Incense (commiphora)	√		√		Sustainable production, Information on plant production techniques Processing, storage and quality control technologies, Marketing structure
	Neem products		√			Technologies related to planting, harvesting and protection from livestock Utilization technologies, processing of products, Marketing techniques
	Tamarind pods		√			Plant propagation methodologies, Information on application and uses of product Information on value-adding processes, Marketing directions
	Oil-producing plants: jatropha, balanites				√	Propagation procedures, Capacity to care for trees Oil processing techniques, Realization of benefits of products

Technologycategory	Products	Loima	Moroto	Na- manga	Monduli	Potential areas for technological advancement
Natural resources: Minerals	Magadi salt	√				Analysis of salt Skills on its potential uses
	Gold	√				Mineral scouting and prospecting technologies Tools and mining procedures Processing infrastructure – water and equipment Standardization procedures, Marketing channels and information Safety procedures, Security in mining areas Supportive government policies
	Garnets (green and red)	√				Tools and mining procedures Safety procedures , Security in mining areas Supportive government policies
	Ochre	√		√		Harvesting and packaging technologies Dyeing skills
	Sand	√		√		Skills to make sand dams Skills to make blocks using sand
	Limestone, marble		√			Appropriate, efficient and safe mining technologies Provision of tools for mining, Public health facilities at mining sites Market chain information, flow of benefits to producers Environmental concerns over disused pits

Technologycategory	Products	Loima	Moroto	Na-manga	Monduli	Potential areas for technological advancement
Artefacts and handicrafts	Ecotourism facilities (e.g. cultural village, handicraft market, campsite)			√		Community capacity to manage enterprises Participatory natural resource management plan Framework for shared benefits Development of market linkages
	Leather-based and beaded handicrafts	√	√	√		Linkage to raw materials Development of production facilities, maintenance of production levels Width of product base Passing down of traditional skills Beadwork quality control skills Leather processing technologies Targeting of product to market Marketing skills Flow of benefits to producer
	Traditional wooden stools and walking sticks	√	√			Quality control, branding, uniformity of finished products Marketing strategies

D. Recommendations

54. These recommendations are based on the findings, recorded in table 3, of the baseline survey in the target areas. It is envisaged that the results will lead into subsequent stages of participatory technology development, assisted by such processes as:

- (a) Further in-depth participatory studies and appraisals that seek to strengthen local indigenous knowledge as a component of sustainable technology development;
- (b) Improving capacity and skills of local partners through, for example, participatory training techniques, exposure visits and farmer-to-farmer learning approaches;
- (c) Joint partner activities such as planning meetings, workshops and reviews to enable vertical and horizontal dissemination of skills;
- (d) Incorporation of private sector providers into participatory technology development to complement the more usual public sector activity;
- (e) Implementation and strengthening of linkages between producers, technology agencies, consumers and other service providers to increase efficiency of resource utilization.

1. Recommendations on livestock technologies

- (a) Facilitate the communities' access to other appropriate breeds for cattle, sheep, goats and camels and establish a community-managed breeding programme;

- (b) Develop flexible livestock movement systems to reduce overgrazing and conflict for pastures;
- (c) Train groups in community-managed animal health systems, including scaling up of paravet training established in some target sites; incorporate indigenous veterinary knowledge (including herbal remedies) into health delivery system;
- (d) Start livestock product marketing associations and establish saleyards at key centres, for example Lokiriama near the Kenya-Uganda border, to encourage transboundary cooperation and trade;
- (e) Train women and young people in hide and skin production, processing and marketing; establish a local leather tannery;
- (f) Train in standardization procedures and provide basic equipment, for example weighing scales.

2. Recommendations on plant-based technologies

- (a) Carry out further surveys of viability of wild plant resources for exploitation and marketing;
- (b) In partnership with the private sector, create awareness in sustainable production and marketing of plant-based products, including lessons from other national and international areas (aloe in Baringo, gum arabica in Sudan, jatropa in Tanzania);

- (c) Train women and young people in use and management of indigenous plants (acacia, aloe, commiphora); establish demonstration plots on cultivation of useful trees;
- (d) Establish environmental education programmes, building where appropriate on previous agency initiatives (at Kakuma, Turkana, for example);
- (e) Clarify government policy regarding exploitation of naturally occurring plant-based resources, including rights issues.

3. Recommendations on cultural products

- (a) Provide training (especially for women and young people) in producing, packaging and branding handicraft for national and international markets; create market networks and linkages;
- (b) Exploit local marketing forums, for example selling handicrafts at district cultural festivals or with other domestic items at livestock market days.



III. Capacity needs assessment and gender analysis

A. Introduction

55. In all four study sites a number of local, national and international organizations are currently engaged in a range of activities related to development, marketing, conservation, health and poverty alleviation (though significant gaps remain in all areas). Traditionally, the roles performed within communities have been to a large extent gender or age specific; men, for example, have responsibility for cash, security and decision-making, while women's roles include childcare and provision of food and water. The division of roles among men, women and children has considerable impact on resource development and capacity-building.

56. The objectives of this theme lay within five main areas:
- (a) Institutional mapping: obtain inventory of institutions that could link with each other and with UNDP-DDC to support project activities;
 - (b) Stakeholder analysis: assess the status, roles and attitudes of relevant stakeholders, and their potential contribution to a successful project outcome;
 - (c) Sectoral analysis: build consensus among stakeholders in various sectors on the major change actions to be undertaken on natural resources and marketing;

- (d) Institutional appraisal: appraise past and present performance of institutions to identify possibilities for productive linkages and capacity to effect change;
- (e) Gender analysis: analyse institutional structures, norms and practices by gender, identifying gender disparities in participation in decision-making and natural resource ownership and management.

B. Background relevant to study sites

1. Institutional capacities

57. Within all four study sites a bewildering range of institutions are engaged in development activities, a number of them set up with the support of development partners to facilitate poverty alleviation. Local government hierarchies provide an existing institutional framework within which further capacity-building could take place. Community-based organizations have grown significantly in number and capacity, though there is a need for more synergy and linkages, with activity coordinated by umbrella bodies.

58. Areas where an increase in capacity would be beneficial include water supply and sanitation; health care; education; provision of microcredit; alternative livelihoods; and marketing strategies.

2. Gender issues

59. As regards national policies on gender, the three East African countries are in different positions. Uganda has had a National Gender Policy in place since 1997; Tanzania's Policy on Women in Development was inaugurated in 2000; and Kenya is in the process of drafting a gender policy. In all three countries, however, it is acknowledged that empowered participation of women in education, employment and development activities is far less than equity demands, as can be seen from a review of the four study sites.

60. In Loima (Kenya), men occupy most leadership positions, with few women participating in decision-making at any level, or owning productive resources. Namanga (Kenya) is a similar pastoralist society, with men owning the main asset, namely livestock, and assuming leadership roles within the community. In Moroto (Uganda), men hold the key positions in the district and representation of women on the district committees is low.

61. The situation is similar in Monduli District (Tanzania), though a gender mainstreaming policy and strategy, funded by the Netherlands Development Organisation (SNV), has been implemented under the District Rural Development Programme as part of the ongoing process of local government reform. The policy aims for gender equity in all aspects of human rights, property ownership, security and representation, though change on the ground has been slow.

62. Generally, despite improvements in gender equity in all four study areas, and indeed throughout East Africa, much still has to be done in such areas as fair representation in decision-making, reduction of violence against women (including female genital mutilation), provision of education and ownership of assets.

C. Survey findings

63. This section summarizes the survey findings for the four study sites, according to the five key objectives described in the introduction.

1. Institutional mapping

64. Local-level institutions are often set up in partnership with national or international organizations active in the study areas. They operate under a number of constraints that may negatively impact their success and their continued survival.

65. Loima. Vétérinaires sans Frontières (VSF)-Belgium and the Arid Lands Resource Management Project (ALRMP) have been assisting in the marketing of livestock by building capacity among livestock traders in Turkana District. The African Medical and Research Foundation (AMREF) is training community health workers and is constructing a slaughterhouse in Lokichoggio, which has the potential to become the most reliable market for livestock in northern Turkana. AMREF could fruitfully link with UNDP on livestock marketing issues.

66. Other ongoing activities in Loima relate to conservation, water and sanitation, education and health. On the other hand, there is no microcredit finance institution currently active in the area, water shortage for domestic and livestock use is chronic, and the prevalence of poverty remains high.

67. Moroto. In Moroto District, a certain amount of local institutional development has grown out of support programmes initiated by the Italian Government, SNV and the World

Food Programme, among others. The Karamoja Programmes Initiative Unit, the Karamoja Livestock Development Programme and the Matheniko Development Forum are all active in the livestock sector, including animal health, and the Karamoja Agropastoral Development Programme is running a water supply project. Other typical initiatives are construction of classrooms, assisted by the Apostles of Jesus Seminary; and peace building, under the auspices of the Northern Uganda Social Action Fund Project and Riamriam.

68. Namanga. A number of local organizations were set up with internal fund-raising by members, including the Mashuru and Matapato Division Development Organizations, which could potentially partner UNDP-DDC in this area. However, although livestock production is the backbone of the economy in the area, few livestock marketing organizations have arisen to fill the gap left by the demise of the Kenya Meat Commission, and advantage would be gained from strengthening the Kajiado District Livestock Council to promote livestock marketing.

69. External organizations active in the area include SNV, whose Kajiado Cluster Programme assists meso-level capacity building and could dovetail with the work of UNDP-DDC; the African Wildlife Foundation (AWF), which is supporting wildlife conservation projects and promotion of ecotourism activities; and the Intermediate Technology Development Group East Africa and the Centre for Livelihood Opportunities Unlimited and Technologies (CLOUT), whose alternative livelihood activities include bee-keeping, pasture management, energy conservation and water supply.

70. Monduli. A number of national and international organizations have recently been active in the Monduli area. World Vision trains groups engaged in human health issues, including HIV/AIDS; AWF supports tourism, environmental conservation and community development projects; Heifer International supplements marketing institutions through breed improvement

programmes; and Promotion of Rural Initiatives and Development Enterprises operates in Longido and provides microcredit to women's groups.

71. Among local institutions, Kampuni ya Kusambasa Teknolojia Rahisi (KAKUTE) deals with the promotion, utilization and marketing of the jatropha tree and its products, and Mtandao wa Vikundi vya Wakulima na Wafugaji Bonde la Ufa (MVIWABU) promotes marketing of livestock and agriculture products. Both are potential partners for UNDP-DDC.

2. Stakeholder analysis

72. In all study areas existing institutions and organizations, including district councils and government line departments, have the potential to support projects. Organizations mentioned under institutional mapping that could contribute positively to project outcomes include ALRMP and VSF-Belgium in Loima; Matheniko Development Forum and Karamoja Agropastoral Development Programme in Moroto; Mashuru and Matapato Division Development Organizations and CLOUT in Namanga; and KAKUTE and MVIWABU in Monduli.

3. Sectoral analysis

73. Within the study areas, there is general consensus on the sectoral change actions that could be undertaken regarding natural resource development and marketing:

- (a) Provision of water for agricultural and domestic use;
- (b) Increased production of marketable commodities;

- (c) Adding value during the production process;
- (d) Empowerment and capacity-building of production groups;
- (e) Market development, including agricultural and livestock products, craft products and ecotourism;
- (f) Enhanced conservation measures and pasture management;
- (g) Provision of credit facilities.

4. Institutional appraisal

74. In the study areas, a number of community environment committees were set up through the initiative of the East Africa Cross-Border Biodiversity Project, and have been active in such areas as bee-keeping, conflict management, energy, pasture management and traditional healing. Their progress has, however, been variable: in Loima, for example, they have played little role in the marketing of commodities, and most are now dormant. In Moroto the committees are not well organized, and capacity-building is necessary if they are to be involved in marketing of such local products as marble and limestone, livestock and livestock products, honey, handicrafts, aloe and gum arabica. Community environment committees in Namanga are engaged in alternative livelihood activities such as bee-keeping, haymaking and the production of stabilized soil blocks.

75. Generally, however, marketing of products, including wood products, handicrafts, minerals, aloe and gum arabica, is largely governed by individual rather than group enterprise, and prices tend to be low, with opportunistic intermediaries making much larger profits than producers.

76. Some promising, if rather piecemeal, institutional development has occurred. In Turkana some water users' associations, for example Letea and Oropoi, have been trained by Oxfam GB and the Water Department, and protect and maintain shallow wells and boreholes. In Moroto marketing groups include an apiary group organized by the Matheniko Development Forum, and cereal bank groups organized by the Karamoja Agropastoral Development Programme. In Namanga the Ol-Kejuado Livestock Marketing Council needs strengthening and financial support. The Oloilielai cooperative society, the only one existing in Namanga, is mainly involved in livestock and agricultural projects. Finally, in Monduli, MVIWABU and KAKUTE would benefit from scaling up their activities in order to promote the marketing of agricultural and livestock products and jatropa tree products.

5. Gender analysis

77. Table 4 presents the traditional roles of men, women, boys and girls that are characteristic of the study sites.



Table 4. Gender and age roles common to study sites

<i>Gender/age groups</i>	<i>Roles</i>
<i>Men</i>	<p><i>Household head, decision maker, asset owner</i></p> <p><i>Meeting with other men, discussing community matters</i></p> <p><i>Ensuring security for family and community</i></p> <p><i>Herding, watering and tending livestock</i></p> <p><i>Livestock security</i></p> <p><i>Hunting, honey harvesting</i></p> <p><i>Major cash transactions, including livestock sales and dowry</i></p> <p><i>Manual tasks: digging wells, fencing, ploughing</i></p> <p><i>Wooden handicrafts</i></p>
<i>Women</i>	<p><i>Preparing food for family</i></p> <p><i>Milking livestock, selling milk</i></p> <p><i>Domestic chores: collecting firewood and fruits, washing, etc.</i></p> <p><i>Fetching water</i></p> <p><i>Weeding, tillage, harvesting</i></p> <p><i>Hygiene, health and care of children and the ill and elderly</i></p> <p><i>Childbirth, raising children</i></p> <p><i>Building houses</i></p> <p><i>Making clothes</i></p> <p><i>Custodian of customs and cultural practices</i></p>

<p><i>Boys</i></p>	<p><i>Livestock herding, watering animals</i></p> <p><i>Milking</i></p> <p><i>Scouting for pasture</i></p> <p><i>Assisting father in security matters, etc.</i></p> <p><i>Dancing, courting girls</i></p> <p><i>Learning male responsibilities</i></p>
<p><i>Girls</i></p>	<p><i>Assisting mother in household and other tasks</i></p> <p><i>Making traditional dresses, beads</i></p> <p><i>Traditional dancing, cultural activities</i></p> <p><i>Cutting grass for calves and thatching</i></p> <p><i>Babysitting young children</i></p> <p><i>Learning female responsibilities</i></p>

78. Such definition of activities along traditional lines is slow to change, and women are still severely underrepresented on most decision-making bodies. They also have few income-earning opportunities, though potential exists in marketing of labour-intensive products such as aloe, gum arabica and handicrafts.

79. A number of self-help groups, including women's groups, have been set up in the Namanga area, and some have been active in marketing of milk, selling beads and handicrafts and vegetable production. However, many of the groups have lapsed into inactivity, and those that remain experience problems similar to those elsewhere:

- (a) Lack of basic knowledge of group dynamics, business management and record keeping, leading to dominance of the proceedings by a few powerful individuals;
- (b) Low levels of funding, especially for women's groups, as men tend to control cash within families;
- (c) Similarly, women can find loan securement difficult, as title deeds bear the husband's name only.

80. Positively, Monduli District has a gender policy, which aims to "ensure that women and men participate and benefit equally in all Monduli District Council's programme and project activities". Application of this policy on the ground has proved difficult and, as elsewhere, most decision-making bodies are male dominated.

D. Recommendations

81. The recommendations listed below take into consideration the following factors that were identified as impacting negatively on institutional and gender equity development in the four study areas:

- (a) Few local markets, resulting in long walking distances, scarcity of outlets;
- (b) Poor communications infrastructure;
- (c) Prices for products tend to be low and unpredictable;
- (d) Exploitation from market intermediaries;
- (e) Lack of marketing skills and knowledge, including advertising, access to external markets;
- (f) Insufficient knowledge, skills and equipment related to production and processing of various products, e.g. honey, aloe;
- (g) Lack of product diversity and little coordination between producers, leading to unnecessary competition;
- (h) High prevalence of poverty;
- (i) Ill health, including HIV/AIDS;
- (j) Lack of credit facilities, difficulties in accessing loans;
- (k) High illiteracy rates;
- (l) Adverse environmental conditions, e.g. recurrent droughts, shortage of water;
- (m) Hindrances to livestock development: disease, inadequate milk storage facilities;

- (n) Insecurity;
- (o) Cultural and social inertia.

82. Overcoming these constraints will require considerable institutional and sectoral development. Recommendations have been made in the following thematic areas:

- (a) Institutional capacity-building: The community environment committees offer an existing network of organizations that have the potential to be active in the marketing of dryland products and would benefit considerably from training and capacity-building, with UNDP playing a leading role. Similar considerations apply to other organizations, for example the Agency for Pastoral Development in Turkana, and the Kajiado District Livestock Council (Namanga area);
- (b) Coordination and linkages: There is a clear need for the setting up of umbrella organizations to coordinate and strengthen the work of local institutions, particularly the community environment committees. In Loima-Moroto, for example, cross-border linkages between such umbrella organizations could promote trade and improve livelihoods and security;
- (c) Partnership building: Organizations identified in the previous section, and others, could profitably work with UNDP, and with each other, to improve production and marketing of dryland products;
- (d) Improved marketing: Increased knowledge of market opportunities, training in marketing skills and financial support for market development would all help stimulate production and improve livelihoods in the study areas. There is a need to strengthen the district and divisional livestock councils to support the marketing of livestock;

- (e) More efficient production: Production needs to be emphasized in the course of the project for some products such as aloe and resins so that harvesting goes hand in hand with production;
- (f) Development of livestock industry: In all study areas livestock form the basis of the local economy. Considerable benefit would derive from breed improvement, pasture management and other initiatives;
- (g) Conservation of environment: Production needs to be managed sustainably in the long term. Positive environmental interventions include increased water supply and pasture management;
- (h) Security: Peace-building interventions would help provide the stable conditions that would benefit trade, particularly cross-border trade. For example, there is a promising market in Uganda for Turkana livestock products, with sorghum as a return product;
- (i) Gender mainstreaming: There should be a deliberate aim to increase participation of women in project activities, with particular focus on training and capacity-building in production and processing, and provision of microfinance. Gender should be regarded as a cross-cutting rather than a specific issue. Youth groups involved in non-livestock products, such as honey, tamarind, gums and resins, and aloe, also need to be supported.

IV. Conflict analysis

A. Introduction

83. Conflict in the East African drylands manifests itself in a variety of forms, including banditry, cattle rustling, local tussles and general criminality. The intensity of conflict may vary enormously, from confusion and frustration among members of a community over poorly communicated development policies to violent clashes between groups over resource ownership rights and responsibilities. With reduced government power in many regions, the resource users, who include pastoralists, marginal farmers and agropastoralists, increasingly influence natural resource management decisions.

84. In this chapter the issue of conflict will primarily be exemplified with reference to the “Karamoja cluster”, the tribal groupings where the borderlands of Uganda, Kenya, Sudan and Ethiopia are in close contiguity.

B. Background relevant to study sites

85. The Karamoja cluster comprises the pastoral and agropastoral ethnic groups, most with cultural and linguistic commonalities, inhabiting the drylands of northern Uganda, north-

western Kenya, south-eastern Sudan and south-western Ethiopia. It includes the Turkana, Karamojong, Jie and Pokot peoples. Nomadic pastoralism is primarily practised, bringing groups into contact with each other and into conflict over such natural resources as grazing, water and woodland, particularly between the Karamojong and the Turkana.

86. The increasing use of guns has, in recent years, brought an extra dimension of violence that has resulted in escalation of conflict, and a number of deaths have occurred in violent cattle raids and reprisal attacks. General lawlessness and banditry are also on the increase. Armed government forces have struggled to establish control in a region characterized by remoteness, rugged terrain, poor communication infrastructure and population movement.

87. Loss of life and property, and displacement of communities, are inevitable consequences, and it is the poor who are the main victims. Strategies to generate livelihood improvements in the drylands of Turkana and surrounding regions have been greatly impaired by chronic insecurity.

C. Survey findings

88. Within the Karamoja cluster most conflict is related to competition over access to and control of scarce resources, exacerbated by population growth. The cattle raid is typically viewed as an instant means of redistributing resources and of exacting retribution in the case of a perceived wrong. To this has been added a growing element of banditry and violent robbery that has gone hand in hand with increased ease of access to guns.

1. Factors leading to increasing levels of conflict

(a) Diminishing role and power of traditional institutions

89. In traditional Turkana and Karamojong communities, the societal norms and cultural values regulated human life and promoted local governance. The sociocultural institutions in these communities, particularly the council of elders, played a key role in solving intra- and inter-community conflicts and facilitating sustainable management and sharing of the available scarce natural resources.

90. Modern influences have, however, eroded these traditional values and diminished the regulatory role of individuals and institutions operating within community systems. For example, the state system of governance now takes legal precedence over traditional conflict resolution systems. Traditional courts have few real powers, relying rather on community goodwill and the increasingly outmoded belief in the power of curses and other traditional magic. As a result of all these factors, young men are no longer as constrained by traditional moral and social forces if they feel inclined to raid cattle.

(b) Inadequate law enforcement

91. There is a general perception within the Karamojong cluster that state law enforcement agencies have been unwilling to engage in the area to overcome lawlessness. The area is thinly policed, and scenes of young warriors wielding AK47s are not uncommon. People feel vulnerable to external aggression, and responses to distress calls are usually slow.

(c) Policy failure

92. Successive governments in the region have not formulated and implemented policies that take into account the needs and aspirations of nomadic pastoralists. For example, there has been no attempt at introducing more flexible education systems in response to the nomadic lifestyle of pastoral communities.

93. This marginalization dates back to colonial times, when economic inputs, including schools, health facilities, roads and communications infrastructure, were concentrated in high-potential agricultural areas. Arid and semi-arid regions, due to their poor resource base, were largely ignored except for scattered missionary activity.

94. In both Kenya and Uganda, post-colonial administrations continued to concentrate development initiatives in high-potential areas, with little attention being paid to dryland communities, and resentment lingers within these communities.

2. Impact of conflict on production of dryland products

95. Conflict hinders the production of dryland products and resources, particularly those related to the main economic activity of livestock rearing, in a number of ways:

- (a) Certain tracts of pasture and water resources have been rendered inaccessible, concentrating remaining livestock in areas that are presumed safe, which in itself constraints the nomadic pastoralism that is an important livelihood option in these areas;

- (b) There is a critical loss of labour when herders are killed during cattle raids and banditry activities;
- (c) Contagious livestock diseases are more easily spread when cattle are concentrated in safer areas as a result of conflict. This effect is exacerbated when veterinary personnel steer clear of conflict-prone areas;
- (d) Conflict increases the cost of producing dryland products, especially livestock. For example, livestock keepers feel the need to invest in expensive firearms to protect their stock;
- (e) Exploration and development of other dryland products and resources, such as minerals and precious stones, has been constrained by lack of security in the area.

3. Impact of conflict on marketing of dryland products

96. Marketing mechanisms tend to operate inefficiently during periods of conflict, which can act as a great impediment to marketing of dryland products in several ways:

- (a) Access to livestock markets is denied, especially those located at some distance from the farmer. For example, livestock keepers in Turkana have been unable to access the Moroto market in Uganda. Also, several livestock markets have been totally abandoned as a result of conflict: for example Lokiriama market, which thrived during the 1980s and early 1990s, is no longer functioning;
- (b) Cattle owners can be exploited by market intermediaries who offer low prices in the knowledge that sellers have little alternative in situations where access to their usual markets is constrained;

- (c) Conflict increases marketing costs and reduces profit margins for herders because they are forced to hire additional personnel for security or lorries to transport livestock;
- (d) Cross-border trade has become much more difficult. The potentially lucrative trading of Turkana cattle for Karamojong sorghum, millet and maize has suffered dramatically.

D. Recommendations

97. Respondents in the survey made several recommendations that would reduce conflict in the drylands of East Africa generally and in the Karamoja cluster specifically, leading to significant improvements in the production and marketing of dryland products:

- (a) Peace dialogues, which have been instrumental in mitigating inter-community conflicts in Karamoja cluster and sensitizing communities to the preferability of peaceful solutions over those based on violence, should be facilitated and promoted. The establishment of cross-border peace committees should accompany the regionalization and harmonization of legal and policy frameworks in Kenya and Uganda. Security linkages, collaboration and sharing of intelligence information between governments and peace committees should be initiated and fostered. As regards the Namanga (Kenya) and Monduli (Tanzania) sites, the formal structure that has been developed for cross-border community collaboration in access to water and pastures serves as a useful model for other initiatives;

- (b) Traditional conflict resolution institutions should be recognized and supported. Dovetailing of traditional and official law enforcement structures could strengthen both; in Kenya, for example, the Government is formulating a national policy on conflict resolution and peace building that spells out the critical role played by traditional conflict resolution mechanisms;
- (c) Disarmament could be hastened, for example by publicizing the ongoing Karamoja disarmament programme among cross-border communities, and establishing a cross-border committee on disarmament that could coordinate approaches adopted in Kampala and Nairobi;
- (d) Building the capacity of peace committees and traditional institutions through incorporation of gender and human rights considerations, and through development of skill sets related to mediation, dialogue and democratic governance, would increase their effectiveness and raise their profile and standing within communities;



- (e) Market rehabilitation, and the opening of new markets, should be an essential component of any peace process, as the extra income generated would improve livelihoods and help reduce violence emanating from the desperation of poverty;
- (f) Increased supply of water points, and rehabilitation of dilapidated water facilities, is essential to reduce conflict and ensure more even grazing of pastures;
- (g) Joint activities and festivals that would facilitate interaction between communities should be promoted. Inter-community sports activities such as athletics, football matches, drama, poetry and singing festivals, and joint women peace crusades, would encourage inter-community cooperation;
- (h) Establishment of cross-border schools, and joint schooling of border communities, would educate children from an early age to shun stereotypes and view neighbours from other communities as brothers and sisters;
- (i) Cultural practices such as body tattooing, war songs and insistence on high bride prices, which exert pressure on warriors to engage in cattle thefts and raiding, should be discouraged. Other forms of identity, such as those related to education and sports, should be promoted as alternatives;
- (j) Production and marketing of non-livestock commodities should be promoted to reduce reliance on the asset that is the prime centre of conflict in the region – cattle. Such alternative livelihood options include extraction of herbal products (aloe), gum arabica, bee-keeping and fishing.

V. Market research analysis

A. Introduction

98. The aim of this section of the study was to analyse the existing market access and market penetration opportunities and challenges, and to identify and prioritize interventions and marketing strategies. Other services, such as infrastructure and access to credit, were explored.

99. The specific objectives included:

- (a) Determination of the poverty profile of the community;
- (b) Assessment of infrastructure in relation to marketing function of dryland products;
- (c) Identification of products with intermediate to high growth potential;
- (d) Determination of the potential market demand levels for identified products;
- (e) Identification of the market pathways and linkages for the identified products;
- (f) Assessment of the constraints and opportunities in accessing microcredit for marketing and production.

B. Background relevant to study sites

100. The project sites are predominantly arid and semi-arid areas with unreliable rainfall regimes. Livestock rearing and rain-fed agriculture are the main economic activities, with pockets of pastoralists practising irrigation, mining, fishing, stone carving and other activities. Several factors constrain production, including natural problems such as drought, and land issues such as subdivision of group ranches, blocking nomadic routes used by pastoralists.

101. Livestock ownership is more culture than commerce driven, with livestock (cattle, sheep, goats, donkeys) performing numerous functions, including food (milk, meat, blood), measure of wealth and social status, traction and transport, dowry payment and insurance in case of emergency. The main methods of livestock acquisition are through inheritance, dowry payment or natural multiplication. However, some households sell their livestock during the dry season to salvage their animals.

C. Survey findings

102. The survey made the following findings, according to the specific objectives outlined in the introduction:

1. Determination of poverty profile of community

103. Many of those taking part in the survey perceived themselves to be in a state of poverty, characterized by lack of access to basic services such as health, education and water, and

inability to satisfy the basic needs of food, shelter and clothing. The majority, however, felt it was possible to move from this situation, though they identified hindrances such as declining infrastructure, lack of government and other assistance, few income-generating opportunities and disadvantageous climatic conditions.

104. Women and children were found to be most affected by poverty, due to their vulnerability, their low social and economic standing, their poorer diet and their lack of access to resources. Equal participation of women in economic-based interventions should be a key objective of the anticipated market access project.

105. Proposed methods for poverty reduction in the four districts include addressing security concerns in conflict-prone areas (Turkana and Moroto), enhancing economic opportunities, providing more efficient services, infrastructure improvement and social protection.

2. Assessment of infrastructure

106. All study sites are characterized by poor infrastructure, and roads can become impassable during the wet season. Communication by mobile phone is increasing as networks widen and has the potential to become an effective marketing tool, for example in arranging shipment of goods, though this will be of little value until the physical infrastructure is improved to the point where delivery can be guaranteed.

3. Identification of products with growth potential

107. The high pressure on resources was observed to be a major impediment to increasing productivity in the study regions, reducing capacity to respond to market demands. Population growth, greater incidence of natural disasters such as drought, intensification of natural resource exploitation, and growing conflict between pastoralists, large-scale ranchers, smallholder farmers and wildlife were all identified as factors increasing food insecurity and constraining development.

108. Communities did, however, through focus group discussions, identify various products available in the region with potential for economic development. The product list was refined through assessment of economic viability, product availability and environmental impact of exploitation. Products identified as having economic potential included:

- (a) Livestock (cattle, sheep, goats, camels, donkeys, poultry) and livestock products (eggs, hides and skins, meat, milk, ghee, manure);
- (b) Minerals: gold, green and red garnet, ochre;
- (c) Vegetable products: aloe, herbal products, sisal;
- (d) Tree products: gum arabica, commiphora incense, charcoal, tree dyes;
- (e) Honey;
- (f) Handicrafts, ecotourism.

109. Factors considered in selecting products included:

- (a) Intermediate to high growth potential;
- (b) Low capital input;
- (c) High farm gate value;
- (d) Easily accessible markets;
- (e) Attractive profitability;
- (f) Sustainable production systems;
- (g) Labour-intensive production or processing systems.

110. The issue of environmental degradation was given high value, and a number of commercial enterprise activities were considered to strike a balance between income generation and biodiversity conservation:

- (a) Dried fine manure packed for sale, particularly to horticultural enterprises;
- (b) Natural dyes extracted and packaged for target markets;
- (c) Meat processing;
- (d) Ecotourism;
- (e) Handicrafts;
- (f) Small-scale food processing for selected products;
- (g) High-value tree products, such as jatropha, gum arabica, incense.

4. Determination of potential market demand levels

111. There is potentially a high demand for a number of dryland products. To take livestock as an example, there are considerable market opportunities in several African and Middle Eastern countries. The great hindrance is the strict import conditions most countries apply regarding foot and mouth, rinderpest and other diseases, which are not met in the study areas.

112. During the dry season many cattle are slaughtered due to lack of water and pasturage to sustain them, and much of the meat is smoked or dried to preserve it. Spiced and dried meat cooked and stored in fat (nyiri nyiri) is a market niche currently being exploited by meat-processing firms in Nairobi. Expatriate populations, for example the 60,000 people of Somali origin currently resident in Toronto, Canada, constitute a considerable market for nyiri nyiri sourced from the arid regions of East Africa. This market is currently satisfied through informal channels to overcome the barrier of health requirements, bringing income to the women who predominantly process the meat while the men are tending livestock on the pastures.

113. A regional approach to expanding export opportunities might include a uniform cross-border vaccination programme for disease control, harmonization of taxation systems and standardization of weights and other regulatory procedures.

114. Improved pasture, additional water sources and better storage facilities would enable communities to more flexible in their market approach. As described above most cattle are slaughtered in the dry season, whereas they are in better condition and have greater income-earning potential during the rainy season.

115. High-value trees and herbs are another potential source of considerable income. For example, the global aloe market has expanded considerably in recent years, with pharmaceutical, cosmetic and health product companies leading the increase in demand. The plant is found in all study areas, particularly Turkana, but little has been done to exploit the product commercially. In fact, aloe is at present under a domestication and marketing ban in Kenya due to its classification as an endangered species. A forum, headed by the Kenya Wildlife Service, is currently addressing these issues.

5. Identification of market pathways

116. Commercialization of dryland products, and the identification of pathways through which these products can be marketed, will play a major role in increasing incomes and supporting community-based management and conservation of natural systems. There is a need for marketing interventions to be integrated into community lifestyles to enhance future livelihoods. Improvement in infrastructure at the local level is of vital importance if these benefits are to be realized.

6. Assessment of constraints and opportunities in accessing microcredit

117. Limited access to credit is a major constraint to development in all four study areas. Microfinance institutions are relatively abundant in high-potential areas but perceive dryland investments to be unprofitable and risky. Loans from commercial banks are characterized by high interest rates and stringent requirements. In addition, those living in dryland environments

tend to lack collateral other than livestock, an unreliable asset that is subject to disease, drought and other negative impacts.

D. Recommendations

118. Interventions that might help address the problems related to market access include:

- (a) Evolve producer groups into business support groups: Producer groups can tend to be socially supportive rather than enterprise oriented, and need support to develop into effective business groups with specialist production and marketing skills;
- (b) Develop efficient marketing systems: It is important to develop products that offer a comparative advantage in the target areas, for example those involving labour-intensive production methods and requiring low to medium capital input;
- (c) Implement market-oriented production: Production for the market requires attention to all parts of the production process, including efficient, cost-effective processing, improved product presentation through packaging, branding and bar-coding and market-g geared promotion and advertising;
- (d) Establish market linkages with buyers: Market information for poor communities is not sufficient until tangible market linkages are identified, established and

- strengthened. Partnership with private sector enterprises is a desirable component of this process;
- (e) Appoint community technical experts: Community resource persons who are respected within the community and possess good understanding of marketing could be trained as community technical experts who could then offer their services for a fee, commission or other mode of payment agreed between them and the community;
 - (f) Make policy linkages: Development at the local level should take cognizance of the national and international policy environment, including the relevant policy stances of EAC, NEPAD and applicable international conventions and agreements. Community capacity-building for policy advocacy is also an important element in improving market access for dryland commodities.

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