A Review of the Status of Emergency Water Trucking in the Arid and Semi Arid Districts of Kenya

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LIST OF ABBREVIATIONS

ALRMP  Arid Lands Resource Management Project
ASAL  Arid & Semi Arid Lands
CBNRM  Community Based Natural Resource Management
CBO  Community Based Organization
CIFA  Community Initiatives Facilitation Assistance
CODES  Community Development Support
DC  District Commissioner
DMO  Drought Management Officer (of ALRMP)
DSG  District Steering Group
DWO  District Water Officer
ECHO  European Commission Humanitarian Aid
EP&R  Emergency Preparedness & Response
EPAG K  Emergency Pastoralist Assistance Group - Kenya
EU  European Union
EWS  Early Warning Systems
EWT  Emergency Water Trucking (Tankering)
FAO  Food & Agriculture Organization of the United Nations
FHI  Food for the Hungry International
GoK  Government of Kenya
ICT  Information & Communication Technologies
IGAs  Income Generating Activities
LEGS  Livestock Emergency Guidelines and Standards
MDGs  Millennium Development Goals
MoLD  Ministry of Livestock Development
MoNK & AL  Ministry of Northern Kenya and Other Arid Lands
MoWI  Ministry of Water & Irrigation
MPIDO  Mainyoito Pastoralist Integrated Development Organization
NEMA  National Environmental Management Authority
NGOs  Non Governmental Organizations
NW&CPC  National Water & Conservation Pipeline Corporation
PISP  Pastoralist Integrated Support Programme
POMC  Presbyterian Outreach Mission Church
PRSP  Poverty Reduction Strategy Paper
RACIDA  Rural Agency for Community Development Assistance
RDD  Regional Drought Decision Programme of ECHO
RATs  Rapid Assessment Teams
RRTs  Rapid Response Teams (for borehole maintenance and repair)
ToR  Terms of Reference
WESCOORD  Water & Environmental Sanitation Coordination
WFP  World Food Programme
WRMA  Water Resources Management Authority
WSBs  Water Service Boards
WSFT  Water Services Trust Fund
WUAs  Water User Associations
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Finally, the Nairobi stakeholders i.e. the Ministry of Water & Irrigation, Eng. SAO Alima, ALRMP headquarters, the National Project Coordinator, Ms. Fatuma Abdikadir, James Oduor, the Drought Management Coordinator, Emuria Lotethiro, the Communications Coordinator and Luigi Luminari of the Drought Management Initiative are acknowledged for their time and information. The WESCOORD members and all those who participated in the stakeholders’ workshop, whose names are annexed to this report, are thanked for the valuable insights and inputs into the preparation of this report.

While considerable information in this report is attributed to different people and sources, any errors, inaccuracies or misrepresentations are the responsibility of the authors of this report.

KESARINE & ASSOCIATES

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EXECUTIVE SUMMARY

This report is an output of a consultancy commissioned by the FAO Kenya Office with funding from ECHO’s Regional Drought Decision Programme (RDD). The assignment aimed at reviewing the status of Emergency Water Trucking (EWT) in the Arid and Semi Arid districts of Kenya (ASALs) with a view to obtaining facts about what drives EWT, how the EWT interventions are implemented and by whom and whether they are achieving the expected effectiveness and outcomes. In view of the fact that EWT interventions are comparatively more expensive than other emergency water supply options and bearing in mind that there is increasing reliance on EWT by humanitarian agencies and communities in the ASALs to provide water during emergencies, it was necessary to undertake this assignment in order to provide factual information on EWT and develop general guidelines on how agencies, government and donors should deal with future EWT interventions. Thus, this assignment has resulted in the formulation of guidelines and standards for future EWT interventions and a policy brief that provides a simple checklist to donors and policy makers on minimum requirements to be fulfilled by EWT proposals.

Kesarine & Associates, a research and development consultancy firm based in Nairobi executed this assignment between June and September 2009. The methodology and approach included a literature review, an examination of the Minimum Standards for Emergency Water Supplies according to SPHERE and Livestock Emergency Guidelines and Standards (LEGS) as well as a review of best practices both in Kenya and elsewhere in order to provide a framework for assessing the performance of current EWT interventions in the ASALs of Kenya. Stakeholder consultations were carried out in Nairobi and in eight ASAL districts – Turkana, Samburu, Marsabit, Wajir, Garissa, Ijara, Mandera and Kajiado North with a national stakeholders workshop held in Nairobi on the 15th of September 2009 to present initial findings and to receive further inputs from stakeholders.

Findings of the assignment

Kenya is not well endowed with water resources and can be classified as a water scarce country with less than 650m$^3$ of freshwater per capita. The resource availability is highly variable both temporally and spatially with droughts and floods, particularly in the ASALs, occurring frequently with disastrous impacts on the local and national economy. There is an increasing reliance on emergency water trucking because of poor investment in more reliable and long-term water sources and facilities. The water sector seems to be following the path of food aid, which has now been institutionalized in Kenya, as a way of addressing chronic and transient food insecurity in the arid and semi arid districts. However, the government depends largely on the international community to finance emergency interventions, with itself not prioritizing and allocating adequate resources for long term water resource development and management, particularly in the ASALs.

The main drivers of emergency water trucking in the ASALs include: 1) drought conditions; 2) poor settlement patterns propelled by political interests of politicians; 3) creation of too many new districts necessitating the establishment of new administrative centers even in locations without reliable sources of water; 4) commercial interests of businessmen in the towns; and 5) lack of long term strategies for investing in reliable and adequate water sources in the ASALs. The government does not prioritize water resource development and resorts to appealing to the international community for emergency assistance when a drought occurs; 6) dependency syndrome on the
part of the communities and 7) donors seem to have relaxed and are no longer strict on discouraging and not funding emergency water trucking interventions.

Measured against Minimum Standards for the provision of emergency water supplies to vulnerable communities and their livestock, most emergency water trucking interventions that have been implemented do not qualify in terms of assessments, cost/benefit analyses, planning, management, implementation, monitoring and evaluation. This has a direct influence on the effectiveness and impact of these interventions. For example, only very few of the interventions were providing adequate supplementary water to justify the cost involved. Nor were they even coming close to the MoWI’s recommended standard of 10 liters per person per day. Although this standard may not be a good indicator since for example water needs may differ among pastoralists and non-pastoralists (due to contextual issues), it is nevertheless a standard that should be aimed for considering the rights-based approach to water and sanitation. Except for those interventions such as that of RACIDA (Mandera), German Agro Action (Kajiado Central) CODES (Samburu) and Oxfam GB (Wajir) where the agencies invested in planning and supervision and in targeting mobile pastoralists or specific institutions such as schools, many other interventions were not providing adequate water to supplement existing water supplies to settled communities and mobile pastoralists in a manner that would justify the cost involved. Non Governmental Organizations performed a little better than government institutions in planning, supervising and managing the EWT interventions. It appears that there is inadequate capacity within government agencies to effectively and efficiently implement emergency water trucking interventions.

There are no national and district level guidelines and standards upon which stakeholders can base the implementation of EWT interventions. Consequently, there is considerable variability across the districts and across agencies, both in terms of quality of implementation as well as effectiveness and impact of the interventions. Coordination mechanisms for emergency water trucking are weak and little attention is given to hygiene and sanitation standards that should go with emergency water interventions. There is also weak consultation with communities and there were cases where water trucking was being targeted in areas where communities and vulnerable populations would not have approved. Record keeping was so poor in most of the interventions that it was difficult for the study teams to access any information for more rigorous analysis.

Although this assignment has produced suggested guidelines and standards, and a policy briefing paper for donors and policy makers in government, there is need for follow-up action by the relevant ministries, departments and authorities to build on the outputs of this assignment and develop more refined guidelines and policies to facilitate more effective and efficient implementation of emergency water trucking interventions, when they are appropriate and deemed absolutely necessary to save lives and livelihoods.

**Recommendations**

In view of the emergency nature of water trucking and the fact that it is extremely expensive and demands considerable investment into its planning, management, implementation monitoring and evaluation, the rising trend in the ASALs of using EWT as a source of water for vulnerable communities and households is of concern. Therefore,
1. There is an urgent need for emergency water trucking guidelines based on Minimum Standards for the provision of emergency water supplies for domestic use and for livestock. The Water Services Regulatory Board should be involved, together with the MoWI, WESCOORD, ALRMP and other stakeholders including UNICEF in developing these guidelines. The guidelines should be informed by the lessons learned from implementing emergency water trucking interventions in the ASALs so far;

2. Consider the opportunity cost. Government and donors should not fund EWT projects without due consideration of other longer term options based on cost/benefit analyses. Any funding should be based on Minimum Standards and guidelines for EWT developed and enforced by the Ministry of Water & Irrigation and the National Environmental Management Authority;

3. In emergencies, where it is clear that many thousands of people will be resident in a settlement for a long time e.g. one year or more, a reliable, well designed supply system will be needed. It is good policy to make an early decision to develop an emergency supply with a properly designed distribution system. This would avoid undue expenditure and worry on the maintenance of a temporary, possibly fragile EWT system. Funds are better spent on a well designed, more permanent system;

4. Currently, the government through the Ministry of Water & Irrigation and the Arid Lands Resource Management Project owns and operates water bowzers in the different districts for purposes of providing water to vulnerable communities during emergencies. Having looked at the operations of EWT and assessed the existing capacity within government, it is probably prudent for the government to consider offering these trucks to be operated by the private sector or competent NGOs under a special contract that guarantees water to communities and maintains the trucks in good condition over a long time. Currently, EWT by government institutions is inefficient, ineffective and has little impact.

5. There is an urgent need for a comprehensive GoK plan for the development of a more appropriate water resource development and management strategy in the ASALs in order to avoid EWT and the dependency it is creating in communities. Such development should incorporate traditional water management strategies and institutions that will enforce proper water development strategies against upcoming settlements. Land use and settlement patterns should be rationalized;

6. The use of drought contingency boreholes such as is the case in the Northern Isiolo district should be explored further with the view to adopting and enforcing this model in other districts. In addition, more resources should be spent by government in expanding water harvesting structures, both in terms of roof catchments and massive storage tanks (for institutions such as schools and hospitals – based on the GAA model in Kajiado) as well as strategic underground water tanks based on examples from North Eastern Province.

7. The Ministry of Northern Kenya and other Arid Lands should come up with a clear policy on creation of new districts and settlements in the ASALs. Any new settlement must have the first criterion as the availability of a permanent water source away from the grazing areas. There should be legal consequences where such criteria are flouted.
Emergency Water Trucking in Kajiado District helps to keep weakened livestock alive- Saving livelihoods.

A water truck in Mandera ready for work: It is hired by RACIDA an NGO implementing an EWT project in Mandera
Chapter 1- INTRODUCTION

1.1 The ASALs, Water Availability and Accessibility in Kenya

Globally, the Arid and Semi Arid Lands (ASALs) make up more than 40% of the earth’s surface and provide livelihoods to more than one billion people. In Kenya, the ASALs occupy more than 80% of the country and are home to about 10 million people and approximately 70% of the national livestock herd. The ASALs in Kenya have the lowest development indicators and the highest incidence of poverty in the country (Ministry of Northern Kenya and other Arid Lands, 2009). This is partly the result of conscious public policy choices taken in Kenya’s past. Under the heading ‘Provincial Balance and Social Inertia’, the Sessional Paper No. 10 of 1965 stated the following:

“One of our problems is to decide how much priority we should give investment in less developed provinces. To make the economy as a whole grow as fast as possible, development money should be invested where it will yield the largest increase in net output. This approach will clearly favor the development of areas having abundant natural resources, good land and rainfall, transport and power facilities, and people receptive to and active in development”.

For many years this statement guided the direction of Government resources, with the result that the social and physical infrastructure of the arid districts was neglected. With regard to water development there are three significant legacies to the current water resource situation that provide key challenges to water resource management in Kenya. These are: 1) the availability, accessibility and reliability of water resources; 2) weak institutional infrastructure to manage both land and water resources and; 3) a lack of high prioritization of this sector on the government agenda, characterized by the low pace of water sector reforms in the country. The policy framework has been poor, planning has been weak and finances have not been forthcoming from government (Water Resource Management Authority, 2005).

It has to be noted that Kenya is not well endowed with water resources and can be classified as a water scarce country with less than 650 m$^3$ of freshwater per capita (MoWI & WRMA, 2005). The resource availability is highly variable both temporally and spatially with droughts and floods occurring frequently with disastrous impacts on the local and national economy. To compound this relative scarcity, approximately 60% of the lakes, rivers and aquifers are shared with neighboring countries. This has implications in terms of Kenya’s freedom and obligations related to the development of these resources.

Now with climate change, rising population, poor water resource development and management in the ASALs, coupled with rising sensitivity to basic human rights and the need to observe international standards, the country is paying for the neglect of the ASALs over the years. Water and food are essential commodities and it is becoming extremely expensive to deliver these commodities to sparsely populated areas of the ASALs. The recent appeal (July 2009) by the Prime Minister of Kenya for international support to address the current crisis was approximately USD 51 billion. This is very substantial and were such resources invested in development, they would make a huge difference. However, if the international community responds positively, these resources will only be spent on short-term initiatives to keep the majority of the ASAL population alive.
1.2 Access to Water for Domestic Use in the Arid Districts

Drinking water is becoming a real challenge in the ASALs, which under normal circumstances receive annual rainfall of between 250-750 mm on average. This rainfall is erratic and sometimes falls in storms of only a few days, making surface water difficult to find unless, pans and dams have been constructed. In many cases most communities in the ASALs have to rely on underground water sources which are more permanent and boreholes have been drilled and fitted with equipment to pump water for both domestic and livestock use. Some of these water infrastructures are 20-30 km away from households and date as far back as the colonial era, often breaking down when overused, particularly during prolonged dry spells or during drought.

The resources for water development are scarce and sometimes priority is given to areas with high population density. The new Sessional Paper for the development of the ASALs, which has been prepared by the Ministry of Northern Kenya and other Arid Lands, underscores the importance of improving water and sanitation infrastructure in the ASALs, in line with a strategic assessment of the most appropriate locations and technologies. However, government policies formulated for improving structural development in the ASALs have not always been matched with the resources allocated.

1.3 Standards and Guidelines for Water Supply

It is clear from the rising number of Emergency Water Trucking Interventions carried out during the 2008-9 drought in ASALs that there was inadequate water in specific arid districts to meet the needs of vulnerable households and their livestock in a timely and adequate fashion. Emergency Water Trucking Projects should be designed to close the gap between existing living conditions and acceptable and expected standards based on either the SPHERE or LEGS Minimum Standards (in the case of emergency water trucking for livestock) or accepted local standards agreed upon with beneficiary communities and the local leadership. These must however be cost effective. Moreover, it is important to make a distinction between the emergency needs and the chronic needs of an affected community or population. In many cases, humanitarian needs and the resources that would be required to undertake Emergency Water Trucking to a community, location or even to a village up to Minimum Standards are far greater than the resources available.

There are still parts of the rangelands of Kenya that lack the necessary water resources for their basic needs, whether in terms of quantity or quality, or both. Demographic growth is likely to increase pressures for the development of water resources and further exploitation of existing ones. Changes in production and consumption patterns are expected to aggravate further the pressures on the quantity and quality of water resources across the ASALs. Rising standards of living, irrigated agriculture, and new industrial processes lead not only to increasing competition for water use and rising costs of water provision, but also to mounting risks.

It is widely acknowledged that there is still a lot to be achieved in the direction of properly managing drinking water resources in the context of a strategy toward sustainable development at all spatial levels, local, regional and national. Furthermore, in recent years, there have been growing concerns on the overall ability of Kenyan society to effectively safeguard water resources, in the sense of their readiness to face threats and risks from catastrophic events which could disrupt water supply. Such events can range from accidental to landslides or intentional human events, from partial disruption of the water delivery system in a city to total destruction of the
infrastructure necessary for water supply across a region or the country. Compared to other similar “public” resources such as electricity, the water sector lacks the perspective and tools (standards and plans) to respond to security incidents, as well as large natural disasters (e.g. floods). A comprehensive, holistic approach to water resource management is thus necessary.

1.4 This Assignment
The FAO Kenya Office commissioned this assignment in order to assess the status of Emergency Water Trucking in Kenya and to contribute to the body of knowledge in the water sector. There has been a continuing concern over sustainability and cost-effectiveness of emergency water trucking interventions in Kenya. Water trucking should be a temporary solution, considering that it provides a very fragile water supply (risk of mechanical and human failure), is expensive and unsustainable. However it is argued that these concerns can deter aid agencies from delivering much needed water especially where there are no alternative water sources (FAO Kenya, 2009).

Thus, the overall objective of this assignment was to establish facts about EWT that would be used to develop standards and guidelines on implementation, monitoring and evaluation as well as exit strategies of EWT projects from communities. It is hoped that the outputs from this assignment could also contribute to the formulation of a national policy on EWT within the Ministry of Water & Irrigation that would provide guidance to the districts in the implementation of EWT projects.

With funding from ECHO’s Regional Drought Decision Programme (RDD), Kesarine & Associates, a research and development consultancy firm based in Nairobi, begun work on this assignment in June 2009 and completed it in September 2009.

1.5 Approach and Methodology
Mike Wekesa and Irene Karani from Kesarine & Associates carried out this assignment. The approach adopted in its execution included a literature review on the current status of water supply in Kenya, particularly in the ASAL districts and on Emergency Water Supply carried out in other countries in order to learn lessons and to inform this assignment. Meetings were held in Nairobi where the two consultants visited stakeholders in their offices and had one-on-one meetings with key informants or Focus Group Discussions (FGDs) where representatives were more than one individual. The consultants also made a presentation at one of the WESCOORD meetings where valuable input from members was received and incorporated into the process of data collection.

Field visits were made to 8 ASAL districts in order to sample EWT operations and to meet District Water Officers, ALRMP staff, NGOs involved in EWT interventions as well as private contractors and communities that have benefited from current and past EWT projects. Community meetings were held with beneficiary groups and key informants provided valuable information on EWT operations in their locations. A National stakeholders’ workshop was held in Nairobi on 15th September 2009 for practitioners.

There were no major constraints in the execution of this assignment except for the inadequate data available on the EWT operations in the districts.
Chapter 2 – FINDINGS FROM STAKEHOLDER CONSULTATIONS

This section of the report reviews the findings of the stakeholder consultation process that was part of this assignment. Consultations were done in Nairobi and in eight districts. In terms of this assignment, the districts were considered as the larger districts before the recent sub-divisions to create new ones. The objective of the field consultations was to go and visit different stakeholders, particularly those agencies that were implementing emergency water trucking interventions in order to share ideas and learn from their experience in implementation and assess their approaches to emergency water trucking projects. Other stakeholders visited included communities and community beneficiaries. Emergency Water Truck drivers and truck owners were also met in some districts and they provided valuable ideas and suggestions.

2.1 Districts Visited and Organizations Met

The table below shows the areas visited and the organizations met and consulted during this assignment.

Table 2.1 showing districts and organizations met

<table>
<thead>
<tr>
<th>District</th>
<th>Organizations met</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nairobi</td>
<td>World Vision, Ministry of Water &amp; Irrigation, WESCOORD, Solidarites, ALRMP hqs, Drought Management Initiative (DMI); Catholic Relief Services</td>
<td>World Vision is involved in the water sector but does not undertake EWT; MoWI does not have EWT guidelines; KFSM reluctant to address the issue of EWT; WESCOORD interested in a policy to guide EWT in the country.</td>
</tr>
<tr>
<td>2. Kajiado district</td>
<td>MPIDO; NIA; ALRMP; POMC; GAA; Private contractors</td>
<td>Water trucking mainly to schools and not to settled communities in Kajiado district. Schools could close if no water is available. Now there is more emphasis on construction of roof catchment and provision of storage facilities to ease dependence on emergency water trucking.</td>
</tr>
<tr>
<td>3. Turkana Central/North</td>
<td>ALRMP, MoWI, Share International, Catholic Diocese, Oxfam GB (for IDPs on a temporary basis)</td>
<td>Oxfam GB’s policy in Turkana is not to truck water unless it is absolutely necessary. The Catholic Diocese does not truck water as they have a pump maintenance unit for repairing boreholes. They prefer to drill and equip boreholes for communities. If their rapid response unit is unable to respond quickly to a breakdown they request MOWI and ALRMP to truck water as a stop gap measure.</td>
</tr>
<tr>
<td>4. Ijara District</td>
<td>Ministry of Water &amp; Irrigation is the only one trucking water in Ijara district</td>
<td>The MOWI has three water bowser of 12,000litres, 10,000litres and 8,000 litres respectively and is trucking water to three communities of 4,000 people due to prolonged drought. Each community gets trucked water twice a day. The Ministry is using over Kshs 200,000 per month for water trucking. One of the challenges the Ministry is facing is that the communities do not have storage tanks and it is thus forced to deliver the water into water pans or...</td>
</tr>
</tbody>
</table>
During every prolonged dry spell or prolonged drought, pans dry out, shallow wells are not recharged and the underground storage tanks empty quicker than normal. When such an event occurs, the ASAL communities implement the coping mechanisms that, according to the level of water shortage and loss of livelihoods, consist of: 1) movement of livestock to other water points; 2) use of their own resources to truck water into berkads using private transporters (for people and small livestock); 3) taking small loans from shops; 4) search for new income sources; 5) migration; 6) change in dietary habits; 7) dependence on remittance from relatives and friends; and 8) reliance on charity and humanitarian assistance.

It is when these coping mechanisms weaken that communities and households begin to appeal for external support in emergency water trucking. Usually, community representatives will write request letters to the Ministry of Water & Irrigation and visit the ALRMP offices in the districts to present their case. According to the MoWI headquarters, EWT is demand-driven and that is one of the criteria for trucking water. Thus, no initial assessments are made to determine water deficit areas. Instead districts wait for communities to request for emergency water trucking. This means that this is often a reactive rather than proactive response by the District Steering Groups. It means that unless a community requests, it will not benefit from emergency water trucking.

<table>
<thead>
<tr>
<th>District</th>
<th>Institutions</th>
<th>Water Trucking</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Garissa District</td>
<td>The MOWI and ALRMP are the main institutions trucking water. Occasionally NGOs such as Womankind also truck water</td>
<td>These institutions truck water throughout the year apart from the months of April, November and December when it rains. Other water interventions by the ministry include distribution of water tanks, fuel subsidies and provision of fast moving spare parts. Currently water tanks are being distributed with the assistance of military personnel and resources.</td>
</tr>
<tr>
<td>6. Mandera District</td>
<td>MoWI; ALRMP; Action Against Hunger (mainly to community therapeutic centers); RACIDA and EPAG (K)</td>
<td>EPAG (K) trucked water 3-5 years ago although during this current drought, it is not doing so due to lack of funds to respond to the emergency.</td>
</tr>
<tr>
<td>7. Greater Wajir District</td>
<td>MoWI; ALRMP; VSF-S; Oxfam GB; Communities themselves</td>
<td>Most of the communities were contributing to EWT and in Wajir Bor, the EWT was necessitated by the contamination of shallow wells in the area.</td>
</tr>
<tr>
<td>8. Greater Samburu district</td>
<td>MoWI; ALRMP; MAWASCO and CODES</td>
<td>Maralal Water Services and Sewerage Company (MAWASCO) is responsible for water trucking to different parts of Maralal Municipality. There is a huge settlement in Lolmolog that arose from clashes between the Samburu and the Pokot. It has severe water shortages but no one is trucking water to this community.</td>
</tr>
<tr>
<td>9. Greater Marsabit district</td>
<td>CIFA; PISP; ALRMP; MoWI</td>
<td>Water has been trucked from Marsabit mountain to as far as Hurri Hills, 180 km away. This proved to be a very expensive operation because of rough road and long distances.</td>
</tr>
</tbody>
</table>
2.2 Overview of Emergency Water Trucking Activities in the Districts Visited

Emergency Water Trucking in the districts is implemented under various circumstances. These range from supplying water to institutions such as schools and health centers to providing water to settled communities in small towns or market centers. There is also water trucking for livestock, especially by those who have large herds and have the capacity to hire water trucks and transport water to the livestock in the grazing areas. But there is also water trucking into towns like Mandera. This is done by private contractors who are hired by able businessmen to provide water to their families in town. Usually this would be for domestic use and for small stock that is kept within the compound. In addition, agencies such as Oxfam GB in Wajir only focused on mobile pastoral households and their livestock and sought to provide supplementary water in the grazing areas.

But there was also water trucking that is politically driven. Families that settle in places where there is no water, but are politically well connected, will demand water through their local Member of Parliament or Councilor. Pressure would bear on the ALRMP and MoWI to provide storage (usually a 10,000 liters plastic storage tank) and truck water to such a community. It is not prudent to give specifics on this issue, for obvious reasons, but it is true that this was happening in Greater Garissa District. However, in all the districts visited, it was clear that water trucking was considered by implementing agencies as a short term intervention that should not be supported every dry season. Despite this acknowledgement, there are communities that have been on EWT support every year in the last five years when rains have been below normal.

Box 2.1 Current implementation approaches of EWT activities

The implementation of emergency water trucking activities in the districts is not well organized. The EWT interventions focus on settled pastoral communities instead of supporting temporary mobile communities and providing water to the distant grazing areas in order to distribute the pressure on scarce natural resources during the drought. Moreover, the interventions are poorly implemented and the main agencies involved i.e. the MoWI and the ALRMP lack the capacity to implement the intervention effectively and in line with Minimum Standards for Emergency Water Supplies. Experience with the NGOs is mixed, with some like RACIDA, CODES and GAA having put in place mechanisms for effective implementation of EWT interventions while others do not have adequate capacity and experience to implement EWT activities, although they may have the resources. Very few agencies are keeping exact figures of beneficiaries, volumes of water being trucked, number of households and people, numbers of livestock, etc. It is difficult to assess the effectiveness of the emergency water trucking. There is need for harmonized and standardized approaches across the districts to ensure that EWT activities are appropriate, timely and effective and achieve desired objectives.

2.3 Case Studies from the Field

The following case studies provide some information on how emergency water trucking activities were being undertaken in the districts.
2.3.1 Kajiado North District

In Kajiado North District, EWT is mainly for primary schools. MPIDO, a local NGO facilitates EWT and each trip is 6,000 liters, delivered by the Presbyterian Outreach Mission Church (POMC), the only organisation with a water bowzer. Water is collected from Najile which has piped water. Schools pay for the transport of the water from Najile depending on the distance. For example, Ol Ng’arua Ewaso primary school is 7km from Najile. The school has 155 pupils and 8 teachers. They have a borehole nearby (2km), although its yield is poor and the borehole dries up during drought. The school pays for trucked water 3 times per month during a drought period totaling to 27 times in a year. Each trip costs them KES 4,000. Water in the school is mainly used for cooking porridge for the pupils so that they can stay in school. Nearly 95% of the school budget is for trucking water with each pupil contributing Ksh. 50 per term. Without water trucking the school is unable to function as pupils do not go to school and stomach ailments increase as a result of drinking dirty water from other sources. No other partners apart from MPIDO supply water to this school.

Sairashe Primary School also trucks water from Najile at a cost of Ksh. 5,000 per trip. It is about 15 km from Najile. They pay for 4 trips per term. Each term, MPIDO buys 28,000 liters of water for the school. This costs them more than 50% of their overall budget per term with each child contributing KES 50 per term. There are 233 pupils and 9 teachers. They have a storage capacity of 45,000 liters and during the rainy season they harvest water from the roofs. This harvested water can last 3 months when used sparingly. The closest water pan is less than 1 km away from the school and when it is full it can last the school 4 months. Other sources of water are hot geysers from a nearby hill less than 1 km from the school. Teachers condense steam from these geysers to get clean water. However it takes two days to collect 20 liters of water. At the time of this study the school was closing prematurely as it had not received trucked water from POMC as their truck had broken down and another bowzer could only be from Ngong town which would cost the school more than 3 times the amount they pay due to the distance.

2.3.2 Turkana Central/North District

There are areas in Turkana where the ground water potential is poor such as Nasiger, Makutano, and Nadwat (gold area). The MOWI trucks water with its 15,000 water bowzer to Nadwat 3 times a day (total of 45,000 litres). There are more than 15,000 people in Nadwat. The water is emptied into storage tanks that can store up to 50,000m³. The storage tanks were provided by ALRMP. The Water User Association (WUA) in Nadwat has negotiated with the Lodwar water and sewerage company so that it buys water for KES 600 per truck. The driver of the truck is paid KES 1,000 per day to deliver the three trips. The WUA sells the water to the community at KES 10 per 20 liter container. Thus it is able to maintain the water trucking. When the MOWI truck is under repair, ALRMP delivers water to this community, although using a small truck with a capacity of 6,000 liters. The ALRMP delivers water twice a day to this community. Out of ALRMP’s drought contingency annual budget of KES 2.8 million in a normal year, more than KES 1 million is used for emergency water trucking.

Oxfam Lodwar’s policy is not to truck water unless it is absolutely necessary. The Office has trucked water to Internally Displaced Persons (IDPs) in the past one year and used between KES 30,000-40,000 per month for 3,000 IDPs over a five-month period. Each household received 20 liters per day and most households found this inadequate. Nearly 50% of Oxfam GB’s budget for
the IDP intervention went into water trucking. The intervention proved to be extremely expensive and Oxfam GB, together with MoWI and the Lodwar Water and Sewerage Company, drilled a borehole and moved the IDPs to where the borehole is now located. During an emergency Oxfam GB intervenes with fuel subsidies and the provision of fast moving spares for the borehole.

Share International, a faith based NGO, was providing 5,000 liter tanks to communities so that they could have storage facilities to keep trucked water. The organization is working in 9 villages with a total of 30,000 people. It owns a 6,000-liter water truck and trucks water twice a month to each village. It was spending KES 30,000 per month per village on water trucking. In order to reduce the cost of water trucking the organization links the communities with other stakeholders e.g. ALRMP and MoWI so that these communities can be assisted with the construction of more permanent water sources such as water pans, boreholes, shallow wells, etc.

The Catholic Diocese does not truck water as it has a pump maintenance unit that maintains boreholes. The Diocese prefers to drill and equip boreholes for communities in strategic locations. Whenever the Unit’s Rapid Response Team (RRT) is unable to respond quickly to a breakdown, the MoWI and ALRMP are requested to truck water as a stop gap measure.

Communities in Nasiger and Loror with 360 and 600 households respectively are on water trucking almost fulltime as they have no permanent water source. They have storage tanks (10,000 liters) provided by ALRMP and the trucked water lasts for a month. The water is only used in schools and the communities do not pay for the water. Households are forced to trek 7km daily to the nearest water source (springs) in Nasiger. Attempts to drill boreholes in these two administrative areas have failed due to poor ground water potential. Loror is a newly established sub-location.

The community in Loturerei (400 people) used to rely on water trucking in the 80s. The town is 25 km from Lodwar town. However two boreholes were drilled and communities now have adequate water unless there is a borehole breakdown. The community here does not maintain the boreholes but relies on the Catholic Diocese for maintenance. When the boreholes breakdown, the ALRMP trucks water twice a week, until the boreholes are repaired. The water provided is inadequate and is purely for domestic use. During such times livestock have to trek to the Turkwell River, 30-40 km away in search of water.

2.3.3 Greater Marsabit District

With regard to the Greater Marsabit district, water shortage had reached crisis levels at the time of this study. For Marsabit central district, the cause was said to be environmental degradation on the Marsabit Mountain. The main water sources on the Mountain, the Bakuli intake had gone abnormally low in terms of water level, a phenomenon that had never been experienced before in Marsabit. Most community members interviewed pointed to the fact that the wanton destruction of the forest and poor protection of the water source was responsible for the abnormally low water levels. Water was so scarce that a 20-liter jerrican of water was going at Kshs 70. Anecdotal information from key informants pointed to the fact that the recent sinking of the Kamboi borehole at the foot of Marsabit Mountain contributed to the low water levels in the Bakuli springs.
It was alleged that the Kamboi borehole had a yield of 45 cubic meters per hour and that this high yield was fed by the Bakuli reservoir, which was essentially draining into Kamboi borehole aquifer. Residents complain that the National Environmental Management Authority (NEMA) erroneously recommended the drilling of the Kamboi borehole and did not look at the negative impacts of this action on the environment. Overall, water development in the larger Marsabit was poor and there was need to support more water development initiatives in the district. According to residents around the Mountain, a deliberate effort has to be taken to rehabilitate the Marsabit Forest to revive the springs in the forest within Central Marsabit otherwise the water shortage will continue to persist.

Adequate water supply in emergencies is necessary to save lives and livelihoods. As a result of the current drought in the Greater Marsabit district, communities were forced to trek for as far as 40 km in search of water for both domestic and livestock use. Most boreholes had very poor yield and could not cope with the demand given the pans and dams had dried up. Most loading camels were too weak to effectively carry water over long distances. In most parts of Chalbi district e.g. Hurri Hills, Bubisa and Turbi, there are no permanent water sources because of the poor groundwater potential.

The study team learnt that there were no laid down guidelines to guide the water trucking activity in the district. However, there was an Emergency Water Trucking sub Committee of the District Steering Group that coordinated emergency water trucking activities. The water trucking activity is purely meant for domestic purposes and not for livestock use. The intervention is based on humanitarian assistance and consideration is given to hard hit areas. Agencies assess the benefiting area based on proximity to water points and the severity of water shortage in the area.

Priority is given to key institutions – mainly schools – both primary and secondary (especially boarding schools), prisons and hospitals. This is mainly to arrest any possibilities of the outbreak of water-borne diseases in such institutions. The wider community is supported through trucking water to specified community water distribution points. These centers are coordinated by the established Water Users Associations (WUAs). Sometimes ALRMP extends one-off water trucking support to some local NGOs in the district. One such beneficiary is the Pastoralists Integrated Support Programme (PISP).

The ALRMP has a duo purpose in water trucking in the larger Marsabit district. These are:
(a) Central planning and coordination of all emergency interventions in the district and
(b) Service delivery - in this case - water trucking to deserving destinations.

Using its drought contingency budget line, the ALRMP, provides fuel for the water bowsers, pays for vehicle maintenance charges and driver allowances. It serves the 3 districts of Laisamis, Chalbi (Marsabit North) and Marsabit Central. The institution has 2 water bowsers with a capacity of 7,000 and 8,000 liters respectively. Both are operational. One truck has been assigned to Chalbi district. The second truck is used by the Ministry of Water & Irrigation at the Marsabit Central district. Laisamis district gets water directly from its borehole but the far flung areas also benefit from water trucking services. The Ministry of Water and Irrigation also provides some funds for water trucking. For example in Chalbi district the ministry provided KES 600,000 in the last supplementary budget for water trucking.
In Marsabit Central district, the intervention targets 30 schools, KARI, Marsabit prison, and hospitals. It also targets communities in 6 locations in Central Marsabit i.e. Nagayo, Akabaricha, Mountain, Jirime, Sagante and Qilta. In Chalbi district the intervention serves Turbi, Bubisa and Hurri Hills.

In terms of cost effectiveness, the following 2 examples illustrate the real situation on the ground:

First case: "Information from the Chalbi District Water Officer revealed that the cost of fuel in Marsabit was KES 87 per liter. Taking the example of ferrying water from Loglogo to Turbi, the truck will need 150 liters of diesel. The community contributes KES 3,000 per trip. The driver and his assistant need an allowance of KES1500 per trip. To support the community effectively, the department has to make approximately 17 trips per month. The cost for water trucking to Turbi per month is therefore KES 247,350. The amount of water ferried will be about 17 trips of 16,000 liters per truck which comes to 272,000 liters. The human population in Turbi is about 10,000 people. Water provided per person is about 20 liters per month, an average of less than one liter per day. Even if the water trucking was meant to supplement water from existing water sources, providing less than a liter per person per day is not an efficient use of resources. Therefore, in terms of effectiveness, this emergency intervention falls far short of being effective and efficient.

Second case: In the 2007/08 drought CIFA spent a total of KES 4,312,000 to undertake 169 trips trucking water. They were using a 10,000 liter- capacity water bowser to ferry water to a total population of 30,298 people comprising of 4,268 households of approximately 6 persons per household totaling to 26,008 persons. In addition they ferried water to 4,290 children in schools. Calculated we find that the total amount of water trucked in 6 moths is 1,690,000 liters for 30,298 persons. This means in effect that every person got 9 liters of water per month. Again, this is far too low when compared with the recommended amounts of water per person per day.

2.3.4 The greater Mandera District

In the Greater Mandera district, water trucking has taken place during every dry spell over the last five years. The agencies that have been involved in water trucking include: Action Against Hunger (mainly to community therapeutic centers), EPAG-K (was involved 5 years ago), the District Water Office; ALRMP and RACIDA. RACIDA has done a commendable job in terms of implementing emergency water trucking projects. The following are RACIDA’s basic operational guidelines which are followed effectively in the implementation of its EWT interventions.

**Box 2.2 Basic operational guideline for RACIDA’s EWT interventions - 2006**

**STAGE 1: Planning and Preparation**
- Rapid assessments (district level) is conducted by stakeholders through coordination of Arid Lands office
- Partners develop proposals and seeking funding from donors.
- Once approval of funding is done and assistance from the DSG helps us to establish targets and how many people can benefit from the project and for how long will the project be running.

**STAGE 2: Implementation Plans**
Once the project is approved by all the parties involved:
Identification of location/populations of both livestock and domestic supply are determined. RACIDA uses sphere standard of not less than 45-50% of the minimum standard. Therefore 6-7 litres per day are recommended i.e. don’t spread the little resource and make no impact.

Quotations are raised from the truck owners.

Moderation of the rate with transporter - often no single transporter has the capacity to serve all the locations that are required.

Rate shall not exceed the local transporters rate for EMOP programme which was between 22-23ksh per metric ton per km

MOU/agreement with truck owner and water users association.

All transported water must be issued with triplicate copies (white copy-transporter, pink copy for community and yellow copy for borehole water users and partner has the book copy)

All the transporters are contracted and given copies of the water trucking schedule with details of population, distance and water required per week and month.

Always approximate the truck capacity since transporters have mind-set to exaggerate the capacities of their truck. You may use a formula like capacity = \( \pi r^2 h \times (3.142 \times \text{radius square x height}) \). Translate this to understandable measurement at community level such as number of drums or barrels per truck.

The nearest water point is identified with a distance between 15-80km and any other distances above this, will make the costs very high.

Deployment of field monitors to the water sourcing point full time to write waybills and coordinate all the trips required per location. S/He gives feedback daily to the Mandera office on the progress of the project.

Community are mobilized and informed of their entitlement for the project period. The issuing of number of litres per person per day is agreed upon.

Water Users Association’s training on waybills procedures/handling.

Payment must be done at the end of every month so that transporters can also settle the debts e.g. fuel, driver salary, etc. The transporters invoice shall show all the details on the waybill, e.g. distance, tone and rate tabulated very well and attach all the waybills copies that are signed by community representatives.

STAGE 3: Monitoring and Evaluation

Water trucking requires continuous monitoring and follow up because the drought situation changes every day and new centres may join or new partners may have secured funding. Always be alert to monitor other actor’s activities.

Coordination meetings with other stakeholders at district level and sharing of progress report with donors.

Make case studies (human stories) of how the intervention helps the communities assisted after the stress period.

Document lessons learnt and share with your stakeholders, partners and communities if possible.
RACIDA contracts private local contractors that have reliable and “clean” trucks for EWT. The agency determines the volume of the trucks by measuring and ensuring that what the owners of the trucks are saying is true because the owners tend to exaggerate the volume of the trucks. Tendering brings in very diverse quotations ranging from 23/= per cubic meter per kilometer to 45/= shillings for the same amount and distance. But RACIDA insists on using the WFP rate for moving 1 ton of grain per kilometer in the same location. There are over 40 private trucks in Mandera town alone, with capability of trucking water.

Asked about the experience in implementing EWT activities, RACIDA’s Executive Director said, “Water will not always be enough however much you truck. Many trucks breakdown because of poor infrastructure and contractors give up, regardless of how much they are paid. The EWT activities divert energy, staff and attention and other activities of the organization may suffer in the process”.

2.3.5 Wajir North District

In the greater Wajir district, communities themselves (e.g. in Wajir Bor division); VSF-Suisse; ALRMP; Oxfam GB; the District Water Office and the Constituency Development Fund (Wajir North) are involved in emergency water trucking. The study team interacted with Abbas Maalim, the Chairman of the Constituency Roads Maintenance Committee for Wajir North Constituency and he had the following to say:

- The responsibility for water trucking is shared between OXFAM GB, ALRMP and the Constituency Development Fund (CDF). The CDF administration initially began trucking water to Wajir with four trucks. Due to the drought, the pastoralists moved North into Ethiopia in search of pasture. Therefore at the time the decision to truck water was made, these mobile pastoralists were not included in the estimates. When they returned, the scale of the intervention became inadequate;
- He pointed out that emergency water trucking on poor roads and infrastructure was not tenable because the wear and tear on the trucks was prohibitive;
- Politicians created settlements around provision of water through EWT which is not sustainable.
- He suggested Livestock Off takes (i.e. outsiders to purchase livestock that are then immediately slaughtered on site) as a better option in alleviating the suffering caused by drought;
- Communities could sell animals and pay for water rather than allow them to die due to drought. However, good markets must be organized for pastoralists to be able to sell.
- Hygiene is a priority concern during Emergency Water Trucking. Hygiene and Sanitation are very important because the water trucked could end up in dirty water collecting vessels, resulting in water borne diseases;
- The last emergency water trucking and the most recent, should be compared to record any changes that may have occurred in the community
- Contingency boreholes should be considered as an alternative first before going into emergency trucking. However, the trend in the country is that the use of contingency boreholes is politicized and ultimately diverted.
- Communities should share the cost of purchasing tanks, and other water storage facilities to ensure ownership and responsibility on their part.
The Oxfam GB’s EWT in Wajir was unique because it was implemented between July and September 2008 i.e. just for a short period and it targeted mobile pastoralists in the distant grazing areas as opposed to settled pastoral households around centers. Over one million liters of water was delivered to 30 sites every week in order to support mobile pastoral households and their livestock. Storage facilities were temporary plastic sheets laid in temporary hand-dug holes under tree shades to minimize evaporation rates. This enabled mobile herders to quickly shift and move to the next site instead of having a permanent water structure that would not facilitate such temporary movements. This intervention aimed to save livelihoods (livestock) instead of providing water for domestic use in settled households and communities. Although the cost/benefit analysis was still being worked out at the time of writing this report, anecdotal evidence from beneficiary communities and from Oxfam GB staff points to the fact that the intervention was appreciated by mobile herders.

2.3.6 Greater Garissa District

The MoWI and ALRMP are the main institutions trucking water. Occasionally NGOs such as Womankind Kenya also truck water. These institutions truck water throughout the year apart from the months of April, November and December when it rains. Other water interventions by the ministry include distribution of water tanks, fuel subsidies and provision of fast moving spare parts. Currently water tanks are being distributed with the assistance of military personnel and resources. Main reasons for trucking water are:

- Sporadic settlements due to loss of livestock as a result of prolonged drought in areas where there are no permanent water sources and due to political reasons.
- Drying up of water pans and boreholes.
- The level of the Tana River is very low and some towns such as Balambala which receive water from a canal fed by the river do not have water.
- Frequent breakdown of boreholes due to overuse during the drought period.

Currently the people in need of water trucking are about 200,000. The district has 3 water bowsers; 2 bowsers have a capacity of 16,000 liters while one has a capacity of 7,000 liters. Each bowser was making 4 trips per day within a radius of 50km. Due to high demand a household can only receive about 60 liters of water every two weeks. The communities are not paying for water. Over 80% of the development budget in the Ministry of Water and Irrigation has been re-allocated to water trucking. As for the ALRMP over 90% of its annual emergency budget line allocation of 2.8 million has gone to water trucking as the villages in need numbered over 44 and were increasing by the day as the situation continued to deteriorate.

Womankind trucked water to 30 villages for about 3 months in 2007, until when it started raining. They used to get water twice a day for domestic use and for small stock. Communities had water tanks where the water was delivered. Some communities left the tanks behind when environmental conditions improved. For example, a community near Modika had been given a water tank by Action Aid and when they moved the tank had to be relocated to Modika town where the town population now uses it. Suggestions for reducing the need for emergency water trucking in the district included the following:

- Investment in long-term term solutions e.g. dams that can store water for about 1 year.
- Increase the number of boreholes in the district.
Discourage settlement of communities by politicians.
Emphasis on proper range management by communities.

2.3.7 Ijara District
Currently the MoWI is the main institution trucking water.
The main reasons for trucking water in Ijara are:
- Drying up of water pans due to prolonged drought.
- Lack of exploitation of ground water sources.

The MOWI has three bowsers of 12,000, 10,000 and 8,000 liters each and is trucking water to three communities with a total population of 4,000 people due to prolonged drought. Each community was getting water twice a day. The MoWI was using over KES 200,000 per month on water trucking. One of the challenges the ministry was facing was that the communities did not have storage tanks and water was being delivered into water pans or temporary polythene storage. Suggestion for improving water availability included improving water storage facilities in order to avoid wastage and more investment in the development of ground water sources.

2.3.8 Greater Samburu District
The MoWI, ALRMP, CODES and Maralal Water & Sewerage Company (MAWASCO) were the main water trucking institutions in the Greater Samburu district. More water trucking was taking place in Samburu North and Samburu East districts.

CODES a local CBO was being supported by CORDAID and was trucking water to Lpuus Community, which is about 40 km from Wamba town. This community used to use donkeys to fetch water from the Seeiyia River, 15-20 km away. But due to the harsh effects of the drought most donkeys had either died or were too weak to be used for this purpose. In order to engage in EWT, the community felt that it would be important to construct a storage tank so that it is more efficient and effective to truck water and store in this tank. Therefore CODES supported the community to construct the tank. On its part, the community dug the pit where the tank would be constructed, collected sand and hardcore and provided unskilled labor during construction. The masonry storage tank is about 280m$^3$. It is used by several villages, whose population totals to about 2000 people (270 households). The tank is constructed near a village that has permanent settlement and so management and maintenance is guaranteed. The community has formed a 12-member committee (4 women and 8 men) who oversee the use and maintenance of the storage tank. The community still feels that the tank is small and that a dam would have been better. There is a pan nearby constructed by a GTZ supported project in the 80s but it was dry because of drought.

According to the DMO in Samburu, the ALRMP trucks water only when there is a problem with a source of water. For example, if a source dries up or equipment breaks down. It also considers whether the area is water deficient or not. Such areas include Ngilai, Langarde, Lodung’okwe, Lpuus and Loruko. Communities come and request and depending on the availability of resources, they are provided with water. The DMO does not see EWT as a permanent solution. A borehole was recently drilled and equipped in Lodung’okwe with contributions from the Samburu County Council, the Constituency Development Fund, the ALRMP and the Ministry of Water & Irrigation. But the community water storage capacity is still limiting.
No coordination sub-committee of Emergency Water Trucking activities has been formed and there are no criteria for targeting vulnerable areas and communities. The Lolmolog community had conglomerated into one big settlement for security reasons. There are 6 such communities and hygiene and sanitation are major challenges. There are about 300 people in each of the 6 settlements, giving an average of 2000-2500 people in these settlements. There are two private trucks in Maralal town and at one time, the ALRMP truck broke down and the private trucks were charging 6000/= per trip of water (6000 liters).

The triggers for EWT in Samburu included:
1) The size of the population i.e. at least 70 households;
2) Acute water stress that threatens human life;
3) Amounts of contingency funds available;
4) Severity of the drought based on EWS monitoring indicators;
6) Gender considerations i.e. walking distance to the next permanent water source. If it is more than 20 km away, then such a community could be considered for emergency water trucking.

Overall, Emergency Water Trucking activities were going on in the districts but with very varied implementation strategies. In most districts, coordination mechanisms were lacking and it was very difficult to obtain records from implementing agencies, particularly from the ALRMP and District Water Offices because of the arrangement between these two agencies. First, the ALRMP was not directly trucking water but owned some trucks which had been handed over to the Ministry of Water and Irrigation to operate. The ALRMP had a contingency budget line from which it could purchase fuel and spares and provide these to the Ministry of Water & Irrigation to operate the trucks. This arrangement is not systematic and apart from work tickets of the trucks being filled to show that they actually utilized the fuel and oils on, it was not possible to know from ALRMP records whether the trucks actually took water to the targeted communities.

2.4 Summary of stakeholders’ views on Emergency Water Trucking

The following is a summary of stakeholders’ views regarding emergency water trucking activities:

- According the MoWI headquarters, water trucking is demand-driven and is coordinated from the various districts. The Ministry has no national guidelines on water trucking and the Kenya Food Security Meeting is reluctant to address the issue, relying more on WESCOORD to take the lead;

- Slow response by the Ministry in developing permanent water structures e.g. boreholes, dams, pans is the main cause of emergency water trucking;

- The main drivers of emergency water trucking include: 1) drought conditions; 2) poor settlement patterns propelled by political interests of politicians; 3) creation of too many new districts necessitating the establishment of new administrative centers even in locations without reliable sources of water; 4) commercial interests of businessmen in the towns; 5) lack of long term strategies for investing in reliable and adequate water sources in the ASALs. The government does not prioritize this problem and resorts to appealing to the international community for emergency assistance when a drought occurs. It is lack of planning and
investment in the water sector that is the key problem; 6) Dependency syndrome on the side of the communities and 7) Donors seem to have relaxed and are no longer strict on funding emergency water trucking interventions;

- There is an urgent need for emergency water trucking guidelines based on Minimum Standards for the provision of emergency water supplies for domestic use and for livestock. The Water Services Regulatory Board should be involved, together with the MoWi, WESCOORD, ALRMP and other stakeholders including UNICEF in development these guidelines. The guidelines should be informed by the lessons learned from implementing emergency water trucking interventions in the ASALs so far;

- If water trucking has to be done because of an emergency, it should only be done once i.e. it should not be done for two successive emergencies. After one emergency when water is trucked, this should not be repeated and a permanent water source e.g. borehole or pan should be developed for that community. People should be encouraged to settle only where there are permanent water sources;

- Development of larger dams/panes should be encouraged as they play an important role in ground water recharge. They should be well designed and located in appropriate places where they can serve a large population; priorities for development of permanent water sources by the Ministry and other stakeholders should be in the areas where there is persistent water trucking;

- Emergency water trucking interventions to settled communities or for purposes of settling pastoral communities have negative impacts, some of which are the following: 1) EWT break up coping mechanisms of communities; 2) EWT interventions fix populations in places where the natural resources do not match the needs; 3) they create dependency on humanitarian assistance and make the government slow down on finding more long term solutions to water problems in the ASALs; 4) they attract larger human and livestock populations that will cause environmental degradation at the water distribution sites; 5) commercial interests may drive emergency water trucking and lead to a system that may serve the interests of the rich at the expense of the poor; 6) they tend to displace populations to the water distribution sites; 7) they exacerbate hygiene and sanitation problems as the water is not enough and the sanitary conditions of the truck or the water being trucked cannot be guaranteed; 8) It is expensive with a high opportunity cost, often diverting human and financial resources that would have been used better on other interventions.

Having pointed out the negative impacts of emergency water trucking to settled pastoral communities, emergency water trucking can also be of benefit to mobile pastoral communities, if properly targeted. For example, Oxfam GB undertook an EWT intervention in Wajir between July and September 2008 and targeted 30 different locations in order to meet the needs of mobile pastoralists. Over one million liters of water were trucked every week to these sites over the three month-period. The intervention aimed to truck water to temporary sites in order to: i) support traditional coping mechanisms (e.g. migration patterns), ii) ensure that there is a better balance between demand and available natural resources, iii) and reduce
risk of environmental degradation by reducing large human and livestock concentrations at few permanent boreholes/centers. Although information on the cost/benefit analysis was still being compiled at the time of writing this report, anecdotal evidence from Oxfam GB staff and from beneficiaries in the field indicates that the intervention was appropriate, timely and effective. Moreover, there was a lot of commercial private water trucking taking place in most of these districts e.g. in Samburu Central, Greater Mandera and Wajir districts at the height of the drought, indicating that that private households and individuals found EWT necessary, although its cost effectiveness could not be justified in some cases.

- Communities need to be encouraged to pay for the sustenance of permanent/reliable water sources instead of relying on free water from water trucking by humanitarian agencies or paying huge sums of money for private and commercial emergency water trucking. Water is a resource that is such a basic need that it should be easily available in good quality and quantity and at an affordable price for both humans and livestock. Communities’ capacities for the operation and maintenance of permanent and reliable water sources should therefore be enhanced so that they do not rely on emergency water trucking as their main source of water.

- In addition, agencies or NGOs must show that their water trucking activity does not have a short-term or long-term negative impact on water access at the source of water (boreholes, spring etc). This could be a kind of pre-intervention impact assessment.

- If water is to be trucked to communities then adequate storage should be available to avoid a lot of water going to waste.

- Discourage settlement by politicians. Emphasis should be put on proper range management by communities based on traditional community-based natural resource management structures and any unwarranted settlement of populations for political expediency should be heavily discouraged.

2.5 Current EWT Interventions Measured Against Minimum Standards for EW Supply

The SPHERE project is an initiative that was launched in 1997 by a group of humanitarian NGOs and the Red Cross and Red Crescent Movement, who framed a Humanitarian Charter and identified Minimum Standards to be attained in disaster assistance. SPHERE is based on the fact that all possible steps should be taken to alleviate human suffering arising out of calamity and conflict and that those affected by disaster have a right to life with dignity and therefore a right to assistance. In early 2009, the Livestock Emergency Guidelines and Standards (LEGS) was launched with the aim of providing guidelines and standards for emergency livestock interventions, including emergency water supply for livestock.

The following are some key SPHERE and LEGS indicators for water supply during emergencies.

1. Average water use for drinking, cooking and personal hygiene in any household is at least 15 liters per person per day. In pastoralist areas such as in the ASALs this quantity may be less during emergencies and standards for EWT provision need to be developed in a participatory fashion with communities and may differ from one location or district to another;
2. The maximum distance from any household to the nearest water point is 500 meters. This indicator was meant for IDP camps. In pastoralist areas, this will be in terms of kilometers away from a permanent or reliable water source;
3. Queuing time at a water source is no more than 15 minutes. Again this depends on the concentration of livestock and humans around the water source. It will differ from one pastoral area to another;
4. It takes no more than 3 minutes to fill a 20 liter container. In ASALs, it may depend on the yield of the borehole or well;
5. Water sources and systems are maintained such that appropriate quantities of water are available consistently or on a regular basis;
6. Water is palatable, and of sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health;
7. People drink water from a protected or treated source in preference to other readily available water sources;
8. Steps are taken to minimize post-delivery contamination;
9. No negative health effect is detected due to short-term use of water contaminated by chemicals and assessment shows no significant probability of such an effect;
10. People have adequate facilities and supplies to collect, store and use sufficient quantities of water for drinking, cooking and personal hygiene, and to ensure that drinking water remains safe until it is consumed.

The following situation was found in the ASALs of Kenya during this review of the status of emergency water trucking during the 2008-9 crisis in the districts visited.

- Eighteen of the 20 poorest constituencies in Kenya, where 74% - 97% of people live below the poverty line, are in Northern Kenya;
- In the arid north of Kenya, the basic foundations of development are either inadequate or lacking. Access to education, health, water, infrastructure, energy, and ICTs are all well below the national average. These are critical enablers of growth and their absence is holding the region back;
- In the arid districts of Kenya, approximately 43% of people take more than one hour to reach water in the dry season while 24% take more than two hours;
- Of all the emergency water trucking projects in the districts visited, the best in terms of amount of water per person per household was in Mandera district, which was trucking at least 6.5 liters of water per person per household per day;
- People are still walking up to 20-30 km in search of water for domestic use. This was clearly seen in Wajir Bor in the eastern part of Wajir East district;
- Where a borehole was high-yielding, all users were on site including water trucks, which would queue for up to five hours waiting for their turn to fill up tanks. Where populations are at risk, this would have been below expected standards;
- The infrastructure, especially the road network was so poor in some districts that no contractors with trucks were willing to truck water to some vulnerable populations because of the high cost of wear and tear on the trucks. This was clearly evident in the Greater Mandera District;
• Some emergency water trucking was done from seasonal rivers with questionable water quality;
• In some locations, water facilities and systems were not maintained to a standard that would guarantee adequate water on a consistent and regular basis, clearly undermining the very sources of water for emergency water trucking;
• Apart from the standard that each person in a household should receive at least 10 liters of water per day for drinking, cooking and hygiene and that all Kenyans however few they were in a location should have water trucked to them because it was their right, the Ministry of Water and Irrigation did not have other minimum standards, guidelines and indicators for emergency water trucking.
Chapter 3 – MINIMUM STANDARDS FOR EMERGENCY WATER SUPPLIES

This section of the report provides an overview of Minimum Standards for Emergency Water Supplies that apply to Emergency Water Trucking as well. It should be clear from the outset that EWT projects should be designed to close the gap between existing living conditions and agreed upon Minimum Standards for providing emergency water supplies to vulnerable communities. These Minimum Standards are based on agencies’ experience in Kenya and in other countries. They are qualitative in nature and specify the minimum levels to be attained by all those involved in implementation. They form a basis upon which implementation performance can be judged and implementing agencies be held to account. They are to be aimed for in implementation and there should be commitment to them. Examples include SPHERE standards and the Livestock Emergency Guidelines & Standards (LEGS). It is also important to point out that the special circumstances in the ASALs may make it difficult to achieve these “International Standards”. However, there ought to be guidelines that make socio-economic sense in trucking water to vulnerable communities.

3.1 Understand the Context in Which Implementation is Taking Place

Programmes or projects that meet the emergency needs of affected communities must be based on a clear understanding of the context. Initial assessments will analyze the nature of the emergency and its effect on the population and its livelihood strategies. For example, in the ASAL communities, provision of strategic emergency water needs for domestic use must incorporate a certain amount of water for livestock. If this does not happen, then there are chances that the little water provided will be shared between humans and livestock. Therefore when planning for emergency water supplies, this important consideration should be catered for. Strategic emergency water needs assessments provide an understanding of the emergency situation and a clear analysis of threats to life, dignity, health and livelihoods to determine, in consultation with the relevant authorities, whether an external response is required, and if so, the nature of emergency water intervention required.

Such an initial assessment should gather information in agreed upon approaches and methodology across all the assessment teams so that transparent decision making can be made. A good example here in Kenya is the short rains and long rains assessments done twice a year by the Government, the World Food Programme and other stakeholders. Local capacities and strategies to deal with the emergency, both of the affected population and the surrounding population, are identified. Estimates of population numbers are cross-checked and validated with as many sources as possible, and the basis for the estimate made known.

The assessment findings should be made available to other sectors, local and national authorities and representatives of the affected population. Recommendations are made on the need for emergency external assistance, and on the appropriate emergency water intervention that is based on feasibility and costs of the different options, cost–benefit analysis, existing water sources, water quality, effective management systems to ensure continued provision of water of acceptable quality and any policy constraints to water access. These should be linked with exit or transition strategies.
3.2 Assess Community Capacities, Vulnerabilities and Ensure Participation

The affected people’s capacities and available resources should be identified at the same time as assessing their needs and vulnerabilities and any gaps in essential emergency water services. For example, an assessment of whether Rapid Response Teams (RRTs), fast moving spares for boreholes, the condition of transport facilities for the RRTs, water fetching facilities of households are all in place is essential. Analysis of the causes and effects of the water emergency situation is critical. If the problem is not correctly identified and understood then it would be difficult, if not impossible, to respond appropriately. For example if a Water User Association does not manage a borehole properly and it leads to a breakdown and an acute water shortage ensues, the solution would be to fix the borehole within 24 hours and address the management problems instead of calling for Emergency Water Trucking.

The participation of communities affected by the emergency in the assessment, development, implementation, monitoring and evaluation of the emergency water intervention in order to ensure the appropriateness and quality of the response are important. The systematic sharing of knowledge and information among all those involved in the response is fundamental in achieving a common understanding of problems and effective coordination among agencies. Written programme objectives and plans should reflect the needs, concerns and values of those affected by the emergency, including the interests of special vulnerable groups such as women, children, those with physical disabilities or those living positively with HIV/AIDS. Participation should reinforce people’s sense of dignity and hope in times of crisis, and people should be encouraged to participate in the emergency water programme in different ways such that their capacities are built instead of their vulnerabilities being reinforced.

3.3 Consider Targeting Very Carefully

Emergency water provision should be provided equitably and impartially, based on the vulnerability and needs of individual households or communities affected by the emergency. The targeting criteria must be based on a thorough analysis of vulnerability and targeting mechanisms should be agreed among the affected population and other appropriate actors. In a drought emergency for example, nearly all communities will be putting in requests to the District Water Office or to the Drought Management Officer (of ALRMP) for emergency water trucking. Resources will not always be available to provide assistance to all of them and mechanisms on how to prioritize communities based on their vulnerability must be agreed upon.

Distribution points for the water for example should be monitored to ensure that targeting criteria are respected and that timely corrective action is taken when necessary. Cases were reported in some districts during this study where emergency water trucks were diverted from their destinations by powerful individuals, causing vulnerable groups to suffer. When a targeting system fails to reach all of the vulnerable households or groups in an emergency, people can quickly develop critical needs. Provision should be made for updating and refining emergency water distribution systems to achieve more effective coverage. In pastoralist communities in particular, population movements can be very rapid and an effective monitoring system needs to be in place to ensure that all the vulnerable groups are taken care of. Those nomadic pastoralists who have lost most of their livestock may come to a distribution center with a few of their surviving stock and this alters the needs significantly.
3.4 Monitoring of the Emergency Water Programme is Critical

The effectiveness of an emergency water project in responding to needs must closely be monitored and changes in the broader context continually appraised, in order to improve the project or to phase it out as required. For an emergency water project, the information collected for monitoring should be timely and useful and should be recorded and analyzed in an accurate, logical, consistent, regular and transparent manner such that it informs the on-going project.

The emergency water intervention should put in place systems to ensure regular collection of information in each of its aspects and to identify whether the indicators for progress, effects and outcomes are being met. Women, men and children from all affected groups should regularly be consulted and should be involved in monitoring activities.

The monitoring system put in place should enable a flow of information between the emergency water project, other sectors, the affected groups in the community, the relevant DSGs, donors and other actors as needed. Monitoring and evaluation activities require close consultation and cooperation across sectors. For example, during a cholera epidemic, information should be continually shared between water and sanitation agencies and the health agencies. Coordination mechanisms such as regular meetings and the use of notice boards can facilitate this exchange of information.

3.5 Evaluation of the Emergency Water Project Ought to be Done

Evaluation of an emergency water provision project is the systematic and impartial examination of the action, with the objective of drawing lessons to improve practice and policy and to enhance accountability. The project would be evaluated in reference to stated objectives and agreed minimum standards to measure its overall appropriateness, efficiency, coverage, coherence and impact on the targeted communities and groups. Such an evaluation would take into account the views and opinions of the affected communities and groups. The collection of information for evaluation purposes is independent and impartial and the results of each evaluation exercise are used to improve future practice.

Evaluating an emergency water project may not be easy because emergencies are characterized by rapid changes and a high degree of uncertainty particularly on target numbers, etc. While qualitative methods are more likely to capture the intricate nature of the emergency response, those evaluating such a project should be prepared to use different methods and compare and weigh the results to arrive at valid conclusions.

An important output from such an evaluation would be a written report that is shared with other agencies. This would contribute to transparency and accountability and allow for lessons to be learned across projects and agencies, leading to improvements in the delivery of emergency water interventions.

3.6 The Implementing Agency Should Have Experience, Competence and Capacity

Working in ASAL areas has sometimes been a challenge to government and humanitarian workers who are not originally from those districts. The training from the university and colleges in Kenya often does not orient employees to the realities of the conditions in the ASALs. For example,
pastoralism is a robust livelihood system that has survived the trials of disease epidemics, floods, droughts and other pressures associated with climate change, among others. It is a subsistence system in which livestock are kept first for subsistence and risk management purposes, then for cultural and other reasons and lastly followed by being kept for sale locally and in external markets. Although pastoralists are progressively and actively participating in the market, the production system is hitherto not for commercial purposes.

But a newly trained veterinarian posted to one of the ASAL districts goes with the mentality and attitude that those livestock kept by pastoralists should be primarily for export markets to benefit the livestock industry of this country. This is the training he or she has received. Therefore, in order to prepare these livestock for the international market, SPS standards have to be achieved and maintained. Only qualified veterinary professionals would bring about these standards. With this attitude the veterinarian would already be on a collision course with pastoralists because pastoralists largely rely on community-based animal health workers to treat their animals because qualified veterinarians are not readily available in those areas for a variety of reasons. Secondly, the pastoral production system is not a commercial ranching system geared towards producing livestock for the export market. With these, the veterinarian’s work becomes very challenging.

The point here is that aid workers in the ASALs must possess appropriate qualifications, attitudes and experience to plan and effectively implement appropriate programmes. Aid workers should have relevant technical qualification and knowledge of local cultures and customs, and/or previous emergency experience. They should also be familiar with human rights and humanitarian principles. They should be knowledgeable about potential tensions and sources of conflict within the relevant communities and should be aware of the implications of delivering emergency assistance, and pay particular attention to vulnerable groups. Finally, staff should be able to recognize abusive, discriminatory or illegal activities and refrain from such activities.

3.7 Capacity to Supervise, Manage and Support Personnel is Crucial

An intervention such as Emergency Water Trucking is very involving and requires a well organized management system to be put in place by the implementing agency. There are contracts with truck owners to be managed; field monitors at the community level; supervisors; drivers; distribution points to manage; vulnerable groups to be identified and their needs addressed; challenges with regular breakdown of trucks and water not reaching targeted groups due to bad roads, etc. The implementing agency must have the capacity to supervise, manage and support personnel on the ground. Managers within this agency should be accountable for their decisions and for ensuring adequate security and compliance with codes/rules of conduct as well as support their staff.

In addition, technical and managerial staff should be provided with the necessary training, resources and logistical support to fulfill their responsibilities. Staff working on specific projects should be able to understand the purpose and method of the activities they are asked to carry out, and receive subsequent feedback on their performance.

To summarize this section, it is important to point out that the above Minimum Standards are for implementation of emergency interventions, which includes water sector interventions e.g. Emergency Water Trucking. They are general but provide the foundation of designing appropriate,
relevant, effective and efficient emergency projects that will deliver assistance to affected populations, communities and groups in a timely fashion. All agencies involved in emergency interventions, particularly in the water sector must strive to meet these Minimum Standards.
Chapter 4 – EMERGENCY WATER TRUCKING GUIDELINES FOR KENYA’S ASALs

This section of the report focuses on guidelines for implementing agencies for emergency water trucking as well as providing funding agencies (government, donors and other stakeholders) with a checklist to help them in making funding decisions for emergency water trucking proposals submitted from the field. The aim of these guidelines is to contribute to lesson learning and improve best practice in emergency water trucking. From this study, good standards were evident in some of the NGOs implementing EWT projects e.g. RACIDA in Mandera, CODES in Samburu and GAA in Kajiado Central district. Combining this experience here in Kenya and that from elsewhere, has resulted in the preparation of these guidelines.

4.1 The importance of Water Supplies in Emergencies

Water is essential for life, health and human dignity and for pastoral areas such as the ASALs, for the survival of the livestock as well. In extreme situations, there may not be sufficient water available to meet basic needs, and in these cases supplying a survival level of safe drinking water is of critical importance. In most cases, the main health problems are caused by poor hygiene due to insufficient water and by the consumption of contaminated water. One of the objectives of water supply and sanitation in emergencies is to reduce the transmission of faeco-oral diseases and exposure to disease-bearing vectors through the promotion of good hygiene practice, the provision of safe drinking water and the reduction of environmental health risks and by establishing the conditions that allow people to live with good health, dignity, comfort and security.

Box 4.1: Water of intermediate quality but of sufficient quantity may be preferable

In extreme emergency situations, until minimum standards for both quantity and quality are met, the priority should be to provide equitable access to an adequate quantity of water even if it is of intermediate quality, rather than to provide an inadequate quantity of water that meets the minimum quality standard. Particular attention should be paid to ensuring that the water requirements of livestock and other livelihoods-based assets or strategies are met, especially in drought situations where lives and livelihoods are dependent on these. A rule of thumb would always be to discuss with those affected and determine what is best for them. This will probably vary from place to place in the ASALs but the most important point is not the variation but rather agreed upon guidelines and standards.

4.2 EWT Projects Must Ensure Access and Water Quantity

In EWT, it is important to ensure that all targeted people and groups and/or livestock have safe and equitable access to a sufficient quantity of water for drinking, cooking and personal and domestic hygiene. That public water distribution points are sufficiently close to households to enable use of minimum water requirement. In addition, it is important to ensure that water sources and systems are maintained such that appropriate quantities of water are available consistently or on a regular basis. In other words, the EWT project should be involved in ensuring that the source of water is maintained and has capacity to provide water as long as the EWT project is still necessary. This might mean providing WUAs with incentives such as fuel or fast moving spares.
4.3 EWT Projects Must Ensure Good Water Quality
As much as possible, it is important to ensure that the water supplied for drinking by humans is palatable, of sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health. An analysis of the water quality prior to trucking should show a low risk of faecal contamination. People should drink water from a protected or treated source in preference to other readily available water sources. In addition, steps must be taken to minimize post delivery contamination.

For all water supplies at times of risk or presence of diarrhea or cholera epidemic, water is treated with a disinfectant so that there is a free chlorine residue at the tap or storage tank of 0.5mg per liter and turbidity is below 5 NTU. No negative health effects should be detected resulting from short-term use of water contaminated by chemical or radiological sources, and regular analyses should show no significant probability of such an eventuality. In ASALs, most water trucked is from boreholes which should be quite safe, unless the truck itself or fetching facilities are contaminated.

4.4 EWT Projects could consider Incorporating Hygiene Promotion
Target groups of EWT should be involved in the management and maintenance of hygiene facilities where appropriate. An assessment should be carried out to identify the key hygiene behaviors to be addressed and the likely success of promotional activity. The key risks are likely to center on excreta disposal, the use and maintenance of pit latrines, the lack of hand washing with soap or an alternative, the unhygienic collection and storage of water, and unhygienic food storage and preparation. The assessment should look at the resources available to the households in the target community as well as local behaviors, knowledge and practices so that messages are relevant and practical.

In addition, implementing agencies should ensure that adequate facilities for collection, storage and use of sufficient quantities of water for drinking, cooking and personal hygiene are available. This will ensure that drinking water remains safe until it is consumed. For example, each household should have at least two clean water collecting containers of 10-20 liters, plus enough clean water storage containers to ensure there is always water in the household. Many have argued that in the ASALs, the promotion of hygiene and sanitation is of secondary importance and that the key should be to deliver water of adequate quality for drinking and domestic use. However, outbreaks of cholera in Turkana, Laisamis district and other ASALs districts during the
2008-9 drought emergency should be a pointer to the fact that it is important to provide hygiene and sanitation education and awareness.

**Box 4.2 Importance of collaboration, cooperation and coordination among agencies**

One important point to note in all these guidelines is that the implementing agency does not need to do all these single-handedly. The Ministry of Health and other health sector actors play a vital role in hygiene promotion for example and they should be part of the collaborating partners in an EWT intervention. The Ministry of Water & Irrigation and the Water Users Association in charge of the borehole (water source) will be major players in ensuring that there is adequate water all the time for the EWT to be effective. Collaboration, Cooperation and Coordination are therefore very important aspects in implementing EWT projects.

**4.5 Issues Around Emergency Water Trucking**

Emergency Water Tankering (EWT) is a common method for delivering water immediately after an emergency has happened while more long term measures are being put in place; in cases where the emergency is thought to be temporary and the situation will return to normal soon; and where security and political problems make it difficult to change to a more sustainable approach. However, over the last five years, there has been a rise in the use of EWT, almost as the default intervention, to provide emergency water to vulnerable communities in the ASALs.

However, there has been a continuing concern over sustainability and cost-effectiveness of emergency water tankering interventions in Kenya. Water tankering should be a temporary solution, considering that it provides a very fragile water supply (risk of mechanical and human failure), is expensive and unsustainable. However it is argued that these concerns can deter aid agencies from delivering much needed water especially where there are no alternative water sources.

The EWT concerns have been discussed in several forums in Kenya from time to time but no concrete guidelines have been developed on operation and phasing out of the EWT. The effectiveness of EWT in response to drought has not been matched by efficiency in phasing it out. The EWT activities have often become an annual event in some of the ASALs. For instance some settlements in Arid and Semi-Arid Lands (ASALs) are almost wholly dependent on EWT as a source of water supply, the dependency starting as early as 2 months after the rains. It has been universally agreed that more sustainable systems need to be sort for supplying water to communities that are perennially dependent on water tankering.

**Box 4.3 Emergency Water Trucking is the price to pay for neglecting long term development**

While the debate on whether to truck water or not rages, it is important to realize that there is a huge opportunity cost of the funding that goes to EWT. If possible, EWT should be avoided because it is expensive and difficult to organize. If there is no viable solution to the water problem, people should be relocated. If relocation is a politically difficult decision to make, then the government must be responsible for financing continued emergency water trucking to these communities. It has to be remembered that EWT is only a symptom of the problem. The main cause of inadequate water supplies in the ASALs has to do with three legacies: Poor development of water resources resulting in inadequate availability, access and reliability; weak institutional infrastructure to develop and manage water resources and a lack of prioritization of the water sector on the government agenda, both in terms of policies and practices as well as financing and planning.

**Source:** Water Resource Management Authority of Kenya (October 2005)
4.6 The Opportunity Cost of Emergency Water Trucking

There is emerging evidence that poor pastoralist households that own mainly sheep and goats (shoats) can be prevented from falling out of pastoralism and become destitute by protecting their core breeding flock during drought emergencies. A viable flock for a household of 6 people is between 50-70 shoats, with a high proportion of goats, probably 70%, because goats are harder than sheep and are browsers. In addition, they easily multiply through their high propensity for twinning. Of course most poor pastoralist households will own more than 50 shoats. But let us assume that the drought is so severe that such households are at risk of losing most of their flock. They will definitely move even to the furthest operational water source to find water for their flock. However, the constraint would be pasture and browse.

Lessons from recent droughts show that supplementary feeding of shoats using minimal concentrate feeds, accompanied with de-worming and other veterinary care, where water is available, will keep these animals healthy and productive (in terms of providing the family with milk) even at the height of the emergency. Provision of concentrate feeds at the rate of 250 g per goat per day is what is required as the animals supplement this by foraging and browsing around within 15-20 km of a reliable water source.

Now, the budgetary provision for most EWT projects is between 25-30 million Kenya shillings for a period of 6 months. If EWT has to continue for one year, this would be 50-60 million Kenya shillings. This same amount is able to keep 400 households alive by protecting their core breeding flock of 50 shoats per household for one full year using supplementary concentrate feeds. Such an intervention would be livelihoods-saving and would provide a much faster opportunity for such households to recover from drought.

Another example of an opportunity cost of EWT is the drilling and equipping of a contingency borehole. A contingency borehole is one that is drilled in an area with a lot of pasture and browse but with little or no water to enable the utilization of the available pasture and browse. Households would move and settle here temporarily until the drought is over. However, there would be agreement that immediately the drought is over, the equipment would be dismantled and kept until the next drought. It may cost between 5-6 million Kenya Shillings to drill and equip such a borehole. Compared with EWT, this is 10% of the cost in a year and yet communities and livestock would be assured of a permanent and reliable water source.

Politically, it is very difficult to enforce the use of contingency boreholes because politicians and the government are interested in settling pastoralists and establishing administrative centers in the name of bringing services closer to the people. But when politicians and the government will be faced with the reality of the cost of EWT, weighed against the costs of a contingency borehole, they will think twice. But for now, the cost of EWT is being passed onto donors and NGOs and therefore the government and politicians can afford to insist on EWT to communities that may not even be eligible.
4.6 Preliminary Assessment Before Embarking on an EWT Project

In view of the fact that EWT is expensive and difficult to organize, it is important to ask important questions before a decision to proceed with the activity is taken. The implementing agency, together with the District Steering Group should ask the following questions:

1. Why is the affected community in need of EWT?
2. If EWT was not possible because of lack of funding or some other reason, what is the second best option to EWT?
3. Has a cost/benefit analysis of all the options of providing water been undertaken? Has this been discussed with representatives of affected communities? (Options include relocation, fixing sources in disuse, community contributes at least 50% of the total cost of the operation, if it is a permanent settlement);
4. Has an initial assessment been done to determine which community or group requires water through EWT, for how long and how will the activity exit from the community?
5. Does the proposed implementing agency have the capacity to organize and manage an EWT intervention according to the suggested guidelines for implementation?
6. Which organizations are likely to be collaborating with the implementing agency in the EWT project and have these organizations been consulted?
7. What role is the affected community likely to play in the EWT intervention?
8. For how long is the community or the affected population likely to need the EWT intervention?
9. What are the likely positive and negative impacts of carrying out this intervention?
10. How long will it take to develop or rehabilitate other alternative sources of water? What is likely to happen during that waiting time?

Once these preliminary questions have been asked and it is clear that the best option is for the EWT intervention to proceed then questions in the decision making tree below should now be answered in detail.
Fig. 4.1 below assists implementing agencies to make a decision on whether to proceed with EWT or not.

**Decision Tree for Emergency Water Trucking**

1. Is there a high short-term risk of human and livestock mortality due to water shortage?
2. Are water sources of sufficient quantity and quality available within trucking distance?
3. Can adverse effects on existing users of these sources be avoided?
4. Can potential conflict over water use (e.g., Human versus livestock) be avoided?
5. Are there sufficient resources (logistical, financial, transport) to support water trucking operations?
6. Are there secure and viable routes?
7. Can water distribution from trucking be managed in conjunction with the local community?

**Emergency Water Trucking**

**Modified from Livestock Emergency Guidelines & Standards (LEGS 2009)**

### 4.7 EWT as the Intervention of the Last Resort

It is generally agreed among stakeholders in Kenya that EWT should be an intervention of the last resort. But what is the last resort? What must trigger an emergency water trucking intervention? This question was discussed at length during the stakeholders EWT workshop held at the Holiday
Inn in Nairobi on the 15th of September 2009. The following are some of the suggestions of indicators that would trigger an emergency water trucking intervention:

- Evidence that there is a high risk of loss of human life and livestock if no water is trucked;
- Evidence of no previous EWT activity in that community or settlement because EWT should not address chronic water crises but rather emergency ones;
- The community should not be a new settlement; all new settlements should not be allowed without a permanent and reliable water source, unless it is an IDP camp where groups had no choice of where to settle;
- There must be a critical mass of people for EWT to be effective with maximum impact. In pastoralist areas, this could be 300 households or more; if not they should relocated, albeit temporarily, to a place where there is a regular supply of water;
- The location of delivery must be above a certain distance to an alternative water supply. In pastoralist communities 15-20 km to a water source is acceptable. This means that if a community or settlement is within 15-20 km of a reliable water source, no trucking of water should be considered;
- The location of delivery must be below a certain distance for it to qualify for EWT. From experience during the current drought in North Eastern Province i.e. Mandera district, the furthest water should be trucked on poor rough road is 80km;
- Failure of an existing source of water can justify EWT while repairs are being undertaken;
- Institutions such as schools and health facilities should be prioritized for EWT;
- A poverty index could be employed to determine the most vulnerable communities such as displaced persons, who need the EWT services;
- There must be a marked percentage reduction in normal water needs per person per day;
- There must be some level of de-stocking of livestock as an indicator, where this is appropriate;
- Use of Traditional Coping Strategy should be incorporated into the EWT;
- EWT can be implemented to save livestock (productive asset) of pastoralists as long as the livestock are in areas where there is pasture but no water during the drought; small stock (goats) will be given preference, since they require less water and are more likely to survive;
- The cost of trucking one cubic meter of water per kilometer should not exceed WFP’s contractual rates for transporting one ton of food per kilometer in the same location;
- If permanent settlement, center or town, evidence of community contingency funds for emergency water trucking should be produced, i.e. community contribution of up to 50%;
- All conditions for undertaking an EWT should be fulfilled i.e. from Minimum Standards for emergency water supply to guidelines for undertaking an Emergency Water Trucking intervention as provided by the Ministry of Water & Irrigation.

The above suggested checklist should be scrutinized thoroughly to justify an emergency water trucking intervention. Once there is satisfaction among all the relevant stakeholders, including representatives of the affected populations or groups, the process of planning the EWT intervention should begin.
4.8 Step-by-Step Process for Implementing an EWT Intervention

As pointed out earlier, if possible emergency water trucking should be avoided. It is expensive and difficult to organize. If there is no viable solution to the water problem, people should be relocated. For example, if there was no possibility of drilling water in the Dadaab Refugee Camp in Northern Kenya, the Refugee Camp would not be there by now because trucking water from other far distance sources would not have been feasible. The same principle should apply with settlements or centers.

Step 1 – Planning the operation

- **Assessment and exploitation of the water resource.** Obtain clearance from relevant authorities, owners or current managers of the water source. Agree with them on the terms of water use e.g. how much to pay for a 25,000 liter truck per trip; what other incentives you may provide e.g. fast moving spares or capacity building, etc.

- **Abstraction levels:** The usual water source is either a surface-water treatment works, or a groundwater pumping station from a borehole or well. In this case, the quantity abstracted must be compared to the exploitation flow, so as not to over-exploit the resource. Pumping tests could be carried out to ascertain this. Bacteriological and physicochemical analyses are always necessary to ensure safety of drinking water.

Step 2 – Targeting beneficiaries of EWT

- **Eligibility Criteria:** Ensure that from the initial assessment those being targeted to benefit from the EWT are eligible and are clearly known in terms of their numbers, location, special requirements by vulnerable groups e.g. the aged, people with disabilities or People Living With Aids (PLWA); and for how long the operation is likely to be on;

- **Facilitate the election of community representatives from target beneficiaries:** This group, comprising of women, youth and men will oversee distribution of water and will monitor water deliveries by the different trucks in terms of schedules, quantities, quality, etc. This team will become the main contact point to the community and to target beneficiaries and communication will be maintained with this team of representatives;

- **Route to be used to different centers:** Survey the route to be used by the trucks to ensure that it is passable and it is the shortest possible route to the communities targeted. The cost of transport is per kilometer and it is important to ascertain this because of the high costs involved.

Step 3 – Assessing the demand and cost for water

- **Demand for water:** This should be based on the best estimates of the population and should be calculated bearing in mind that the population may increase suddenly due to one reason or another. Water availability usually draws other people to distribution points or centers.
- **Minimum water requirements:**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum for survival</td>
<td>3-5 liters/day</td>
</tr>
<tr>
<td>Minimum for basic domestic use</td>
<td>15 liters/day</td>
</tr>
<tr>
<td>Health centers and hospitals</td>
<td>5 liters/day/outpatient</td>
</tr>
<tr>
<td>Day schools or administrative institutions</td>
<td>3-5 liters/day/child/worker</td>
</tr>
<tr>
<td>Boarding schools</td>
<td>15 liters/student/child/day</td>
</tr>
<tr>
<td>Cholera centers</td>
<td>60 liters/day/person +15 liters for carer</td>
</tr>
<tr>
<td>Livestock</td>
<td>Shoats – 5 liters/day; large stock – 20 liters/day</td>
</tr>
</tbody>
</table>

NB: Note that the 15 liters per person per day is a SPHERE standard developed for IDP camp conditions and may be totally inappropriate for pastoral communities in northern Kenya. But this does not mean that there should be no standard for water quantity for northern Kenya. This is why the MoWI should come up with realistic standards. However, in this report, the figures used for water needs per person per day are from SPHERE and are used to illustrate calculations for water demand only.

- **Water trucking schedules and cost:** It is important to establish how much water people need and how much they are actually using at the moment. This can be cross-checked by a quick household survey and at static storage tanks or underground tanks in the village. But in order to establish water trucking schedules, the amount of water required has to be worked out. The following example will suffice:

<table>
<thead>
<tr>
<th>Example: An IDP camp was established in Mandera after the clan clashes in 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water had to be trucked along a rough 10 km road from the nearest borehole to the camp</td>
</tr>
<tr>
<td>Number of IDPs – 10,000 people</td>
</tr>
<tr>
<td>Water requirement per person per day – 15 liters</td>
</tr>
<tr>
<td>Daily water requirement for 10,000 people – 150,000 liters</td>
</tr>
<tr>
<td>Allow 20% wastage and for new arrivals – 30,000 liters</td>
</tr>
<tr>
<td>Total amount of water to be trucked – 180,000 liters</td>
</tr>
<tr>
<td>5,000 liter trucks were readily available and appropriate on the Mandera roads. These were privately owned and had to be hired.</td>
</tr>
<tr>
<td>Estimate of journey time from borehole to distribution points within the camp. One way journey time@20 km per hour was 30 minutes.</td>
</tr>
<tr>
<td>The borehole pump was discharging at 5 liters/second. Time to fill a 5,000 liter truck would be 17 minutes.</td>
</tr>
<tr>
<td>Off-loading is by gravity through a 75 mm diameter horse pipe. Each distribution point was chosen to give a 1.5m head difference between tanker outlet and receiving tank. This allowed a tanker to discharge by gravity in about 6 minutes.</td>
</tr>
<tr>
<td>To calculate the turnaround time (total delivery time plus the return journey for each truck)</td>
</tr>
<tr>
<td>Time to fill truck - 17 minutes</td>
</tr>
<tr>
<td>Journey time from filling to distribution point - 30 minutes</td>
</tr>
<tr>
<td>Time for off-loading - 6 minutes</td>
</tr>
<tr>
<td>Return time to borehole -30 minutes</td>
</tr>
<tr>
<td>Net turnaround time - 83 minutes</td>
</tr>
<tr>
<td>Add 30% for contingencies - 25 minutes</td>
</tr>
<tr>
<td>Gross turnaround time – 108 minutes or 1.8 hours</td>
</tr>
</tbody>
</table>
• The number of journeys and trucks or tankers required can now be determined. If we include a contingency time for rest for the truck crew and for refueling etc and because the distribution points were all within the camp, the number of deliveries per tanker in a day would be:

• Working hours in a day/gross turnaround time = 12/1.8 hrs = 6(a)
  
  Total number of deliveries in a day = daily water tankered = 180,000/5000 = 36(b)
  Number of tankers required is b/a = 6

• Summary: A total of 6 tankers of 5,000 liter-capacity were required to make 6 deliveries each per day to supply enough water at 15 liters per person per day for 10,000 people

We could even calculate the cost i.e. 6 trucks x 5m³ of water each x 10 km x 23/= per km per m³ x 6 trips = KES 41,400.00 per day. For 6 months this would be: 6x30x41400=KES 7,452,000.00. This cost does not include administration, personnel and other hidden costs such as the time for community participation in the project, etc. In addition, it is EWT to only one area, the refugee camp. More areas will require more funds, more organization and more trucks.

Step 4 – Management Issues

• Establishment of an EWT team within the implementing agency: EWT must be well organized and closely managed. It is important a team of staff or employees within the organization are dedicated to managing this operation. There will be an overall officer in charge, then a supervisor in charge of transport and another in charge of distribution. A field monitor is required at each distribution site to work closely with community leadership on the ground in order to organize water distribution. Then administrative personnel to manage contracts with truck owners and to keep the accounting up to date.

• Develop management tools: This involves designing contracts with truck drivers, designing monitoring sheets detailing which data needs to be collected and monitoring report formats including allocation of responsibilities for data collection and reporting regimes within the management team. Examples of information to be kept include the following:

<table>
<thead>
<tr>
<th>RACIDA: Mandera District EWT Monitoring File (Example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck Details: KAB 657M – 20,000 liter capacity</td>
</tr>
<tr>
<td>Owner: Abdalla Hussein</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>-------</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Needs Coverage Table: RACIDA EWT Wargadud Division – September 2009 (Example)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site</td>
</tr>
<tr>
<td>No. of sites total</td>
</tr>
</tbody>
</table>
• **Train staff and community committees**: It is extremely important for all staff and community monitoring committees to be trained so that they can all understand the EWT operation and what ought to be done right from planning, transportation, distribution and exit strategy. They need to know which information to collect and which forms to fill and report back at what intervals.

• **Establish clear communication channels**: Communication channels with the public (those who may be enquiring about the EWT; field monitors and the community committees at each distribution site; within the management team; with the DSG or overall coordination body in the district e.g. EWT DSG sub Committee must be clear and responsibilities clearly outlined. For example only the field monitor or the Community Committee chair may call the overall manager of the EWT from the distribution site to request for information or clarification, support, etc.

• **Identify the most suitable transport**: It is important to identify the most suitable transport based on the condition of the road network, volumes desirable, distances to be covered etc. Always ask which transport is most appropriate? What capacity (load) can the route sustain? Are there bridges that a 25,000 liter tanker might not use to reach certain villages? What was the tanker used for before? How well was it cleaned for purposes of EWT? Are the tankers adequately maintained by the owners? Whichever tankers are selected, they must be cleaned with detergent and chlorinated before they can be used for EWT.

• **Develop and sign contracts with truck owners**: Contracts should stipulate delivery targets and means of payment based on amount of water delivered. Agree on the method of measuring quantity of water delivered from the outset. Establish a monitoring and recording system as shown by the above examples. Contracts must detail various aspects in particular with clauses which clearly identify the hire company’s responsibility i.e. hire of the vehicle itself, without mileage limits; wages of driver and assistants; insurance; maintenance of the truck and possibly supply of fuel and oil; responsibility in case of accident, fire or theft; etc. In addition, some special clauses may be added, such as the possibility of changing the driver if unsatisfactory, or reporting the truck in case of prolonged breakdown, etc.

With regard to trucks, it is probably advisable that the government does not operate Emergency Water Trucks. This is because it requires considerable care, supervision and management. These capacities are not necessarily available within the Ministry of Water & Irrigation or even the Arid Lands Resource Management Project. It may be proper that if the Government has trucks, it should contract this out to the private sector, which might maintain them better, deliver water to vulnerable communities at the right time and in the right quantities and will maintain a much more accountable and transparent EWT system.

**Step 5 – Water distribution**

• **Identification of distribution sites**: These sites should be identified on the basis of: 1) Fair and equal distribution of the water; 2) Easy access and turnaround space for trucks/tankers; 3) Good drainage from the distribution point; 4) Space for storage to give a 24-hr reserve; and 5) The development of the site for ease of off-loading, increased storage and improved
Avoid direct distribution from the tanker: Direct distribution by water tanker is to be avoided for obvious reasons, including long discharge times, poor hygiene, difficult crowd-control etc. It is indispensable to set up specific distribution points or use existing distribution systems. Distribution points should be as close as possible to dwelling areas. The trucks must be able to maneuver without difficulty to supply the storage tanks. These tanks are connected to one or more tap stands depending on the layout of the site.

Establish a well organized system of distribution: Do people have sufficient containers in which to collect water and how will they be filled? Some containers have small filler holes resulting in spillage and a lot of wasted water. Can the containers be filled from the taps of the static storage tanks? Can tankers off-load at high speed? (Trucks are expensive to run and should be used to transport water, not to distribute it). In terms of controlling crowds waiting for water, use roped queues to control them. Ensure people know that there will be a regular distribution so that you ease anxiety. Try to build up adequate water stocks quickly. To avoid chaos on the first day, it is important to be ready and organized during the first distribution.

Tankers should discharge water into plastic storage tanks with taps: There are several advantages of this: 1) the tankering operation is separated from queues and possible unrest; 2) reduced tanker turnaround time; 3) tankers discharge more quickly into the static storage tanks than into individual containers. Reduced turnaround time for trucks means more trips of water can be delivered; 4) people do not need to queue for long to collect water from the tanks much more easily; 5) static storage tanks provide a reserve of water for when there is a break in supply; 6) the storage of water can have a beneficial effect on the quality of water because suspended solids in turbid water have time to settle in the storage tanks.

Encourage hygienic operations: Hygiene could be essential in EWT operations and should form part of the intervention, where appropriate. This is because water can easily be contaminated at the source, in the trucks, during distribution or in the containers that households use to fetch water. Therefore: 1) provide containers for collection and storage; 2) provide community support and hygiene promotion; 3) pipe the water to storage tanks and then to water kiosks or temporary tap stands; 4) chlorinate the water supplied preferably when the water is in the trucks; and 5) liaise with health workers to identify any change in water borne disease incidence.

Step 6- Plan the exit strategy from the on-set
During the dry season in the ASALs, people suffer from a level of water stress that could justify an intervention. But knowing that EWT is an emergency response that should not be implemented each year, clear indicators must be defined in order to decide on the beginning of the intervention and its end. These indicators, linked to rainfall and economic parameters, are not easy to define objectively and are not always understood and accepted by the authorities and communities concerned.

Therefore, the exit strategy must be anticipated before the beginning of the water trucking
operation. Exit strategies involve more sustainable solutions in many cases. They depend on the context, and the main scenarios should be anticipated. Criteria to end water trucking operations must be carefully defined from the beginning and respected in order to avoid any negative effects such as creation of dependency. This is especially important in cases where the exit strategy does not lead to the construction or rehabilitation of longer-term water supplies. Such criteria should be clearly communicated to communities and local leaders and politicians should facilitate community understanding of the termination of the water trucking operation.

Other important aspects to consider in the exit strategies are the attitude of the authorities and the political decisions regarding future infrastructure development and settlement planning. In the case of displaced populations, where permanent infrastructure construction encourages people to settle, the exit strategy is a political decision that must be carefully discussed at local and national level. In some cases, water trucking can be replaced by cheaper intermediate solutions (e.g. emergency distribution systems) that don’t necessarily encourage permanent settlement. These are more appropriate in pastoral contexts of the ASALs. A good example would be emergency drought contingency boreholes discussed earlier.

Step 7- Undertake participatory monitoring and evaluation

EWT, like any other intervention has specific objectives to be achieved over a specific project timeframe. The formulation of the proposal should be very clear on the purpose and expected results of the intervention. The indicators have to be Specific, Measurable, Achievable, Realistic and Time bound (SMART). The initial assessments on vulnerability, risk, targeting, numbers of those affected, water borne disease prevalence, hygiene and sanitation, minimum standards for emergency water requirements for domestic and livestock use, etc should all form baseline and indicators upon which progress in implementation as well as monitoring the effects and impacts of the project are based.

It is important to emphasize that M&E should involve communities, beneficiaries, local leadership, the DSGs and any other relevant stakeholders. The evaluation at the end of the project should be independent and external of the implementing agency. An external evaluation report should be produced and should be shared widely with relevant stakeholders. The experience from implementation and the lessons learned should inform policy change and best practice as appropriate.

4.9 Alternatives to Emergency Water Trucking

If it becomes clear that populations are going to be settled in a place for long i.e. for more than one year and this place suffers chronic water shortages, then emergency water trucking is not appropriate and alternative should be sought. These alternatives include the following:

1. **Re-location**: Households in pastoralist areas are mostly mobile anyway and if they know that water is going to be a constraint, they will want to move to a place where they are near a more reliable water source such as a pan or borehole;

2. **Investment in more permanent underground sources**: In the ASALs boreholes or deep wells are probably the most reliable water sources. However, these are expensive to develop and maintain and in most cases is a big challenge for pastoralist communities because community
water supply systems have very many challenges ranging from poor governance, lack of adequate community participation and involvement in the management of the water source; inadequate technical skills to provide sustainable operation and maintenance; financial mismanagement and other cross-cutting issues such as environmental degradation around permanent water sources and the potential for settlements to be established. However, where management is good and there are strict guidelines for water development, this is probably the best option.

3. **Improve water harvesting in the area**: Rainfall is little and erratic in arid districts. But there is still potential for increasing water harvesting through the construction of large pans that can serve a big population of humans and livestock. In Kajiado Central, GAA has been encouraging roof catchment as a way of harvesting rain water mainly in schools that have large roof catchments. A large masonry storage tank (100m$^3$-200m$^3$) is constructed and this can serve the school for a long time. In north eastern province, the concept of large underground water tanks (berkads) is quickly picking up. It is a technology that harvests surface runoff and stores water to be used during extreme dry periods. It has proved very useful to some of the semi-nomadic households. Rock catchments, and sub-surface dams still have great potential in certain parts of the ASALs.

4. **Consider a combination of technologies**: More water secure communities in the ASALs have combined roof catchments, pans, underground water tanks, boreholes and good storage. All these sources are used at different times of the year. For example, once it rains, the 10,000 liter storage tank will serve a certain number of households for some time. Once this is exhausted, the pan will follow and when the pan dries up households revert to underground water tanks. The borehole is the last source of water when all others have failed. It is when the borehole breaks down that households think about emergency water trucking.

5. **Undertake a cost/benefit analysis for piping water to settlements or centers**: Piping and reticulation systems were never considered appropriate in the ASALs in the past because of mobile pastoralism. But lifestyles are changing and no one family today can be considered to be purely mobile. Households require health services, education facilities for children, food aid, cereals and grain from the market centers etc. More and more lifestyles are becoming semi-sedentary. It is probably time to consider piping water to places that may even be up to 30 km a way from a permanent water source such as a spring or borehole in order to serve centers that are water deficient. This has happened in parts of Isiolo North district where market centers previously without water now have a consistent supply of potable water. In Walda in Moyale district, there is a very high yielding borehole and piping is being considered to provide water to underserved neighboring centers. However, there are limitations to the extent this can be done on a large scale because it depends very much on the water source.

6. **Consider using drought contingency boreholes and enforce the law**: The concept of contingency boreholes makes a lot of sense. A borehole is drilled in a location with a lot of pasture and browse but with limited or no water during the dry season. This borehole is equipped and used only when it is dry or when there is a drought. Once it rains, the equipment is dismantled and kept away until when it is absolutely necessary to use the equipment again. In Isiolo North District, Borana elders have used their authority in traditional natural resource
management to enforce the use of 3-4 contingency boreholes in this manner for a long time. The only risk with contingency boreholes is lack of enforcement of the law and conditions. Many times, this will be politicized and administrators will demand continuous use of the borehole regardless of the season and soon it no longer is a contingency borehole and a settlement comes up right in the grazing areas, completely undermining the ecosystem balance in the area. But it is an option with great potential.

In summary, it may be fair to conclude that the District Focus for Rural Development Strategy (1984) and later the Sessional Paper No. 1 of 1986 on Economic Management for Renewed Growth acknowledged increasing budgetary constraints, as it was becoming clear that the government could not deliver water to all Kenyans by the year 2000. But it is true that it is not just budgetary constraints that are the impediments. Conflicts and competition over diminishing water resources, uncontrolled catchment degradation, deterioration in water quality, the slow pace of water resource development due to lack of prioritization, particularly in the ASALs, low coverage of water and sanitation services and inadequate investment in more long term and sustainable water resource development technologies are probably the culprits as opposed to budgetary constraints. As long as the government continues to use the same approach in water resource development and management, it is unlikely that we will see the end of emergency water trucking in the ASALs of Kenya.
Chapter 5 – RECOMMENDATIONS FOR FUTURE CONSIDERATION

The following recommendations and suggestions are made for future consideration:

1. FAO should circulate this report to all relevant districts currently undertaking EWT interventions with a view to providing implementing agencies and DSGs with a framework for reflecting on what they are doing so that they can document the lessons learned and their experiences with implementation of EWT projects. Simple lesson learning documentation formats could be developed and forwarded to districts and agencies along with this report.

2. WESCOORD should be used as an avenue through which the outputs of this assignment are discussed and taken upwards in order to influence policy within the Ministry of Water & Irrigation with a view to establishing standards and guidelines for EWT.

3. Government and donors should not fund EWT projects without due consideration of other longer term options based on cost/benefit analyses. Any funding should be based on Minimum Standards and guidelines for EWT developed and enforced by the Ministry of Water & Irrigation and the National Environmental Management Authority.

4. There is an urgent need for a comprehensive GoK plan for the development of a more appropriate water resource development and management plan in the ASALs in order to avoid EWT and the dependency it is creating in communities. Such development should incorporate traditional water management strategies and institutions that will enforce proper water development strategies against upcoming settlements. Land use and settlement patterns should be rationalized.

5. Care must be taken to avoid the creation of new permanent water sources indiscriminately as these could cause conflict over water resources. Emphasis should be put on expanding and rehabilitating existing water sources. Traditional institutions should participate effectively.

6. Where there is pasture and browse for livestock but water is lacking, priority should be given to saving the core breeding herd of goats because they are hardier than sheep and are likely to survive the drought with minimum inputs from EWT and supplementary feeding with concentrates. However, this should not be prioritized over water for domestic use if human life in this particular location is at risk.

7. The use of drought contingency boreholes such as is the case in the Isiolo North district should be explored further with the view to adopting and enforcing this model in other districts. In addition, more resources should be spent by government in expanding water harvesting structures, both in terms of roof catchment and massive storage tanks (for institutions such as schools and hospitals – based on the GAA model in Kajiado) as well as massive underground water tanks based on examples from North Eastern Province.

8. The Ministry of Northern Kenya and other Arid Lands should come up with a clear policy on creation of new districts and settlements in the ASALs. Any new settlement must have the first criterion as the availability of a permanent water source away from the grazing areas. There should be legal consequences where such criteria are flouted.
ANNEXES
Annex 1 – Terms of Reference

Background
Emergency Water Tankering (also called water trucking) can be used to quickly supply water to people when damage or failure of the usual water supplies, drying up of the supplies due to drought or contamination by flooding or human activities has occurred. It may also supply water to refugees or internally displaced persons (IDPs) in camps.

Emergency Water Tankering (EWT) is a common method for delivering water immediately after an emergency has happened while more long term measures are being put in place; in cases where the emergency is thought to be temporary and the situation will return to normal soon; and where security and political problems make it difficult to change to a more sustainable approach. In the last case, tankering may continue for long periods – sometimes for years.

There has been a continuing concern over sustainability and cost-effectiveness of emergency water tankering interventions in Kenya. Water tankering should be a temporary solution, considering that it provides a very fragile water supply (risk of mechanical and human failure), is expensive and unsustainable. However it is argued that these concerns can deter aid agencies from delivering much needed water especially where there are no alternative water sources.

The EWT concerns have been discussed in several forums in Kenya from time to time but no concrete guidelines have been developed on operation and phasing out of the EWT. The effectiveness of EWT in response to drought has not been matched by efficiency in phasing it out. The EWT activities have often become an annual event in some of the ASALs. For instance some settlements in Arid and Semi-Arid Lands (ASALs) are almost wholly dependent on EWT as a source of water supply, the dependency starting as early as 2 months after the rains. It has been universally agreed that more sustainable systems need to be sort for supplying water to communities that are perennially dependent on water tankering. The creation of dependency amongst the community and the high costs associated with EWT mean that timely phase-out is imperative.

Phasing-out of EWT requires provision of a reliable (quantity and quality) alternative source of water to the community. A good phasing-out strategy by the government and the aid agencies in Kenya is not available. Therefore successful and safe phasing-out of EWT needs to be documented for the existing and upcoming practitioners of EWT to follow.

Agencies counteract others in their strategies and interventions i.e. there are no proper coordination and information sharing on who is doing what where. WESCOORD has tried to initiate information sharing amongst water and sanitation players with limited success. Coordination of EWT interventions sometimes happens at the district level via the District Steering Group (DSG). There are no clear criteria/guidelines/modalities on starting and phasing out the EWT even among the GoK or the aid agencies.

Some questions to answer regarding EWT:
• Is it cost-effective?
• Can’t the money be used for development of more sustainable/permanent water systems?
• Under what circumstances must it be carried out?
• What are the approximate costs (average rates) e.g. of m³ of water?
• Where is it carried out?- prevalence/distribution
• What is it used for? Is it also used for livestock watering?

**Objectives of the study**

**Overall objective**
Review and document the EWT interventions in ASALs of Kenya with a view to consolidating lessons learnt, best practices and recommendations to the stakeholders.

**Specific objectives**

• Review and document the EWT activities including mode of transport, water sources, water quality, treatment options, its uses, etc. in Kenya
• Establish the level of community and stakeholders involvement in the EWT including level of contribution
• Establish indicators of why/when EWT should be carried out
• Establish the impacts of the EWT to the communities
• Establish the existing EWT phase-out strategies by the stakeholders and document any successful case studies or Best Practices to be emulated
• Recommend a sustainable phasing-out strategy for an EWT intervention giving details on criteria/procedures
• Establish what coordination mechanism exists for EWT in Kenya
• Disseminate findings of the study to the current and potential practitioners of EWT

**Activities/methodology**

• Review and document existing literature on EWT in ASALs
• Establish the geographical coverage of the EWT- best done via a map up to sub-location level or approximate locations at point scale
• Investigate agency procedures, project cycle and tools used in EWT
  o Interview EWT donors and direct suppliers e.g. NGOs and GoK relevant ministries. The study can be introduced at WESCOORD and then interviews planned
  o Prepare checklists or questionnaires for interviewing the EWT providers
• Investigate community perceptions of EWT and their involvement in the process
• Document the socio and political dynamics of EWT
• Document the community traditional/earlier coping mechanisms now and before emergency water tankering. What is impact of EWT on the coping mechanisms of communities?
• Document hygiene and sanitation and quality assurance practices related to EWT
• Estimate the cost of water tankering and budgetary allocations and the unit cost of water at the beneficiary supply point
• Review/critically analyze the interventions made during emergency to ensure sustainable phase-out of EWT in order to avoid recurrent needs for EWT
• Document case studies of EWT operations in the ASAL regions in Kenya
• Document any other issues or problems affecting the EWT operations and successful phase-out
• Document best practices and give recommendations on sustainable EWT operations
• Present the reports (draft and final) to the relevant stakeholders (the Water/NRM Technical working group, WESCOORD- Nairobi, ALRMP, etc.)

Expected Outputs
1. A report which should include the following:
   • A review of existing literature on EWT
   • Methodology used in carrying out the study
   • Questionnaires used in the study
   • Case studies of EWT in ASALs of Kenya
   • Conclusions and recommendations on the best practices on implementation of EWT including an effective phase-out strategy
   • Link with the Oxfam’s advocacy project: Reducing the Vulnerability of Pastoral Communities Through Policy and Practice Change in the Horn and East Africa

2. Summary/brief to guide on policy- for easy reading and distribution to stakeholders

3. 2 workshop presentations to the various stakeholders one of which should be at the WESCOORD (who have also planned to hold a workshop to discuss water trucking).

4. Copies (hard or digital) of existing literature on EWT

Duration and Timing
The fieldwork and the final report should be finalized within 2 Months after signing of the contract.
INTRODUCTION

No guidelines and standards for Emergency Water Trucking

Emergency Water Trucking is viewed by NGO’s and Humanitarian organisations alike as an acute emergency intervention. However in recent years, with the effects of Climate Change being felt severely, especially in the ASAL regions, the Government of Kenya has been involved in with Water Trucking more than ever before, with a substantial portion of its emergency budget dedicated to this exercise every year. The Ministry of Water and Irrigation supports Emergency Water Trucking but has not developed any guidelines and operational standards for the districts. This has led to different approaches being used with different results from this very expensive intervention. Results from the field study show that there are different motivations that drive Emergency Water Trucking, ranging from profit margins for those who own trucks to political interests for those politicians that would like to settle their supporters even in areas where there is no permanent or assured water source. They would then use their influence on government institutions such as the Arid Lands Resource Management Project to get water trucked to these unsustainable settlements.

Eligible communities

But there are also communities such as those in Wajir Bor in Wajir East District, whose wells became contaminated with high levels of sulphur dioxide and their main pan dried up due to prolonged drought. Now they must rely on emergency water trucking from Wajir town, which is nearly 60 km away. These and many other communities have a genuine need for emergency water trucking since theirs is not a chronic but rather an emergency need for water trucking.

Everyone has a right to water

Everyone has a right to water. This right is recognized in international legal instruments and provides for sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. An adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking, and personal and domestic hygiene requirements. The right to water is inextricably related to other human rights, including the right to health, the right to housing and the right to adequate food. As such, it is part of the guarantees essential for human survival. The State of Kenya and non-State actors have responsibilities in fulfilling the right to water. In times of drought for example, where sources have collapsed or dried up, it would be expected that these actors would move in to alleviate resultant water problems.

The question is how to provide the water to vulnerable communities

The question is how to provide this water to vulnerable communities and households. In the recent past, there has been a proliferation of Emergency Water Trucking Projects, mainly in the northern rangelands of Kenya but also in the southern rangelands. Many stakeholders begun to
wonder whether most of these projects responded to risks of lives to be lost or they were just the most convenient and “soft” options in meeting the water needs because donors are increasingly willing to pay for emergency water trucking.

**Objectives of the assignment on Emergency Water Trucking**

It is in this light that this consultancy assignment was formulated with the main objective of gathering data to determine what actually drives emergency water trucking, particularly in the Arid and Semi Arid Districts of this country. The assignment was implemented between June and September 2009, due to the heavy travelling to the different districts. One of the outputs from this assignment was for the consultants to organize and facilitate two workshops, one for practitioners and another for policy makers. This workshop was for practitioners and it has been agreed between FAO and the consultancy firm that the policy workshop will be held at a later time when the report and other outputs have been finalized.

**Some guidelines for Emergency Water Trucking**

Due to its prohibitive cost, emergency water trucking should only be used as a last resort intervention; taking considerable care and assessment before implementation, and ensuring that it is implemented only where human life is at risk as a result of lack of water. It should not be for recent settlements, unless they are IDPs, having been affected by conflict or some other calamity. In addition, they should not be communities that suffer chronic water shortages. Such communities should be relocated to where permanent and reliable water sources are easily accessible. Such were the issues that necessitated this workshop. The opportunity cost of Emergency Water Trucking is huge and the vicious cycle of ever-increasing dependency on EWT services needs to be reviewed and standards and guidelines for their operations established.

**Workshop objectives**

The Workshop focused on the following:

- Development and Establishment of Policy Guidelines for Emergency Water Trucking (EWT)
- Development of Operational Strategy for EWT
- Additional input into policy direction based on the current situation on the ground
- Opportunity Cost of EWT
- The way forward for EWT services, including exit strategies from communities that are already benefiting from Emergency Water Trucking

**Workshop participants**

This was a high level workshop with major actors in EWT. The study findings were presented by the consultants and participants provided very valuable inputs that were incorporated in the main report. This Workshop on the Review of Current Status of Emergency Water Trucking Services in Kenya was hosted by FAO- Kenya Programme and took place at Holiday Inn hotel in Nairobi on the 15th of September, 2009. Kesarine & Associates, the consulting firm contracted to carry out the review by FAO Kenya, organized and facilitated the Workshop.

The event brought together over 30 participants from different stakeholders’ groups representing the government of Kenya, International agencies, professional organizations, practitioners and
scientists. During the Workshop, participants shared their experiences, views and suggestions freely.

OPENING SESSION

Participants Introductions
The Workshop was called to order at 9.00 AM. Mike Wekesa of Kesarine & Associates welcomed the participants and gave a brief introduction to the Emergency Water Trucking assignment and the objectives of the workshop. He referred to the study findings of the status of EWT in districts as background information for this workshop.

Opening Remarks (FAO)
Michael Gitonga from FAO gave a short background on the assignment and expected outputs from the consultants and he highlighted the need for the forum assembled to brainstorm on persistent issues related to Emergency Water Trucking, especially in the ASAL areas and come up with feasible guidelines to be used across the board. He thanked ECHO for their support in funding of the EWT, and encouraged the open participation of all stakeholders both within the Government and the humanitarian sector.

PRESENTATIONS

a) Presentation by Mike Wekesa- Kesarine & Associates, Kenya

Overview of the Assignment:
- Review and document the EWT activities including mode of transport, water sources, water quality, treatment options, its uses, etc. in Kenya
- Establish the level of community and stakeholders involvement in the EWT including level of contribution
- Establish indicators of why/when EWT should be carried out
- Establish the impacts of the EWT to the communities
- Establish the existing EWT phase-out strategies by the stakeholders and document any successful case studies or Best Practices to be emulated
- Recommend a sustainable phasing-out strategy for an EWT intervention giving details on criteria/procedures
- Establish what coordination mechanism exists for EWT in Kenya
- Disseminate findings of the study to the current and potential practitioners of EWT

Methodology Used in Carrying out the Study
- Reviewed and documented existing literature on EWT in ASALs
- Established the geographical coverage of EWT
- Investigated agency procedures, project cycle and tools used in EWT
- Interviewed different stakeholders e.g. NGOs and GoK relevant ministries; Private Contractors;
- Investigated community perceptions on EWT and their involvement in the process;
- Documented the socio and political dynamics of EWT;
- Documented the community traditional/earlier coping mechanisms now and before emergency water tankering.
• Analyzed the interventions made during emergencies;
• Documented best practices and made recommendations on EWT operations

Facts about Water Trucking in the ASALS of Kenya
• In all the districts visited, it was clear that water trucking was considered a short term intervention and one of the last resort because it is expensive and administratively complicated;
• Varying reasons for water trucking – contamination, drying up, recently settled populations where there is no good water source; political; profit; save livelihoods (livestock) – pasture without water;
• Other options, including relocation of people and livestock closer to existing sources of water, are not being thoroughly explored before trucking commences. It is highly political and controversial;
• Very few agencies are keeping exact figures of beneficiaries, volumes of water being trucked, number of households and people, numbers of livestock, etc. It is difficult to assess the effectiveness of the emergency water trucking;
• Most of the water trucking is being done by DWOs, ALRMPP and a few other NGOs;
• Except in one or two cases in the districts, no guidelines or standards have been developed by DSGs or Agencies involved. Anything is possible with EWT

Minimum Standards for Emergency Water Trucking
• Programme design and implementation – have you thought through the EWT intervention? Where, why, how, for whom, when?
• Water for trucking is obtained from sources that can maintain an adequate supply of assured quality during the period over which the intervention will operate;
• Proper arrangements are implemented for secure transport of water and its equitable distribution on arrival in the affected area;
• Agree on furthest distance you can truck water – 80 km in Mandera
• Agree on minimum amount of water per person per day – 7-10 liters ;
• Assessment of populations at risk – Are they eligible?
• Agree on quality of water – can water from Ewaso Nyiro River be trucked for human consumption without being treated?
• Hygiene issues – Are facilities for fetching the water clean?
• Disaster affected populations actively participate in the assessment, implementation, monitoring and evaluation of the water trucking intervention – they have good ideas and capacities;
• Water distribution is provided equitably and impartially, based on the vulnerability and needs of individuals affected – powerful people with a lot of livestock to water – influential and may divert water for other uses;
• Those trucking water receive supervision and support to ensure effective implementation of the EWT intervention – diversion of water; sold to others, etc.
• There is a systematic and impartial examination of the EWT so that we can draw lessons to improve practice and policy and to enhance accountability;
• Exit strategy – determine it and make it clear to all beneficiaries

Guidelines for Effective Emergency Water Trucking
1. Always good to enter into a contract for water trucking in order to be assured of certain minimum standards; local traders with trucks will want to take advantage of the government and NGOs;
2. Determine volume of the truck; often it is exaggerated;
3. In terms of cost, settle on a figure per cubic meter per km. Use WFP figures of moving grain per km per ton. Around 23/= per km per cubic meter;
4. To reduce administrative pressure, monthly contract is best;
5. Capacity of trucks ranges between 6000 to 25000 liters; choose the one with the largest volume, if in good condition;
6. Water collection points to be determined based on how close they are to where the water is to be trucked;
7. Must always have a field monitor on the ground to monitor how the water is delivered and distributed;
8. Maximum distance to truck water in order to save human life is approximately 80km;
9. Ensure you are paying for the water at the source so that it continues operating i.e. pay WUA 1000/= to 2000/= (strengthen O & M). Do not just focus on trucking the water out;
10. Provide fast moving spares as an incentive;
11. Continuous appraisal of situation on the ground because of the dynamic nature of water trucking situations;
12. Continuous monitoring and coordination with ALRMP and MoWI;
13. Determine who qualifies for water trucking through joint RATs;
14. But institutions, admin units, children, aged persons or persons with disabilities must be given preference – changing pastoral lifestyle;
15. PIT who have just joined a village with few stock;
16. Areas with pasture but with no water – opening up the rangelands;
17. Go for where the risk of water shortage is greatest – large populations first;
18. Where the EWT is likely to save livelihoods, the 80km distance may be ignored;
19. Issues of cost e.g. in Mandera – 23/= x65kmx20 cubic meters + water charge of 2000/= at source = 31900/= /20= 1595/= per cubic meter. 160% over the price of one cubic meter at source. Think about this cost per cubic meter before embarking on EWT;
20. Saving human life – 350/= per person per month is okay. Saving goats – 500/= per goat per month may be justified. Goats may be further away from the settlement;
21. The most important question is to ask whether the intervention is effective i.e. if people are getting at least 10 liters of water per person per day.

Conclusions on emergency water trucking
- It is an extremely expensive affair; exhaust all alternatives before trying to truck water;
- Emergency Water Trucking can be justified all the time; it just depends on willingness to pay; in many cases, people will find another solution;
- Effectiveness can be greatly improved with a little more common sense;
- Fix permanent water sources ahead of time and ensure they are operational all the time;
- Increase water storage and water harvesting structures at the community level;
- Explore the issue of contingency boreholes – Is it practical with our politicians and government wanting to create districts, administration units, etc. to settle people?

Reactions to this Presentation
The participants were in agreement on the findings of the field research presented by Mr. Wekesa and had the following questions to Mr. Wekesa:

Q1: Please clarify on importance of livestock in determining EWT response. It seems from the presentation that livestock are more important than Human life.
Q2: What are the livestock emergency requirements?
Q3: It is difficult to get the exact populations of animals and people for EWT. How can this be solved?
Q3: Do you have a recommendation of the best measure for unit cost per cubic metre?
Q4: What are the sources of the guidelines developed by NGOs?

The following were the responses given to the above concerns:
- There is more impetus to truck water for those who have livestock because one would be helping them maintain their livelihoods, rather than just their lives.
Livestock emergency requirements must be established for example the minimum requirements per day for a goat are 10 litres. A major challenge for EWT is getting the exact populations of animals.

The best measure for unit cost per cubic metre can be approximated roughly to KSh. 23 per unit costs but costs are affected by the quality of the road.

Mapping should be incorporated to provide more information for provision of water.

There is a flow chart available for operational strategy but it only caters for livestock. In the absence of guidelines Wescoord, Ministry of Water and ALRMP will provide measures and standards.

b) Wajir North: A Case Study
Abbas Maalim the District Roads Committee Chairman from Wajir North has been involved in water trucking in his District, which was created in 1996. He gave a brief case study of Wajir North where the responsibility for water trucking is shared between OXFAM, ALRMP and the Constituency Development Fund (CDF). The CDF administration initially began trucking water to Wajir with four trucks. Due to the drought, the pastoralists had moved North into Ethiopia in search of pasture when decisions to bring water were being made, and were therefore not included in the population census. The Emergency Water Trucking intervention in this case was inadequate due to poor communication. He emphasized the need for proper infrastructure for more effective EWT.

Mr. Abbas Maalim emphasized the need to stop politicizing EWT because water is a basic need. Politicians create settlements and water is provided through EWT, which is not sustainable. He suggested Livestock Off takes i.e. outsiders to purchase livestock that are then immediately slaughtered on site as a better option in alleviating the suffering caused by drought.

Reactions to the Presentation
The participants were grateful to Mr. Abbas Maalim for giving a realistic overview of the situation on the ground.

Even if there was an organization willing to bear the costs, the opportunity cost of EWT was enormous.

Communities could sell animals and pay for water rather than allow them to die due to drought. However, good markets must be organized for pastoralists to be able to sell.

Experience gathered by those who have been involved in EWT is valuable and lessons learned need to be documented from the stage of planning to M&E. This would avoid the repetition of mistakes that have been made consistently in EWT.

Hygiene is not a priority concern during Emergency Water Trucking. However hygiene and sanitation are very important because the water trucked could end up in dirty water collecting vessels, resulting in water borne diseases.

Plenary Issues from the Presentation
The plenary session discussions raised the following issues that:

Monitoring water usage would curb trucking for economic activities and administrative centres.
The last emergency trucking and the most recent should be compared to record any changes that may have occurred in the community.

Contingency boreholes should be considered as an alternative first before going into emergency trucking. However, the trend in the country is their use is politicized and ultimately diverted.

Emergency Water Trucking should be just that for emergencies.

Communities should cost share in the purchasing of tanks, and other water holding facilities to ensure ownership and responsibility for them.

The outcomes of this workshop should be relayed to DSGs as they are the ones in charge of the EWT exercises.

Communities should be encouraged to engage in Natural Resource Management to reduce dependence on EWT.

As the scarcity for water due to Climate Change has progressively become worse, water trucking has become inevitable. There is a need to define what the last resort is. The participants came up with the following criteria for EWT being the Last Resort Intervention:

1. EWT should only be undertaken where human life is at risk of being lost;
2. There must be a critical mass of people for EWT to be effective with maximum impact;
3. The location of delivery must be above a certain distance to an alternative water supply;
4. Failure of an existing source of water source can justify EWT while repairs are being undertaken;
5. Institutions such as schools and health facilities should be prioritized for EWT;
6. A poverty index could be employed to determine the most vulnerable communities such as displaced persons, who need the EWT services.
7. There must be a marked percentage reduction in normal water needs per person per day.
8. There must be some level of destocking as an indicator.
9. Use of Traditional Coping Strategy should be incorporated into the EWT; and
10. Communities should be stable under normal conditions.

There must be an element of peace education to avoid conflict

Some communities have been transformed into permanent EWT recipients with large underground tanks.

RECOMMENDATIONS
1. Documentation of best practices from organisations experienced in EWT should be included in the report as case studies;

2. WESCOORD should be used an avenue through which the outputs of this assignment are discussed and taken upwards in order to influence policy within the Ministry of Water & Irrigation with a view to establishing standards and guidelines for EWT;

3. EWT usually attracts more people to the place where water is being distributed and some of those may not be vulnerable. Therefore, monitoring of changing population dynamics should be more stringent than before;

4. Policy guidelines should be provided by the Ministry of Water & Irrigation in order to bring sanity into EWT;

5. The guidelines and standards should take care of nomadic pastoralist households instead of only focusing on settled communities in the villages;
6. Funds intended for EWT should be flexible to be used for other projects if EWT is no longer required because circumstances on the ground have changed. Donors need to be flexible;

7. Research into harvesting of water must be beefed up and prioritized.

8. Care must be taken to avoid the creation of new water sources as this could cause conflict over resources. It is wiser to expand existing water sources;

9. Where there is pasture and browse for livestock but water is lacking, priority should be given to saving the core breeding herd of goats because they are hardier and are likely to survive the drought with minimum inputs from EWT and supplementary feeding with concentrates. However, this should not be prioritized over water for domestic use if human life in this particular location is at risk.

CONCLUSION

This assignment is an important step in trying to establish Minimum Standards in Emergency Water Supply. The Minimum Standards in Water, Sanitation and Hygiene Promotion are a practical expression of the principles and rights embodied in the Humanitarian Charter. The Humanitarian Charter is concerned with the most basic requirements for sustaining the lives and dignity of those affected by emergencies or disasters, as reflected in the body of international human rights, humanitarian and refugee law. EWT projects should be designed to close the gap between existing living conditions and the International Water Standards for emergency water supply. It is nevertheless important to make a distinction between the emergency needs and the chronic needs of an affected population. In many cases, humanitarian needs and the resources that would be required to bring a community up to international minimum standards are far greater than the resources available. No one agency can expect to bring this about single-handedly and communities, their neighbours, Kenya government, development partners, and other local and international organizations have an important role to play. Coordination among those responding to a disaster situation is essential to address critical gaps.

In view of the above, the setting of standards and guidelines for EWT will be prioritized within WESCOORD and a framework through which other stakeholders will come together and lobby the MoWI to develop these standards should be put in place. Meanwhile, the final outputs of this consultancy should be distributed to all DSGs and interested donors so that we begin to have improved standards of implementation as well as harmonized approaches for EWT.

With this, Eliud Wamwangi of MoWI closed the workshop at 1.05 PM.

List of Participants

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Organization</th>
<th>Position</th>
<th>Contact</th>
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# EWT Workshop Agenda

**REVIEW OF CURRENT STATUS EMERGENCY WATER SERVICES IN KENYA**

**EWT Workshop 15<sup>th</sup> September, 2009**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tr>
<td>8.30-9.00am</td>
<td>Registration</td>
</tr>
<tr>
<td>9.00-9.15am</td>
<td>Introduction, workshop objectives &lt;br&gt;Opening Remarks (FAO)</td>
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<tr>
<td>9.15-9.30am</td>
<td>Opening by Mike Gitonga of FAO</td>
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<tr>
<td>9.30-10.00am</td>
<td>Presentation by Mike Wekesa on review of EWT activities in Kenya</td>
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<td>10.00-10.30</td>
<td>Tea Break</td>
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<tr>
<td>10.30-11.00</td>
<td>Presentation by Abbas Maalim on Wajir North – A Case Study on EWT activities</td>
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<tr>
<td>11.00-11.30pm</td>
<td>Plenary Session</td>
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<td>11.30-12.30pm</td>
<td>Discussion on the Way Forward</td>
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<tr>
<td>12.30-1.00pm</td>
<td>Closing remarks by Eliud Wamwangi of Ministry of Water &amp; Irrigation</td>
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<td>1.00-2.00pm</td>
<td>Lunch and departure</td>
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### Annex 3 – People met and consulted during this study

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<th>Name</th>
<th>Organization</th>
<th>Position</th>
<th>Station/Contact</th>
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<td>1. Abass Maalim</td>
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<td>Wajir North</td>
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<tr>
<td>2. Abdi Musa</td>
<td>ALRMP</td>
<td>DMO</td>
<td>Mandera</td>
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<tr>
<td>3. Abdo Haret Farah</td>
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Annex 4 – References and Bibliography


