

IN SEARCH OF PROTECTION AND LIVELIHOODS



Socio-economic and
Environmental Impacts of
Dadaab Refugee Camps on
Host Communities

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Acronyms and Abbreviations

ALRMP	Arid Lands Resource Management Project
CDF	Constituency Development Fund
Danida	Danish International Development Assistance
DfID	(UK) Department for International Development
DRA	Department of Refugee Affairs
DRC	Danish Refugee Council
EU	European Union
FaIDA	Fafi Integrated Development Association
GoK	Government of Kenya
GTZ	<i>Deutsche Gesellschaft für Technische Zusammenarbeit</i> (German Agency for Technical Cooperation)
LWF	Lutheran World Federation
NEMA	National Environment Management Authority
NRC	Norwegian Refugee Council
RRDO	Relief, Reconstruction and Development Organisation
RUMC	Resource Utilisation Monitoring Committee
SAG	Study Advisory Group
TLU	Tropical Livestock Unit
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
WASDA	Wajir South Development Association
WB	World Bank
WFP	(United Nations) World Food Programme

Executive Summary

Introduction. The Dadaab refugee complex in Kenya's North Eastern Province comprises the three camps of Dagahaley, Hagadera and Ifo, which officially accommodate around 270.000 predominantly Somali refugees. In spite of extensive investments in sustaining the camps over the last 18 years, knowledge of their social, economic and environmental impacts on the surrounding areas remains scanty, and largely anecdotal. As the impacts have become more apparent, there has been increased attention from donors, UN agencies, NGOs and the Government of Kenya (GoK) on the provision of services in the districts around Dadaab. There is scope for developing a joint (GoK, humanitarian and development agency) approach to host community issues, but this requires a well informed decision-making process. A study of the impacts of the camps on the host community was therefore commissioned by Department of Refugee Affairs and the Danish and Norwegian embassies in Nairobi, to provide the information necessary to guide such a process.

Objectives. The objectives of the study were to (1) Assess the social and economic benefits and challenges that the Dadaab refugee camps have on the host community and Kenya at large; (2) Assess the environmental impacts of the camps on the surrounding area; and (3) Identify and assess options for addressing the negative impacts and optimising the positive elements. Based on these options, the study was to provide recommendations for improving the sustainable presence of the refugees.

Defining the hosting area. The study identified a 50 km radius of routine interaction between the refugee camps and host communities for in-depth analysis of impacts, encompassing an area of 9.600 km² in Fafi, Lagdera and Wajir South Districts.

Methodology. The study comprised desk review of literature, meetings with stakeholders and field survey in the Daadab area over 14 days in April 2010. It was undertaken by a team of national and international experts utilising social, economic and environmental survey and assessment methodologies that included a number of quantitative and qualitative research approaches.

Study limitations and risks. A key study limitation was the lack of published statistics and more general information on trade and socio-economic conditions related to the Dadaab area and the host community. The study team therefore had to develop its own methodologies for determining host community locations, population dynamics, refugee/host identities, the nature of local livelihoods and the scale of economic activities. Some of the findings run counter to established views on the situation in the area and there is a risk that if these findings are not used to take better informed decisions, they could be used to undermine functional relationships between host communities, refugees and agencies involved in the area. This is clearly not the intention.

The study's main findings and conclusions are summarised as follows (see chapters 3 and 4 for details):

Host population, clan identities and relationships. The host population within 50 km of the camps comprises at least 148.000 people. The area has seen significant population growth well in excess of the average for North Eastern Province. Since 1989 the host population has increased tenfold and since 1999 the annual growth rate has been 11,7%, driven mainly by in-

migration from other ethnic Somali areas of Kenya. The study also found that host and refugee communities overlap closely and their identities are intertwined. The two populations share a common language, culture and religion, and in many cases clan and sub-clan identities, together with a common-property approach to resource use across large swathes of land either side of the international border. Complex systems of division of rights have been developed between host community members and those who live in the camps. The camps have become major centres for services, shops and social amenities, and host/refugee interactions within the camps are significant.

Refugee ration card holders among host community. Based on a careful assessment at settlement level, it is believed that at least 40,500 host community members within 50 km (27%) are holding refugee ration cards. Their distribution among households is rather unequal, with some households having multiple cards and others having none. Those holding ration cards include both people who are from the host area originally and others who have moved in from elsewhere in Kenya, primarily to seek a better livelihood. They are not refugees.

Push, pull and deterrent factors. Recurrent droughts have had profound effects on population dynamics and have been a key push factor bringing people to the Dadaab area. Pull factors include: the availability of cheap food due from distribution in the camps and imports via Somalia; the opportunity to register as a refugee and receive a ration card; the better availability of services than in other comparable places; and the existence of more employment opportunities. Deterrent factors for potential migrants are the need to belong to a clan which owns land locally, and the high level of competition for access to natural resources.

Host community livelihoods. Livelihoods in the host community are overwhelmingly pastoral. Many households sell livestock products to the camps or to other local people. Virtually everyone in the host community with more than a few sheep or goats (shoats) keeps part of their herd mobile in order to optimise pastoral production, with a significant proportion of livestock foraging during part of the year in areas far from Dadaab. The number of livestock owned by the host community is estimated to be 80-100,000 camels, 200-250,000 cattle and 300-350,000 shoats. This is many times more than the livestock owned by refugees. Livelihoods are diversified and all host community households ensure that they have access to local food relief and/or refugee rations to avoid complete dependency on livestock.

Development processes, actors, initiatives and challenges. The three districts hosting refugees have been created by the sub-division of larger districts since 2007. Their respective development plans list a variety of proposed investment activities but do not analyse the specific situation in each community and make no references to capitalising on the numerous development opportunities arising from the presence of refugees. There are various development projects in the host area implemented by humanitarian organisations in addition to the Arid Lands Resource Management Project, the UN Kenya host community project, the Kenya Red Cross/Danish Red Cross initiative in health and the Kenya Red Cross/WFP programme of food relief. Development challenges in the Dadaab area include difficulty in planning as time horizons (both for donor funding and for the camps' presence) are uncertain and typically short-term, increases in the host population in need of services are hard to predict and there is a tendency to over-focus development on the immediate surrounding of the camps, where resource competition is most acute.

Access to social infrastructure, services and security. The vast majority of people in the host communities report improved access to education facilities and to water for people and livestock

since the establishment of the camps. Health services catering for host communities have been improved by agencies working in Dadaab and the agency-equipped hospitals in the camps and Dadaab town may be accessed free of charge by local people. The presence of the camps has dramatically improved the frequency and reach of transport services available to the host community. The overall availability of social services is high compared to other areas of pastoral settlement in Kenya, especially close to the camps, even if the considerable increase in host population is factored in. Residents of the host community generally rate the security situation as good and the presence of refugees is not felt to be affecting the level of crime. Questions of national security and the security of humanitarian workers fell outside the remit of the study.

Economic impact. The estimated annual income accruing to the host community from livestock and milk sales to the refugee camps is KSh 218 million (USD 3 million). The price of basic commodities such as maize, rice, wheat, sugar and cooking oil is at least 20% lower in the camps than in other towns in arid and semi-arid parts of Kenya. The main reasons are the re-sale of WFP rations, access to free food by locals registered as refugees and illegal imports via Somalia. The lower food prices result in a total annual saving on food purchase in the host area estimated at KSh 123 million (USD 1,7 million) while the estimated value of refugee food rations received by the host community (if it was traded) is KSh 363 million (USD 4,9 million) per annum. The annual income accruing to local contractors from assignments for the UN and NGOs is estimated to be at least KSh 35 million (USD 0,5 million). The total economic benefits of the camps and related operations for the host community, using 2010 as the reference year, are around USD 14 million annually. On a per capita basis this equates to around 25% of average annual per capita income in North Eastern Province.

Trade and employment. Wholesalers inside the refugee camps import basic commodities via Somalia with high unit value such as sugar, powdered milk, pasta, fruit drinks and upmarket consumer goods. Prices of smuggled goods are cheaper in Dadaab than elsewhere in Kenya. There are around 5.000 businesses in the camps ranging from petty traders to large shops and trading in all kinds of goods, with a further 370 in Dadaab town. Annual turnover of the camp-based businesses alone is estimated to be around USD 25 million. It is estimated that 600-750 local persons have fixed employment related in some way to the refugee operation, with an additional 500 jobs created in host communities related to trade activities. Local wage rates for unskilled labour are significantly (50-75%) higher in Dadaab than in other comparable parts of Kenya.

Refugee operation and host community investments. The majority of funds flowing into the Dadaab area come from donors and agencies supporting the refugee operation. The cost of this operation grew from USD 44 million in 2007 to USD 82 million in 2009 and is projected to reach USD 100 million in 2010. Direct support for host community initiatives rose from around USD 2 million in 2007 to USD 5,5 million in 2010, with 12-15 programmes currently working in food security, conflict reduction, environment, education, health, water, sanitation and business development.

Impact on natural resources. The host area has seen a steep rise in human settlement and this is having negative impacts on mobility and grazing patterns. The significant increase in total livestock numbers has nevertheless taken place without the pasture and browse resource being completely depleted. The combined demand for firewood and building materials from the camp and host community populations is very significant, with more or less equal total demand from both groups. The supply of wood to the camps has become highly commercialised and is dominated by

harvesters based in the camps. A programme of agency-managed firewood supply has provided an average of 11% of estimated camp consumption over the 12 years of its operation. It is disliked by many host community members, however, who report that supply contracts benefit only a few influential individuals. The environmental impact of using thorn bushes for greenbelt fencing is limited, but enclosing portions of the rangeland contributes to an undesirable process of resource alienation and undermines a pastoral mode of production that depends upon communality of resources. The host area is undergoing a general trend of environmental degradation that has been ongoing since the early 1990s, which is spreading outwards from the camps and (without a major reduction in the area's population) will continue to do so. Nevertheless, the environment is hardy and resilient and the impacts of the camps in purely environmental terms are serious but spatially restricted in an area of inherently low resource value.

Impacts on water resources. The boreholes that supply water for the refugee operation - together with large portions of Garissa, Wajir and Isiolo - tap into the Merti aquifer. Total abstraction from this aquifer is estimated at 4,6 M m³/yr. Recharge is difficult to quantify but the best estimate of the study is around 4,5 M m³/yr. The rate of water discharge therefore slightly exceeds the likely rate of recharge and the presence of the camps is a contributing factor. There is, however, believed to be sufficient water stored underground to last many centuries at current abstraction rates, which explains the minimal drops recorded in local borehole levels.

Environmental support projects. A number of environmental projects have been supported by refugee and development agencies, including firewood supply, fuel efficiency improvements and alternative fuels, distribution of tree seedlings, establishment of woodlots and greenbelts, kitchen gardening and irrigated horticulture, environmental working groups and awareness-raising. Harsh climate, poor soils and unreliable rainfall limit what these programmes have been able to achieve in terms of environmental rehabilitation, outside settlements.

The balance of positive and negative impacts. The impacts of the camps on the host community are complex and both positive and negative. Positive impacts relate to access to distributed food, economic opportunities and service improvements, while negative impacts largely relate to depletion of firewood and building materials together with grazing competition in the immediate vicinity of the camps. Overall, the study identifies significantly more positive impacts than negative, as exemplified by the significant in-migration to the area.

Host community project support. Host community projects have focused on the upgrading of infrastructure and delivery of social services in settlements, and there has been little support to pastoral production and its associated strategies of mobility. Hence the key livelihood opportunity in the area is being overlooked and the nature of current support risks creating further dependency rather than self-reliance. Agencies tend to finance and oversee their own discrete projects, which are single sector focused and generally weakly coordinated with the initiatives of other agencies or government.

Below is an abbreviated summary of the study's priority recommendations, which should form the basis for discussion and further refinement by the Study Advisory Group. The recommendations are elaborated by sector in Chapter 5:

Focus host community support on pastoral production and mobility. Support to host communities should focus more on developing pastoral production, pastoral trade and, above all, mobility. Such support can reach the majority of both the mobile and settled population due to the overall importance of pastoral production in the host area and the close links between the mobile and the settled groups.

Develop a strategy for host community development. An overall area development strategy is required which focuses on viable livelihood support rather than hand-outs from humanitarian agencies. This strategy should recognise the interdependency of the host settlements and the camps, and should seek to unleash the potential for further development of trade and economic linkages. The strategy should form the basis for developing a coordinated approach among key development partners, with GoK taking a leading role.

Coordinate support and focus implementation modalities. Support to host communities from GoK, development and humanitarian agencies should be better coordinated. This can be facilitated by an approach based on host community locations and their own planning processes, which are linked in turn to district development plans and to Kenya's ASAL (Arid and Semi-Arid Land) Policy. Efforts should therefore be made to support localised planning and implementation, and the *common pooling* of funds by development and humanitarian agencies into some form of "Locality Development Fund" for each community.

Support development of a host community development agency. Efforts should be made to direct the proposed host community support through an agency mandated or appointed to develop the targeted areas and with significant competencies in pastoral support and natural resource management. Such an agency should work at inter-district level under the leadership of GoK, possibly at the level of the provincial administration.

Promote further integration between humanitarian and development work. A more developmental approach to working in the hosting area should be introduced, moving from humanitarian-style thinking with short-term planning horizons towards integrated development interventions over the longer term. Development agencies should recognise the importance of the refugee presence and the associated humanitarian operations in driving local development, and tailor their interventions to enable host communities to further develop production, trading and support services linked to the camps. Humanitarian agencies should develop longer-term planning horizons and joint implementation approaches. Humanitarian financing for a protracted crisis such as Dadaab should be sourced from longer-term funding allocations.

Direct investments in services away from camps. In conducting longer-term development planning for the host area, future support should prioritise investments in *mobile* services and in communities further away from the camps, aiming for a displaced ring of investment 50-100 km away to counter-balance the over-development of the immediate Dadaab area.

Aim at opening the border with Somalia. Given the significant amount of trade taking place with Somalia, the lax regulation of this trade, the significant movements of people across the border and the problems that a closed frontier presents to vulnerable refugees, there would be clear benefits from re-opening the border and legalising the ongoing trade and movements. The current situation shows that an officially closed border is doing little to regulate trade and migration.

Re-evaluate encampment policy. With the camps now over 18 years old and the refugee crisis emanating from Somalia not likely to be solved in the near future, it is recommended that GoK re-evaluates the encampment policy towards the Dadaab refugees. The productive capacity of refugees could be significantly enhanced and applied if they were not subject to encampment. However, under the current encampment policy, additional space is likely to be required for housing refugees. Given the established administrative and logistical capacity that exists in Dadaab and the lack of politically viable alternatives for housing refugees in other areas, extension of the existing camps or a new fourth camp in the Dadaab area is likely to be needed.

Plan for the Dadaab area in light of its importance for enterprise and trade. Undertake development planning for the Dadaab area that recognises its status as a major urban centre with a sizeable level of economic activity. This would benefit both refugees and host community members.

Address host community ration card ownership and needs-based provision of food. In order to decrease dependency levels and reduce the Dadaab pull factor, the provision of free food to host communities through acquisition of refugee ration cards should be carefully decreased by developing a system to ensure that ration card holders are actually present at food distributions - unless proven to be sick, elderly or handicapped. Options for developing a more needs-based system for providing refugee rations should also be investigated. The Department of Refugee Affairs, in cooperation with UNHCR, should initiate a programme to de-register locals who have registered as refugees. The use of cards with biometrics data should be introduced at food distribution points. This will be a very sensitive process.

Expand support to local environment and natural resource committees. Expand support to District Environment Committees and Community Environment Committees to build their capacity for planning, managing and enforcing the way in which natural resources are used, ensuring that women, mobile groups and under-represented traditional leadership structures are appropriately represented in the process.

Seek alternatives ways of implementing the existing firewood programme. Identify new implementation modalities for managing the refugee firewood supply programme. Seek to break entrenched operating structures in need of new thinking and change systems of implementation that are perceived to favour elites at the expense of resource owners.



Livestock trading in the Dadaab area

1. Introduction

1.1 Study Background

The Dadaab refugee complex in Kenya's North Eastern Province comprises the three camps of Dagahaley, Hagadera and Ifo, which officially accommodate around 277.000 predominantly Somali refugees. See Figure 1 for a location map.

Figure 1: Dadaab location map



In spite of extensive investments in sustaining the camps since their establishment in 1991, knowledge of their social, economic and environmental impacts on the surrounding areas remains scanty and largely anecdotal. As these impacts have become more apparent, there has been increased attention from donors, UN agencies, NGOs and the Government of Kenya (GoK) on the provision of services in the refugee-affected districts. Recent response efforts have included a joint UN Country Team approach to development in the area and bilateral interventions of organisations such as the Kenya Red Cross Society, CARE International and the Arid Lands Resource Management Project (ALRMP). Such interventions are not always coordinated and there is scope for developing a joint approach between GoK, development and humanitarian partners for working with communities around Dadaab. This, however, requires informed decision-making.

Following the recommendations of a 2009 Review of the Danish-funded Regions of Origin Initiative in Kenya, the GoK and the Embassies of Denmark and Norway agreed to commission a study of the impacts of the Dadaab camps on the surrounding area. The study was intended to:

- provide a platform for joint evidence-based decision-making and programme implementation in and around the Dadaab refugee camps;
- serve as an entry point for a harmonised approach to integrated activities addressing both host and refugee groups;
- eliminate myths and facilitate an informed dialogue on the camps and their impacts; and
- provide inspiration for similar areas around the world hosting large refugee populations over protracted periods.

1.2 Objectives

The specific objectives of the impact study were to:

1. assess the **social and economic benefits and challenges** of the Dadaab refugee camps on the host community;
2. assess the **environmental impacts** of the camps on the surrounding area;
3. identify and assess options for addressing the negative impact and optimising the positive elements of the socio-economic impact of the camps; and
4. provide recommendations for improved sustainable presence of the refugees.

The full study Terms of Reference are in Annex B.

1.3 Defining the hosting area

There are many ways to define the Dadaab hosting area and host community. This study sought to identify the immediate impacts of the camp operations on the surrounding area and to analyse the routine interactions between hosts and refugees. In this context, socio-economic impacts were found most clearly within 30-40 km; environmental impacts were largely confined to a 50 km radius, although this is increasing, and were indistinguishable from host community impacts beyond this distance; economic impacts are being felt as far away as Garissa and Nairobi. Based on initial interviews, observations, literature review and analysis of maps, the limit of routine and regular interaction for the purposes of the study was defined as 50 km from the camps. This was mapped as an oval rather than a circle, tilted slightly from north-south in alignment with the camps and 100 wide x 120 km long (9,600 km²). Refer to Figure 2, which is based on the work of the study team and is the only map available which reliably pinpoints the locations of all host community settlements.

Figure 2: Map showing refugee camp locations and study area



White = host community villages, green = camps, yellow = Divisional boundaries, straight yellow = international border

The refugee-hosting Divisions have traditionally been seen as Dadaab and Liboi (in Lagdera¹ District) together with Jarajila (in Fafi District). However, Sebule Division in Wajir South District is just as much part of the host area, its boundary being only 3 km from Dagahaley camp, and was included within the study.

1.4 Methodology

1.4.1 Organisation

The study was carried out by a team comprising four international consultants and two Kenyan experts, supported by local interpreters and enumerators. The team's expertise covered environmental management and survey, rangeland and biomass assessment, socio-cultural, socio-economic and institutional appraisal and management, as well as economic assessment. The team also incorporated expertise in drylands development and pastoralism, humanitarian operations and Somali culture and society.

¹ Dadaab District has recently been carved from Lagdera.

The study began with an inception phase in February 2010 during which the methodology was developed and tested, baseline information was gathered, various meetings were convened in Nairobi, Garissa and Dadaab, a presentation was made to the Study Advisory Group (SAG) and an inception report was produced and discussed. Based on an agreed methodology outlined in the inception report, the main field study was undertaken during April 2010 in the eight locations of Abak Khaile, Matheghesi, Alinjugur, Welmerer, Borehole 5, Hagarbul, Sebule and Dadaab town. Additional surveys were undertaken in the refugee camps (with a focus on their markets) and in 40 rangeland sample plots up to 50 km from the camps, as outlined further below. Refer to Annex C for the study itinerary.

The study team split into three teams for the field survey: one focussed on the environmental assessment (in turn dividing as required for the field assessments and for camp-based biomass consumption studies), one focussed on the socio-economic and socio-cultural assessment in the selected communities and one focussed on assessment of economic impacts in Dadaab, Sebule and markets in the camps. Results were continuously compared and discussed within the team.

1.4.2 Approach

Social/socio-economic component

The methodology for the social/socio-economic component comprised:

- *Desk study, meetings, and review of accessible information:* The desk study was based on reports, documents and other materials from government at national, regional and district levels and from UN agencies and NGOs. Meetings were also held with a wide range of relevant stakeholders. Refer to Annex D for a list of those met and Annex E for the documents consulted.
- *Field study:* The field study consisted of quantitative and qualitative interviews, focus group discussions and community meetings in sampled settlements and surrounding areas. With a host population of at least 148,000 and a study that sought to uncover complex issues and interactions, the methodology clearly had to focus. Hence eight out of 20 host community settlements and associated sub-locations were randomly sampled as study sites, representing different distances from the refugee camps. One or two days were spent at each site and 5-7% of households were included in a quantitative, questionnaire-based survey (lower in Dadaab and Sebule towns) and an average of 15 in-depth qualitative interviews as well as one or two focus group discussions were held. Two survey instruments were developed in English and translated into Somali:
 - Questionnaire for quantitative data collection (including socio-cultural, socio-economic, economic and environmental questions); (see Annex F)
 - Questionnaire for qualitative data collection (also including socio-cultural, socio-economic, economic and environmental questions); (see Annex G)

Locally-based Kenya Red Cross volunteers with survey experience were trained to administer the quantitative household survey in the eight sample sites, under the supervision of the team leader and socio-economist, and completed 398 questionnaires in total. The qualitative questionnaire was introduced through semi-structured, in-depth interviews in an additional 115 randomly-selected households representing different sections of each village

and different wealth categories. These took 1½ to 2 hours each and were conducted by study team members with the assistance of trained interpreters familiar with Somali culture. Focus group discussions were used to triangulate information on specific issues in need of further attention or cross-checking.

- *Data analysis:* The data from the quantitative questionnaires were analysed using the Statistical Package for the Social Sciences (SPSS). A general percentage-wise response to all questions was produced and some 45 cross-response questions were also developed and analysed (see Annexes H and I respectively).

Economic component

The main direct and indirect economic impacts caused by the existence of the refugee camps and the operations of the agencies were identified, and as far as possible quantified and evaluated in monetary terms. The economic component of the study also included an extensive review of literature by the team economist and interviews were conducted with government agencies, elected leaders, host community members and businesspeople in the refugee camps, donor agencies, UN organisations and their implementing partners in Dadaab, Nairobi and Garissa. Questionnaires were used to guide interviews with businesspeople, and local persons were employed in data collection. The economic fieldwork focussed primarily on Dadaab town, Sebule town and markets in the camps. Official statistics were scarce and most study data had to be collected by the team. A particular challenge was the need to validate potentially biased information, and this was addressed through careful cross-checking between data supplied from different sources.

Environment component

The environment study methodology comprised the following components (see Annex J for details):

- Review of available literature on environmental status, refugee impacts and mitigation measures, including: GoK district development plans, food security assessments and census data, UNHCR-funded environmental impact assessments and audits, technical reports on fuel supply, aquifer status, solid waste and shelter programmes, and NGO work plans, budgets and evaluation reports.
- Interviews with operational staff responsible for refugee registration (UNHCR), water supply (CARE), environment (GTZ), shelter (NRC) and camp mapping (LWF)².
- Sampling studies in Ifo camp on refugee fuel consumption, livestock ownership, construction and fencing, as a basis for extrapolation to the other camps.
- Forest survey on 40 rangeland plots from 1-55 km from the camps to determine standing volume of trees, species mix, human impacts and dead wood availability.
- Comparison of satellite imagery from 1987 and 2010 to determine land cover changes in the camp environs.

1.4.3 Factors impacting choice of study methodology

Given the large population in the hosting area, it was decided at the inception stage to focus on a sample of communities from which results could be extrapolated. Due to the complexity of the

² GTZ: *Deutsche Gesellschaft für Technische Zusammenarbeit*; NRC: Norwegian Refugee Council; LWF: Lutheran World Federation.

issues to be studied and a likelihood of bias in the responses to some questions, the study had an added focus on qualitative survey methods and a significant effort was made to triangulate responses for validation purposes.

The heavily politicised refugee situation and the very specific circumstances of the Dadaab area favoured the use of locally-based enumerators. Village-based Red Cross volunteers were therefore recruited as enumerators and worked in the same sites as the study team members, who could supervise their work.

The selection of sampling sites was also influenced by the security situation, and settlements close to the Somali border were ruled out. The paucity of existing data on the host communities meant that most of the information on socio-economic conditions, trends and historical development had to be collected in the communities themselves.

Given the risk of receiving biased answers on any questions related to economic interaction between hosts and refugees, a two-step approach was used for the assessment of host community economic activities. The general picture of economic activities, revenues from work, trade and sales of produce was first addressed, and was followed by quantitative determination of the importance of the different sources of household incomes and the extent to which they were influenced by the existence of the refugee camps and their associated operations.

An observed tendency among host communities to focus almost exclusively on the negative impacts of refugees meant that objective monitoring techniques were especially important in the environmental aspects of the study. The team therefore made use of empirical measurement tools to assess a targeted sample of 40 rangeland plots on which live standing biomass, usable dead biomass, species composition and evidence of human interference were recorded. Although questions on natural resource use were included in the community questionnaire, the primary focus in the environmental assessment was on methodologies independent of human influence. Estimations of refugee livestock holdings and measurement of refugee biomass consumption within the camps were also made using quantitative methods that as far as possible avoided respondent bias.

1.4.4 Study Limitations and Risks

Due to the lack of published statistical information, especially in relation to economics and trade, the study team chose to use a bottom-up approach for the estimation of impacts. Generalising from samples always brings a risk of amplifying errors. However, the study ensured that figures were double-checked and conservative estimates were always used.

The lack of reliable information on host community population, distribution and status meant that the study team had to make its own estimates of these figures. This resulted in new insights into social and demographic changes in the host area, but it should also be stated that figures are estimates and have margins of error.

Results from the fieldwork gave a consistent picture of impacts with only a few cases of contradictory information. It became apparent that much of the information provided by host community leaders in public and at the initial superficial level painted a very different picture of impact than the reality found as the study progressed. The nature of the dynamic between humanitarian agencies and host communities tends to generate long lists of requests for support that must be provided as “compensation” for the negative impacts of refugees. There is a risk that any findings from this

study that contradict the entrenched view of refugee/host relations may be rejected, and this is something that the SAG will need to be prepared for.

For example, study findings include the sensitive issues of large-scale influx of settlers to the host area, large numbers of people from the host community being registered as refugees, and the vibrant economic interactions that the camps have stimulated. Disseminating these unprecedented findings risks creating a more difficult relationship between GoK, humanitarian agencies and host communities, as they shed new light on the significant benefits of the camps for the hosting area, as well as their negative impacts, and put into perspective the frequently-raised issue of compensation to host communities for the hosting of refugees. It is not the intention of the study team to endorse any reduction in support to host communities that might appear justified in light of the previously un-quantified benefits that they are realising, but to argue for a different way of supporting those communities that promotes self-sufficiency rather than dependency.

The study also looked at the sizeable trade relationships with Somalia (which are illegal as long as the border is officially closed), the significant cross-border interactions and movement of people back and forth, and the difficulties in determining refugee/host identities. Some of these findings risk fuelling anti-Somali sentiment and questioning the right to protection of Somali refugees. The study team strongly advocates for the right of genuine refugees to protection and for the importance of open trade and economic interaction to create a vibrant society. The team hopes that the findings are used to argue for opening of the border, relaxation of controls on refugee movement and commerce, and contribute to the most possible open processes for determining the status and identities of refugees.

Lastly, the ownership of the study findings and the way in which the recommendations are finalised and presented need to be carefully addressed by the SAG, otherwise there is a risk of the study not being properly utilised in development planning for the Dadaab area.

2. Background and Context

2.1 Location

The Dadaab refugee camps are located close to each other in Lagdera and Fafi Districts. Wajir South is also a refugee-hosting district in the sense that its border is a few kilometres from Dagahaley camp. Fafi and Lagdera are within the former Garissa District and Wajir South within the former Wajir District. All three are in Kenya's North Eastern Province and are arid to semi-arid, with pastoralism being the dominant livelihood system. The refugee camps have existed since 1991 and host primarily Somali refugees.

2.2 Topography and Climate

The area within 50 km of the camps is mostly flat or gently undulating with elevation between 110 and 190 m above mean sea level (a.m.s.l.). The camps themselves lie at 120-130 m a.m.s.l., Ifo being the lowest, while the surrounding terrain generally slopes downwards from west to east. The main geographical feature is the Lagh Dera flood plain, which passes immediately north of Dagahaley camp and is a former continuation of the Ewaso Ng'iro River that rises on Mount Kenya. The Lagh Dera floods periodically and inundates parts of Dagahaley and Ifo.

The area is classified as arid, with mean annual rainfall at Garissa of 325 mm falling in a bimodal pattern, often in isolated heavy downpours. Maximum daily temperatures range from 34°C between June and August to 38°C in February and March. The climate is therefore hot and dry with high rates of evapo-transpiration, interspersed with occasional flooding in poorly drained areas.

2.3 Soils and Vegetation

The camps are not situated in a homogenous sea of dryland scrub, as casual observation may suggest, and 14 different landscape classes have been identified (IRD, 1999). Soil type is the main determinant of land cover so the soil map of the area (see Annex K) gives a general indication of likely vegetation cover. The *adable* clay soils are generally the most thinly vegetated, exemplified by the Lagh Dera near Dagahaley. Some of the clay soils (*kunia*) found along other valley floors support thicker vegetation. The remainder of the area's soils may sustain visibly dense bush, but low rainfall and a lack of nutrients mean that growth rates are slow. The most productive soils are the loamier *ber gudud* and most refugee wood harvesting takes place in these more fertile areas which lie mostly to the south and west of the camps, while the areas to the north and east have the poorest sandy soils (*raama*) and are less fertile, less productive and hence the least attractive for sourcing building materials and fuel.

2.4 Socio-economic Situation

The people living in the study area are ethnic Somali pastoralists. Normally such an area would have a low population density of around 7 people/sq.km, but actual densities around Dadaab are more than double this figure as a major influx of population has been experienced. The host community comprises both people who are settled in 20 major villages within 50 km of the camps and people practising mobility within the refugee hosting area and beyond. A total of at least 148,000 people are now living in the hosting area, not including the camp residents.

3. Study Findings

3.1 Host community and host/refugee identities

3.1.1 What are the local population dynamics?

There are no reliable figures on the number of the people in the camp-hosting area. The 2009 census results had not been released at the time of the study and both GoK and international agencies were using extrapolated data from the 1999 census. No accurate map of the host community settlements exists either. A major initial task was therefore to establish the location of host community villages and the size of the population within the 50 km study zone.

The locations of villages were established through interviews with government officers and knowledgeable local people, plotting of food distribution points and analysis of maps and satellite images. The resulting settlement map developed by the study team is shown in Figure 2 above. Population figures were established through household interviews in eight randomly selected villages at various distances from the camps, and through interviews with local leaders and data provided by those who had acted as enumerators for the 2009 census. Figures were collected both for people in the settlements and for those more mobile, and were triangulated through

independent interview. Food distribution figures were provided by the NGOs responsible for WFP distribution and interviews with those involved established the percentage of people being targeted for food in each community. The food distribution figures for food relief to the host communities, locally reported populations and the provisional census figures corresponded well in the eight selected villages. The food distribution figures could therefore be applied with confidence to estimate the populations of the other, non-visited villages. In the event of discrepancies between sources, the study always used the most conservative estimates.

Using this triangulated approach, it was established that the population within 50 km of the camps is at least 148.000 people, of whom approximately 60% are in settlements and 40% are mobile pastoralists not permanently settled in any village. This suggests that the camp-hosting area has seen a significant rise in population from the estimated 1999 level of 41.000, with an annual growth rate of 11,7% p.a. (compared with the average for North Eastern Province of 3,7% p.a.). The 1989 pre-refugee figure was reported to be around 15.000, thus the host population has increased tenfold since the initiation of the refugee support operation. The study found an average household size of 7-8 people hence there are approximately 20.000 host community households. The population figures are shown in Table 1.

Table 1: Populations of host communities

Division	Settlement/ sub-location	Distance to closest camp (km)	Estimated total population
Dadaab	Dagahley	0	2.594
	Labasigale	2	3.459
	Dadaab	6	19.000
	Weldoni	11	3.026
	Matheghesi	13	8.000
	Welhar	17	2.162
	Abak Khaile	23	6.000
	Saredho	25	4.000
	Kumahumato	27	6.918
	Alikune	34	5.378
	Hagarbul	42	6.918
Jarajilla	Borehole 5	1	7.000
	Alinjugur	10	10.000
	Yumbis	19	6.053
	Welmerer	31	10.000
	Hagarbul B	42	3.000
Liboi	Kulan	37	6.918
Sabuli	"Darfur"	3	10.160
	Sabuli	25	25.000
	Shimbirbul	27	2.313
Total:			147.898

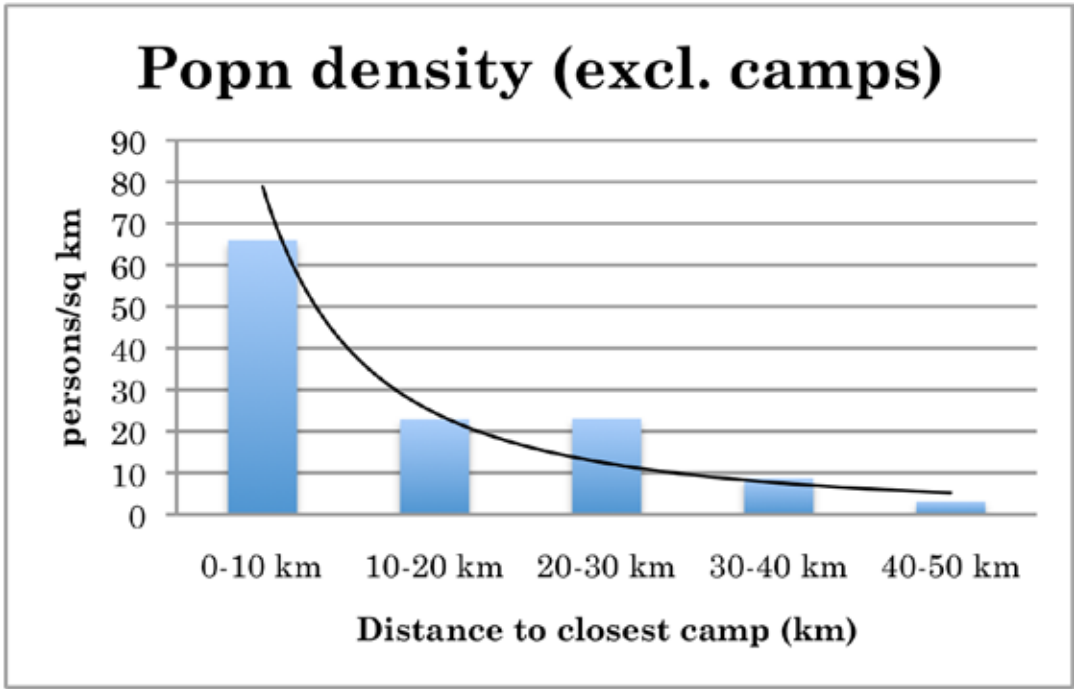
Population density is highest within 10 km (66 people/sq.km) and declines with increasing distance from the camps. The average density across the whole 0-50 km range is now 15 people/sq km, compared with an average for other rural areas of North Eastern Province of approx. 7 people/sq.km. Refer to Table 2 and Figure 3 below.

Table 2: Dadaab host community populations and population density by distance from nearest camp

Distance	0-10 km	0-20 km	0-30 km	0-40km	0-50km
Population	42.213	71.454	115.684	137.980	147.898

Distance	0-10 km	10-20 km	20-30 km	30-40 km	40-50 km	Ave. 0-50 km	Ave. for rural NE Province
Total host popn.	42.213	29.241	44.231	22.296	9.918		
Area (sq km, oval)	640	1.280	1.920	2.560	3.200		
Density (persons/sq km)	66	23	23	9	3	15,4	7

Figure 3: Chart showing population density against distance from the camps



The strongest population increase has been seen closest to the camps. In-migration is the key driver of this trend. Interviews with host community members suggest that more than 70% of them settled in the Dadaab area less than 15 years ago and that many people have moved in from a much wider region, deliberately choosing to settle in the camp-hosting area rather than the many alternative locations to which they could have migrated.

Although most host community members state that they originate from the “local area”, it was found that this generally refers to the wider area where their respective clans have rights of access, not necessarily the immediate vicinity of Dadaab. Three Ogaden sub-clans (the Aulihan in Lagdera, Abdwak in Fafi and Magarbul in Wajir South) account for the majority of the host population. These sub-clans inhabit large areas beyond Dadaab where fellow sub-clan members are granted access for grazing, water and settlement. The fact that the population concentration is most pronounced close to the refugee camps suggests that people have chosen to converge there rather than in other areas controlled by their sub-clans which are further away. This is despite the fact that this is the area where negative environmental impacts are most pronounced.

Clearly there are specific factors attracting people to the camp environs, in spite of the degraded condition of the natural resources.

3.1.2 Who is mobile and who is settled?

60% of the population in a given sub-location are typically settled in villages while around 40% are usually moving with livestock. Closest to the camps the ratio is closer to 65% settled: 35% mobile and further away it is 55% settled: 45% mobile. An important finding is that the majority of households (around 90% in the in-depth interviews) are divided, with some members mobile and others settled, or at least having relatives in households that are mobile (if they are settled) or settled (if they are mobile). Even for those households or individuals settled in centres, 41% are themselves mobile for part of the year. Combining settlement and mobility is a key strategy for reducing risk, and one that is used at various scales both within households and during seasonal and annual cycles. Even households that have fallen out of pastoral production expect to return to a more livestock-dependent mode of production and to re-adopt mobility in some form. The main overall finding is therefore that the vast majority of households in the camp-hosting area depend upon a complex combination of settlement and mobility, which makes it misleading to apply definitive attributions of settled or mobile.

3.1.3 How are refugee and host community identities defined?

Host and refugee communities overlap closely and their identities are intertwined. It is not a simple matter of a distinct group of refugees arriving and living on the land of a distinct host community. The two populations share a common language, culture and religion, and in many cases clan and sub-clan identities, together with a common-property approach to resources across large swathes of land either side of the international border. For those Somalis who sought refuge in the camps, relationships with ethnic Somali host communities have, over the 18 years of the camps' existence, evolved with a deep and intimate degree of overlap; host community families often have members in the camps; host community households also often have members moving back and forth between Somalia and Kenya according to pasture availability. So defining a household as Kenyan or Somali is rarely a clear-cut process; much of the host community population has itself come to the camp-hosting area during the last 20 years and cannot truly be identified as hosts in the sense that they were settled there before the refugees arrived and explicitly agreed to host the camps in their area. The holding of a Kenyan ID card or a refugee ration card does not necessarily mean that this card matches the real identity of the holder.

Arriving at a fair method of pinning down the identity of this large population, taking into consideration the history and livelihood systems of an inherently cross-border society, is clearly difficult. Confusion has been exacerbated by the different interpretations of identities by the states of Kenya and Somalia and the international agencies, allowing many ethnic Somalis to assume whichever identity is most beneficial at a particular point in time. Nomadic Somalis fiercely maintain a transnational clan identity, which often contradicts the boundaries of the modern state that are built on a territory-based concept of citizenry, identity and belonging.

It is especially important to stress that virtually all host community households have members of their extended family in Somalia during all or part of the year, and that no-one interviewed reported that this movement back and forth over the international border constituted a security problem for those involved, as long as the main towns and transport corridors are avoided. Movements are guided by rain and range availability. This finding has profound implications for the much-anticipated influx of refugees to the Dadaab area, as large sections of the border are effectively open to pastoralists and can be crossed with few problems, and the recent rains in south-central

Somalia, after three years of drought, have meant that fewer people find it necessary to seek refuge in Kenya than the international agencies expected. The modalities for crossing at official border posts are, however, rather different and this has implications for those seeking to enter Kenya who have no connection to pastoral societies in the border areas.

3.1.4 Clans, access and interaction – How related are the host and refugees?

Somali people are broadly divided into six large clan families: the Darod, Isaq, Dir and Hawiye, and the riverine Ranhanwein and Digil-Mirifle. The majority of those in the Dadaab host area are Ogaden, part of the Darod confederacy, and they also form the majority population in the refugee camps, followed by other sub-clans of the Darod. The same Ogaden sub-clans found in Wajir South, Lagdera and Fafi Districts of Kenya are also found across the border in Middle and Lower Juba. The majority sub-clan in Lagdera are the Aulihan, and they form a large proportion of the refugees in Dagahaley and Ifo camps. The majority Ogaden sub-clan in Fafi are the Abdwak, and they form a large proportion of the Ifo and Hagadera camps. In Wajir South are found another four Ogaden sub-clans, of which the Magarbul are the most numerous.

The similar clan backgrounds and the tradition of sharing of resources in good and bad times dominate relations between the ‘host’ and ‘refugee’ communities. Host community members initially tend to deny any interaction with refugees, but digging deeper it is clear that they share much in common with the people in the camps, many of whom are not in fact seen as refugees but as fellow clansmen. The acceptance of a large influx of people who are given access to local natural resources, as well as the incorporation of local pastoral drop-outs into the camps, has been made possible by these sub-clan relationships. Access to natural resources is also to a large extent regulated along clan lines by leaders and elders of the host communities, who are engaged in various agreements with camp residents that govern access, including access to grazing resources. This implies that access is easier if sub-clan affinities are utilised, whereas it is reportedly more difficult or not even possible for minority clans to access host community resources.

In spite of the blurring of identities, it is still clear from interviews that genuine refugees who have fled to Dadaab seeking protection are not living in the host community area, but are living in the camps. Settling among a host community necessitates a direct relationship with the sub-clan present in the area. More than 95% of all households in the villages in Fafi District are Abdwaks and the same goes for Alihuans in villages in Lagdera District. Minimal intermingling of sub-clans is taking place, except in Dadaab and Sebule towns.

3.1.5 How many from the host community are registered as refugees?

Based on in-depth, independent interviews with at least ten individuals in each of the eight surveyed villages, together with extended interviews with strategically-placed camp residents, triangulation of information from different informants, focus group discussions, direct observation and a conservative consideration of the figures given, the study established that a large proportion of host community households have members holding refugee ration cards. The incidence of card ownership is higher closer to the camps. Based on the village surveys, Table 3 presents the estimated prevalence of ration card ownership among the host community. These represent conservative estimates and actual figures may be higher.

Table 3: Estimate of refugee ration card ownership in the Dadaab host community

Ration card holders (i.e. host community members registered as refugees)			Total
0-10 km	10-25 km	25-50 km	
14.456	10.572	15.472	40.501

Assumes: 50% hold cards from 0-10 km; 30% from 10-25 km; 20% from 25-50 km; 15% in Dadaab town (due to the proximity of government authorities, the repeated drive to register people in the Kenyan system and engagement in local business and NGO contracting which makes it more beneficial to be officially Kenyan).

Thus at least 40.500 people out of 148.000 (27%) within 50 km are believed to hold refugee ration cards. They include both people who are from the host area originally and others who have moved there from other areas in Kenya, primarily to seek a better livelihood. These are not refugees.

The practice of registering as a refugee is widespread and it is not considered especially difficult to obtain a refugee card. It is moreover seen as a logical survival strategy for anyone living in the host area. It should also be stressed that although holding a Kenyan ID card and a refugee ration card at the same time has become more difficult due to biometric registration, many host community members have made a choice between holding one of the other. For many, holding the ration card makes more sense as it provides food (which converts to income) whereas a national ID card offers less tangible rights. It is also clear that many do not believe that holding a ration card will in fact deny them of Kenyan identity, as they perceive the Kenyan registration system to be corruptible. So although the ongoing refugee verification process may eliminate double registration, it is unlikely to reduce significantly the number of ration cards held by the host community.

3.1.6 How do negotiations function between host and refugee stakeholders?

During the long existence of the Dadaab camps, both formal and informal avenues for negotiation and conflict resolution between host and camp-based communities have been established. Formal avenues to address natural resource access include Environmental Working Groups and Environmental Committees. But outside the milieu of humanitarian and government agencies, vigorous interaction takes place on a non-formal basis between the leadership of the refugee camps and the local leaders, who hail from similar sub-clans. Agreements exist over the vexed question of land and resource rights, the allocation of business plots within the camps and the division of jobs and contracts. Elders from both sides resolve conflicts and facilitate interactions between the camps and neighbouring villages. As a result, the residents of the camps are able to have a more vibrant existence, and ambitious refugees are able to make investments, establish businesses and generate income. The overlap of identities and roles, and the intermarriage and cooperation between the peoples, has greatly smoothed the stay of the refugees.

3.1.7 What social interaction and local politics are at play?

With the Dadaab camps being major centres in the area for services, shops and social amenities, the host community is naturally inclined to look towards the camps for a wide range of benefits. Social interaction between host community members and refugees largely takes place in the camps and is significant. The closer the host settlements are to the camps, the more the interaction. The camps are clearly seen as places where the urban-oriented activities are taking place and host communities are in comparison seen as the rural areas. There is a strong sense in the host community that the camp environment provides better services and economic opportunities than in the host area. Refugees are seen as getting the better deal as international humanitarian

standards are applied to refugees but not to hosts. Benefits arising from the presence of the refugees are typically downplayed and can only be drawn out through a process of in-depth interview and discussion. With local politics naturally aimed at getting the best deal possible for constituents in the form of government and donor support, host community politicians typically and quite vocally stress the problems associated with the presence of the camps and a claimed need for compensation directed at the host community.

3.1.8 What are the push, pull and deterrent factors in the host area?

As elsewhere in the ASAL areas of Kenya, recurrent droughts have had profound effects on the population in the Dadaab host community. Droughts and significant reductions in family livestock herds have been a major push factor concentrating people in centres with water, food relief, schools and health services. Poverty is also a factor leading to settlement, but surprisingly the study revealed that people who have settled in the host villages within the last five years are not in fact the poorest, but are actually slightly better off than the average (as exemplified by their larger livestock holdings and their own assessment of their relative wealth).

There are also a number of pull factors to the hosting area that are not typical of other ASAL areas of Kenya. The most important include: the availability of cheap food due to indirect subsidy via distribution in the camps and imports via Somalia; the opportunity to register as a refugee and receive free rations and non-food items; the availability of more services in the area than in other comparable places; and the existence of more employment opportunities. Some of these pull factors are common to other urban centres of the region, but there are also important differences as the economy in Dadaab is fully driven by the funding of the refugee operation and the presence of the refugees.

Deterrent factors keeping people from moving to the host area are the need to belong to one of the clans who own land locally, and the high level of competition for access to natural resources.

3.1.9 Development processes, actors and initiatives in the host area

The three refugee-hosting districts were created in 2007-8: Wajir South was carved out of Wajir while Lagdera and Fafi were carved out of Garissa. A fourth district (Dadaab) was being established within Lagdera during the study period. Lagdera and Fafi have developed their district development plans, although it was not possible to access a development plan for Wajir South.

The Lagdera District Development Plan of 2008 lists a wide range of planned activities, but only mentions the presence of the refugee camps in relation to environmental degradation from the over-use of vegetation. It does not analyse the specific situation of the different communities around the camps or propose any measures that could build productively upon the significant development opportunities associated with the presence of the refugees and the plan does not capture the support provided by humanitarian agencies to host communities. The camps and the refugee support operation are apparently not seen as issues that merit attention in the district planning process. The significant population increase in the host area is also not captured in the plan. Hence services are planned for a population that numbers less than one third of the actual population in the host area. The plan reports a wide range of initiatives in all sectors, but implementation performance is reported to be limited. However, the health and education sectors are clearly seeing better implementation than other sectors and enjoy better support from donor-funded programmes. The major ongoing initiative in support of food security, livestock, agriculture and natural resources is reported to be the Arid Lands Resource Management Project (ALRMP). Apart from health and education, the refugee hosting area is generally underserved by the district

administration and few development initiatives are described. The humanitarian organisations are the main providers of project support. The district plan is linked to national policies and strategies, particularly the Medium Term Plan for Vision 2030, but no links to any provincial development planning process are mentioned.

The Fafi District Development Plan was also developed in 2008 and follows the same format as the plan for Lagdera. It addresses the same problems and proposes the same solutions, suggesting that the same team assisted both districts in plan development. As in Lagdera, the Fafi plan does not address the presence of the refugee camps or the refugee operation in the district. No attempts are made to address the specific development challenges and opportunities presented by the presence of the refugees and the refugee-hosting area is reported to be underserved by the various government development efforts.

GoK has the lead planning responsibility for the host area. The district development plans are a tool for it to fulfil that planning responsibility. No specific overall plan for the development of the North Eastern Province exists, but the 2009 National Policy for the Arid and Semi Arid Lands of Kenya gives overall guidance for planning for the province and its districts. This Policy does not address refugee – host population issues. At the national level, the Kenyan Economic Recovery Strategy for Wealth and Employment Creation 2003-07 (the Kenyan PRSP) addresses development issues in the country but also does not address impacts or opportunities associated with refugee hosting in any of the areas where camps are located.

The responsibility within GoK for managing refugees and the camps lies with the Department of Refugee Affairs (DRA), which has increased its presence and is increasingly playing an important role in camp management. UNHCR and a range of humanitarian organisations are implementing the refugee operation and the districts administrations and local politicians address issues that arise between host communities and refugees. GoK oversight and regulation of trade and business development associated with the camps and the host area is in practice very limited.

A number of host community development initiatives are implemented by the humanitarian agencies working in Dadaab. They are described in Annex A. Additional development initiatives being implemented in the hosting area are as follows:

Arid Lands Resource Management Project (ALRMP). ALRMP is a major GoK initiative supported by the World Bank (WB) and the European Union (EU) which addresses development in all ASAL districts of Kenya. The Ministry of Development of Northern Kenya and other Arid Lands is the lead GoK agency and the project's focus is on the empowerment of communities and support to investments at community level which will increase food security and decrease vulnerability. ALRMP is in its second phase running to the end of 2010 and a third phase is under preparation with an expected budget of USD 180 million and likely donor support from the WB, EU, DFID and Danida. ALRMP has been working in several of the Dadaab host communities and is cited as the key development initiative in the area. It has supported community action planning and the formation of a number of community development committees. It is being managed from the ALRMP offices in Garissa and Wajir. At the level of these two greater districts, district steering groups have been supported to plan, coordinate and facilitate development initiatives. Support is also being provided for the establishment of district steering groups in the four new districts, however with the new Constitution having been adopted this process might be put on hold and work concentrated on the new counties/former greater districts. ALRMP and its close support to district implementation continues to be an important vehicle for development in the Dadaab area

and holds the possibility of further facilitating development. The third phase will continue to focus on food security, improved production and livelihoods and reduction of vulnerability. An added focus on a number of growth axes in the arid districts will be added. In this respect the Dadaab host area could be treated as a growth axis and receive a specific focus in the third phase.

The UN Kenya host-community project. This two year project was launched in December 2007 with a budget of around USD 2 million from the UN and Japan. The overall goal is also to improve the long-term food security of the host community, through provision of food assistance and asset creation as a means to address the inequality between the refugee and host community. Other areas of intervention include education, water and sanitation, rural roads, environmental conservation and peace building. The project is designed to empower host communities in the targeted areas to produce their own food, improve local security, secure pasture and water for their livestock and rehabilitate the environment. The budget is divided between UNICEF, WFP, UNHCR and UNDP. Implementation is partially supported by ALRMP. Actual implementation is being carried out by the Ministry of Water and Irrigation; ALRMP, the Ministry of Education and UN organisations including WFP, UNICEF, UNDP and UNHCR (collaborating with GTZ). An assessment of the project in June 2009 concluded that implementation had been very slow. Various reasons were listed, key among them being a complicated funding system, deficiencies in project preparation (especially budgeting) and a lack of capacity within the implementing partners.³ The project was extended to finish in July 2010, but has been further extended due to significant delays. The institutional challenges of the project and the slow implementation rate mean that it is not likely to become a significant vehicle for development support to the host area.

Kenya Red Cross/Danish Red Cross health interventions. The Kenya Red Cross Society (KRCS) has been implementing an integrated health project targeting both refugees and host communities in Dadaab since 2005. The first phase was completed in January 2008 and a bridging phase is expected to lead to a continuation of the project until 2012. A provincial blood donor and satellite transfusion centre was constructed in Garissa, the Dadaab Health Centre was upgraded to a sub-district hospital and demonstration latrines were constructed. More than half of the population relies on monthly medical outreach visit activities to address the basic health needs for the host community. The project has further engaged youths, both in and out of school, in the communication of HIV/AIDS and sexual reproductive health to promote sexual behavioural change. The KRCS has been the main provider of support to the host community within the area of health care outreach and this constitutes an important service to the host population.

GoK (and donor) health sector support. As part of a national effort to provide health services to the population, GoK is supporting basic health provision in the Dadaab area. A special programme initiated in 2003 is targeting underserved areas in North Eastern Province for access to basic health packages. This has included support to nomadic clinics to serve mobile pastoralists.

WFP food relief. Based on food security assessment undertaken in the ASAL of Kenya by the Drought Management Initiative under ALRMP, KRCS is responsible for distributing relief food on behalf of WFP in the Dadaab host area and the NGO WASDA⁴ in Wajir South. As in other arid parts of Kenya, the food relief is crucial for avoiding outright famine. In Dadaab it is, however, likely that the availability of additional free or cheap food sources (from refugee rations or illicit imports) make the needs somewhat lower than in other arid parts of Kenya.

³ Report of inter agency joint assessment mission for host-communities in Dadaab and Turkana (2009).

⁴ Wajir South Development Association.

3.1.10 Development challenges in the host area

The Dadaab host area experiences a number of development challenges and opportunities. At a fundamental level in a protracted refugee situation like Dadaab, it cannot be known when the refugees will return to their homeland and the associated support operation will be phased out. Hence it is difficult to decide when to address problems and when to utilise opportunities. In Dadaab this dilemma has resulted in a short-term compensatory approach that addresses only the most immediate and visible problems, and there is little evidence of government and development agencies capitalising on the development opportunities that the presence of so many refugees and an operation of this size present. Local communities have been quick to respond to these opportunities, but their response has not been supported and has largely gone unnoticed. There are, for example, no advisory programmes or micro-finance initiatives to support the large number of host community members involved in trade with the camps and within the camps; there are no specific efforts to support pastoral production to make more beneficial use of the ready markets created by the camps; and the significant population increase is not captured in any planning processes and hence the provision of services to the host population has to a significant extent been left to the humanitarian agencies and is not part of an overall planning process for the districts or the province. In a pastoral area like Dadaab, where movements are common, people are opportunistic and clan affiliations facilitate access, it is to be expected that significant in-migration will take place if opportunities arise, and indeed this is what has transpired.

With a very significant increase in population attracted to the Dadaab area by opportunities associated with the camps, and with their livelihoods intimately dependent on access to cheap or free food and access to the markets that the camps provide, there are likely to be serious local repercussions from a future phasing out of the refugee operation in the area. The impact will be less significant if the phase-out takes place gradually over a longer period of time.

Although the host population has increased significantly, it is important to note that the vast majority of local people remain dependent on pastoral production, a production that has gone up significantly in the host area and which is dependent upon large-scale livestock movements and on the local availability of cheap relief food that can be fed to animals during droughts. The pastoral mode of production is also closely associated with the ready markets for livestock products in the camps. Alternative production systems such as agriculture have reportedly largely failed in the area. Development efforts need to recognise this and seek to support moderate pastoral production improvements rather than promoting agricultural initiatives that will never be locally sustainable. Given that the refugee operation is at some point likely to be phased out, it makes further sense to support pastoral production, which by is inherently mobile and can be moved to other areas if the Dadaab area becomes less attractive. The extent to which pastoral production can be improved should not be overstated, however, as the conditions in the Dadaab area do not allow for significant improvements in breeds and in fodder production.

The concentration of people in the host area is a clear consequence of the large-scale refugee operation. Services have been provided in the area (to a large extent by humanitarian agencies) and this has attracted more people. District-led planning for the distribution of services has been over-ridden by the provision of services (health facilities, schools and water supplies) by the Dadaab-based humanitarian agencies. A more comprehensive approach in which government (through the districts) prioritised service provision would be beneficial, as it would seek to attract people away from the immediate host community area closest to the camps.

Another development challenge is how to ensure that benefits and opportunities associated with the refugee operation can be provided to communities further away from the camps, to avoid further concentration of population near to the camps. Such opportunities could include firewood supply contracts, services along livestock routes, provision of veterinary services, training in trading and business opportunities associated with the camps, and infrastructure support to ease transport to camps. Such support would no longer be provided as “compensation” to the immediate host community, but would form part of an overall development strategy for the refugee-affected area that recognised the immense importance of the refugee camps and associated opportunities.



Water development in Dadaab area

3.2 Impacts on livelihoods, production and natural resource management

3.2.1 How do households diversify livelihoods and make a living?

Livelihoods in the host community are overwhelmingly pastoral, with 87% of interviewed households citing pastoral production as their primary livelihood and 84% having no significant secondary livelihood. The vast majority of households own some livestock. However, livelihoods are diversified and all households also ensure that they have access to local food relief and/or refugee rations. Hence, all have access (directly or through sharing with relatives) to relief food distributed by the KRCS or WASDA and a large number also have access to refugee rations (either by being registered as refugees themselves or by sharing with family members who have access to the rations). Diversification of livelihood strategies also includes the education of children in order that they might get paid employment and support their family.

Many households sell products to the camps or to other local people who have settled in the immediate camp environs. These include livestock, milk, firewood and donkey cart transport services and such pastoral products provide the main source of income for 88% of respondents. Access to formal employment is only significant in the communities immediately adjacent to the camps or in Dadaab town.

Dependence on the market has increased and dietary changes continue to move families away from the classical pastoralist diet of milk and meat. Rates of exchange in the host area make it profitable to sell livestock and buy grain.

Although host community households adopt a range of different strategies to piece together a livelihood, widespread poverty still prevails. However, poverty levels are less pronounced than would be expected for a pastoral area coming out of one of the worst droughts in memory and with a heavy burden of in-migration. In fact no-one interviewed classified themselves as destitute and only 20% saw themselves as being poor. Fewer than 3% of households have no livestock at all. Although the study findings cannot be directly compared to the prevalence of absolute rural poverty for North Eastern Province as a whole of around 60-65%, it does indicate less acute poverty around Dadaab than in other comparable areas. However, the dependency on free food, services and donor-funded projects is more pronounced than in other comparable pastoral areas, with basic services like water and schooling usually available within a short distance of the villages.

3.2.2 What developments can be seen in pastoral production?

Pastoral production is by far the most important source of livelihood in the area and virtually everyone with more than a few sheep or goats (shoats) keeps part of their herd mobile. Livestock are trekked long distances and a significant numbers of animals are moved back and forth over the Somali border depending on where grazing is available, in age-old movement patterns. Mobility is seen as a vital element in optimising pastoral production. However, part of the herd is typically kept around the settlement all year round, one reason being to facilitate feeding with relief or refugee food during the dry periods of the year.

Although average livestock holdings per household have decreased substantially over the last 15 years, the large rise in the number of host community households has resulted in a substantial increase in the total number of livestock in the area. With an eight- to ten-fold increase in the human population over the last 20 years alongside an estimated 50% drop in livestock holding per household, total host community livestock numbers are still estimated to be four or five times higher. It seems that such an increase has taken place without the pasture and browse resource being completely depleted. According to local views, there is still room in average and good years to increase livestock holdings.

There have also been changes in the nature of livestock holdings and there is now a markedly smaller percentage of households with large livestock herds alongside a much larger percentage of households with herds sizes around the overall average. And although the general picture is one of decreasing livestock numbers per household, 12% of households still report more camels now than five years ago, 20% report more cattle and 17% report more shoats. These are not trivial numbers and (given that the study was conducted just after a serious drought) indicate that the picture of livestock holding and changes in pastoral production for individual households is very dynamic.

Pastoral production systems in the host community have been developed specifically to supply the refugee camps and their major markets. The selling of milk has mushroomed and more than 50% of all households sell milk to the camps on a regular basis. Livestock have always been sold into regional market centres, primarily Garissa, but more than 30% of all households are now also selling livestock at least one per month into one of the camps. The total sales figures for milk and livestock are not very different from other pastoral settings with good market access in terms of the percentage of households participating, but they are more significant in terms of the total *number* of host community households involved.

It was found that larger holdings of camels and cattle correlate closely with higher income from market participation. Thus livestock wealth predictably translates into the realisation of greater benefits from trading. For shoats the picture is somewhat different with less correlation, indicating that shoats are seen more as subsistence animals and facilitate participation in barter rather than economic enrichment.

Droughts in which large number of livestock die-off are a recurrent phenomenon, as vividly recalled by several respondents. Livestock numbers normally increase again after such droughts and most households expect a significant increase in their holdings as a result of the good rains which fell between January and April 2010. A recovery period of three to five years with normal rains is considered necessary to get livestock herds back to pre-2006 levels.

Although pastoral production and mobility are by far the most prominent features of the local livelihood system, the pastoral way of life has received very limited support in the various host community initiatives implemented by the humanitarian agencies in Dadaab. Due to limitations of mandate, understanding or technical capacity, investments in host communities from these agencies tend to be focussed on schools, clinics, boreholes (for mixed livestock and human use) and other settlement-oriented infrastructure. Support to veterinary services, mobile social facilities and improvements to pastoral breeds, pastoral products and trading have been limited. The capacity of district administrations to support pastoral production is limited in the host area and only through specific programmes like ALRMP and NALEP have host communities seen some pastoral production support initiatives. Among humanitarian as well as district and development agencies there has been a tendency to support *alternatives* to pastoral production, based on the assumption that pastoral production and pastoral mobility does not offer a future for many people. However, this assumed evolution in livelihoods away from pastoralism was not observed by the study, with an overwhelming level of sustained involvement in pastoralism in host communities, whether or not a household is fully or partially settled or has remained mobile.

3.2.3 Who owns the livestock and how many?

Livestock owned by residents of the camps are taken out in large flocks each morning and brought back in the evening. Interviews established that very few are grazed further away than this daily movement allows. Few, if any, livestock owned by refugees are kept away from the camps and grazed by host community members. Therefore grazing competition is largely limited to a 15-20 km radius from the camps.

The study team undertook a livestock count and estimated that 53,000 sheep/goats (shoats) and 8,000 cattle are kept in the camps. Meanwhile the number of livestock owned by the host community is estimated to be 80-100,000 camels, 200-250,000 cattle and 300-350,000 shoats. Only during the rainy season are the majority of these livestock kept in the host area.

The figures show that host community members own much more livestock than the residents of the camps. The difference is a factor of 25 for cattle, 6 for shoats, and with camels not owned by refugees at all. This figure is significantly different from that normally reported by local leaders. It is estimated that host community households own an average of 12,8 Tropical Livestock Units (TLUs)⁵, though they may not necessarily be present in the host area. Assuming that a household of 7-8 people needs a minimum of 25 TLUs according to accepted standards for East Africa to sustain itself entirely from pastoral production, it is clear that the host community has only half the number of livestock required. The study findings suggest that 40-50% of households exceed the 25 TLU threshold but that more than half have fewer than 25 TLUs and must therefore rely on diversified livelihoods to support themselves.

3.2.4 How is grazing, browsing and land managed?

The refugee-hosting area has seen a steep rise in human settlement and this is having profound impacts on mobility and grazing patterns. These impacts are indicated by the livestock herd sizes presented above, which are much more significant than the numbers of livestock based in the camps. Mobility, so essential for the pastoral system, is being hampered by fast-growing populations around water points with depleted grazing and browsing resources, by the tendency to keep some of herds partly immobile year-round to access cheap/free food and water, by the physical expansion of the camps and settlements, and by the fencing of grazing land and “greenbelts”. Greenbelts established with donor support are seen and experienced by the majority of the host community as a threat to pastoral production and its essential element of mobility, and contribute to privatisation of the range to the benefit of only a few individuals who are effectively becoming the owners of the grazing land.

During the rainy season, grazing and foraging of host community livestock is largely restricted to the locations to which a particular household belongs. During the dry season however, grazing and foraging takes place further away, often several hundred kilometres distant. Although grazing is acknowledged to have recovered significantly during 2010, there is still uniform agreement that grazing has generally become less or much less available during the last 20 years. The significant increase in overall livestock numbers is clearly a contributing factor.

Systems for regulating access to grazing are dependent on clan and sub-clan affiliation and reciprocity. Only members of the same sub-clans or those with a close relationship are given access to grazing in the host area. Nevertheless, there seem to be few - if any - regulations to limit access by livestock to grazing reserves during part of the season in order to conserve fodder for other periods. This is surprising, and could be linked to the significant influx of population and the weakening of previous land management systems.

Livestock may be tended by members of the household which owns them or by close family or friends, on the basis of reciprocity. The study found no evidence of people outside this immediate circle being paid to tend livestock, except in the camp environs where hired graziers are employed. Likewise pastureland is not generally rented out by local people, and to the extent that this practice has been observed close to the camps, it is implemented and controlled in fenced areas by a small number of the host community elite. Land sales are limited to the areas immediately around the camps and Dadaab town and again involve only a very few influential individuals. While the study did not investigate the impact of the refugee camps on land sales beyond the defined host

⁵ The average holding is based on (90.000 camels x 1,1) + (225.000 cattle x 0,7) + (325.000 shoats x 0,1) = 256.500 TLUs, divided by 20.000 host community households.

area, it is likely that land prices and rental values in Garissa have risen as a consequence of the increase in population and trade activities around Dadaab.

3.2.5 What have been the experiences of farming?

Farming has been promoted in the host communities by several development agencies. Very few local people were previously involved in any form of farming, and for those who have taken part, the returns have so far been disappointing. In fact no respondent reported any positive experience of farming and those who participated said they did so because they were given free inputs and specifically asked to take part. The relatively low cost of foodstuffs in the area, together with the high cost of growing crops in a dry environment (where irrigation water must be pumped and unit costs are high), means that farming is very unlikely to succeed around Dadaab. Viable farming is likely to be limited to kitchen gardening in compounds, where domestic wastewater is available.

3.2.6 What is the nature of firewood and building material collection?

The combined demand for firewood and building materials from the camps and the host communities is very significant. With a host population of around 150,000 and a camp population of perhaps 200,000, the demand from the two populations is more or less equal (given that the latter use more per capita). Collection of firewood and building materials is undertaken by members of host communities and camp populations alike, and both groups are engaged in its buying and selling. However, commercial provision of firewood to the camps is largely carried out by firewood harvesters based in the camps. Good quality firewood is difficult to find close to the camps and nearby settlements, leaving only low quality firewood for collection by women and girls in the host communities. Host community women spend two to five hours per trip collecting firewood, typically every second day. There seems to be no significant difference in the time spent between communities close to camps and those further away. However, closer to the camps the quality of collectable firewood is lower. As the distance to good firewood sources has become greater, the collection process has been taken over by men using donkey carts and has been increasingly commercialised. Firewood collected in this way is mainly destined for sale in the camps or the host communities (further details in Annex L).

Several organisations working in the Dadaab area have sought to reduce and manage the collection of firewood and building materials. The most prominent initiative has been the organised programme of fuel wood purchase and supply to the camps. In several areas there is resentment of this programme from host community members who find they are not benefitting because contractors bring in labour from outside (usually from the camps), while elders and chiefs take the lion's share of the available funds and the contracts further increase local competition for the available resources (see 3.6.7 for more details).

The demand for energy for household use is growing with the increasing population in the area as a whole, including both the camps and surrounding communities. The local collection of firewood is becoming more laborious and the potential for conflict is increasing. Only limited charcoal burning is reported so far, but the increasing distances over which firewood must be transported to the camps is going to change this situation, given that camp residents and host community members seek to solve their energy needs in the most practical and cost-effective way.

3.2.7 What is the significance of employment for host communities?

Overall, few people from the host community, except in Dadaab town and those settlements closest to the camps, have ever had any formal employment. Only 12% of all respondents to the quantitative questionnaire had ever been employed, typically with a government institution,

but closer to the camps generally with agencies linked to the refugee operation. Some people are now finding opportunities for unskilled work with the local NGOs RRDO and FaIDA in the labour-intensive operations of tree nurseries, dryland farming and greenbelt development. Host community members often cite employment as the most important benefit brought by the refugee support agencies.

Of the 12% of host community members with employment experience, 40% live less than 10 km from Dadaab and the camps. Several host community members work or have worked in the camps or in camp-related activities (security jobs, NGO work). Most of these jobs are male-dominated and employment opportunities for women are limited, and include employment in tree nurseries or as institutional cooks.

Around 51% of respondents with employment or employment experience have 10 to 40 cattle and 23% have more than 40 cattle. Around 30% also have more than 40 camels. These are all above average livestock holdings. At the same time a majority of these respondents stated that they invest in livestock if they have money. This suggests firstly that those with employment have larger livestock holdings than the average, and secondly that people in the host communities who have income from employment have a tendency to invest it in livestock.

3.2.8 How is relief food reaching people?

Food relief is widely distributed in the Dadaab area by the Kenya Red Cross Society (in Fafi and Lagdera) and WASDA (in Wajir South) on behalf of WFP, and the operation is generally reported to be well implemented. The food is shared along family and household lines between all community members, hence close to 100% of interviewed households report regularly receiving food relief, ranging from the poorest to the wealthiest. As in other ASAL areas of Kenya, relief food has great importance. Community members complain that the food relief is insufficient, however. It is difficult to establish if this is true or not, but clearly the wide distribution to community members does have an impact on the amount available for the most needy. The nature of the sharing system varies, but in some places discontent was expressed with the manner in which local food security committees control the distribution of rations and how some people in need are being side-lined.

3.3 Impacts on social infrastructure and services

3.3.1 How is access to water and how has it changed?

Access to water has become easier and more secure for both people and livestock, with 83% of respondents reporting improved access. Many water development initiatives have been supported by the agencies active in the refugee operation and boreholes with tap-stands and livestock troughs have been constructed in all communities visited. More than 90% of those living in host villages now have access to borehole water within close walking distance. The significant investments in water supply infrastructure have afforded host communities a degree of access to potable water that is well above the average for other arid areas of Kenya.

In contrast with earlier times, water is no longer seen by host communities as a scarce resource. Engine breakdowns and lack of diesel sometimes cause delays in pumping, but solutions are developed (such as having a stand-by engine or an agreement for supplementary supply from a nearby community). Sometimes nomads bring diesel to pump water for their livestock, but in the dry season certain supplies may be over-burdened and they might be asked by a village water committee to move elsewhere.

Water committees manage boreholes and community members are members of the water associations. The committees draw up lists of members with times when they can water their livestock. Collection of household water generally follows a different system at separate tap-stands where people have to queue, often for several hours. All respondents reported that their local water committee generally worked well, that their boreholes and surrounding facilities were satisfactorily maintained and that when nomads bring in their livestock the committee was active in preventing and resolving conflicts over access. The ample supply of potable water from boreholes has influenced pastoral production in the area by decreasing overall mobility, attracting pastoralists from other districts and changing the use of grazing and forage resources. However, the use of mobility as a coping strategy means that many livestock do not spend the dry season in the vicinity of the villages. Host communities are paying for water as they do elsewhere in Kenya (further details in Annex M).

3.3.2 What is the status of education in the host area?

Most of those interviewed gave education as a key reason for settling down. All villages have a primary school and in all areas access to education was said to have improved (by 85% of respondents). Both boys and girls attend schools, and whereas previously boys attended at a higher rate, it seems that attendance is now equally prioritised for both sexes. Parents generally have high (and perhaps unrealistic) expectations of what the education of their children will bring in returns to the household through employment and income. Host communities are eager to capture educational opportunities and scholarships offered by agencies in Dadaab are fully utilised.

The Ministry of Education, the Constituency Development Fund (CDF) and humanitarian agencies have all supported school construction in the host area, usually alongside community contributions of labour and local materials. Where the government has not provided teachers, typically in the smaller and most recently settled communities, teachers are employed through community initiatives using a school fee top-up. The extended family structures typical of the host area make it possible for children from the mobile part of pastoral families to attend school by staying with settled relatives. Only one nomadic school is operating in the area and it is not linked to the refugee operation. Additional school facilities are prioritised in the government's development plans for the host districts. These are needed because of in situ population growth and the continued influx of new families.

The illiteracy rate among the adult population in host communities is reported to be high, except in Dadaab town. NRC has a vocational training centre in Dadaab but adult education is not available elsewhere and host communities expressed the view that they lack the necessary skills to compete for certain employment opportunities.

3.3.3 How is access to health services and sanitation, and how has it changed?

The development of health services has been supported by the humanitarian agencies working with host communities, usually in the form of outreach clinics and dispensaries built in cooperation with the Ministry of Medical Services. Respondents' perceptions of whether access to health facilities has improved or not is divided, given that several dispensaries and mobile clinics in the villages lack staff and medicines - an aspect that is important to address. Host community members also use private clinics in the refugee camps and agency-equipped hospitals are accessed free of charge in the camps and in Dadaab. Child delivery takes place primarily at community level but agency-supported hospitals are available in the event of complications. This is an opportunity that

rarely exists in other remote arid parts of Kenya. Hospitals in the refugee camps do not record whether their patients are refugees or host community members. The development of the camps and Dadaab town as centres where health services can be accessed has profoundly changed the availability of such services in this otherwise remote area. Improved public transport has also improved the ease with which people can access these services and reports of decreased occurrence of malaria in the camps are a good indicator of their effectiveness.

Latrines are seen in all communities although coverage is still very low. Most have been constructed with the assistance of refugee support agencies through various host community programmes. The fast growing population settled in the host communities means that the need for planning and constructing sanitation facilities is increasing.

3.3.4 How has access to transport changed?

80% of host community respondents report increased use of vehicular transport in the form of buses, matatus, pick-ups and taxis. Commercial transport is used to go to the refugee camps to trade, visit relatives, access health facilities and collect or buy food. Host community members also make limited use of buses to Nairobi and Garissa. Donkey carts are widely used to transport firewood, building materials, food and other products to and from the camps.

3.3.5 What is the status of access to electricity and communication?

Electricity is available in Dadaab town and in sections of the camps from privately run generator sets, but is otherwise not available in the host community. Solar energy is installed in many mosques, schools and dispensaries, and shops providing mobile phone charging services often also use solar energy. Mobile telephone services are now available in several of the visited host communities.

3.3.6 How concentrated is access to social services?

The concentration of social services in host communities is relatively high compared to the situation that would normally be expected in a remote pastoralist area, even taking into consideration the significant growth in population. The closer to the camps, the easier it becomes to access such services. They are predominantly designed to cater for settled populations and there is a close link between growth in services and growth in the settled population. Those communities settled closest to the camps have been able to attract the greatest investments in social infrastructure from the humanitarian agencies, and this is tacitly understood as compensation for hosting refugees. Local leaders close to the camps have been able to voice their demands most clearly to the agencies. People further away and those who are more mobile have not been able to exert as much influence over how new services are targeted.



Mobile pastoralist moving camp in Dadaab area

3.4 Impacts on social structures and institutions

3.4.1 What are the impacts related to gender and age?

The division of labour in host communities is strongly gender-based. Men and boys herd, water, trek and trade livestock, and gather and trade firewood commercially, while women and girls collect firewood and water for household use, take care of children, handle and trade milk, prepare food and are responsible for other domestic chores and income-generating activities. Little change has been seen in this division of labour.

For the households or parts of household settled in villages, the duties of men and boys have tended to reduce while those of women and girls have remained the same or even increased (if they need to go further for firewood or become involved in additional income-generating activities). This has a tendency to result in under-employment of settled males and associated problems of idleness, debt and *khat* addiction. The impacts of the refugee camps on host communities play out differently for men and women. Whereas the economic opportunities, cheaper food and access to free rations is of equal benefit, the environmental impacts have clearly been felt more directly by women than men. The easier access to services and transport in the hosting area has had especially positive impacts for women, as the main day-to-day caretakers of the family.

Extended family structures remain strong and govern families' participation in pastoral production and other livelihoods, and ensure that households are able to benefit from the opportunities associated with settlement and mobility. Young unmarried men can herd the livestock, while married women and children and older people can stay in the centres and be involved in trade and the collection of food relief.

There are few female-headed households and these are most common in the settlements closest to the camps. Inter-marriage between refugees and host community members does occur but the

study was unable to establish its frequency. Female respondents in some of the surveyed villages knew about women's income-generating groups, though most did not know who organised them or how they could participate (further details in Annex N).

3.4.2 How secure do host communities feel?

Residents of the host communities generally perceive the security situation as good. People feel able to move freely without problems, which was not the case in the 1990s when banditry was a major issue. Women and girls can go into the bush to collect firewood and complaints about security or sexual and gender-based violence are now very rare. The presence of refugees is not felt to be negatively affecting the level of crime in the host area and the much-debated security problems associated with small arms and abductions are simply not an issue in the eyes of host community residents. GoK has increased the police presence in the host area and several police posts are maintained, including several on the tracks that lead to the Somali border. The study did not gather data on security issues beyond the defined host area or on security issues not perceived to affect the host community members.

3.4.3 What development in leadership structures has taken place?

Leadership structures in the host community comprise a mix of traditional clan elders, elected councillors and appointed chiefs. The role of local elders continues to be of great importance and is increasingly integrated with other structures of leadership. The *de facto* recognition within GoK of the leadership roles of clan elders has been a contributing factor in the improved security experienced by ordinary people in the Province. Among the refugees, clan elders also play a prominent role but this has been supplemented to a large extent by a system of elected leadership. Differences emanating from Somalia still have an impact at Dadaab camp level and clan competition is joined now by struggles among different interpretations of Islamic doctrine.

3.5 Economic impacts

3.5.1 What is the income from pastoral production?

By far the largest contributor to host community income is pastoral production in the form of milk and livestock sales. The refugee camps have developed as major markets with considerable purchasing power and are competing with Garissa - especially Dagahaley, which acts as the main catchment for livestock being trekked in from the north and Somalia. The study found that the majority of host community households now sell products in the refugee camps or to markets linked to the existence of the camps.

In all three camps there are slaughterhouses providing fresh meat for the refugee population, the construction and operation of which have been supported by the UN and NGOs. They process an average of 15 camels and 30 shoats per day in total, and an estimated half of the camels and two thirds of the shoats are supplied by the host community⁶. The price of a camel for slaughter is KSh 25 000 to 60 000 (with an average of KSh 40 000), and a shoat KSh 1500 to 6000 (average KSh 3000). The annual income accruing to the host community from the meat processed by the slaughterhouses alone is therefore estimated at KSh 133 million (USD 1,8 million). An alternative for sellers would be to transport or walk their animals a further 100 km to Garissa, which would be more costly. Most of the sales revenue can thus be considered a net benefit resulting from the existence of the camps.

⁶ The remaining camels are brought in from outside the defined host area, whereas the remaining shoats are reported to be supplied by camp residents.

The sale of milk is also a considerable source of income for the host community. About 500 milk sellers operate inside the camps, mostly women, each with a daily turnover of about KSh 600. At a price of KSh 50/l of milk, this represents total daily sales of 6000 l in the camps, of which 80% can be assumed to comprise the producers' share. The income for the host community from the milk trade is thus around KSh 85 million (USD 1,2 million) annually. This sizable fresh milk trade is very much dependent on the consumer market provided by the camps, Garissa being too far away to be an alternative. The milk trade volume is estimated conservatively. Based on the estimated number of 200.000 refugees, the necessary milk supply could be as large as 20-25.000 l/day.

3.5.2 How are the food prices and what is the impact of subsidised food?

Large numbers of wholesale traders are located inside the refugee camps and others can be found in Dadaab town. Table 4 summarises the prices of basic food commodities in the camps and compares them with prices in comparable dryland towns elsewhere in Kenya.

Table 4: Commodity prices in the Dadaab refugee camps and elsewhere in Kenya

Commodity	Primary source	Camp price (KSh/kg)	Price differential from other dryland towns	
			(% difference, from – to)	
Sugar	Somalia	65	22%	42%
Maize flour	WFP food rations	40	50%	95%
Rice	Somalia	50	26%	26%
Wheat flour	WFP food rations	50	26%	26%
Cooking oil	WFP food rations	90	17%	39%
Powder milk	Somalia	183	97%	228%

It is apparent that commodity prices in the Dadaab area are significantly lower than in other dryland towns. The main reasons are the re-sale of WFP rations, access to food by locals registered as refugees and illegal imports via Somalia. These three will be discussed in turn.

(i) Re-sale of WFP rations

WFP distributes foodstuffs in the camps and local communities that include maize, wheat, pulses and cooking oil, but reports that 18% of the cereals are typically sold to obtain more preferred commodities⁷. This is a conservative figure judging by the volume of such stocks on display in local shops.

It is conservatively assumed that 10 000 households in the host community (around 50%) benefit from these cheap food sales, and that average prices are about 20% lower than comparable locations elsewhere in Kenya. Household surveys established that all households purchase their food items in the camps or from shops in local villages that obtain their supplies of maize, wheat and oil from wholesalers in the camps. Interviews also established that an average household purchases 50 kg of maize, 50 kg of wheat and 5 litres of cooking oil every month, all of it effectively subsidised. The overall savings realised by host communities from re-sold WFP foodstuffs are summarised in Table 5.

⁷ WFP Post Distribution Monitoring Report, Nov-Dec 2009, para 1.1

Table 5: Savings in host communities arising from the purchase of re-sold refugee foodstuffs

Commodity	Bulk size	Price per kg		Savings (KSh/kg)	Savings (KSh/mth)
		Camps	Elsewhere		
Maize	50 kg	40	48	8	400
Wheat	50 kg	50	60	10	500
Oil	5 litres	90	115	25	125
Total monthly savings					1025
Total annual savings (KSh mill.)					123
Total annual savings (USD mill.)					1,7

Note: Assumes average price difference of 20% and 10.000 households benefitting.

The total annual saving on food purchases is KSh 123 million (USD 1,7 million) or KSh 12.300/yr per household for the host population, compared with the cost of living in other parts of Kenya.

(ii) Registration of host population as refugees to benefit from WFP food

As elaborated above, it is conservatively estimated that 40 000 host community members hold refugee ration cards and therefore benefit from the WFP food distributions and other services intended for refugees. Table 6 summarises what this represents in terms of free food value.

Table 6: Benefits for host-community members receiving refugee food rations

Food item	WFP ration (kg/person)		Price per unit (KSh)	Sales value (KSh/person/yr)
	per day	per month		
Wheat flour (kg)	0,210	6,3	50	3780
Maize (kg)	0,210	6,3	40	3024
Beans (kg)	0,060	1,8	30	648
Cooking oil (l)	0,030	0,9	90	972
Corn soya blend (kg)	0,045	1,4	40	648
Salt (kg)	0,005	0,2		
Total				9072
Beneficiaries				40.000
Total annual savings (KSh mill.)				363
Total annual savings (USD mill.)				4,9

These calculations are based on the WFP food rations, which comprise a diversity of items distributed twice monthly in the camps. These rations are assigned values as per refugee camp prices. The estimates suggest that distribution of free rations to an estimated 40.000 host community members constitutes an annual subsidy of KSh 363 million (USD 4,9 million) or KSh 9000 per household member, whether used for personal consumption or sold. The number of members of a household appearing on a ration card will vary significantly, so in some households it will be only a few members and in others most members.

(iii) Cheap goods imported through Somalia

Wholesalers inside the camps arrange imports via Somalia of commodities with high unit value such as sugar, powdered milk, pasta, fruit drinks and upmarket consumer goods, clothes, perfumes, cosmetics and electrical items. Typically a group of traders organises transport from the port of Kismayo and accesses the refugee camps using one of the well-established alternatives to the

officially closed border crossings. There is evidence that large portions of the commodities sold in the camps come in through Somalia, since many lack Kenyan Bureau of Standards labelling and represent brands not otherwise found in Kenya. The host community makes use of the trading opportunities in the camps alongside the refugees.

Sugar can be selected as a representative smuggled commodity since it constitutes an important part of the local diet. The price from wholesalers in the camps is as low as KSh 60/kg, compared with KSh 80-90/kg elsewhere in Kenya. The savings realised by importing through Somalia could thus average KSh 25/kg. The savings on rice could be KSh 30/kg and for powdered milk somewhat more (see Table 4). In this simplified analysis an average saving of KSh 30/kg is applied for those commodities imported through Somalia. A major part of this saving comes from avoided taxes, while bribes will have to be paid along the route.

The volume of smuggled goods is difficult to estimate. Judging from the quantities stocked in shops in the camps, it could constitute 25.000 t. on an annual basis. This would still be small compared to the WFP distribution of 54.000 t./yr. of food in the camps alone. Nevertheless, assuming that 10 t. lorries are being used, it still implies an average of seven border crossings with goods from Somalia each day. The implied savings for host communities are summarised in Table 7.

Table 7: Estimated scale and savings from goods imported through Somalia

Imported quantities annually	25.000 t
Savings on imports	30 KShs/kg
Annual savings	750 KSh mill.
Annual savings	10,1 USD mill.
Share to the host-community	10%
Savings for the host-community	1,0 USD mill.

On these assumptions, imports through Somalia save consumers in Kenya about KSh 750 million (USD 10 million) p.a. The imported goods are spread to consumers over a large area that includes not only the refugee camps, but also Garissa and beyond. About 10% (USD 1 mill.) could be benefiting the host population around Dadaab, on the basis of its share of the consumption of such goods.

3.5.3 What is the volume of trade and how does it impact on host area?

Counts commissioned under the study show that Dagahaley and Ifo have at least 1000 shops each, while Hagadera has more than 2800. This covers all types of outlets and many are much more than petty traders. They display large selections of upmarket goods (such as fashion items or electricals) and would in regular towns be located in permanent brick or concrete buildings. In total, the camps have around 5000 shops, a figure that can only be matched by major cities. In Dadaab town, the principal host population settlement, a relatively small total of 370 shops and vendors was identified.

Groceries dealing in both wholesale and retail represent the largest group of traders in Dadaab and the camps, with over 1600 in all. There are over 500 milk sellers and more than 800 *khat* sellers, with 500 in Hagadera alone versus only 35 in Dadaab. Women are represented primarily in the clothes trade, *khat* distribution and milk and meat sales. The data are summarised in Table 8.

Table 8: Businesses establishments in the refugee camps and Dadaab town

	Dagahaley	Ifo	Hagadera	Dadaab	Total
Total number of businesses	1026	1081	2820	374	5301
	Percentage				No.
Groceries, wholesale and retail	28%	35%	27%	55%	1620
Clothes, shoes	15%	11%	12%	6%	617
Khat sellers	12%	14%	18%	9%	810
Taxi, matatu	8%	8%	1%	6%	222
Milk distributors	5%	3%	15%	8%	538
Telephones, electrics	4%	3%	7%	1%	270
Hardware stores	4%	3%	2%	2%	150
Hotels, restaurants	5%	8%	4%	2%	268
Other	19%	15%	14%	12%	806
	Total				5301

Annual turnover of these businesses was estimated on the basis of interviews with shop owners and the average was found to be somewhat larger in the camps than in the same type of establishment in Dadaab town. The result is a business and trade activity amounting to USD 25 million annually for the three camps, Hagadera being the largest with USD 14 million, while Dadaab town mobilises only 5% of the trade in the area (see Table 9).

Table 9: Annual turnover of local businesses

	Dagahaley	Ifo	Hagadera	Dadaab	Total
Total annual turnover (KSh mill.)	406	426	1054	95	1981
Total annual turnover (USD mill.)	5,5	5,8	14,2	1,3	26,8

The figures for economic turnover further illustrate the importance of trade with the refugee camps as a source of income and job creation. The meat trade alone accounts for USD 1,8 million p.a. and the milk trade USD 1,2 million, while the combined annual turnover of the business community in Dadaab town is estimated at USD 1,3 million.

In the camp market areas, vendors from the host community put up shops alongside the refugees. Dagahaley in particular hosts non-refugee traders in large numbers and they may account for more than half of the business community there. This is presumably a result of the ability of the host community clan to exercise ownership and regulate access to the land set aside for the camp. Such informal regulations, outside the control of the authorities running the camps, have facilitated the influx of non-refugees seeking business opportunities. Non-refugee businesses thus contribute to the population of the camps, and to the need for more infrastructure such as water supplies and sanitation facilities.

The host population business community of Dagahaley could thus be larger than that of Dadaab town (see preceding tables). The employment created for host community members by camp-based business activity is substantial, conservatively estimated at more than 500 jobs across

the three camps. The daily net earnings from sales or salaries for each person involved can be estimated to the level of wages (KSh 200/day), which adds up to a total annual income of KSh 35 million (USD 0,5 million). This job creation for the local population is a direct benefit from the camps and the trade that takes place in the camp markets.

There are seven bus companies operating in the Dadaab area. Two scheduled connections pass through Dadaab town each day en route to Nairobi and five to Garissa, all with returns. Each bus has a capacity of 60 passengers, thus over 800 people travel to or from Dadaab and the camps on a typical day. The booking offices are located in the refugee camps (especially Hagadera) rather than Dadaab town, indicating extensive travel activity among the refugees - even though their movement is officially tightly regulated.

In addition, Dadaab town hosts 22 taxis, pick-ups and matatus, while Dagahaley has 80, Hagadera 30 and Ifo 90, indicating vibrant traffic between the camps and to/from local settlements. Most villages in the host area are accessed using some form of commercial transport, either buses along the main roads or shared taxis/matatus on smaller tracks. The household survey shows that 80% of people in the host community have increased their use of public transport during the last decade.

Khat sellers have a turnover of at least KSh 700 each per day, and over 800 sellers can be counted. This amounts to total annual turnover in the *khat* trade of KSh 198 million (USD 2,7 million). On the basis of the number of sellers, the bulk of this trade is going on in the camps with only 4% in Dadaab town. This consumption differential is an indicator of the difference in population and purchasing power between Dadaab and the camps. Some sources report larger volumes of *khat* trade than those estimated here.

3.5.4 How has trade in Dadaab town developed?

It is clear that Dadaab town has developed significantly over the last 18 years, from a cluster of rudimentary shelters to a busy regional centre. Property prices are rising rapidly and land along the main road is changing hands at a premium due to speculation by developers. A total of 370 shops and vendors were counted in the town, of which over 70% are owned by local people. Interviews with 30 businesses of different types revealed that 70% expect increased activity in the future, with plans for their own expansion; about 30% anticipate stable activity levels. None of them foresee declining business opportunities and no one interviewed was planning to close down or relocate. Almost half of businesses in the town were established during the last five years and about 75% within the last ten years, hence the business growth is a recent development. The findings reveal considerable optimism within the local business community and the main driver is the activity related directly or indirectly to the refugee camps. There are no other large developments ongoing or planned in the area.

Dadaab has very little industrial production and most of the business people are traders. A water bottling plant with ten employees has temporarily closed because of generator failure. Tailoring, furniture making and other petty trades are undertaken at an artisanal level aimed strictly at the local market. The electricity supply in Dadaab town comes partly from tapping of the UNHCR supply.

The lack of capital for extension is often mentioned as a problem by local shop owners. No banks have established branches in Dadaab, although formal money transfer services are available (such as M-Pesa and Zap) and a number of Hawala agencies have a loyal clan base and offer short-

term credit to reliable customers. Micro-credit was introduced by CARE with Danish support, but seems to have worked better for the refugees than the host-population (Nzyuko, 2008).

3.5.5 What is the income from employment and remittances?

UNHCR, WFP and their implementing partners support the host community through direct employment, particular of unskilled labour. Employment has been created for youth, women and disabled groups as well as through some of the firewood contracts. UNHCR has 130 staff in the Dadaab area and WFP has 45, of whom around 40% are reported to come from the host community. The UN-contracted security company is a major employer with 250 individuals acting as guards for the Dadaab agency compound, camp-based facilities and the airstrip. It is claimed that 75% of the staff serving in the Dadaab area come from the local community, although this share is said by local politicians to be smaller.

The hospitals inside the camps offer significant work opportunities for the local population. The International Rescue Committee (IRC) runs the hospital in Hagadera and employs about 100 staff from the local area (in addition to other Kenyans and refugees), and the situation is similar for the other two camp hospitals. Other NGOs working in the camps generally employ refugees in their daily operations as “incentive” workers. While relatively few in number, local community members working for NGOs may be on the rise with the increased engagement of national NGOs and a growing emphasis on host community projects.

Altogether some 200 persons from the local community could be working with the NGOs on a permanent basis (not counting the hospitals). In total there could be 600-750 local persons with fixed employment related in some way to the refugee operation, the more temporary jobs coming in addition. The total wages accruing to these locally-based staff may be around USD 0,8 million annually. Level of wages is addressed in 3.5.6 below.

The study established that hardly any host community households receive remittances from abroad or from family members in other parts of Kenya. Only around 5% are receiving such remittances and these are concentrated in Dadaab and close to the camps.

3.5.6 What is the economic impact of direct camp operations on the host area?

Some of the businesses in Dadaab have responded to invitations for tender and obtained contracts for works or deliveries to the non-governmental agencies engaged in the refugee operation. The contracts comprise mainly the construction of houses and fences, repair works, delivery of foodstuffs and household items, and freight services (including transport to the camps and the relocation of refugees).

There are around 15 companies in the contracting business in Dadaab, often working in combination with other activities like grocery shops, hotels and transport, and some without fixed offices. They often organise works by sub-contracting or hiring people on a short-term basis. The incomes to such local contractors from assignments for the UN and NGOs can be estimated at USD 0,5 million p.a. There are also occasional larger contracts, among others them the transport of refugees to Kakuma and fuel supply contracts. There are also three local NGOs established in Lagdera (RRDO), Fafi (FAIDA) and Wajir South (WASDA). Two of these are directly involved with host community projects supported by UNHCR through international NGOs.

Local wage rates are high in comparison with other parts of Kenya. While regular rates elsewhere for unskilled labour are KSh 200-300 per day, locals in Dadaab may demand over KSh 400. NGOs report that contracts given to local companies are frequently sub-contracted to others, often bringing in labour from outside (e.g. Wakamba for construction work) and including people registered as refugees. The refugee camp activities for certain constitute the most important cause of that. Expectations of wage rates for work with UN and other agencies tend to be high, which several strikes and other actions witnessed among workers seeking pay rises (e.g. as experienced by IRC in 2010, which seriously hampered the operations of the Hagadera camp hospital).

3.5.7 What is scale and nature of investments in camp operation and development?

The lion's share of the funds flowing into the Dadaab area comes from the donors and agencies supporting the refugee operation. The cost of this operation rose from USD 44 million in 2007 to USD 82 million in 2009 and is projected to reach USD 100 million in 2010. The funds are mostly channelled through WFP and UNHCR, which in turn engage NGOs as implementing partners, although some NGOs also receive financing directly from donors. The total funding linked to the refugee operation is summarised in Table 10.

Table 10: Funding for the refugee operation and host community initiatives (USD mill.)

Provider	2007	2008	2009	2010
UNHCR own expenses	13,7	16,8	24,1	16,4
UNHCR partners	20,5	24,1	29,0	21,6
Total UNHCR	34,2	40,9	53,1	38,0
WFP	9,0	35,0	25,0	52,0
Direct funding to NGOs	1,4	3,9	4,7	10,2
Total (refugees + host)	44,6	79,8	82,8	100,1

The scale of support for host community initiatives has been increasing, both in order to meet actual needs and as a response to community demands and political pressure. A brief review identifies 12-15 host community initiatives underway at present (see Annex A). Most are being run by refugee support agencies who have extended their assistance to the surrounding area. These initiatives still represent a small proportion of total budgets, although they are gaining importance with one agency (DRC) recently introducing the policy of a 50:50 funding split⁸, while WFP has allocated 8% of its 2010 budget to host community support in the form of food items and durable assets, and its host community budget has increased far more than its budget for the refugee operation.

Host community initiatives are currently concentrated on food security, conflict reduction, environmental management, education, health, water, sanitation, and business development. The approach to assistance has largely been sector-wise and single agency based, with cases of overlapping activities. Some activities are designed to benefit both communities, such as the UNHCR/GTZ organised purchase of firewood for the refugee camps from the local population (USD 0,6 million in 2010). A few organisations, like the local NGOs and the Kenya Red Cross, work only with the host community.

Conflict resolution has been necessary as local community actions have sometimes hindered the agencies in their operations. Host community forums were organised by UNHCR in Garissa in April 2009 and March 2010 to ease these tensions and solicit project ideas for donor consideration.

⁸ Danish Refugee Council project document, 2010-11.

Although recurrent costs tend to dominate agency budgets, some of UNHCR’s funds are invested in permanent local infrastructure. In many cases, infrastructure established for the refugee camps also serves the local population, for example the three camp hospitals to which everyone in the area has free access. This is an exceptional opportunity compared with elsewhere in Kenya, where medical services can be hard to access and expensive for users. For the sake of this economic analysis it is assumed that 2% of the net annual budget for refugee operations is allocated to investments that have immediate benefits for the local host population.

Some elements of camp infrastructure and facilities in the UN and NGO compounds will have a useful life after the closure of the camps. Buildings, fences, warehouses, boreholes, slaughterhouses and the electricity supply system can all be sustained to the extent that a need and willingness exists. These potentially significant future benefits are not considered for now.

Table 11 combines the direct funding for host community projects with the estimated 2% share of the refugee operation budget that also benefits the host community.

Table 11: Agency and UN funding for host community development (USD mill.)

Provider	2007	2008	2009	2010
WFP	0,3	0,4	0,1	4,3
UNHCR	1,4	0,6	1,8	0,4
Direct funding to NGOs	0,6	0,7	0,6	0,8
Total host population initiatives	2,3	1,7	2,5	5,5
Investment share of refugee program (2%)	0,8	1,6	1,6	1,9
Total financing for development	3,1	3,3	4,1	7,3

It is clear that host community expenditure has been increasing and in 2010 exceeds USD 7,3 mill. The capital accumulated as a result of each year’s investments will result in annual benefits accruing to the local population over the whole lifetime of specific items of infrastructure. Assuming that these investments are well targeted, they could generate an annual rate of return of 7%. So while the host community benefits considered here cover the years 2007-2010, with 7% returns the capital accumulated during this period will generate additional benefits worth USD 1,2 million in 2010.

3.5.8 How are economic impacts experienced by different wealth categories?

The information collected during this study shows that not only well-off individuals or households make use of the opportunities associated with the refugee camps. The low-middle income group (KSh 2000-6000 per month) is over-represented among those households having their main markets for domestic produce in the refugee camps, while the richer and the poorest categories are under-represented. See Table 12.

Table 12: Use of opportunities according to cash income groups

Household income (KSh per month)	<2000	2000-6000	6000-12000	>12000
Share of host population	25%	58%	12%	6%
Share with main market in refugee camps	14%	75%	9%	2%

3.5.9 What is the combined economic impact on the hosting area?

The total economic impact of the camps on the host community comprises the four parts discussed above: (1) Direct benefits from camp support operations; (2) Gains from business

opportunities in camp markets; (3) Indirect benefits from reduced prices of goods; and (4) Returns from investments. These are summarised in Table 13.

Table 13: Total host community benefits (USD mill./yr.)

Nature of benefits		Value (USD mill./yr)	Total (USD mill./yr)
(1) Direct	Employment and wages	0,8	6,8
	Incomes to local contractors	0,5	
	Firewood sales	0,6	
	Value of distributed food rations	4,9	
(2) Business	Sale of animals for slaughter	1,8	3,4
	Sale of milk	1,2	
	Host-population in refugee camp businesses	0,5	
(3) Indirect	Savings on the purchase of foodstuffs	1,7	2,7
	Savings on imports from Somalia	1,0	
(4) Investments	Returns on development projects	1,2	1,2
Total annual benefits			14,2

The combined annual benefits amount to about USD 14 mill. with 2010 as the reference year, which translates into a USD 95 annual per capita benefit. The benefits have most likely been increasing in recent years, commensurate with the rising budget allocations for refugee operations and host community initiatives, the number of refugees, the size of the host population and the accumulation of invested capital.

USD 14 mill. is a conservative estimate based on the most readily identifiable forms of economic impact, both direct and indirect. As previously discussed, the economic impacts of the refugee operation extend well beyond Dadaab and in fact are locally limited by the relatively small size and limited sophistication of the Dadaab business community. The most sizeable impacts in terms of delivery of goods and services for the camp operation are realised from outside the Dadaab area.

Milk and meat sales are nevertheless very locally important and are likely to increase. The rising number of local traders in Dadaab town and established inside the refugee camps are the first link in the multiplier chain. Local contractors are employed to some extent, creating a demand for input to their activities.

The economic impacts on the local community of the refugee operations could possibly be extended, but this area was also very poor at the outset, before the refugee operations were launched in 1992. At that time North Eastern Province had Kenya's highest proportion of people living in absolute poverty⁹ and it still ranks lowest in UNDP's Human Development Index (UNDP). For Kenya as a whole, GDP per capita in 2009 was estimated at USD 912,¹⁰ out of this the annual per capita economic impact for the local host population will constitute 10%. For the arid North Eastern Province, however, the poverty line of USD 1 per day could be more relevant for comparison, and of that the estimated host population impact would constitute 25%. Across Kenya's ASAL areas, more than 60% of the population exists on income levels below that poverty line,¹¹ meaning that many have substantially less.

⁹ Kenyan Economic Recovery Strategy (2004): page 9.

¹⁰ World Economic Outlook Database April 2010, International Monetary Fund (IMF)

¹¹ National Policy for the Sustainable Development of Arid and Semi Arid Lands in Kenya (November 2009), page iii.

GoK launched a programme in 2009 to spend KSh 300 billion on ASAL development over the next ten years (10% of annual government revenue) across an area with 10 million inhabitants.¹² This ambitious programme covers many sectors and includes significant infrastructure investment. If it is assumed that such investments yield an annual return of 7%, then the recurrent benefits accruing to the population would be worth USD 28 per capita annually by the end of the investment period. The ASAL programme will bring additional direct benefits such as employment. The scale of economic benefits of the refugee operation for the Dadaab host community impact comes out favourably in comparison.

3.5.10 What are the impacts beyond the immediate hosting area?

The most lucrative contracts connected with the operations of the refugee camps, such as the large-scale transport of food on behalf of WFP, are generally outside the reach of Dadaab-based companies. Significant direct benefits from the purchase of goods and services therefore fall outside the immediate area, and are realised in Garissa, Nairobi and Mombasa. Garissa is flourishing, property prices are high and the town has a vibrant and diversified business community. The prices of consumer goods are lower than elsewhere in Kenya, indicating the effects of the influx of commodities through Somalia and food and other items through the refugee operations. The scale and value of these economic impacts were not estimated by the study.



Women at water point in Dadaab area

¹² National Policy for the Sustainable Development of Arid and Semi Arid Lands in Kenya (November 2009), page iv.

3.6 Impacts on biomass

3.6.1 What is the impact of firewood collection?

Firewood is the most significant resource harvested around the Dadaab camps. The refugee household survey found that average consumption has reduced from 1,5 kg per person per day (p.p.p.d.) in 1998 to 1,0 kg today. This is a clear sign of increasing shortage and commercialisation of the supply chain, which has obliged users to become more economical in the way they manage energy. This trend was also highlighted during interviews with camp residents. Fuel consumption among non-camp residents is estimated at 1,2 kg p.p.p.d. as they have slightly easier access to wood (see Annex J for survey methodology and results).

In spite of the per capita reduction in firewood use, total consumption in the three camps is still around 73 000 t./yr. Adding local people living within 50 km brings combined annual demand to 138 000 t., 66% of which is used within a 10 km radius (refer to Table 14). Hence Dadaab is a large and concentrated focus of wood energy demand, second only to Garissa within North Eastern Province.

Table 14: Firewood consumption in Dadaab camps and hosting area

Group	Estimated popn.	Per capita firewood consumption (kg/day)	Total firewood consumption (t/yr)	Remarks
Refugees	200.000	10	73.000	
Locals	147.898	12	64.79	
Total			137.799	0-50 km (refugees + 147.898 locals)
			91.489	0-10 km (refugees + 42.213 locals)

Note: A working figure of 200.000 camp residents is assumed, based on UNHCR's predictions after ongoing verification and a conservative estimate of the number of locals holding refugee cards.

As further confirmation of increased energy shortage, personal collection of firewood by refugees has virtually ceased and the sight of women and children carrying head-loads of wood is now rare. Fuel supply has become a major commercial enterprise involving an estimated 3000 donkey carts (according to GTZ). They spend two or three nights in the bush and travel 30-50 km in search of suitable dead wood, usually travelling in convoys up to 15-strong for protection. Many carts are reportedly owned by local people, though operated by refugees, complicating any simple distinction between the collectors and those who live in the hosting area as fuel-harvesting refugees and resource-owning locals.

The quantitative household survey results suggests that only 10,9% of area residents are directly involved in the sale of firewood, and among those only 14,5% make wood sales more than twice per month. This confirms the dominance of camp-based harvesters in the firewood supply business. It also suggests that access to the hosting area for wood harvesting is still accepted free of charge under organised access arrangements¹³.

¹³ Otherwise more local people would have been found selling wood to the camps.

Firewood demand is species-specific and the quantitative survey revealed consumer preference (in declining order) for *Cordia sinensis*, *Acacia tortilis*, *A. reficiens*, *Terminalia obicularis* and *T. spinosa* (see Annex O for Somali names). Donkey carts travel great distances to locate these species, rather than return with inferior (and less lucrative) alternatives. The weight of a donkey cart of wood has risen by 20% since comparable research in the 1990s and an average of 390 kg per load was measured. Prices per cart range from KSh 1200-1500 (equivalent to KSh 3,1-3,8/kg), with most deliveries destined for particular customers rather than the open market, according to operators interviewed.

3.6.2 What is the impact of pole-wood harvesting?

Wooden poles are widely used for building and compound fencing. Long-term camp residents have continued to build larger and more permanent structures and it is common for wealthier refugee families to have three or four living huts in addition to kitchen shelters, shower and latrine enclosures, and animal pens. New arrivals also seek to replace temporary *tukuls* (domed huts) with more long-lasting structures as soon as possible.

The programmes of NRC and LWF to construct mud-brick houses can only keep pace with internal population growth and do not satisfy total demand for new shelters or replace existing structures being repaired or re-built. Demand for building poles therefore remains high and is estimated at 23.400 t/yr from the camps and 32.000 t/yr including local consumption within 50 km, 81% being consumed within a 10 km radius. See Table 15.

Table 15: Pole-wood consumption in the Dadaab camps and hosting area

Group	Estimated popn.	Per capita pole-wood consumption (kg/day)	Total pole-wood consumption (t/yr)	Remarks
Refugees	200.000	0,32	23.360	
Locals	147.898	0,16	8.637	
Total			31.997	0-50 km (refugees + 147.898 locals)
			25.825	0-10 km (refugees + 42.213 locals)

Note: Demand data from Owen (1998), with local people assumed to use half that of camp residents, based on observation of average number and style of domestic structures.

The quantitative survey suggests that demand for poles is even more species-specific than for firewood, with taller uprights usually coming from *Acacia tortilis* or *Terminalia spp.*, intermediate poles, fence posts and cross-pieces from *Cordia sinensis* and withies from the shrub *Phyllanthus somalensis*. A local shortage of construction timber is indicated by the widespread sale in camp markets of eucalyptus poles from central Kenya and *Terminalia* poles from Somalia and Ijara.

3.6.3 What is the impact of thorn fencing?

Thorn fencing around green belts and seasonal farms is dominated by *Commiphora spp.* (named by 96,5% of respondents in the household survey), with *Acacia reficiens* and *A. tortilis* also commonly used (named by 82,6% and 63,5% respectively). Branches are harvested selectively to allow the source tree to continue growing and the impact is therefore extensive but not dramatic. There is concern, however, that the drawbacks of continued enclosure of land within greenbelts (now enclosing 898 ha according to GTZ) may outweigh its benefits. The greenbelt programme

began as an agency effort to set land aside as seed banks for regeneration if the camps should ever close. But significant areas of additional land are being enclosed each year and the only apparent beneficiaries are the appointed caretakers, who are permitted to exploit the greenbelts for their own benefit. Local people have had conflicts with powerful individuals enclosing blocks of land for personal use (e.g. west of Ifo and north of Hagadera) and funds have been raised by community groups specifically to have live fences removed. The enclosure of land contributes to an undesirable process of resource alienation and undermines a pastoral mode of production that is reliant upon communality of resources.

3.6.4 What is the status of woody resources and how are they impacted by harvesting?

The survey of rangeland plots confirms a general trend of environmental degradation which has been ongoing since the early 1990s, and which continues to spread outwards from the camps. The pattern is not the same in all directions because the richness of resources is not the same in all areas. Human impacts to the east and north of the camps are generally less severe, because the resources in those areas are less valuable so fewer harvesters find it worthwhile to go there. The deep sandy *raama* soils across the Lagh Dera in Sebule Division are especially low in productivity, as are those in the uninhabited block beyond Weldon in the east, where dead wood was exploited long ago and there are now few trees of value worth harvesting. There are, however, valuable woody resources remaining to the north-west (west of Welhar and south of Alikune) and to the south-west (south of Saredho and west of Yumbis). So while this report presents the average trend of degradation, directional differences remain important.

The findings of the rangeland sampling study are summarised in Table 16.

Table 16: Summary findings, rangeland plot sampling survey

Distance from camp	Trees per ha	Species per plot	Woody biomass (m ³ /ha)	Usable dead wood (t/ha)	Cut stems per ha
0-10 km	272	7	15	0,14	519
10-20 km	362	8	22	0,87	216
20-30 km	394	9	25	1,28	33
30-40 km	271	8	27	1,89	16
>40 km	448	9	46	2,56	-

Note: Woody biomass refers to live volume >2 cm size.

Source: Survey conducted on 40 plots around Dadaab for current study.

The data show a consistent trend of reducing environmental degradation with increasing distance from the camps. The number of trees, species variety, standing volume and dead wood availability all increase further away, while evidence of human damage progressively reduces (raw data and summary charts illustrating these trends are in Annexes P and Q respectively). The findings can be summarised according to distance as follows:

- **0-10 km (area 640 km²):** Although there are still over 270 trees per ha in this zone, due mainly to dense stands of low-value species north of the Lagh Dera, vegetation has been heavily degraded and average standing volume reduced to 15 m³/ha (67% lower than the average for the area beyond 40 km). As further indicators of scarcity, the quantitative survey found that 65% of host community members in this zone buy their firewood, and for those who collect for themselves, 48% take more than 90 minutes per trip. There is

virtually no dead wood remaining and abundant evidence of human damage (over 500 cut stems per ha). No species of commercial value are left and this inner zone is dominated by *Commiphora africana*, *Boscia coriacea*, *Boswellia neglecta* and *Grewia tenax*. Where more valuable trees such as *C.sinensis*, *Acacia senegal* and *A.reficiens* do occur, the specimens are small or have been heavily harvested for their prime stems. Some areas have been invaded by *Prosopis juliflora* and are becoming impenetrable. *Prosopis* will continue to take over degraded land around Ifo and Dagahaley, but is unlikely to spread around Hagadera as the sandier soil retains less water.

- **10-20 km (area 1280 km²):** The density of tree cover rises by 33% in this zone and standing volume by almost 50%. However, species diversity hardly changes and there is still considerable evidence of human impact. A few large specimens of *Acacia reficiens* and *A. tortilis* remain, perhaps considered too risky a target for harvesters due to proximity to a road or cut-line. But most marketable trees have been removed or heavily pruned and what remain are scrubby examples of *Dalbergia*, *Rhamnus*, *Commiphora* and *Boswellia* spp. There are 30% fewer trees species recorded at 20 km than 50 km from the camps, so biodiversity in this zone has been measurably degraded. The amount of usable dead wood within 20 km has also declined by 60% since 2000, from 290.000 t. to 120.000 t. (see Blondel, 2000a) and 35% of host community firewood collectors in this zone still have to walk more than 90 minutes to source fuel.
- **20-30 km (area 1920 km²):** At these distances the evidence of tree cutting drops significantly but standing volumes and species diversity show only minimal improvement from the 10-20 km zone, with just 25 m³/ha and an average of nine species per plot. Up to 2000 this would have been a virtually untouched area accessible only to occasional donkey carts, but over the last decade it has been stripped of all commercially valuable fuel and construction material as cart operators have expanded their harvesting range. There is around 1,3 t/ha of dead wood on the ground, usable but not considered valuable for commercial collectors. The relative availability of wood at these distances means that 53% of host community members collect their own firewood (rather than buying it) and among those who self-collect, the percentage having to walk more than 90 minutes drops to 30%.
- **30-40 km (area 2560 km²):** Standing volume continues to rise in this zone (now double that within a 10 km radius) and 1,9 t/ha of dead wood can be found and potentially harvested. The number of trees and species diversity appears to go down slightly, the data probably affected by a small sample size (only two plots).
- **>40 km (area 3200 km²):** Above 40 km there are significantly more trees (almost 450 per ha) and standing volume rises to 46 m³/ha, with the land heavily vegetated. There are over 2,5 t/ha of usable dead wood and limited evidence that live stems have been cut. 95% of host community members in this zone can meet their firewood needs within a 90 minute walking distance. Nevertheless, with an average of only nine species per plot and few trees of commercial value to be found, it is still apparent that these areas have been selectively harvested for their most valuable specimens. In other parts of North Eastern Province with similar population densities, the standing volume would be similar but there would be greater species variety.

Table 17 summarises standing biomass in the different distance bands and estimated sustainable yield available from annual growth.

Table 17: Total usable biomass and sustainable yield

Radius	Area (sq km)	Standing woody biomass (cu m)	Standing woody biomass (air-dry t)	Annual yield (air-dry t/ha)	Annual yield (air-dry t)	Total dead wood (t)
0-10 km	640	960.200	685.857	0,51	32.921	9.109
10-20 km	1280	2.783.100	1.987.929	0,75	95.421	111.212
20-30 km	1920	4.734.093	3.381.495	0,85	162.312	246.525
30-40 km	2560	6.869.701	4.906.929	0,92	235.533	484.850
40-50 km	3200	14.642.809	10.459.149	1,57	502.039	819.966
	9600	29.989.902	21.421.359		1.028.225	1.671.661

Assumes: 1,4 m³/air-dry t.; annual yield = 4,8% of standing stock (*Western and Ssemakula, 1981*).
Source: Data from previous table, based on survey of 40 plots around Dadaab.

Considering the entire 9600 km² oval-shaped zone from 0 to 50 km from the camps, 1,67 M t. of dead wood are still available for harvesting. Also harvestable without degrading the standing stock is the annual yield, which ranges from 0,51 to 1,57 t/ha/yr (air-dry) with increasing distance¹⁴. Based on standing stock of 21,42 M t. (air-dry) within the 50 km radius, a total of 1,03 M t. of wood can be sustainably harvested each year. These figures compare favourably with combined camp demand for firewood and pole-wood of 96.360 t/yr. Even if demand from local settlements within 50 km is added, the total wood requirement is still only 169.777 t/yr, well within sustainable off-take.

The problem for the environment, however, is that very few of the trees that remain within 50 km are considered acceptable as commercial fuel or pole-wood. They might be good enough for personal consumption, but with the supply chain now highly commercialised, the donkey cart operators must bring back wood that will attract the highest price, not wood that is merely acceptable. So while there may be a large amount of biomass in the surrounding area and a sustainable yield apparently well in excess of consumption, harvesters cannot find the species they seek without going at least 45 km away or by harvesting the few remaining live specimens closer to the camp. These, indeed, are the two parallel trends that are currently being observed.

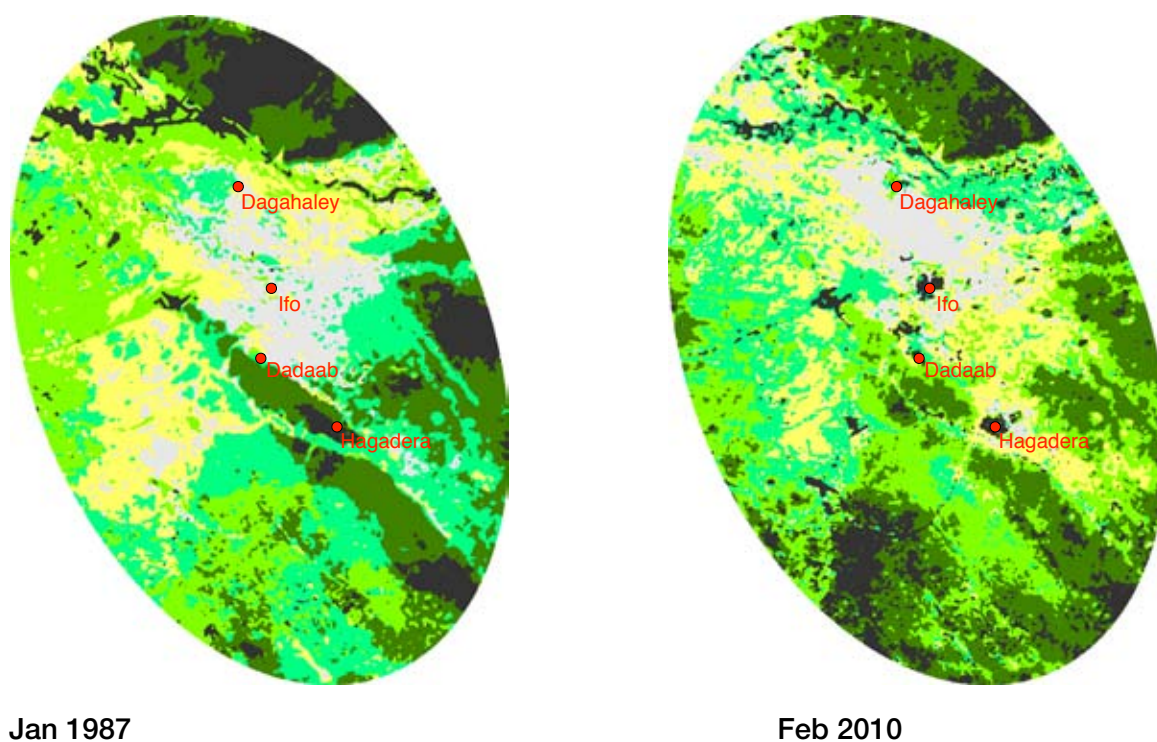
3.6.5 Findings of satellite image analysis

Landsat images from 1987 and 2010 were compared using the methodology described in Annex J, in the hope that land cover changes within 20 km of the camps could be quantified. This proved challenging due to deterioration of the Landsat sensors post-2003, a scattering of cloud in the 2010 scene and the susceptibility of image interpretation to seasonal effects¹⁵. There had been rain in January 2010 and it is likely that the second image was affected by the grassing over of clearings. The two images that were compared are shown in Figure 4.

¹⁴ Comparable with a recent estimate of biomass yield for Dadaab of 0.4-1.5 t/ha/yr (Milimo, 2009).

¹⁵ With a very open tree canopy, the condition of low-level ground cover has a significant effect on the way each scene is classified. So the condition of grasses and shrubs have a disproportionate weighting and the spectral signature is strongly affected by whether or not it has recently rained.

Figure 4: Classified Landsat images from 1987 and 2010



Colour code	Description	Area covered (km ²)		Change
		1987	2010	
	Camps, built-up areas, dense bush	226	216	-5%
	Medium dense bush	344	441	+28%
	Bushland	404	414	+3%
	Bushy woodland	431	323	-25%
	Scattered woodland	317	365	+15%
	Open ground	198	162	-19%
		1920	1920	

The analysis suggests that there has been a 19% reduction in open ground within 20 km of the camps since 1987. This is perhaps surprising, but visual comparison of the images suggests this is attributable to construction and subsequent afforestation of the Ifo and Dagahaley camps on previously open ground, as well as vegetation colonising the land between Dadaab and Ifo. Meanwhile opening up of land can be seen between Ifo and Dagahaley, around Hagadera and to the southwest of Dadaab town. The area of scattered woodland has increased significantly (15%) at the expense of denser vegetation (bushy woodland has reduced by 25%), as might be expected. The picture is less clear when it comes to denser vegetation cover, as the category described as Medium Dense Bush seems to have increased significantly (28%) when it would have been expected to have been degraded. It is possible that this reflects recent rainfall in the southern part of the 2010 image area, with fresh grass in clearings creating a temporary impression of thicker vegetation.

The satellite image analysis does not add significantly to existing understanding and the findings of the forest plot survey. More sophisticated remote sensing investigation might yield more revealing and reliable results, employing manual digitising (rather than unsupervised classification) and using higher resolution imagery from more modern sensors (e.g. SPOT or ASTER).

3.6.6 What are the trends in biomass impacts?

Access to particular areas for wood harvesting is granted on the basis of clan affiliation, and camp-based elders have long-standing arrangements with representatives of the indigenous clans which specify the zones that may be exploited. Such relationships were documented through the qualitative household survey. GTZ facilitated the convening of Environmental Working Groups in the mid-1990s to provide a formal conduit for access negotiations, but such arrangements are becoming hard to sustain as shortage of the most desired species pushes donkey cart operators into more distant locations, beyond those for which access has been arranged.

The weakening of clan-based access controls can already be seen. Organised groups are reportedly engaged in commercial charcoal production for export via Somalia, from which only a few members of the host community derive benefit. A recent court ruling released refugees arrested for harvesting live trees on the grounds that the Forest Act does not apply to foreigners. Well-connected backers and favourable court rulings have emboldened harvesters, who sometimes use violence to resist attempts to stop them.

The weakening of traditional access controls is generating resentment specifically related to biomass harvesting. This is felt by all those in the camp-affected area but is most one-sided for those who live furthest away. They experience only the negative impacts of wood harvesting, whereas those living closer to the camps at least realise some degree of trade-off between economic benefits (such as markets for their livestock products, infrastructure investments and firewood supply contracts) and degradation of their resources. This is less the case for more distant communities.

The selective harvesting of desirable tree species is permanently altering biodiversity and affecting pastoralists over some 10 000 km² by changing the ecological balance of plant, animal, bird and insect species. This will have unquantifiable impacts on pasture, browse and the stability of the rangeland. *Terminalia spinosa*, for example, is targeted because of its high density and has been all but eradicated within 50 km of the camps. It is traditionally a valued source of browse for camels and goats.

Market forces have already catalysed significant conservation measures and firewood consumption cannot go down by more than a further 10-15% if users are still to enjoy cooked food. So unless the population of the camps and nearby settlements is reduced, it can be expected that the future will bring:

- ever-increasing harvesting distances;
- a continued rise in wood prices;
- increased cutting of live trees;
- further weakening of clan-based access arrangements, leading to more conflict;
- greater benefits accruing to a small number of individuals well positioned in the wood trade, to the detriment of the wider community;
- increased production of charcoal to supply both the camps and markets in Garissa and Somalia; and
- probable introduction of lorries in fully privatised operations for transporting woodfuels to the camps.

These are trends typical of any large urban settlement, which is what the Dadaab camps and the nearby communities have effectively become.

3.6.7 How is organised fuel supply managed?

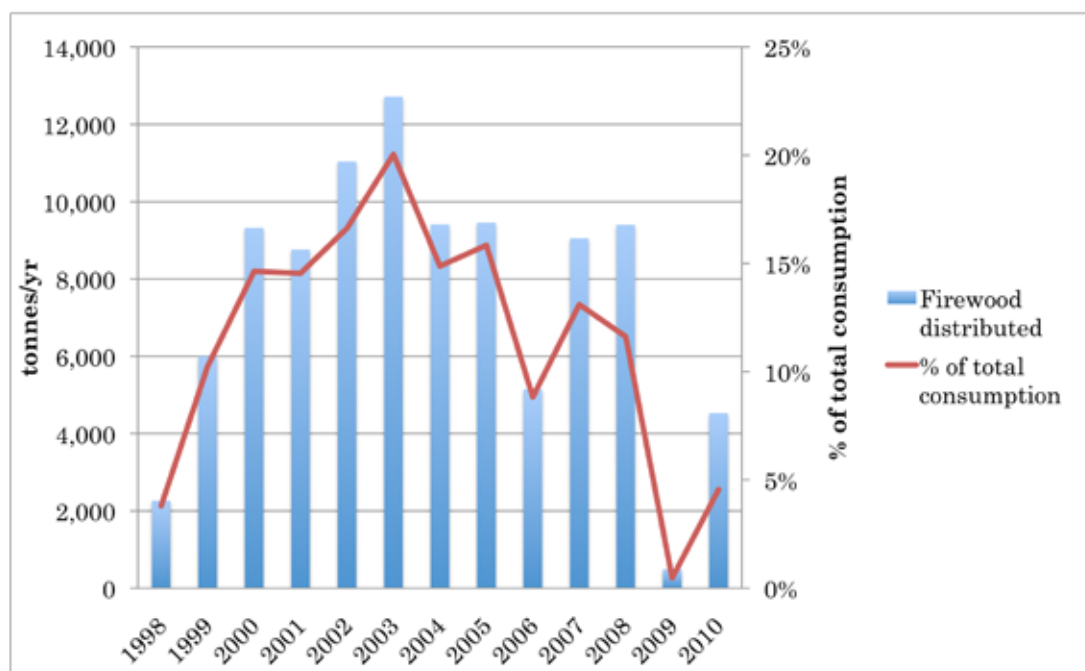
GTZ has been managing a programme of firewood supply to the camps since 1998 with funding from UNHCR. This was initiated to address rape and violence against women and girls, although a second objective of environmental rehabilitation was later added and then a third of reducing resource-based conflicts between refugees and local communities (CASA Consulting, 2001). 93 000 t. of wood will have been supplied to the camps by mid-2010, as Table 18 and Figure 5 illustrate.

Table 18: Summary of Dadaab firewood supply programme, 1998-2010

Year	Firewood distributed (t)	Average refugee popn.	Ave. consumption per person (kg/day)	Ave. consumption overall (t/yr)	% supplied
1998	2.265	108.827	1,50	59.583	4%
1999	5.999	110.000	1,46	58.552	10%
2000	9.322	123.138	1,42	63.673	15%
2001	8.761	120.000	1,38	60.225	15%
2002	11.041	136.445	1,33	66.403	17%
2003	12.716	134.552	1,29	63.436	20%
2004	9.411	138.618	1,25	63.244	15%
2005	9.458	135.354	1,21	59.697	16%
2006	5.142	136.671	1,17	58.199	9%
2007	9.053	168.227	1,13	69.078	13%
2008	9.405	204.646	1,08	80.920	12%
2009	489	270.638	1,04	102.899	0%
2010	4.525	272.029	1,00	99.291	5%
	93.060			905.200	11%

Source: Firewood supply records from GTZ Dadaab. Refugee populations from UNHCR (2005-2010) and internet research (1998-2004). Firewood consumption for 1998 from Owen (1998), reduced in linear fashion to 2010 measured figure of 1.0 kg p.p.p.d.

Figure 5: Contracted firewood supply (1998-2010)



Organised firewood supply has averaged 11% of estimated consumption over the 12 years of the programme and peaked at 20% in 2003.

A joint agency mission reported in 2002 that host communities were benefiting from firewood purchase contracts, that Resource Use Monitors and Resource Use Monitoring Committees (RUMCs) made frequent visits to harvesting sites to verify compliance with agreed environmental protection requirements and that Environmental Working Groups ensured only dried wood was collected. However, by 2005 the Provincial Environment Officer and Provincial Forester (see GoK, 2005b) were reporting that:

- tendering was exclusively controlled by chiefs and hand-picked elders, usually their relatives or members of the RUMCs;
- harvesting contracts were being sold on by chiefs and DOs to businesspeople from Dadaab and Garissa;
- monitoring was only carried out by internal project staff and their reports were not widely circulated;
- RUMCs were failing to enforce rules designed to protect the environment, either because of deliberate bias or because they could not co-ordinate properly with gatherers due to logistical constraints.

The large sums of money available for the supply contracts have led to increasing politicisation of the firewood programme, and it was suspended altogether in 2009 in a high level dispute over the price payable for wood. Although the original social and environmental objectives are still cited in progress reports, the primary benefits now seem to accrue to the local elite. The latest round of tenders involves 362 contracts¹⁶ to source and deliver 4,525 t of firewood to the camps at a total cost of KSh 36 million. The fact that harvesting contracts are awarded to several Locations in Dadaab and Fafi from which dead wood has long been eliminated is an indication of political motivations and understandably creates resentment among people living in the areas affected: Why should a contractor from Alinjgur, where no dead wood remains, be authorised to take wood from Yumbis?

The harvesting zones targeted by the contracted transporters originally lay beyond the areas frequented by camp-based donkey carts, meaning that closer areas would be harvested using carts and more distant locations using lorries. This system to disperse the camps' impact has broken down as the donkey carts have moved outwards and the contracted harvesters now simply hire carts from the camps to bring wood to centralised collection sites accessible to the lorries. The firewood supply programme has hence become a formalised version of the harvesting system already being implemented by the refugees, only with a delivered price of Shs 8000/t now being paid through GTZ, as compared with the current price for firewood in the camps of Shs 3100/t¹⁷. This is clearly a rather uneconomical way to source fuel and can no longer be justified on either environmental or protection grounds¹⁸. In addition, the household survey in host communities established that negative impacts of the firewood harvesting contracts are felt and resented right across the community, while the benefits are realised by only a few. The political nature of the firewood supply programme and the fact that it is one of the few agency-supported initiatives that injects cash directly into the local economy, mean that it would be difficult to phase out¹⁹. However, the way in which the programme is managed offers significant room for improvement.

¹⁶ Half the contracts are for harvesting and the other half for transport.

¹⁷ KES 1 200 per 390 kg cart-load.

¹⁸ There now being an average of one recorded rape incident per year, generally unrelated to fuel collection.

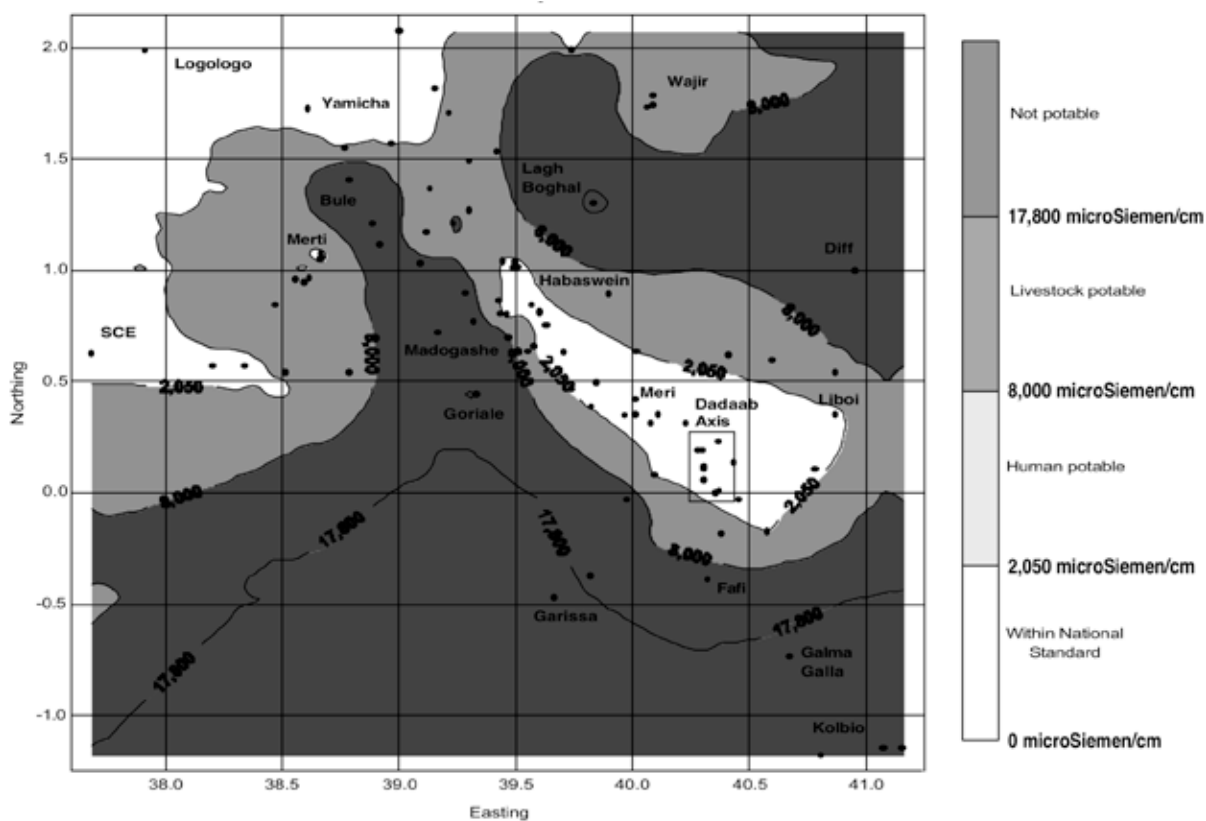
¹⁹ "There is a lot of vested interest and the issue is complex with potential for political and personal interests prevailing at the expenses of other factors" (Ndibalema, 2008)

3.7 Impacts on water resources

3.7.1 What is the scale of aquifer abstraction?

With the exception of the wells at Shantabak north-west of Dadaab, the only permanent sources of water in the refugee-hosting area are deep boreholes. The boreholes that supply the refugee operation – together with large portions of Garissa, Wajir and Isiolo - tap into the Merti aquifer, the extent of which is depicted in Figure 6.

Figure 6: Map showing extent of Merti aquifer



Source: Gibb Eastern Africa, 2004.

Research into abstraction and recharge of the aquifer was commissioned by UNICEF through Gibb Eastern Africa in 2004. This comprehensive technical study forms the basis of the following discussion, together with consultations with the report’s lead author²⁰ and updated information on the Dadaab boreholes provided by CARE.

At the time of the Gibb research there were 14 functional boreholes in the camps and there are now 19. Annual abstraction for refugee use has doubled from 1,0 to 2,0 M m³/yr since 2002. Four additional boreholes serve communities living adjacent to the camps and two boreholes supply Dadaab town (one of which serves the humanitarian agencies). Together they discharge an estimated 0,25 M m³/yr. Hence total estimated abstraction in the vicinity of Dadaab is 2,3 M m³/yr.

Determining water abstraction from the rest of the aquifer is more difficult because of data deficiencies at the catchment authority, which could not provide information on boreholes sunk

²⁰ Mike Lane of Aquasearch Ltd., whose insights are gratefully acknowledged.

in the aquifer since the Gibb study. It was therefore necessary to estimate the current number by extrapolating from the 2002 figure of 41 boreholes across three districts, assuming an annual growth rate of 5%, to give a figure of 60 boreholes unrelated to the refugee operation that between them draw 2.25 M m³ of water per year. Total abstraction from the Merti aquifer is therefore estimated at 4,55 M m³/yr, as summarised in Table 19.

Table 19: Estimated abstraction from Merti aquifer (2002 and 2010)

Location	2002		2010		Assumptions
	No. of BHs	Abstraction (M m ³ /yr)	No. of BHs	Abstraction (M m ³ /yr)	
Garissa	20	0,88	30	1,31	5% p.a. growth
Wajir	15	0,55	22	0,80	5% p.a. growth
Isiolo	6	0,11	8	0,14	5% p.a. growth
Dadaab town			1	0,05	17.000 l/hr, 12 hrs/day
Ifo, local			1	0,03	6000 l/hr, 12 hrs/day
Hagadera, local			1	0,02	5000 l/hr, 12 hrs/day
Dagahaley, local			2	0,07	16.000 l/hr, 12 hrs/day
Refugee camps	14	0,998	19	2,04	5,6 M l.day
UNHCR			1	0,08	9000 l/hr x 24 hrs/day
Total	55	2,52	85	4,55	
Garissa, Wajir, Isiolo			3	0,11	5% growth in 2010
Ifo II extension			4	0,44	each 20.000 l/hr, 15 hrs/day
Camp replacements				0,16	6 BHs 25% >current ave.
UNHCR replacement				0,02	1 BH 25% >current yield
Projected total (end 2010):			92	5,28	

The lower part of the table includes four new boreholes to be sunk in 2010 in the Ifo II extension and seven more that will replace aging infrastructure, funds permitting, six of them in the camps and one in the UNHCR Dadaab compound. There are also new boreholes being sunk in elsewhere in the aquifer. Once these new and replacement boreholes are commissioned they are likely to increase total abstraction from the Merti aquifer to an estimated 5,28 M m³/yr.

3.7.2 What is the rate of aquifer recharge?

Several estimates of aquifer recharge are quoted by Gibb, two of which are quantified with some degree of confidence: 0,9 M m³/yr from the Ewaso Ng'iro river and 2,4 M m³/yr from the so-called Yamicha Triangle, giving an assured recharge volume of 3,3 M m³/yr. Water quality measurements suggest that there may be a third source of fresh water recharge through the bed of the Lagh Dera, although no specific infiltration locations are unequivocally pinpointed. Consultation with the Gibb lead author suggests there may be recharge between Sericho and Habaswein, or possibly near Sebule via superficial sandstone deposits. This could arise from large-scale recharge events occurring every few thousand years (perhaps more frequently). But the volume of recharge via this Lagh Dera mechanism can only be hypothesised and is estimated at 1,2 M m³/yr on the basis of flux measurements, giving total recharge of 4,5 M m³/yr from the three postulated sources. There is an unknown lag-time between rainfall events and aquifer recharge that is likely to be in centuries or millennia.

With current aquifer abstraction of 4,6 M m³/yr expected to rise to 5,3 M m³/yr in 2010, it is concluded that the rate of water discharge is now in excess of the likely rate of recharge.

3.7.3 What are the trends in borehole water levels?

Static Water Level (SWL) in boreholes is one indication of aquifer health. The records for six camp boreholes from 2002 to 2009 were analysed as part of the study and show an average decline in SWL of only 1,3 m since 1992 (see Annex R). The greatest decline is seen in Dagahaley but is still only 2 m in 17 years. These are negligible changes, given that the saturated thickness in the camp boreholes is generally at least 40 m.

Wanyeki (1979) calculated the effects on the aquifer of 70 hypothetical boreholes discharging 4,2 to 11,1 M m³/yr. His scenario is similar to the actual situation that now prevails, with an estimated 85 boreholes discharging 4,6 M m³/yr. Wanyeki concluded that drawdown would not exceed 10 m in the most heavily-pumped areas over a 50 year period. The latest borehole data in fact show a healthier trend than he postulated, equivalent to 6 m over 50 years in the worst case and only 3,8 m over 50 years on average.

The rate at which SWL has been falling is similar to that recorded by Gibb seven years ago: In Ifo it has been falling slightly faster since 2003 than it did over the preceding 12 years, whereas in Hagadera the rate of SWL decline has reduced and in Dagahaley the rate is approximately the same (refer to the charts in Annex S which illustrate these trends). All SWLs continue to drop, but in no camp has there been a significant speeding up or slowing down of the rate at which this is happening.

3.7.4 Discussion of water impacts

The picture of water abstraction is mixed. There is no reason to believe that utilisation thus far has been unsustainable, but it seems likely that a threshold has now been reached where abstraction is exceeding the confirmed rate of recharge. This may have impacts well into the future, given that recharge probably takes centuries or longer. The total volume of water stored in the Merti aquifer is about 3,7 km³ (Mike Lane, pers. comm.). Annual discharge of 4,6 M m³ therefore represents only 0,12% of the water available underground and it is likely to be many years before major impacts are recorded. Nevertheless, extracting more water than is being recharged amounts to mining of the resource, and is a risky course of action.

The situation will worsen because recharge via the Ewaso Ng'iro is in steep decline, with abstraction for irrigation reaching 60% of river flow during dry seasons (Gichuki et al, 1998, quoted in IWMI, 2006), and because the Lagh Dera infiltration mechanism is only hypothetical and it would be foolhardy to assume that this represents a regular or reliable source of recharge. It is therefore necessary to proceed with caution in drilling new boreholes and exploiting existing ones. This is especially so for the refugee support operation, given that it accounts for 47% of total abstraction from the aquifer and that this percentage is rising. Gibb recommended a conservative approach to future aquifer development, with maximum borehole extraction of 8-10 m³ per hour. Actual abstraction now averages around double this in the camp boreholes. CDC (2009) observed that "the current rates of pumping significantly exceed the recommended pumping rates in the aquifer study". With the rise in the number of boreholes and the increase in average abstraction per borehole, the possibility of over-use of the aquifer needs to be addressed.

3.8 Impacts on grazing and wildlife

3.8.1 What are the impacts on grazing?

Given the fundamental nature of pasture and browse for sustaining the pastoral mode of production, livestock may only be grazed in particular areas by members of resident clans or others with negotiated access rights for defined areas or seasons. Such rights are not generally granted to those living in the camps and their livestock are limited to day trips out and back under the care of hired graziers. The system is orderly and regulated, within a distance limit of 15-20 km. Grazing pressure is heavy within this radius from an estimated 53,000 shoats and 8,000 cattle, but negligible beyond. The host community household survey also established that livestock from the camps are only to a very limited extent being herded further away or spending nights outside. Refugees are not permitted to keep camels. It would therefore be misleading to overplay the level of competition between the hosts and refugees for pasture and browse. The loss of access affects around 2,000 sq km, barely 4% of Garissa District and not significant in the wider regional context.

During dry periods there is insufficient local grazing so the camp-based animals are fed supplementary maize and corn soy blend from refugee rations, and water from camp boreholes. Their water consumption may be as high as 340,000 l/day, over 5% of total abstraction in the camps – see Table 20.

Table 20: Estimated water consumption of camp-based livestock

Livestock type	Total	Water consumption	
		l/animal/day	Total l/day
Sheep & goats	53,000	3,3	174,900
Cattle	8,000	16,7	133,600
Donkeys	3,000	10,0	30,000
		Total	338,500

Source: Livestock numbers from head count in Ifo, extrapolated based on relative camp populations. Water consumption from Government of Kenya, 2005.

Camp-based livestock are therefore significant consumers of food and water intended for humans. Both are obtained free of charge whereas outside the camps it is common to pay a watering fee of KSh 2, 5 or 10 for shoats, cows and camels respectively. Non-camp residents complain that this distorts markets as they cannot afford to sell their livestock as cheaply as refugees (though the issue is not clear-cut as there are also local people benefitting from free food and water).

Another issue of concern commonly raised in host communities is the enclosure of land for the privatised production of fodder by refugees and influential community members, which is cut and sold to both refugees and locals during dry periods. Host community members object to this practice and aim to remove thorn-fenced enclosures whenever they can, unless the instigator is particularly powerful.

3.8.2 What are the impacts on wildlife in the area?

Wildlife populations around Dadaab have been reduced as animals have migrated due to disturbance, been forced out by competition with livestock for food or been hunted for their meat.

Droughts have intensified competition between herbivores and domestic livestock, reducing the traditional prey of predators and forcing them to attack goats, sheep and cattle instead. In Garissa District it is estimated that predators kill over 1300 head of stock annually with a value of USD 22,000 (Murithi, 2007). Lion and spotted hyena account for 46% and 41% of these losses respectively.

Refugees play their part in the process of wildlife destruction. The Sudanese and Bantu Somali trap birds and hunt warthogs for their own consumption and hunt antelope to supply meat to the wider Somali community, among whom game was not traditionally consumed but is now reported to be part of the diet. Wildlife is sensitive to disturbance and is likely to have moved away from the area affected by the refugees and host community. There is therefore some hope that migration rather than poaching may account for the majority of the population decline.

The loss of wildlife around Dadaab is not only a camp-related phenomenon. The same trend is being observed across most areas of Kenya outside National Parks and private conservancies. As with many environmental phenomena, however, the presence of the camps has significantly intensified the process. Whether migration or poaching are the principal cause of the population decline, it is unlikely that game will recover unless the camps and associated local settlements are dispersed. It is also inevitable that conflict between livestock keepers and predators will escalate and that lion and hyena numbers will continue to decline as a result.

3.9 Camp-based environmental issues

3.9.1 How is solid waste managed and what are its impacts?

The traditional approach to solid waste management within the camps has been burning and in situ burial, but this is becoming unsustainable due to the volume of waste now accumulated. CARE recently conducted a study of solid waste generation to inform a new strategy for managing its disposal (CARE International, 2009) and found that average per capita waste production in the camps is 1,63 kg/day, of which 75% is animal dung suitable for kitchen gardening or compound tree planting. The balance is lower than the volume produced by inhabitants of normal towns of comparable size and is no different to the quantity routinely generated - and disposed of haphazardly - in local communities. Agencies working in the camps are nevertheless concerned about this issue and involved with collection, recycling and landfill initiatives, meaning that it is receiving a level of attention not seen in local communities. Only 8% of the solid waste is unsuitable for recycling or re-use and is being dumped in a trial landfill at Hagadera.

The water table in the area is at least 110 m below the surface and there is no infiltration mechanism that could channel leachates from solid waste to these depths. The risk of livestock ingesting plastic bags has been over-stated. The study team could also find no recorded instance of accident or sickness among either camp residents or locals linked directly to solid waste. So while solid waste is said to pose a “major environmental hazard” (ibid.), this is an arguable claim, however unsightly and unpleasant accumulated waste may be. UNHCR’s Senior Water and Sanitation Officer concluded that “the view of the plastic bag everywhere is a visual nuisance but does not create a health hazard; overall considering the population of the camps solid waste is relatively well managed” (Porteaud, 2009). It is clear that solid waste accumulation is spatially contained and that the issue is being taken seriously. Better management of solid waste is still possible, however, and well suited to community mobilisation by local and refugee groups, as a self-help opportunity that should not rely solely on NGO intervention.

3.9.2 What are the impacts of sanitation facilities?

Again, with a deep water table and no known infiltration mechanism, there is no chance that latrines in the camps are affecting ground-water quality. Surface flooding leads to overflow of pit latrines, however, particularly in the clayey soils of Ifo and Dagahaley. There is also a problem of soil instability in Hagadera which is being addressed through the experimental use of oil drums for latrine pit lining (Porteaud, 2009). Both issues present a localised health risk to camp residents but not to host communities or the wider environment.

3.9.3 What impacts are seen from mud brick production?

Camp residents have been replacing traditional huts and wood-pole shelters with mud brick houses since the late 1990s. Humanitarian agencies have adopted a similar building style in their shelter programmes and aim to build 3500 mud-brick houses per year. With this building style there is a trade-off between benefits - including security, space, dignity, weather-proofing and the non-use of local timber and thatch - and drawbacks, mainly the fact that they require clay soil and water for brick production. 3500 houses require 49.000 cu.m. of soil and 8820 cu.m. of water (Kennedy, 2010), with additional needs for houses being built spontaneously by refugees and locals. But the risks associated with hole-digging for mud extraction have been over-stated and the pits are inappropriately pinpointed as a key source of danger to children and a breeding ground for mosquitoes, given that such risks arise from numerous other sources. The consumption of water should always be moderated, but 8820 cu.m./yr is only 0,4% of total abstraction from the camp boreholes and a fraction of that which leaks, is fed to livestock or is pumped free of charge at the camp-adjacent community boreholes. The environmental benefits of mud brick houses compared with wood-pole structures are clear, and the down-side is considered an acceptable trade-off.

3.10 NGO environmental activities

UNHCR and the German government have been supporting a programme of environmental activities in Dadaab since 1993 under the management of GTZ. The supply of firewood is one of these activities and others include the promotion of energy-saving cooking practices, the development, manufacture and distribution of fuel-efficient stoves, the distribution of tree seedlings from nurseries in Dadaab and the camps, fencing and replanting of greenbelts (using micro-catchments for seedling establishment), exploring alternative fuels and stoves, promoting “multi-storey” kitchen gardening, catalysing Environmental Working Groups involving refugees and locals, and implementing environmental awareness-raising and educational programmes. Since 2009, two local NGOs²¹ have also been supported to work in the settlements closest to the camps on household tree planting, woodlots, kitchen gardening and irrigated horticulture.

The camps themselves have been heavily forested as a result of long-term household tree planting with good survival rates. However, the harsh climate, poor soils and unreliable rainfall have limited what these programmes have been able to achieve in terms of environmental rehabilitation outside settlements and domestic compounds. Planted trees will only survive if they are actively tended, watered and protected, which effectively precludes large-scale tree planting. Scope exists for further environmental management activities within the camps and on private plots in nearby settlements. However, rehabilitating large tracts of the surrounding dryland bush through active

²¹ Relief, Reconstruction and Development Organisation (RRDO) funded through NRC and Fafi Integrated Development Association (FaIDA) funded through LWF.

intervention, as opposed to reducing human pressure and managing its natural regeneration, would be an extremely expensive exercise with a low probability of success.

3.11 Environmental impacts – overview

In spite of the numerous social and economic benefits that the Dadaab camps have brought to the hosting area, it is irrefutable that they are placing a considerable strain on the natural resources of the surrounding area. Wood collection in particular has reduced a large area of land to scrub. Nevertheless, there has been a tendency to characterise the environmental situation around Dadaab with superlatives at the expense of facts. The environment has been portrayed as fragile²², refugee behaviour as indiscriminate²³, impacts as a regional disaster²⁴, local people as victims who deserve compensation²⁵ and mitigation programmes by refugee-support agencies as grossly inadequate in scale and scope²⁶.

The reality is more complex. The environment is hardy and resilient; refugee behaviour towards local resources is largely structured within the context of clan affiliations, the impacts of the camps in purely environmental terms have been serious but spatially restricted in an area of inherently low resource value, and the differentiation between local people and refugees is blurred, making definitive attribution of impact impossible. Given also that large-scale rehabilitation of the environment is called for by most government and donor-funded missions that visit Dadaab, it is unsurprising that little seems to have been achieved – it will never be possible to meet inflated expectations that some 10.000 km² of dryland bush can be rehabilitated, unless population pressure is alleviated and natural regeneration becomes a possibility. Reforestation efforts outside domestic compounds are not viable because of low survival rates and high cost, and because introduced tree species cannot substitute for the rich diversity of the natural rangeland, to which local culture and lifestyles are finely adapted.

There are several realities that become apparent:

- a) Environmental degradation is an *inevitable consequence* of the GoK practice of containing refugees in large camps in an area of low productivity; this is not a situation brought about by UNHCR or other international organisations, whose guidelines are clear on maximum camp populations of 20.000.
- b) There is a trade-off from this containment practice between costs and benefits, with the evidence pointing to significant economic benefits accruing to the hosting area at the expense of losses through environmental degradation.
- c) Large-scale rehabilitation of the hosting area is not technically or financially feasible; a significant reduction in the camp and local population would permit natural regeneration,

²² e.g. “fragility of the environment” (Ndibalema, 2008); “refugees in a fragile environment” (Dadaab Integrated Env. Mgmt. Framework, 2010); “a fragile ecosystem” (Prov. Commissioner trip report, 2009); “the fragile state of this semi-arid environment” (UNEP mission report, 2009).

²³ “indiscriminate cutting of trees for firewood by the great (sic) immigrants” (Murithi, 2007).

²⁴ “refugee community have ... exposed 113,140 ha of land to severe erosion...” (Garissa District Food Security Profile).

²⁵ “...local people get nothing in return. The local communities need to be compensated” (NET-Fund proposition meeting, Nov 2009); “...first step in the rehabilitation program should be ... e.g. compensation to the host communities” (Hon. A.Sugow, MP, Stakeholder Workshop on Integrated Env. Mgmt., Apr 2010).

²⁶ “there have been many interventions ... but the problems have been alleviated only slightly” (Dadaab Integrated Env. Mgmt. Framework, 2010).

but otherwise Dadaab will exhibit increasingly urban-like characteristics and an expanding ring of resource degradation.

Changes to the ecological balance of plant, animal, bird and insect species brought about by the presence of the camps are having unquantifiable impacts on pasture, browse and rangeland stability. These changes are accelerating a process of resource deterioration and livelihood vulnerability that is seen in similar forms across Kenya's drylands and which is pushing growing numbers of pastoralists to towns, where they are becoming dependent on hand-outs rather than their own resources.



Dadaab environment

3.12 Host community support projects

The study team summarised ongoing host community projects (Annex A) and during the study many discussions were held with community members on the content and approach of these projects. Donations of infrastructure dominate the host community project portfolio and initiatives supporting pastoral production and its associated strategies of mobility are largely absent. Agencies involved in local community programmes tend to manage their own projects with a single sector focus and little coordination. Several examples can be found of parallel investment in expensive boreholes in the same communities, funded by different agencies. Coordination with government initiatives also seems weak and direction by government is equally lacking. Hence several new schools and health clinics are not staffed. This is not a problem unique to initiatives of the humanitarian agencies and applies equally to projects supported by the CDF and ALRMP.

Furthermore, as humanitarian agencies become involved in development projects they find themselves working outside their core areas of competence, with a need for approaches that are quite different from those appropriate in the context of refugee camps. Staff lack the necessary skills to design and implement development programmes, there is over-use of hand-outs in what should be long-term development initiatives, and short-term funding cycles undermine long-term planning. UNHCR, for example, operates according to one-year funding cycles.

4. Conclusions

4.1 Socio-Economic Impacts

- 1. Host area.** Impacts from the Dadaab camps are significant and include business and trading opportunities, reduced food and commodity prices, and investments in services and infrastructure, resulting in large-scale in-migration of people. The main socio-economic impacts are felt within 35-45 km and environmental impacts within 50 km. A 50 km radius can therefore be defined as the host area in terms of routine and measurable interaction, with an oval shape 100 x 120 km (9600 km²) covering parts of Fafi, Lagdera and Wajir South Districts. Defining the host area is necessarily an approximation, especially when mobile pastoralists use grazing and foraging grounds up to several hundreds of kilometres away. The refugee-hosting area is not defined in any government-led development planning processes and falls under the jurisdiction of several districts with their own independent planning processes.
- 2. Host population.** The host population within 50 km comprises at least 148.000 people and this has been growing at 11,7% p.a., compared with the average for North Eastern Province of 3,7%. p.a. From the pre-refugee figure of around 15.000 in 1989, the host population has increased tenfold. Population density is highest within 10 km of the camps (66 people/sq.km) and declines with increasing distance. The average density across the whole 0-50 km range is now 15 people/sq km, compared with an average for other rural areas of North Eastern Province of approx. 7 people/sq.km. In-migration is the main driver of the significant increase in host area population, with at least 70% of the adult population having settled in the Dadaab area within the last 15 years. People are moving in from other parts of ethnic Somali parts of North Eastern Province, predominantly from areas inhabited by the same sub-clans. Government-led development planning for the host area does not account this significant,spatially-focussed increase in population.
- 3. Mobile and settled.** Approximately 60% of the host community live in settlements and 40% are mobile pastoralists, but the vast majority of households are divided, with some members mobile and others settled, or at least having relatives in households that are mobile (if they are settled) or settled (if they are mobile). Combining settlement and mobility is a key strategy for reducing risk and is used at various scales both within households and during seasonal and annual cycles. The complex combination of settlement and mobility makes it misleading to apply definitive attributions of settled or mobile. Provision of services by government, development and humanitarian agencies is predominantly catering for settled populations. The distinctions between settled and mobile populations and the problems in directing appropriate development interventions towards both groups are well known in other pastoralist-dominated areas of Kenya. Understanding these experiences is crucial for developing appropriate interventions in support of the host community.
- 4. Clans, access, identities and relationships.** Host and refugee communities overlap closely and their identities are intertwined. The two populations share a common language, culture and religion, and in many cases clan and sub-clan identities, together with a common-property approach to sharing of resource use across large swathes of land either side of the international border. Relationships between refugees and hosts have evolved over time with a deep and intimate degree of overlap. In addition, host community families often

have members in the camps, and have part of their households moving back and forth between Somalia and Kenya in search of pasture, and have probably themselves arrived in the Dadaab area only recently. Clear-cut definition of identities is therefore difficult, but for practical purposes the study defined host community as those people living outside the camps and within a 50 km radius. Shared identities and blurred distinctions between refugees and hosts are key reasons why a humanitarian operation of this scale has been able to operate relatively smoothly in terms of host/refugee relationships. That said, it is still clear that rights in terms of grazing are by and large controlled by the clan institutions of the host community, and only to a limited degree are these rights extended to refugees in the camps. With the Dadaab camps being major centres in the area for services, shops and social amenities, the host community is naturally drawn towards the camps for a wide range of purposes. Social interaction between host community members and refugees are taking place within the camps at a significant scale. Refugees are seen as getting the better deal as international humanitarian standards are applied to refugees but not to host communities, and local politicians are typically quite vocal in stressing the problems associated with the presence of the camps and the supposed need for compensation directed towards the host community.

5. **Refugee ration cards holders among host community.** Realising the importance of refugee ration card ownership for host community households, the study team conducted a thorough assessment of the scale of this practice. At least 40,500 host community members (27%) within 50 km are believed to hold refugee ration cards. Their distribution among households seems to be very unequal with some households having most members included and other having none. Holders of ration cards include both people who are from the host area originally and others who have moved there from other parts of Kenya, primarily to seek a better livelihood. These are not refugees. Among host community members it is not considered very difficult to obtain a refugee card and is moreover seen as a logic survival strategy for those living in the host area. Holding a Kenyan ID card and a refugee ration card at the same time has become more difficult due to biometric registration; but for many, holding a ration card makes more sense as it provides food (which converts to income) whereas a national ID offers less tangible rights. Ration cards are used in food distribution and carry no photograph. The widespread ownership of ration cards by host community members is a major impact of the refugee operation and unique to the Dadaab area. It has become part of the integrated relationship between the camps and the surrounding area and contributes to the peaceable acceptance of refugees. It is a highly sensitive issue, however, and persists exists despite concerted attempts by GoK (through DRA) to rationalise the situation.
6. **Negotiations and agreements.** Both formal and informal avenues for negotiation and conflict resolution between host and camp-based communities are well established. Formal channels of interaction have been supported by various agencies, whilst vibrant informal interaction takes place between the leadership of the refugee camps and the local leaders, who hail from similar sub-clans. Agreements exist over the vexed question of land and resource rights, the allocation of business plots within the refugee camps, the division of jobs and contracts, resolution of conflicts and facilitation of interactions between the camps and neighbouring villages.
7. **Push, pull and deterrent factors.** Recurrent droughts have had profound effects on the population and the increase in settlement in the Dadaab host community. Significant reductions in livestock holdings have, as in other ASAL regions of Kenya, pushed large

numbers of people into poverty and settlement. Pull factors unique to the Dadaab area include: the availability of cheap food due to indirect subsidy via distribution in the camps and imports via Somalia; the opportunity to register as a refugee and receive a ration card; the availability of more services in the area than in other comparable places; and the existence of more employment opportunities. Deterrent factors keeping people from moving into the host area are the need to belong to the sub-clans who own land locally, and the high level of competition for access to natural resources.

- 8. Host community livelihoods.** Although livelihoods in the host community are overwhelmingly pastoral, all households ensure that they also have access to food relief and/or refugee rations. Many households sell domestic products to the camps or to other local people, including livestock, milk, firewood and donkey cart transport services. Although widespread poverty prevails in the host area, no one interviewed classified themselves as destitute and only 20% saw themselves as poor. Although this cannot be directly compared to the absolute rural poverty level for North Eastern Province of 60-65%, it does indicate a situation with somewhat less acute poverty than in other comparable areas. Fewer than 3% of households have no livestock at all. However, dependency on free food, services and donor-funded projects is more pronounced than in other comparable pastoral areas. Livelihoods have been shaped by the presence of the refugee operation specifically due to the scale of pastoral trade, free and subsidised food and access to services.
- 9. Pastoral production.** Virtually everyone with more than a few shoats keeps part of their herd mobile in order to optimise pastoral production. Livestock are trekked long distances and a significant numbers of animals are moved back and forth over the Somali border depending on where grazing is available. Livestock kept around settlements all year round are partially fed during the dry season with cheap food available from relief or refugee rations. With an estimated eight- to ten-fold increase in the human population over the last 20 years alongside an estimated 50% drop in livestock holding per household, total livestock numbers are still four or five times higher overall. This development is unique to the Dadaab area and not generally seen in other pastoral areas of Kenya, and is directly associated with the opportunities created by the refugee operation. An increasing number of households now report to have middle size herds as compared to some decades ago and a majority of households report decreasing herd sizes (though 15-20% report increasing herd sizes). This means that less households are rich and less are poor or destitute. The picture is very dynamic. Pastoral production systems in the host community have been developed specifically to supply the refugee camps and their major markets. Support to pastoral development is being provided by the district administrations with the support of special projects like ALRMP, however the support is limited and only partially addresses the mobile production system. Government capacity for supporting pastoral production is weak and the area to be covered is vast.
- 10. Livestock ownership.** Livestock owned by residents of the camps are taken out in large herds each morning and brought back in the evening and very few are grazed further away than this daily movement allows. An estimated that 53.000 shoats and 8.000 cattle are kept in the camps and grazed in this way. The number of livestock owned by the host community is estimated to be 80-100.000 camels, 200-250.000 cattle and 300-350.000 shoats. Only during the rainy season are the majority of these livestock kept in the host area. 25 times as many cattle are owned by host community as by refugees and six times as many shoats, with camels not owned by refugees at all. Host community households still own an average

of only 12,8 Tropical Livestock Units, however, which is only half of that required to sustain a household from purely pastoral production. This is a further indication of the diversified livelihood base of the host community.

- 11. Grazing and browsing management.** The host area has seen a steep rise in human settlement and this is having profound impacts on mobility and grazing patterns. Mobility, so essential for sustaining the pastoral system, is being hampered by fast-growing populations around water points with depleted grazing and browsing resources, by the tendency to keep herds partly immobile year-round, by the physical expansion of camps and settlements, and by privatisation of the range through the fencing of grazing land and “greenbelts”. Grazing is acknowledged to have recovered significantly during 2010, but there is still uniform agreement that grazing has generally become less or much less available during the last two decades. Still, according to local views, it is still possible in average and good years to increase livestock holdings. This remains possible because a significant number of livestock are foraging during part of the year in areas far from the host community area.
- 12. Farming.** Farming has been promoted in host communities by several development and humanitarian agencies. Very few local people were previously involved in any form of farming, and for those who have taken part, the returns have so far been disappointing. Viable farming is likely to be limited to kitchen gardening in compounds, where domestic wastewater is available. Although performance in rain-fed farming has been very poor in the host area (as in other arid parts of Kenya) and although irrigated farming from boreholes or small- or medium-sized waterpans is not economically viable, farming is still routinely cited in district development plans and in donor-funded development initiatives as an alternative to pastoral production, indicating a basic lack of understanding of development options for ASAL areas with a pastoralist tradition.
- 13. Firewood and building materials collection.** The combined demand for firewood and building materials from the camps and the host communities is very significant, with more or less equal demands from the hosts and refugees, and with both communities involved in the trade with firewood and poles. However, commercial provision of firewood and poles to the camps is largely involving harvesters based in the camps. In several communities there is resentment towards the agency-managed programme of firewood supply from locals who are not benefitting because contractors bring in labour from the camps, while elders and chiefs take the lion’s share of the funding and the contracts further increase competition for the available resources. The provision of donkey carts by ALRMP to encourage local participation in the firewood trade has provided important income-generating opportunities for some host community members, but the scale of this support has been limited.
- 14. Development processes and roles in the host area.** The three districts comprising the refugee hosting area were created in 2007-8. A fourth (Dadaab District) was being established during the study period. GoK has the lead planning responsibility for the host area and sets out its intentions in the respective district development plans. These list a wide range of planned activities for each district, but only mention the presence of the refugee camps in the context of environmental degradation and do not propose any measures to develop positive opportunities associated that might be with the presence of refugees. Implementation of host area development programmes has to a large degree been left to humanitarian agencies. Neither the National Policy for the Arid and Semi Arid Lands of Kenya nor the Kenyan Economic Recovery Strategy for Wealth and Employment Creation

addresses impacts or opportunities associated with hosting refugees. The responsibility within GoK for managing the camps lies with the DRA, which has increased its presence and is playing a growing role in camp management. District structures and local politicians address issues arising between host communities and refugees. GoK oversight and regulation of trade and business development associated with the camps and the host area is in practice very limited.

- 15. Development actors and initiatives.** In addition to the projects implemented by humanitarian organisations in the refugee-hosting area, a key development initiative is the **Arid Lands Resource Management Project (ALRMP)**. With an overall goal of improving food security and reducing vulnerability, it has supported community action planning, formation of community development committees and community investments in a number of host communities. ALRMP and its close support to district implementation continues to be an important vehicle for development in the area and has the potential to facilitate further development. **The UN Kenya Host Community Project** aims to improve the long-term food security of the host community, through provision of food assistance and interventions in education, water and sanitation, rural roads, environmental conservation, and peace building. The budget is divided between UNICEF, WFP, UNHCR, and UNDP and implementation supported by a range of ministries. Complicated institutional arrangements have hampered implementation and it is not likely to become a significant vehicle for development support to the host area. **The Kenya Red Cross/Danish Red Cross Initiative in Health** is an integrated health project targeting both refugees and host communities around Dadaab since 2005. More than half of the host population in Dadaab relies on the project's monthly medical outreach visits to address basic health needs and it has become the main provider of health outreach support to the host community. **WFP food relief** (through KRCS and WASDA) is based on regular food security assessments and provides food distribution in the host area. Funding and food items are provided by the World Food Programme's emergency operation.
- 16. Development challenges in the host area.** The Dadaab area experiences a number of development challenges and opportunities. In such a protracted refugee situation, it is not known when the refugees will return to their homeland and the humanitarian operation will be phased out. It is therefore difficult to decide when to address problems and when to utilise opportunities. In Dadaab, this has translated into a short-term compensatory approach to immediate and visible problems and very little consideration by government and development agencies of the development opportunities that the presence of so many refugees and an operation of this size presents. With a very significant increase in host population attracted to the area due to opportunities associated with the camps and with livelihoods intimately dependent on access to cheap or free food and access to the markets in the camps, there are likely to be serious local repercussions from a future phasing out of the refugee operation. Although the host population has increased significantly, it is important to note that the vast majority of local people remain dependent on pastoral production, from which returns have risen significantly in the host area. Efforts to promote alternative production systems such as agriculture have largely failed. Development efforts need to recognise this and seek to support moderate pastoral production improvements, and production investments that can be moved to other areas if and when the refugee operation is phased out and the host area becomes less attractive. Another development challenge is how to ensure that benefits and opportunities associated with the refugee

operation are provided equitably to communities further away and not as compensation to immediate host neighbours, so that the attraction of the immediate camp area reduces and counters the continued large-scale influx of people. Opportunities for more dispersed development investments include firewood contracts, livestock routes, veterinary services, training in trading and business opportunities associated with the camps and infrastructure support to facilitate transport to the camps.

17. **Food relief.** Food rations are widely distributed in the Dadaab area and the operation is generally reported to be well implemented. Food relief is shared along family and household lines between all community members, so all households, no matter how poor or wealthy, receive this form of assistance. The distribution of food is managed in the same way as in other ASAL areas of Kenya but the unique impacts of the refugee camps on the availability of food and food security are only to a limited extent captured in the routine food security assessments on which subsequent phases of support are based. Provision of food relief remains the responsibility of GoK, although implementation is sub-contracted to civil society organisations.
18. **Access to water.** The vast majority of people in the hosting area report improved access to water for people and livestock. Significant investments in water supplies for host communities emanating from the refugee operation have endowed them with access levels well above the average for dryland areas of Kenya, and host communities no longer see water as a scarce resource. Water committees manage boreholes satisfactorily and local residents are members of the water associations. Host communities are paying for water as they do elsewhere in Kenya.
19. **Access to education.** Access to education has improved significantly in villages of the host community and educating children is a key reason for settling down. The Ministry of Education, CDF and humanitarian agencies have all supported school construction, with community contributions typically being in the form of labour and local materials. Although a large part of the population is mobile, investment in mobile education has been limited and only one nomadic school is operating in the area.
20. **Access to health services.** Health services catering for host communities have been improved significantly as a consequence of the refugee operation and investments by humanitarian agencies. This has resulted in levels of access much higher than in other comparable arid areas of Kenya. Host community members have high expectations of easy access to quality health services and often make comparison with the services available to refugees in the camps. Outreach clinics and dispensaries serve the host communities and public transport is accessible in most locations, which makes it relatively easy to access the hospitals and clinics in Dadaab town and the camps. While health services in the camps and Dadaab are seen to function well, the village-clinics and dispensaries often lack staff and medicine, a problem shared with many areas of Kenya. The agency-equipped hospitals in the camps and in Dadaab are generally accessed free of charge by the host communities.
21. **Access to transport and communication.** The presence of the camps has dramatically improved the transport services available to the host community, with a large majority of community members reporting increased use of road transport. Mobile telephone services are now available in several of the settlements close to Dadaab, as a result of services designed to target the camps. Availability of transport services and communication is significantly

better than in other comparable parts of Kenya. GoK is responsible for maintaining road infrastructure, but this is only done at a very limited scale in the host area. Although the UN agencies provide some support to some road maintenance, several key access roads are in a very poor condition.

- 22. Concentration of services.** The availability of social services in host communities is high compared to what normally would be expected in remote pastoral areas, with a greater concentration and easier access closer to the camps. This is the case even if the significant increase in host population is factored in. Services are predominantly designed to cater for settled populations and the link between increase in services and increase in settlement is strong. Those host communities settled close to the camps have been able to attract the most investment and best services from humanitarian agencies in Dadaab, and this is tacitly recognised as a form of compensation for hosting refugees.
- 23. Gender aspects.** The increased settlement, decreased availability of firewood and greater involvement in trade arising from the existence of the camps has added to the workload of women, whereas moving from mobility to settlement has decreased the workload of men. Little change has been seen in the division of household tasks by gender. Whereas the economic opportunities, cheaper food and access to free rations is of equal benefit to different household members, the environmental impacts from the camps have clearly been felt more directly by women than men. However, improved access to services like safe drinking water, health facilities, markets for domestic produce and transport services have had especially positive impacts for women, as the main day-to-day caretakers of the family.
- 24. Security issues.** Local residents generally perceive the security situation as good. People feel able to move freely without problems, which was not the case in the 1990s when banditry was a major issue. In this sense the host area has experienced the same improvement in security as other areas of North Eastern Province. The presence of refugees is not felt by the host community to be affecting the level of crime in the area. GoK has increased the police presence in the host area and several police posts are maintained.
- 25. Leadership structure.** The leadership structure in the host community combines traditional clan elders, elected councillors and appointed chiefs. The role of local elders continues to be of great importance but is increasingly integrated with more formalised structures of leadership.

4.2 Economic Impacts

- 26. Income from pastoral production.** By far the largest contributor to host community income is pastoral production in the form of milk and livestock sales. The refugee camps have developed as major markets with considerable purchasing power. The annual income accruing to the host community from only the livestock sold for slaughter in the camps is estimated at KSh 133 million (USD 1,8 million), with a further KSh 85 million (USD 1,2 million) from the milk trade.
- 27. Food prices in host area.** Large numbers of wholesale traders are located in the camps. The prices of basic commodities such as maize, rice, wheat, sugar and cooking oil are at least 20% lower than in other ASAL towns in Kenya. The main reasons are the widespread re-sale

of WFP rations, access to free food by locals registered as refugees and illegal imports via Somalia. 18% of refugee rations are reported to be re-sold, but study observations suggest the proportion may be significantly higher. Reduced food prices result in an average family being able to save around Ksh 1000 per month and with an estimated 10.000 households benefitting, the total annual saving on food purchase in the host area is estimated at Ksh 123 million (USD 1,7 million).

28. **Value of ration cards.** With an estimated 40.000 refugee ration cardholders among the host community, the total value accruing from free food handouts (if this food was traded) is estimated at Ksh 363 million (USD 4,9 million) per annum. This translates into KSh 9000 for each household member who holds a ration card. Assuming average per capita income of around Ksh 75 per day in Kenya's arid areas, this subsidy is worth around one third of average income. The number of people in a household who are registered as food ration beneficiaries varies significantly from none at all to most of the household members.
29. **Smuggled goods from Somalia.** Wholesalers inside the camps arrange imports via Somalia of basic commodities with high unit value such as sugar, powdered milk, pasta, fruit drinks and upmarket consumer goods, clothes, perfumes, cosmetics and electrical items. In this respect the camps are unique trading centres in Kenya. Area residents benefit from the purchasing opportunities that exist in the camps alongside the refugees and other buyers from different parts of Kenya. A rough estimate of smuggled goods is 25.000 tonnes a year. With an average cost saving of 30 Ksh per kg and with an estimated 10% share of these savings benefitting host community members, the local benefits of illicit trade amount to around Ksh 75 million (USD 1 million) per annum.
30. **Volume of trade.** There are around 5000 shops in the refugee camps and 370 in Dadaab town ranging from petty traders to large wholesale outlets trading in all kinds of goods. Annual turnover of the businesses in the camps is estimated to be around USD 25 million and those in Dadaab town have a turnover of around USD 1,3 million. Vendors from the host community and other non-refugees put up their shops in the camps alongside the refugees, especially in Dagahaley where non-refugee traders are reported to comprise more than half of the business community with access regulated by clan ownership to land. Seven bus companies with booking offices in the camps indicate extensive travel activity among the refugees.
31. **Trade in Dadaab town.** Trading in Dadaab town is dominated by host community members. The town has developed significantly over the last 18 years, from a cluster of rudimentary shelters to a busy regional centre. Trade activity has risen significantly and is expected to continue doing so. Property prices are rising rapidly and roadside plots are changing hands at premium rates due to speculation by developers.
32. **Refugee operation-related employment.** UNHCR, WFP and their implementing partners support the host community through direct employment, particular the recruitment of unskilled labour. In total it is estimated that 600-750 local persons have fixed employment related in some way to the refugee operation, with temporary jobs coming in addition. Employment among the host community is concentrated to communities close to the camps, outside that few have ever had formal employment. The wages accruing to these locally based staff may total around KSh 56 million (USD 0,8 million) annually. In addition, host community job creation related to trade activities amounts to at least 500 jobs with an

annual income of KSh 35 million (USD 0,5 million). Local wage rates are high in comparison with other parts of Kenya. For example, while rates elsewhere for unskilled labour are KSh 200-300 per day, locals in Dadaab are reported to demand over KSh 400.

- 33. Remittances.** Few host community households appear to receive remittances from abroad or from family members in other parts of Kenya, those that do being concentrated in Dadaab and close to the camps.
- 34. Local contracts.** Some of the host community businesses in Dadaab town have obtained contracts for works or deliveries to the non-governmental agencies engaged in the refugee operation. Some of the larger contracts have included the transportation of refugees to Kakuma and the supply of fuel. The annual income to local contractors from assignments for the UN and NGOs is estimated to be at least KSh 35 million (USD 0,5 million). Due to the high local wage rates, contractors are reported to bring in cheaper or more skilled labour from outside the host area.
- 35. Refugee operation investments.** The majority of funds flowing into the Dadaab area comes from the donors and agencies supporting the refugee operation. The cost of this support grew from USD 44 million in 2007 to USD 82 million in 2009 and is projected to reach USD 100 million in 2010. The funds are mostly channelled through WFP and UNHCR, which in turn engage NGOs as implementing partners, although some NGOs also receive financing directly from donors. An estimated USD 1,9 million from the overall support budget is for infrastructure investments that benefit the host community.
- 36. Host community investments.** Direct support for host community initiatives has risen from around USD 2 million in 2007 to USD 5,5 million in 2010, with 12-15 ongoing initiatives working in food security, conflict reduction, environmental management, education, health, water supply, sanitation and business development. The approach to host community assistance has been largely sector-wise and single agency based, with cases of overlapping activities. Total investment in host community programmes over the last four years has been USD 12 million. Assuming that these investments are well targeted they can provide an annual rate of return of 7%, which translates into benefits worth USD 1,2 million in 2010.
- 37. Combined economic impact.** The total economic benefits for the host community, using 2010 as the reference year, are around USD 14 million annually. The benefits have been increasing in recent years, commensurate with the rising budget allocations for refugee operations and host community initiatives, the number of refugees, the size of the host population and the accumulation of invested capital. On a per capita basis, the combined economic benefits to the host community represent an estimated 25% of average annual per capita income in North Eastern Province. Milk and meat sales are especially important and are likely to keep rising. The increasing numbers of traders in Dadaab town and host community members established inside the refugee camps form a first link in a multiplier chain that will inevitably rising demand for other inputs.
- 38. Impacts beyond the Dadaab area.** Some significant direct benefits of the refugee operation (such as purchase of goods, services and transport) are realised outside the Dadaab area and benefit individuals and companies in Garissa, Nairobi and Mombasa. The size and value of these economic impacts were not estimated by the study.

4.3 Environmental Impacts

- 39. Fuelwood collection impacts.** Firewood is the most significant resource harvested around Dadaab. Average consumption in the camps has reduced from 1,5 kg per person per day in 1998 to 1,0 kg today giving total demand of around 73.000 t./yr. Adding local people living within 50 km brings combined annual demand to 138.000 t., 66% of which is used within a 10 km radius. Hence Dadaab is a large and concentrated focus of wood energy consumption, second only to Garissa within North Eastern Province. The supply chain to the camps has been fully commercialised and constitutes a major commercial enterprise.
- 40. Pole-wood harvesting impacts.** Wooden poles are widely used for building and compound fencing. Demand for building poles is estimated at 23.400 t/yr from the camps and 32.000 t/yr including local consumption within 50 km, 81% of this being consumed within a 10 km radius.
- 41. Thorn fencing impacts.** The impact on the biomass from thorn fence harvesting associated with the camps is extensive but not dramatic. The overall environmental impact of fencing off land as greenbelts especially near the camps is limited, however, the socio-economic impact of enclosing part of the range contributes to an unintended and undesirable process of resource alienation and undermines a pastoral mode of production reliant upon communality of resources.
- 42. Woody resources status.** The refugee-hosting area is experiencing a general trend of environmental degradation which has been ongoing since the early 1990s, and which continues to spread outwards from the camps. The pattern is not the same in all directions because the richness of resources is not the same in all areas. Table 21 below presents the average findings of the study. The data were gathered through a large number of forestry sample plots. Due to interpretation limitations, satellite image analysis did not add significantly to existing understanding and the findings of the field survey.

Table 21: Status of rangeland with increasing distance from camps

Distance from camp	Size of area (km ²)	Trees per ha	Species per plot	Woody biomass (m ³ /ha)	Usable dead wood (t/ha)	Cut stems per ha
0-10 km	640	272	7	15	0,14	519
10-20 km	1280	362	8	22	0,87	216
20-30 km	1920	394	9	25	1,28	33
30-40 km	2560	271	8	27	1,89	16
>40 km	3200	448	9	46	2,56	-

The data show a consistent trend of depletion of wood resources linked to proximity to camps. The number of trees, species variety, standing volume and dead wood availability all increase further away, while evidence of human damage progressively reduces. Within the 0-20 km distance degradation of the woody biomass is significant.

Within the entire host area of 9600 km², 1,67 M t. of dead wood are still available for harvesting. Also harvestable without degrading the standing stock is the annual yield estimated at 1,03 M t. The combined demand by camps and host community for firewood and pole-wood of 169.777 t/yr. is therefore well within sustainable off-take. The concern, however, is that very

few of the trees that remain within 50 km are considered acceptable as commercial fuel or pole-wood. So while there may be a large amount of biomass in the surrounding area and a sustainable yield apparently well in excess of consumption, harvesters cannot find the species they seek without going at least 45 km away or by harvesting the few remaining live specimens closer to the camp. These, indeed, are the two parallel trends that are currently being observed.

- 43. Trends in biomass impacts.** The selective harvesting of desirable tree species is permanently altering biodiversity and affecting pastoralists over some 10 000 km² by changing the ecological balance of plant, animal, bird and insect species. This will have unquantifiable impacts on pasture, browse and the stability of the rangeland. Market forces have already catalysed significant conservation measures and firewood consumption cannot go down by more than a further 10-15% if users are still to enjoy cooked food. So unless the population of the camps and nearby settlements is reduced, it can be expected that the future will bring more developments comparable to other large urban centres in the arid and semi/arid part of Kenya, this include: (1) ever-increasing harvesting distances; (2) a continued rise in wood prices; (3) increased cutting of live trees; (4) further weakening of clan-based access arrangements, leading to more conflict; (5) greater benefits accruing to a small number of individuals well positioned in the wood trade; (6) increased production of charcoal to supply both the camps and markets in Garissa and Somalia; and (7) probable introduction of lorries in fully privatised operations for transporting woodfuels to the camps.
- 44. Organised fuel supply.** A programme for firewood supply to the camps has been in operation since 1998. The organised supply has averaged 11% of estimated consumption in the camps over this period. The programme is disliked by many host community members, who report that it benefits only a few leaders. With harvesting taking place in the same areas where firewood collectors with donkey carts from the camps source their wood, the desired spread of negative environmental impacts is not achieved, and with a wood price 270% above current market rate in the camps, the main justification for the programme appears to be that the programme facilitates collaborative arrangements between the humanitarian agencies and local politicians and leaders.
- 45. Impacts on water resources.** The boreholes that supply water for the refugee operation – together with large portions of Garissa, Wajir and Isiolo - tap into the Merti aquifer. Total abstraction from this aquifer is estimated at 4,6 M m³/yr and will probably rise to 5.3 M m³/yr by the end of 2010. Recharge of the aquifer is difficult to quantify but the best estimate is around 4,5 M m³/yr. The rate of water discharge is therefore in excess of the likely rate of recharge. So far Static Water Levels in boreholes have only changed slightly, indicating good health of the aquifer, but extracting more water than is being recharged will inevitably lead to mining of the resource, and is a risky course of action.
- 46. Impacts on grazing and wildlife.** Livestock from the camps impact grazing up 15-20 km away but grazing pressure and competition is negligible beyond this distance. Meanwhile wildlife populations around Dadaab have been reduced as animals have migrated due to disturbance, been forced out by competition with livestock for food or been hunted for their meat. Droughts have intensified competition between herbivores and domestic livestock, reducing the traditional prey of predators and forcing them to attack goats, sheep and cattle instead. This is reported as a serious problem by host communities.

47. **Solid waste management and sanitation.** Average per capita waste production in the camps is 1,63 kg/day, of which 75% is animal dung and ideal for kitchen gardening or compound tree planting. The balance is lower than the volume produced by inhabitants of normal towns of comparable size and is no different to the quantity routinely generated - and disposed of haphazardly - in local communities. The water table in the area is at least 110 m below surface level and there is no infiltration mechanism that could channel leachates from solid waste to these depths. Pollution from solid waste from the camps is not affecting host communities living in areas away from camps. With a deep water table and no known infiltration mechanism, there is also no chance that latrines in the camps are affecting ground-water quality. Sanitation problems present a localised health risk to camp residents only.
48. **Mud brick production.** Camp residents have been replacing traditional huts and wood-pole shelters with mud brick houses since the late 1990s, a practice that is not widespread in the host communities. Humanitarian agencies have adopted a similar building style in their shelter programmes and aim to build 3500 mud-brick houses per year. This requires 49.000 cu.m. of soil and 8820 cu.m. of water, with additional needs for houses being built spontaneously by refugees and locals. This is not considered problematic in comparison with other water demands, and although there are some environmental risks associated with brick production, the net environmental benefits of mud brick houses are clear compared with wood-pole structures.
49. **Environmental support projects.** A number of different environmental projects in the camps and host communities have been supported by humanitarian agencies, including: firewood supply, fuel efficiency, savings and alternatives, distribution of tree seedlings, woodlots, establishment of greenbelts, kitchen gardening and irrigated horticulture, environmental working groups and awareness raising. The harsh climate, poor soils and unreliable rainfall of the Dadaab limit what these programmes can achieve in terms of environmental rehabilitation outside settlements. Rehabilitating large tracts of the surrounding dryland bush through active intervention, as opposed to reducing human pressure and managing its natural regeneration, would be an extremely expensive exercise with a low probability of success.
50. **Environmental impacts – overview.** The existence of the Dadaab camps has in sum placed a considerable strain on the natural resources of the surrounding area, specifically in association with various aspects of wood collection, which has reduced a large area of land to scrub. Nevertheless, the study has found that the environment is hardy and resilient; refugee behaviour towards local resources is largely structured within the context of clan affiliations, the impacts of the camps in purely environmental terms have been serious but spatially restricted in an area of inherently low resource value, and the differentiation between local people and refugees is blurred, making definitive attribution of impact impossible. Large-scale rehabilitation of the environment will only be possible if population pressure is alleviated and natural regeneration becomes a possibility. If not, Dadaab will exhibit increasingly urban-like characteristics and an expanding ring of resource degradation. Environmental degradation is an inevitable consequence of the government's decision to contain refugees in large camps in an area of low productivity, and there is a trade-off when hosting refugees in this concentrated way between costs and benefits, with the evidence pointing to significant economic benefits accruing to the hosting area at the expense of losses through environmental degradation.

4.4 Overall Impacts

51. **The balance of positive and negative impacts.** Impacts on the host community are complex and both positive and negative. Positive impacts are related to access to distributed food, economic opportunities and services, while negative impacts are largely related to depletion of firewood and building material as well as grazing competition in the immediate vicinity of the camps. Depending on the situation of the individual household, the positive and negative impacts will play out differently, but in total the study has established significantly more important positive impacts on the host area than negative. This finding is supported by the significant attraction of many people who have settled in the host area, which cannot be attributed to push factors alone.
52. **Host community project support.** Host community projects have been focused on the upgrading of infrastructure and delivery of social services in settlements, while there has been little support to pastoral production and its associated strategies of mobility. Hence, the key production potential in the area is being overlooked and the nature of current support runs the risk of creating further dependency rather than self-reliance. Agencies tend to finance and oversee their own discrete projects, which are single sector focused and generally only coordinated to a limited extent with the initiatives of other agencies or government.

4.5 Impacts on refugee/host area development

53. **Refugee/host area development.** With the significant impacts in the Dadaab host area arising from the presence of the refugee camps, there is a need to further integrate the support provided to refugees with that provided to host communities. A short-term humanitarian approach to support is not conducive to meaningful development of the host area. The multiplicity of humanitarian donors providing disparate support complicates development efforts, and without stronger leadership from GoK in terms of planning and coordination, the nature of this support is likely to remain unchanged. It is possible to identify options for a more harmonised approach to refugee and host community support, particularly in relation to trade and business development, which might include: supporting and legalising trade and business development; and providing a larger percentage of support to refugees (food rations) and host communities (food relief) as cash transfers, thereby further facilitating trade and development of local markets in the area. If development planning were to consider the Dadaab area as a centre for economic activities and a hub of development that attracts many in-migrants, it would be easier to plan development more appropriately. As it is now, development planning does not recognise that the Dadaab camps function as a major urban centre, meaning that such planning is not in line with reality.

5. Recommendations

The study presents the following priority recommendations. These should form the basis for discussion and further refinement by the Study Advisory Group:

To GoK, ALRMP, development agencies and humanitarian agencies involved with host community projects in Dadaab:

- **Focus host community support on pastoral production and mobility.** Support to host communities should focus more on developing pastoral production, pastoral trade and, above all, mobility. Mobility is still a viable part of the pastoral production strategy, as witnessed by its strong prevalence in the camp-hosting area. Such support could include investments in: veterinary services (including veterinary outreach services, vaccination campaigns and training of community animal health workers); rationalising the supply chain for livestock drugs; value addition to pastoral products; market access support to capture existing market opportunities in the area; mobile schools; mobile clinics; development of stock routes; development of livestock holding grounds; piloting fodder production and conservation strategies; protecting water points and supporting dispersed water development with more emphasis on water harvesting; stock insurance or restocking support; and development of access rules and supporting customary institutions for negotiation and regulation. This support will be able to reach the majority of the host population due to the overall importance of pastoral production in the host area and the intimate link between mobile and settled populations. Whereas household kitchen gardening in compound could be viable, it is not recommended to support alternative livelihoods that are not proven to work without project subsidies in the host area (e.g. irrigated farming based on water drawn from dams or boreholes).
- **Develop a strategy for host community development.** An overall area development strategy with clear GoK leadership should be developed which focuses on viable livelihood support rather than hand-outs from humanitarian agencies. The strategy should recognise the interdependency of the host settlements and the refugee camps and seek to unleash the potential for further developing the trading and economic linkages between the camps and the surroundings. The strategy should also be the foundation for development of an agreement between the government authorities, development agencies, refugee support agencies, and organisations representing refugees and local host communities on respective responsibilities and targets for, and funding of, support to host communities. In this way, the agreement should help ensure that humanitarian agencies are not continually pressurised to provide compensatory projects to host communities in an uncoordinated and ad hoc manner. Such a strategy must consider the legal issues pertaining to refugee administration, the mobility of host communities and the role of districts/counties provided for in the new Constitution.
- **Coordinate support and focus implementation modalities.** Support to host communities from the development and humanitarian agencies and GoK should be better coordinated. This can most effectively take place if the point of departure is the host community locations and their own planning processes, which are linked to district development plans and through them linked to the national ASAL Policy. Efforts should therefore be made to support empowerment in localised planning and implementation and common pooling

of funding by the various agencies into some form of “Locality Development Fund” for each community. The Community-Driven Development approach use by the Ministry of Development of Northern Kenya and Other Arid Lands would be beneficial in this respect. Such a Fund should have its major focus on financing activities that improve production and income generation, which in most cases are related to pastoral production. A continuation of current uncoordinated, single agency projects in host communities to further improve service delivery is not supported.

- **Support development of a host community development agency.** Efforts should be made to direct host community support through an agency mandated or appointed to develop the host community areas and with significant competencies in pastoral support and natural resource management. Such an agency should operate at an inter-district level under the lead of GoK, possibly at the level of provincial administration. Humanitarian and development actors should be encouraged to channel their resources for host community support to a “Regional Development Fund” as the overarching Fund for the proposed Locality Development Funds. Such a Fund should be managed by the mandated host community development agency, working in close collaboration with existing customary and government institutions. The right institutional set-up for such an agency would see a leadership role for GoK, represented by the Ministry for the Development of Northern Kenya and other Arid Land and supported by ALRMP. Input from UN agencies would be important, but leadership (in light of the institutional challenges experienced under the current UN-Host Community Project) not lie with any UN agency.
- **Direct investments in services away from camps.** In light of the concentration of services close to the camps, and as part of larger scale development planning for the area, future support to services should prioritise investments in mobile services and communities further away, aiming for a displaced ring of investment at 50-100 km from the camps to counter-balance the over-development of the immediate Dadaab area. A continued emphasis on social service infrastructure is not required and will further exacerbate the already high population growth rates and the shift from mobile pastoralism to sedentary lifestyles and hand-out dependency. No (or only very limited) further social service infrastructure investments should be made within 20-30 km of the camps as they will bring yet more people to an area already over-prioritised relative to other parts of the region.
- **Invest in support of trade and business development.** A more harmonised approach to trade and business development is recommended that links refugees and host communities. This could include supporting and legalising trade and business development, and providing a larger percentage of support to refugees (food rations) and host communities (food relief) as cash transfers to further facilitate trade and the development of markets in the area.

To donors, humanitarian and development agencies:

- **Promote further integration between humanitarian and development work.** A more developmental and longer-term approach to work in the hosting area should be developed, moving from short-term humanitarian-style thinking towards integrated development interventions. Development agencies should to a much larger degree recognise the importance of the refugee presence and operation in driving local development and should tailor their interventions to enable host communities to further develop their production,

trading and services linked to the camps. Humanitarian agencies should develop longer-term planning horizons and joint implementation approaches. The short funding cycles of most humanitarian agencies, often dictated by their funding sources, is clearly acknowledged, but in a protracted crisis like Somalia and its influence on Dadaab, it is essential to have a development-oriented approach to any work with host communities. There is a clear need for longer-term planning horizons of at least three years (and preferably more) for humanitarian agencies that wish to engage in the grey zone between humanitarian and development work. Sector support provided by development agencies should recognise the specific needs and opportunities of the Dadaab area and seek to promote trade and business development, transport infrastructure, pastoral production, natural resource management and mobile services that recognise the scale of the economy and the socio-economic importance of the area.

To GoK:

- **Aim at opening the border with Somalia and legalising cross-border trade.** Given the significant amount of trade already taking place with Somalia, the lax regulation of this trade, the large-scale movement of people across the border and the problems that a closed frontier presents to vulnerable persons, there are clear benefits from re-opening the border and legalising the existing trade and movements. This would benefit the host community at large, the refugees and GoK's ability to monitor movements and collect taxes. It does not seem likely that it would pose an added security threat as the border is already open for the majority of those who want to cross, and who are not poor marginalised refugees from Somalia. The situation in Dadaab clearly shows that the officially closed border does little to regulate movements.
- **Re-evaluate encampment policy.** With the camps having been in operation since 1991 and with the refugee crisis in Somalia not likely to be solved in the near future, it is recommended that GoK re-evaluates the encampment policy that is applied to the Dadaab refugees. The containment policy has not been able to restrain vibrant trade and business development and effectively the camps are open, not only towards the host area and the border regions but also, for those with intent, to the rest of Kenya. The level of commerce within the camps and between the camps and the host area and beyond shows the productive contribution that refugees could potentially play if it was not for the restrictions placed on them by the encampment policy. Encampment results in a huge number of refugees having very limited economic opportunities and this has potential repercussions on security and the growth of sectarianism, not to mention a heavy concentration of environmental impacts well beyond the level that can be sustained in a dry and sparsely vegetated area. At the same time encampment is very expensive and increases costs of the refugee support operation, at a time of donor funding cuts and calls for more investments to be directed towards the ever-increasing host community population. At some point funding for a camp-based operation may start to dry up as other crisis situations develop.
- **Plan for the Dadaab area in accordance with its importance for trade and business.** Undertake development planning for the Dadaab area that recognises its status as a major urban centre with a significant scale of economic activity. This will benefit both refugees and host community.

To DRA, District/County administrations and UNHCR:

- **Seek additional protection space for refugees.** Under the current encampment policy, additional space is likely to be required for housing refugees. Given the established administrative and logistical capacity that exists in Dadaab and the lack of politically viable alternatives for housing refugees in other areas, extension of the existing camps or a new fourth camp in the Dadaab area is likely to be needed. However, on purely environmental grounds this is not the best solution, as more refugees will be placed within the zone already devoid of dead wood and valuable trees. Significant support will be needed to further manage the trade in firewood, charcoal and building materials, including sourcing these materials from outside the host area.
- **Further support the customary institutions for negotiations.** The informal clan-aligned arrangements for negotiation between host communities and camp populations should be given more formal status and more should be done to support regular and open dialogue between the two populations. The successful operation of the Dadaab refugee camps over a long period in a difficult area has to a great extent been made possible by the existence of formal and informal avenues for settling disputes and negotiation. Supporting such institutions for dialogue is clearly a crucial aspect in addressing other situations of refugee/host interactions in different parts of the world.
- **Address the scale of host community ration card ownership and needs-based provision of rations.** In order to decrease dependency and reduce the Dadaab pull factor, the provision of free food to host communities through acquisition of refugee ration cards should be carefully decreased through development of a system that ensures ration card holders are actually present at food distributions and do not send delegates - unless they are proven to be sick, elderly or handicapped. Further strategies to address the scale of host community and absent ration card holders should be developed and possibilities of developing a more needs-based provision of refugee rations should be investigated drawing experience from other protracted crisis situations (e.g. the Burmese refugees in camps in Thailand). The Department of Refugee Affairs, in cooperation with UNHCR, should continue and strengthen the programme to de-register locals who have registered as refugees. The use of Refugee ID cards (which have photos) should be introduced at food distributions to assist WFP instead of the Ration Card (which has no photo) It should be stressed that this will be a very sensitive process.

To the Ministry of Environment and Mineral Resources, the National Environment Management Authority, NGOs in Dadaab, UNEP, UNHCR and development agencies:

- **Support District government capacity in Dadaab.** Support the government to assign a District Environment Officer and District Livestock Production Officer to Dadaab, in fulfilment of its mandate to coordinate and direct NGO and UN activities in the host area. Such support might include office space, transport or equipment, as well as straightforward engagement, involvement and progressive transfer of oversight responsibility.
- **Expand support to local environment committees and introduce more realistic approaches into large-scale environmental rehabilitation programmes.** Expand support to District Environment Committees and Community Environment Committees to build their planning, management and enforcement capacity in relation to regulation of natural

resource utilisation in the area, with an explicit effort to include women, mobile groups and under-represented traditional leadership structures. The role played by community- and clan-based institutions in managing access and mediating in conflict over resources should be recognised. Dialogue should be opened with donkey cart operators to understand the arrangements under which they access natural resources and to mediate for an expansion of harvesting zones to spread their impacts, ideally directing their cutting more transparently and openly. In contrast with a number of recent studies and ongoing initiatives, the team does not recommend a large-scale environmental rehabilitation programme, believing this to be an ineffective allocation of resources in an expansive, dry area under communal management.

- **Promote communal grazing reserves rather than additional greenbelts.** There is a need to engage with local clan representatives to agree on what should be done with established greenbelts (e.g. opening up and conversion to community-owned fodder banks). Agreement should be developed on communal grazing reserves rather than adding more greenbelts.
- **Seek alternatives for implementing the firewood supply programme.** Identify new implementation modalities for managing the refugee firewood supply programme. Seek to break entrenched operating modalities in need of new thinking and to change modalities for implementation that are perceived to favour elites. Harvester contracts should only be issued for areas where dead wood actually exists; tender committees should be decentralised to Location level; harvesting distances should be increased to at least 60 km straight-line distance from the closest camp, properly measured and enforced; local residents should be given priority in fuel gathering and centralisation; and district and provincial officials from NEMA and KFS should be mandated to monitor the programme and enforce change if needed.
- **Support water-saving measures in relation to boreholes.** Pump no more than 60% of tested discharge from each camp borehole for 10 hours per day, in accordance with the permits held. Meanwhile work further to reduce leakage, wastage and misuse of water, and in particular the amount of water being given to livestock.
- **Monitor condition of aquifer.** Improve the accuracy and consistency of monitoring aquifer static water levels, abstraction rates and water quality, and disseminate the data outside CARE and UNHCR for better-informed debate and planning.

Annexes (under separate cover)

- A Dadaab host community initiatives
- B Study terms of reference
- C Study itinerary
- D List of people met
- E List of documents consulted
- F Quantitative questionnaire
- G Qualitative questionnaire
- H SPSS analysis full percentages
- I SPSS analysis of response to analysis questions
- J Environmental assessment methodologies
- K Soils of the Dadaab area
- L Firewood, building material collection and energy supply
- M Social infrastructure/social services
- N Impacts related to gender and age
- O Somali and botanical tree species names
- P Forest plot summary data
- Q Charts showing rangeland sampling survey results
- R Borehole data
- S Static water levels, selected camp boreholes (1992-2009)