Enhanced enrolment of pastoralists in the implementation and evaluation of the UNICEF-FAO-WFP Resilience Strategy in Somalia

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Foreword

Mobile groups are easily overlooked by humanitarian, development and government agencies alike. Their shifting ways of life often leave little trace, come with few contact details, and are minimally represented at 'central' levels of state and development planning. Compared with settled counterparts, mobile or semi-mobile groups are much less likely to be accommodated either in surveys and assessments or in adapted programming. The scale and character of contemporary mobility tends to be poorly grasped or even dismissed. It is diverse, dynamic and changing, but it risks being stereotyped as an anachronism that will inevitably disappear (or is largely gone); or a pathology obstructing the path of national development; or an inconvenience beyond the reach of programming.

Despite this tendency to be overlooked or misunderstood, mobility is a common phenomenon globally and a common thread throughout human history. Under many circumstances mobility is beneficial – to migrants themselves, the livestock they travel with, the environments they travel through, and the society at large. In arid and semi-arid areas of the Horn of Africa which are affected by complex shocks and stresses, it is well accepted that mobility is a major component of resilience for pastoralists: they move not only to avoid risks but also to grasp opportunities.

This study informs a planned impact evaluation in Somalia where livestock-keeping pastoralism is the majority livelihood and many of those who practice it are nomadic or semi-nomadic – traveling with their herds in pursuit of water and pasture. Following the 2011 famine, FAO, UNICEF and WFP embarked on a common 'Resilience Strategy' that seeks to align and design interventions to build the resilience of households and communities to shocks and stresses. Pastoralists are a key part of the programme's focus, and assessment and evaluation efforts need to ensure their inclusion even if they are mobile to any degree. While the Horn of Africa region has relatively few examples of systematically including mobile groups in impact evaluation or assessment, lessons learned from other regions – in particular the Sahel or central Asia – show that this is feasible.

The importance and feasibility of including mobile groups in programme design and impact evaluation is the starting point for this paper, commissioned by UNICEF ESARO, to guide the Somalia strategy. However, it also will have relevance in other areas (regionally and beyond) where mobile or semi-mobile pastoralist groups exist. Recognising, understanding and accommodating mobile groups allows us to design contextually-appropriate programming and then monitor and evaluate its actual effectiveness. It demonstrates solidarity with a way of life that, while changing in both scale and character, remains an important choice for many and deserves not to be excluded.

UNICEF ESARO, June 2013

Executive Summary

Pastoralism is the traditional basis for the rural economy in Somalia which has a higher proportion of pastoralists than anywhere else in Africa. The pastoral system is the second largest livelihood system in the country consisting of 13 livelihood zones and covering about 470,000 km^2 or approximately 72% of the total area; it extends right across the country with major concentrations in the arid central and northern regions. The livestock sector is the largest contributor to Somali livelihoods—65% of the population are engaged in some way in the industry and livestock and their products account for 80% of exports in 'normal' years. As well as having great economic importance, livestock are a key component of household food security and hold social and cultural importance for pastoralist communities. Throughout greater Somalia (including areas of Ethiopia and Kenya), rainfall patterns force a complex series of movements in search of grazing land between the different seasons; the livestock sector is thus characterized by mobility that allows access to extensive grazing resources.

Mobile pastoralist communities tend to be considered 'hard to reach' by agencies delivering basic social services, and are among those most vulnerable to exclusion from them. A recent survey (Carr-Hill et al, 2011) showed that only 22% of school-going age pastoralist children in Somalia were in school, less than 50% of children were vaccinated, and under-five mortality was as high as 35%. However, there are examples of adapted service delivery for mobile groups, for example innovative and effective health and education provision programmes that are sustainable beyond the duration of donor-funded projects. Increasingly 'good practice' examples in pastoralist settings take inter-sectoral and inter-agency approaches, recognising that programming synergies are required to tackle complex and inter-connected vulnerabilities.

To design and evaluate appropriate programming for mobile or semi-mobile pastoralists, their inclusion in baseline surveys and impact evaluations must be ensured – even where this may initially seem less feasible or convenient. Conventional data collection methods that are largely designed for settled households can lead to under-representation – if not exclusion – of mobile populations. The impact evaluation for the FAO-UNICEF-WFP Resilience Strategy in Somalia offers an opportunity to design and apply a sampling approach that deliberately includes mobile pastoralists from the start. An approach adapted for this may also benefit other surveys and assessments carried out in other areas or regions where mobile populations represent important strata of the population.

This report makes recommendations on how representative enrolment of pastoral households in the FAO-WFP-UNICEF Resilience Strategy and its impact evaluation can be developed. In summary, its recommendations are as follows:

- **Inclusion of mobile or semi-mobile pastoralist communities must be ensured from the start:** The exclusion of these groups from initial consultations on programming design and assessment is likely to be perpetuated through monitoring and evaluation efforts as well as programming; their initial inclusion must be stressed.

- **Timing is crucial:** The best period for conducting consultations or assessments is when pastoralists originating from a certain district have returned from seasonally-determined transhumance (movement in pursuit of pasture and water) and have sufficient time, e.g. when agricultural or other demands are few. Complete information on a suitable period should be obtained from traditional and local authorities as well as agencies working in a district prior to the first community consultation or assessment. Due to inter-annual changes based on variable rainfalls, pasture availability and security, past and current information needs to be included in this planning.

- **Sampling frames must be as complete as possible, and include relevant mapping of mobility**: A rapid comparison between existing sampling frames (such as lists of villages) and information on actual pastoralist families in a certain district/location should be done. Existing lists may be outdated or incomplete, or may not capture the inter-seasonal and inter-annual variations of mobile and especially semi-mobile families. Mapping with local authorities and representatives of pastoral communities themselves (as well as of other livelihood communities where relevant) and comparison to existing sources of data on pastoralist groups will show if and how the sampling frame needs to be extended. Maps need to show movement patterns and particularly 'seasonal zones of concentration' of pastoralists: these are places pastoralist groups tend to return to and congregate at, at certain times of year (perhaps varying per good or bad years), that make appropriate locations for consultations or assessments.

- **Sampling methodology must be linked to initial consultations:** The (random) selection of households for the impact evaluation should be coupled with community consultations already held. If the villages and sites registered in existing sampling frames adequately represent pastoralist families, the same random selection procedure as for other households can be taken. If a sampling frame was extended, for example to include seasonal zones of concentration, a random selection with random coordinates can be planned.

- ***Reach* the 'hard to reach'**: Certain enumerators (used to implement survey or impact evaluation work) have greater access to remote areas than others. Before training in community consultation or impact evaluation methodology, enumerators should be chosen who can reach zones that may be restricted to others (e.g. international staff of UN agencies). This and other relevant efforts should be made to ensure that all communities are represented in the sampling frame, and there is no selection bias based on access.

- **Ensure follow-up regardless of mobility**: In many instances mobile households are 'lost' to panel or longitudinal data because their follow-up was either not possible or, more likely, not insisted on. In most cases follow-up of participants from mobile pastoralist households can and should be done – and in many contexts mobile phone coverage is one way of supporting this. Early announcement by cell phone of the date and time of arrival of the interview team is necessary for a convenient meeting point and time to be identified. If the interviewees are too far away to be reached for face-to-face interviews with enumerators – or the enrolled husband and wife are split at time of interview – then telephone interviews should be foreseen. Telephone numbers of relatives or other household members should also be registered during the initial interview to better ensure that they are reached; incentives (e.g. mobile phone credit) may also be planned.

- **Ensure good relationships and information sharing for continued inclusion of pastoralists:** As is the case for all enrolled households in the impact evaluation, continuously providing appropriate information on the goals and implications of the survey (and the corresponding programme) is crucial to minimise loss of follow-up.

- **Synergies with veterinary services:** Given the priority placed on livestock health and productivity by all pastoralists, veterinarians tend to be well trusted and to have better reach and access than other service providers. They should be contacted as key resource people (next to local authorities and agencies) when drawing up a sampling frame, selecting from it, and then accessing pastoralist communities. Models of sustainable animal health service provision in pastoralist areas can inform the delivery of other services. Synergies – for example 'One Health' models where human and animal immunisation/health initiatives are aligned in mutually reinforcing ways – can support holistic programme design that seeks to connect sector-specific work with broader outcomes of sustainable livelihoods and resilience.

This report, intended to complement the impact evaluation protocol, was commissioned by UNICEF ESARO and carried out by the Swiss Tropical and Public Health Institute which has 15 years of experience of surveys and implementation projects among mobile pastoralists in West Africa and Central Asia. To compile the report, a review of existing documents was done and was complemented by discussions in Nairobi with resource people of UNICEF, WFP and FAO regional country offices.

1. Rationale for including pastoralists in the implementation and evaluation of the UNICEF-FAO-WFP joint strategy on resilience in Somalia

1.1 The pastoral livelihood system of Somalia

Pastoralism is a way of life for a large number of Somalis – with different degrees of mobility from nomadic to sedentary. Given the predominance of a mobile pastoralist rearing system – with herds also moving across borders into Kenya and Ethiopia in search of forage and water – livestock production (cattle, sheep, goats, and camels) was not as heavily impacted by the civil war as other production systems (UNEP, 2005). Compared to pastoral livestock systems of other countries, the Somali system is very market-oriented. Significant numbers of the pastoral and agricultural communities are engaged in trade, business and fisheries (World Bank, 2005).

The pastoral system is the second largest livelihood system in Somalia. It consists of 13 livelihood zones, covers about 470,000 km^2 (approximately 72% of the total area) and extends across the country with major concentrations in central and northern regions (Figures 1, 2). Pastoralists are livestock producers whose main income [>50%] (Swift, 1988 and Rass, 2006) is from livestock. They are highly vulnerable to climate variability which determines the availability of water and grazing opportunities. The pastoral population is estimated at 2.3 million (29% of the total population), of which 52% reside in the north, 33% in the south and 15% in central Somalia (FAO Somalia, 2011). Note that population numbers in Somalia are either based on estimates from surveys or extrapolations of the 1997 population census.

The agro-pastoral system covers 151,000 km2, or 23% of the total land area with 12 zones: 8 in the south, 3 in the north and 1 in central region (Figures 1 and 2). The agro-pastoral population represents 26% (almost 2 million people) of the total population with 88% of this concentrated in the south (FAO Somalia, 2011). Field crops and livestock are more or less equally relevant in this system. Rain-fed sorghum and maize are the main subsistence crops and are also sold or traded. Most crop production is rain-fed (and rain can be inadequate and erratic). Cattle are concentrated mainly in the south and camels in the northern part of the country. Livestock (sheep, goats, cattle and camels) are used for family consumption, income (through sales of animals and animal products), transportation, land preparation, and as a crop failure mitigation measure (FAO Somalia, 2011).

Livestock sales are the main source of revenue for pastoralists, with many people depending on livestock marketing and trading. Thus the sector has significant influence on food security and poverty. It is also the main source of foreign exchange earnings (excluding remittances), much of which is used to finance imports of food and basic necessities. In Somaliland for example, about 80% of foreign exchange earnings come from livestock exports (Knips, 2004). The share of livestock in agricultural gross domestic product for Somalia in 2000 was about 88% (FAO Somalia, 2011).

Urbanisation is increasing rapidly. Internal labour migration is fuelled by weakened pastoral livelihoods – in large part due to the 2000-2009 livestock ban prompted by a Rift Valley Fever outbreak in Saudi Arabia (the first ever outside Africa). Migration because of drought and internally displaced persons (IDPs) and refugees escaping conflict and poverty also added to the intensity of the conflict, as migrants and IDPs often clashed with host populations in their use of land and water. Many pastoralists dropped out of pastoral production and migrated to urban centres, where many of them live in a destitute state; this could be one of the reasons why Somalia reports to have such a strikingly high rate of urbanisation (Carr-Hill et al, 2011). Only poor pastoralists (those who have lost all or almost all of their livestock) tend to settle: those with some stock will usually move to access water and pasture for their herds.

Remittances and private sector activities have provided a boost to the economies of all three regions of Somalia[1]. Mostly unregulated, these are in the form of telecommunications, *hawala* [informal money transfer system] or other money transfer companies, and international transit trade. These positive developments need to be seen alongside economic disasters, such as a 2000-09 livestock ban, given that livestock is the mainstay of the pastoral economy.

The 2000-09 livestock ban by Saudi Arabia, coupled with environmental degradation and drought, increased the fragility of the economy and created large-scale poverty (World Bank 2005). Perturbed by such export bans restrictions, the export of live/slaughtered animals is also hampered by the near **collapse of state-run veterinary**

[1] Somaliland, Puntland and South/Central Somalia

services and virtual absence of an animal health surveillance system. Linked to this, the lack of a regulatory framework for livestock exports threatens the stability and growth of this trade (much of which is still controlled by individuals).

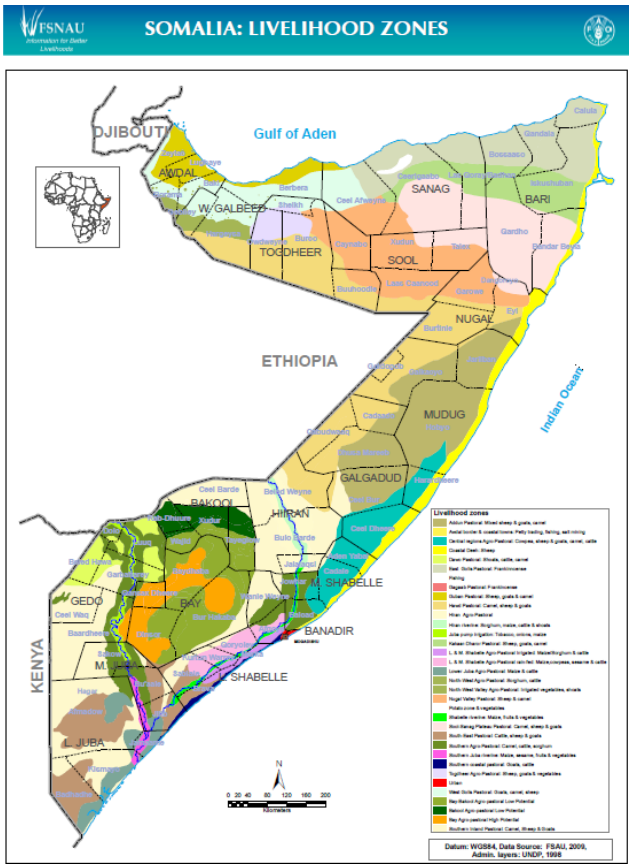

Figure 1. Somalia Livelihood Zones (FSNAU, updated 2012)

Figure 2. Food Security Analysis Unit 2004 (UNCHR Somalia Atlas 2005, in UNEP, 2005)

1.2 Livestock sector, mobile pastoralist systems and a fragile environment

The livestock sector is the largest contributor to Somali livelihoods, with over 65% of the population engaged in some way in the industry (FAO Somalia, 2011). It is also the most important source of cash income for the predominantly rural population. Although the trade mainly consists of live animals, export of chilled meat to Middle East countries has recently increased. Livestock are shipped to various countries in the Arabian Peninsula, and trekked or transported to markets in Kenya, Djibouti, and Ethiopia. Livestock also enter Somalia through the borders with Ethiopia and Kenya.

Livestock exports – especially sheep – normally increase sharply during the months that coincide with the Haj. In 2010, the country exported 4.3 million livestock, the highest figure ever recorded. Most (62%) of the livestock traded were cattle, with 42% being traded through Togowajale market, a key border crossing point between Somalia and Ethiopia (The Market Analysis Sub-group of the Food Security and Nutrition Working Group 2012). Livestock are channelled through a series of clearly defined routes in the general direction of the Somali ports (Berbera, Bossaso and Mogadishu) and the Kenyan market (Figure 6). Each of these trading routes is associated with a different clan. Traders using 'their' corridor benefit from the protection of their clan, but they cannot easily switch to another route when problems arise (Birch, 2008). The large livestock exports, however, also places stress on localized grazing and watering points near main ports, as well as fuelling conflict over access rights (UNEP, 2005). Since the decade long ban on livestock trade with Middle Eastern countries, particularly Saudi Arabia, was lifted, the greatest beneficiaries in the livestock sector are brokers and livestock traders who buy animals from pastoralists at paltry prices and sell them at higher prices in urban areas and the external markets (Carr-Hill et al, 2011).

Livestock is key to local consumption and household food security. Throughout greater Somalia (including areas of Ethiopia and Kenya), rainfall patterns force a complex series of movements in search of grazing-land between the different seasons. The livestock sector is thus characterized by mobility requiring access to extensive grazing resources.

Seasonal movement is essential for pastoralists to manage spatial and temporal changes in grazing resources while enabling pasture recuperation. Mobility is widely considered the best strategy for managing the low net productivity, unpredictability and risk in the arid and semi-arid lands of Somalia (as well as elsewhere). The 'mobility paradigm' suggests that, compared with any other production system, mobile pastoral land use and livestock production uses the natural resources of the fragile semi-arid ecosystem in the most sustainable way (Niamir-Fuller, 1999 and Scoones, 1994). Indeed, the rationality of pastoralism based on mobility and communal tenure has been demonstrated by natural and social science research (Morton and Meadows, 2000). In Somalia, mobility can be vertical, linking highland with lowland areas for winter, spring and summer grazing; and also horizontal, through different zones.

Patterns of mobility range from long distance, often cyclical movements covering hundreds of kilometres to various forms of transhumance each demanding different involvement of household and herd members. A distinction can also be made between regular movements and emergency movements during critical times caused by drought, conflict or other reasons (FAO Somalia, 2011). In the past, the pattern was for pastoralists in the eastern part of the vast Somali region to use dry season wells and return to Ethiopia for wet-season grazing. Similarly, Degodia pastoralists from the Liban zone in the south-west of the region once moved as far as Wajir in northern Kenya. But these long-distance cross-border movements, facilitated by reciprocal arrangements between clans, are rarer now than in the past. The general trend over the past half-century is that livestock mobility has been progressively shrinking. Somali herders once moved their animals distances of up to 600km; however, the maximum range was some years ago closer to 50-100km (Birch, 2008). Mobility also decreases with increasing insecurity in the country and the greater Somali region; conflict in South Central Somalia for example has significantly reduced the scale of pastoralist mobility across clan boundaries that existed in the past.

Different herd management strategies – such as herd splitting, herd diversification and herd maximization – allow Somali pastoralists to ensure that they spread the risk of livestock loss from droughts, diseases and theft (Carr-Hill et al. 2011). In 2011, Carr-Hill et al found in six regions that herd sizes were low, with households of six people owning an average of 8.1 camels, 7.4 cattle, 37.5 goats and 27.3 sheep – below what is considered minimal for subsistence for households of that size.

Women are typically very much involved in livestock production, particularly small ruminants and lactating females kept near to the house. In a customary pastoralist household they will manage the flocks, and with older males and children, tend them. Women sell milk and animals locally and at markets and slaughter and sell meat, although the decision on when and which animal to sell is usually taken jointly with the male family head. The money from sales is managed by the women for household and family needs unless the animal is sold for another specific purpose in which case the man will be involved. Traditionally, women manage poultry flocks while men tend and manage nomadic herds (FAO Somalia 2011). Many households today have transformed however – with conflict, urbanisation and changes to pastoralism – so it should be remembered that many 'traditional' social or gender norms are altered, and in many places contemporary households are very heterogeneous.

Restriction of mobility, however this is caused, effectively increases the vulnerability of pastoralists to natural and man-made shocks (Carr-Hill et al, 2011). For the mobile pastoralist system to be effective and sustainable, access to extensive grazing resources is necessary. It also requires adequate water access through judiciously placed and maintained supply points as well as access to animal health services and markets. Unregulated or restricted grazing areas, and blocked, neglected or damaged water points, all may limit herders' choices and their access to adequate resources (FAO Somalia, 2011). In several regions insecurity resulting from conflict has reduced the extent of movement of pastoral communities; but even in regions with relative calm, the emergence of land demarcations, border controls and fencing is equally restricting free movements. Another key factor is the **rapid increase in the human population** in many pastoral areas (Carr-Hill et al, 2011); a result of this has been extensive over-grazing and rangeland degradation (FAO Somalia, 2011).

Climate and rainfall vary between tropical and sub-tropical, and between arid and semi-arid regions. Erratic and unreliable as they are, there are seasonal patterns of rainfall that are strongly influenced by the Inter-Tropical Convergence Zone (ITCZ), the north-south movement of which results in two dry seasons and two wet seasons each year. The *Jilaal*, from January to March, is the harshest dry season and results from dry north-easterly winds sweeping down from the Arabian Peninsula. This is followed by the *Gu* rainy season from April to June, followed by the *Hagaa*

dry season from July to September during which sea breezes from the Indian Ocean help cool at least the southern parts of the country. The cycle is completed by the *Deyr*, a short and unreliable wet season in October and November. The coastal region in the south around Mogadishu and Kismayo has an additional rainy season, the *Xagaaye* in July and August, during which there may be isolated showers. Livestock husbandry and farming are adapted to this climatic regime, with herds being concentrated around water sources in the *Jilaal*, but driven to pastures deep in the interior during the *Gu*, when rain-fed agriculture also becomes briefly possible (UNEP, 2005) (Figure 3).

The *Jilaal* dry season of January to March is considered the most difficult for pastoralists. During this period, herds tend to be moved longer distances from homesteads, which in turn reduces the supply of milk to remaining members of the household. Heightened food stress is likely to be experienced at such time (UNEP, 2005).

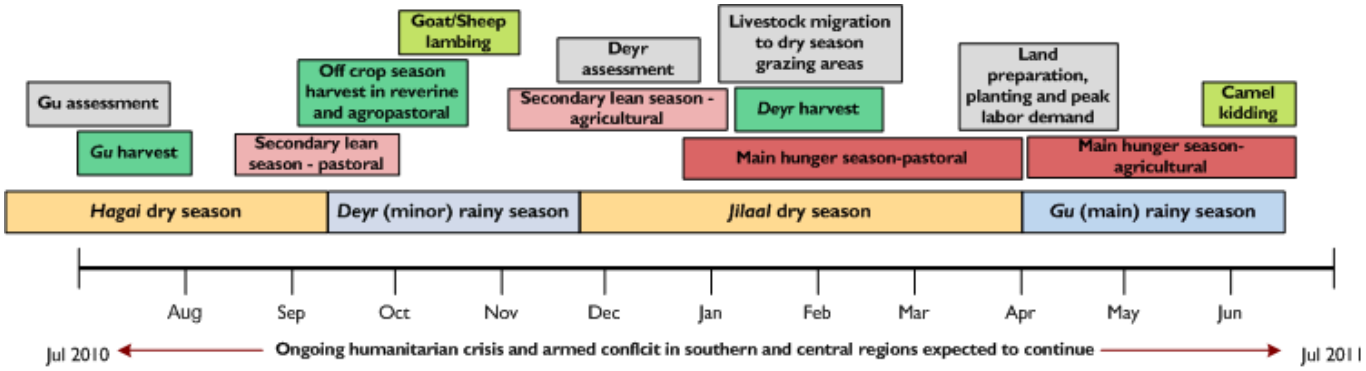

Figure 3. Seasonal calendar (FEWS Net http://www.fews.net)

Overstocking, overgrazing, declining fertility of pastures, disease outbreaks and unpredictable rainfall are among the perils and risks that livestock owners have to face. Southern Somalia's environment has suffered less from the livestock pressure of mobile pastoralists that the northern parts of the country, but agricultural development and southward expansion of the cattle industry are now placing severe pressure on many of the region's remaining wild habitats. The numbers of livestock are reported to be exceeding the carrying capacity in many areas, leading to risk of overgrazing and outbreaks of disease (UNEP, 2005). Degradation of grasslands, by as much as 50%, is a consequence of large numbers of livestock, proximity to ports for livestock export, and also the steep topography. Over much of the country, areas around water holes or wells are all degraded (UNEP, 2005). Recurrent droughts in Somalia are symptoms of complex trends and inter-linkages related to population growth, the dwindling capacity of a fragile ecological system, environmental degradation, weather cycles and the absence of agricultural and non-agricultural rural development (UNEP, 2005).

1.3 Pastoralism and insecurity

Several main clan families including Darod, Dir, Issaq, Hawiye and Rahanweyn along with minority clans traditionally constituted Somali society. There is no agreement on the sub-clan structure, with Somalis themselves disputing clan affiliations, and this is further complicated by fluid sub-clan identity affiliations (World Bank 2005). A patrilineal, highly segmented clan structure controls access to natural resources and to the various livestock trading routes (Birch, 2008).

Conflict alters ecologically sound grazing patterns towards ecologically destructive patterns where groups reduce mobility to avoid contact with other groups (underpinned by conflict or mistrust between pastoralist groups). This behaviour is precipitated by pastoralist households tending to stay together due to insecurity and herds being grazed on the little remaining secure land (Frank, 1999 and Unruh, 2005).

Increasing demand and limited supply of natural resources makes their conservation and proper use even more critical. Agriculture has also been hit by droughts, increasing unemployment and misery in the rural areas. Pastoralists retain high animal stocks which need grazing land to survive; but agro-pastoralists are also over-exploiting the land and contributing to its degradation (World Bank, 2005) or causing disputes over access to the most fertile pasture and water points. Land rights of pastoralists are not secured in the legal system and legislation is regularly not clear (or clearly enforced) due to lack of government capacity, overlapping ministerial mandates, and the different influences of customary law (Dyer, 2008). This often brings pastoral groups into conflict with agricultural ones. There are also conflicts over control of the lucrative main export marketing routes, or over grazing land: clans that are more powerful may push their herds into the pasture land of weaker groups, or onto villagers' ripening crops (UNEP, 2005).

Customary forms of natural resource management and control systems exist but many have been abandoned or weakened (while some may in turn have become stronger as state systems have retreated). In several instances, this has resulted in clearly unsustainable exploitation of natural resources, a trend which may prove difficult to reverse. The loss of incomes from the pastoral economy also makes pastoralists explore other opportunities, resulting in competition over alternative livelihood sources (World Bank 2005). For example parts of the north-west and the Kismayo area are showing signs of environmental degradation as a result of overgrazing and the uncontrolled harvesting of trees for charcoal (perhaps today Somalia's most valuable export) (UNDP, 1998).

1.4 Opportunities to enhance the inclusion of pastoralists in humanitarian and development programmes

Pastoralism is the majority livelihood, among a dynamic diversity of others. As the formal economy virtually collapsed, many people in rural areas turned to natural resource exploitation for survival, and in urban areas to informal business and entrepreneurialism with links to the wider region and diaspora. Leonard (2009) notes how Somali business has undergone 'explosive growth' with Somalis now the dominant traders in the region, controlling major finance and transport systems. Nevertheless, Somalia has a higher proportion of pastoralists than any other country in Africa, pastoralism is the traditional basis for the rural economy, and Somali pastoral livelihoods are more diversified and integrated with the cash economy than ever before. Economically, pastoralism is enormously significant: it has been demonstrated to contribute significantly to agricultural Gross Domestic Product (GDP) in many Sahelian, Central and Inner Asian countries (up to 80%), and this contribution increases when considering indirect values such as manure for crop farming, wildlife conservation and tourism in addition to the direct values (Hatfield and Davies 2006; World Initiative for Sustainable Pastoralism, 2008).

There is little formal investment in the pastoral economy, despite the fact that even modest improvements would likely not only improve livelihoods but also reduce escalation of conflicts fuelled by unemployment, economic migration, competing demands on scarce resources, or pursuance of illegal economic activity. It is also important to consider how assistance that specifically benefits pastoralism can be balanced by assistance that specifically benefits sedentary agriculture (World Bank, 2005).

Strengthening livestock production and productivity is a priority for each region. With much of the grazing resource already damaged by overuse, loss of trees, soil degradation and climatic factors, a significant rise in production and productivity is not possible by simply increasing animal numbers. Indeed the sustainable management of grasslands and water should be at the core of livelihood strategies (World Bank and UN, 2007), which will need to employ holistic programming approaches.

An important constraint on pastoralist households – on their livelihoods primarily but also in other connected ways such as reducing access to services (including schooling) and increasing environmental degradation – is the relative lack of veterinary services in Somalia. This is mentioned in the community consultation reports and in virtually all FSNAU livelihood reports. Strengthening veterinary services is a priority for Somali pastoralists; within Somali pastoral communities generally, there is a high demand for animal health services. Veterinary services do not necessarily need to be provided by veterinarians, but can be sufficiently provided by community animal health workers – provided they can access continuous education, quality drugs and have a supervised accounting system that allows them to live from their services (in contrast, for example, to receiving one-off drug supplies from agencies and giving these for free, or virtually free, to their community). Evidence suggests that if this willingness to pay for private veterinary services can be established with appropriate engagement and support from outside agencies, a strong livestock health support system can be established (Catley, 1999).

During dissemination meetings to present this study to stakeholders, the following related/additional suggestions on supporting pastoralist production and productivity were made:

i) Restocking

To ensure success, restocking programmes must be accompanied by sound rangeland management.

ii) Improvement of Rangeland Management

Traditional skills could be enhanced in new, integrated systems to increase rangeland pasture productivity and water conservation. Most critical is controlled grazing to allow for recovery of natural vegetation in areas that have suffered

overgrazing and charcoal burning; and control of soil erosion. Cultivation of fodder crops in areas where this is viable should also be encouraged.

iii) Livestock Health, Animal Husbandry and Value Addition

Animal health and veterinary services should be strengthened to ensure that disease related livestock deaths are minimized (see above). Efforts could be made to integrate modern techniques into animal production and to introduce new and more genetically productive breeds (e.g. of milking goats). Improving animal health and husbandry should be accompanied by identifying new markets to exploit, and differentiating the livestock product base to meet market requirements through public-private partnerships (PPP). Interventions should wherever possible add value to livestock products such as milk, hides and skin.

iv) Diversification of Livelihood Activities

Support for technical skills should be targeted to local demand (e.g. masonry, carpentry, plumbing, welding, electric works and automotive technicians in urban centres); vocational training centres can supply skills to pastoralist children and youth that are relevant in emerging markets – while at the same time strengthening (or restoring) existing markets and customary production systems linked to pastoralism. In many parts of the country there is believed to be potential for increased rain-fed and irrigation farming.

v) Environmental Conservation and Improvement

Livelihoods in rural and urban areas are undermined by environmental degradation; conservation efforts need investment, and returns on investments need to be seen by communities – some promote efforts to introduce and support more trees that serve as productive browse for livestock (Carr-Hill et al, 2011).

Adapted and effective social service provision to communities living in these contexts is critical, since mobile pastoralists are among the communities most vulnerable to exclusion from primary social services. UNICEF and WHO refer to them as 'hard to reach' communities (World Health Organization & UNICEF, 2005), and the UNICEF-commissioned 2011 survey on the Assessment of the Education, Livelihoods, Living Conditions and Welfare of Somali Pastoralists (Carr-Hill et al, 2011) showed poor welfare indicators among both mobile pastoralists and agro-pastoralists. Since there were rarely substantial variations between livelihood patterns within one region, the authors recommend that programming be largely region specific. This in-depth survey in six regions of Somalia provided substantial information on livelihood patterns, education, nutrition, health and sanitation. When compared to previous studies many indicators had slightly improved, however most were still poor among pastoralists. Below are some key results from the education and health assessments of this survey (Carr-Hill et al, 2011):

Education

- → Only 14% of adults reported having gone through formal education (commonly with low finish rates)
- → The levels of enrolment of children were still low in 2011: on average, only 22% of school-going age children were in school
- → There was a disparity between agro-pastoralist and pastoralist communities, with more agro-pastoralist children enrolled. This was found to be due largely to school availability and factors such as migration, as opposed to differences in attitude towards education
- → The quality of education in many cases was considered poor, but it was also very difficult to enrol qualified teachers and the rolling out of adapted approaches for mobile pastoralists had not been effective in the past
- → The most successful education programmes in the past were considered the 'live-ins', where pastoralist families send their children to stay with sedentary relatives and friends in areas with schools

Health

- → Under-five mortality was estimated to be as high at 35% overall
- → Vaccination coverage was low, with less than 50% of mothers interviewed confirming that their children had received some of the mandatory vaccinations (47% had received the polio vaccination)
- → Morbidity continued to be high: 58% of mothers confirmed that their children had respiratory related ailments within two weeks preceding the survey. Similarly high was fever, reported by 48% of mothers, and diarrhoea, 40% for the same two week period. The fact that the majority of children with diarrhoea were given fluids could be an indication of increased awareness on the importance of ORS fluid in the management of diarrhoea. Of those who had a cough, 30% were given medicine from private pharmacists
- → Malnutrition rates were high: 36% of children were underweight based on MUAC estimations, including 12% who were severely undernourished

- → Reproductive and maternal health: Some improvements were noted in the number of mothers receiving antenatal care: about 44% of mothers confirmed seeing a medical person during pregnancy. Regarding knowledge on HIV, 67% were still unaware that healthy looking persons could have HIV; more positively, 54% of respondents knew that HIV/AIDS could be transmitted from mother to baby.
- → Quality of inputs: there were concerns about the capacity of 'pharmacists' (who are much depended on for drugs) including their knowledge on the quality of drugs including expiry dates, and on their application

Adapted health and education programmes for pastoralists do exist, ones that are specific to certain contexts and effective in reaching and providing appropriate services to communities even beyond the duration of donor-funded projects (Schelling et al, 2008). These are not however the majority of cases: in spite of growing recognition of their economic importance and sustainable management of natural resources (World Initiative for Sustainable Pastoralism, 2008) mobile livestock production systems – and those living within them – are rarely considered in development and decentralisation plans (Lister, 2003). In addition, governments are often perceived to be using the difficulty of providing services to mobile pastoralists as a reason to promote settlement that is easier for governance, taxation, electoral enrolment etc.

A mobile pastoralist way of life brings a unique set of development needs corresponding to specific vulnerabilities – to environmental change, conflict and natural hazard, marginalisation and neglect. Increasingly it is clear that complex and interlinked vulnerabilities require holistic (as well as context-specific) programming approaches that bring together aspects including livelihoods, governance and environment as well as health and nutrition, water and sanitation, education and protection.

The links between rural pastoralist contexts and urban centres are very clear in contemporary contexts, and should be seen as an opportunity for holistic understanding and programming. Growing urban populations rely increasingly on the ecosystem health of drylands, including their effective management by pastoralists: meat and other livestock products are supplied to towns from rural pastoralists; urban centres depend on the social, economic and trading networks that span vast rural areas; and the provision of drinking water and hydro-electricity in urban settings often depends on maintaining water cycling in drylands. Governments and agencies should recognise that undermining pastoralist systems has implications for many non-pastoralists (World Initiative for Sustainable Pastoralism, 2008). Seeing these connections is also relevant to programming that acknowledges the movement of people out of pastoralism, whether permanently or temporarily: while policies should strengthen the resilience of pastoralists through support for diverse risk management or livelihood strategies, where appropriate they should also facilitate the engagement of pastoralists in alternative income generating activities – in many areas this is necessary to address the growing imbalance between humans, livestock and the environment (Rass, 2006 and Simpkin, 2005).

Inter-sectoral and inter-agency approaches, based on context-specific understandings, are required to address the interdependencies that exist when it comes to vulnerabilities or capacities in pastoralist settings. This is increasingly recognised by policy makers, donors and researchers, with a call for correspondingly holistic approaches or responses. Departing from a past where interventions have been mostly sector-specific (focusing separately for example on water, or marketing, or land tenure reforms, or access to fodder etc.) planning and programming must demonstrate obvious interdependencies (for example how access to markets and livestock health influence the quantity and quality of livestock production, or how access to basic social services increases the food and livelihood security of a household or community). Agencies need to align diverse programming objectives to a wider common outcome of sustainable livelihoods, as opposed to humanitarian action or sector-specific development programming.

Decentralisation processes are occurring in many contexts (for example in health sector reform programmes) and appear to be an opportunity for promoting such holistic approaches; but also, importantly, for empowering communities including mobile pastoralists, because they recognise and strengthen regional economies – for example extensive livestock production systems (Lister, 2003 and Bonfoh et al, 2007).

2. Target populations and study districts

2.1 Definitions of pastoralist households, Internally Displaced Persons, refugees

The following definitions of different 'target populations' are suggested to inform the FAO-UNICEF-WFP Somalia Resilience impact evaluation and its household survey:

Pastoralist Household

Pastoralists can be mobile, partly mobile or not at all mobile. Some would argue that a pastoralist household defines itself (self-determination); others say a pastoralist household is defined by the proportion of the household's income gained through livestock and livestock products (i.e. over 50%, as per Swift, 1988, cited above). In addition, mobile pastoralist households have a zone of origin (or livelihood zone): pastoralist households can be IDPs or refugees newly/recently returned to their zone of origin, or may have remained in a certain zone for many years, establishing it as their new 'zone of origin' and intending it to apply to successive generations. In this context the majority of pastoralist households will have a certain degree of mobility associated with livestock access to water and pasture. Since there is no clear definition of a pastoralist household in Somalia, it is proposed here to apply the definition where a household's income through livestock and livestock products is above 50% (Swift, 1988). Thus pastoralist households can also engage in agriculture (as well as professions, enterprises or trades), and seasonality of crop-farming may need to be considered in districts with high numbers of 'agro-pastoralists'.

Internally Displaced People (IDPs)

UNHCR Somalia published in February 2013 an estimate of 1.1 – 1.36 million internally displaced people (IDPs) in Somalia, whereby the highest concentrations are in Mogadishu/Central regions and in urban centres. IDPs are defined by UNHCR as 'Persons who are displaced within their country and to whom UNHCR extends protection and/or assistance. It also includes persons who are in an IDP-like situation.' UNHCR will focus on protection and the provision of core relief items and emergency shelter. Access to basic needs remains a challenge. The majority of IDPs lack adequate shelter, access to food, health care, education, and live in poor sanitary conditions. And women and girls are particularly exposed to sexual and gender-based violence. It is anticipated that 100,000 IDP households may want to return to their area of origin in 2013 (http://www.unhcr.org/Somalia).

Refugees

UNCHR lists 1 million refugees living outside Somalia, and accommodates some of these in camps in Ethiopia and Kenya (Figure 4, red tents). Increasingly there is movement of numbers of these ("returnees") back into the country from these camps. Many return journeys through Dollow district, but arrivals do not necessarily stay in the district.

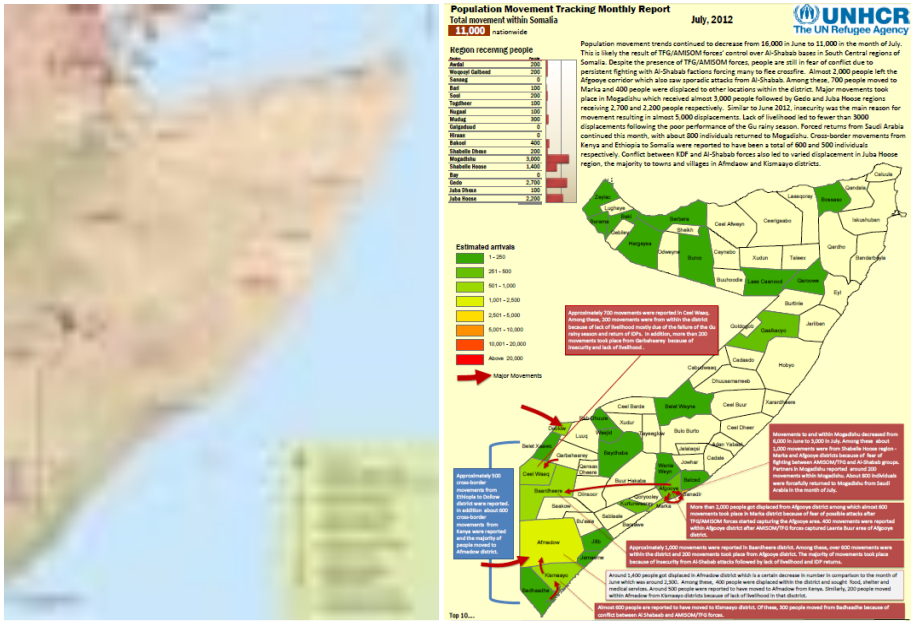

Figure 4. UNCHR maps on location of refugee camps (red tents) and population

2.2 Study districts and pastoral groups

The impact evaluation for the UNICEF-FAO-WFP Resilience Strategy will take place in five districts of greater Somalia: Boroma district (of Awdal, Somaliland); Owdweine district (of Toghdeer, Somaliland); Bossaso district (of Bari, Puntland); Iskushuban district (of Bari, Puntland); and Dollow district (of Gedo, South Central Somalia). In the five districts there are important livestock movements (*Figure 5*). The five districts include at least three of the five major clans, namely Darod, Dir, and Issaq (*Figure 7*). The selection criteria for these five districts were defined by the three executing agencies and included the following: i) accessibility; ii) presence of a scheduled programme of interventions; iii) data availability; and iv) presence of skilled field staff.

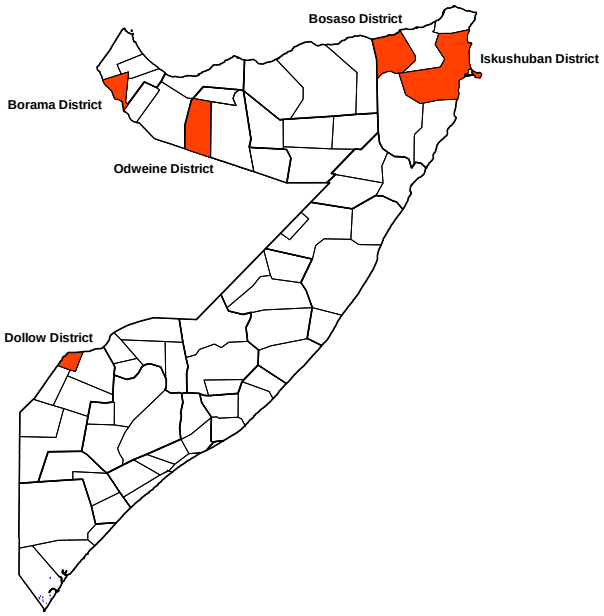

Figure 5. Selected five districts where the UNICEF-FAO-WFP Resilience Strategy and impact evaluation will take place.

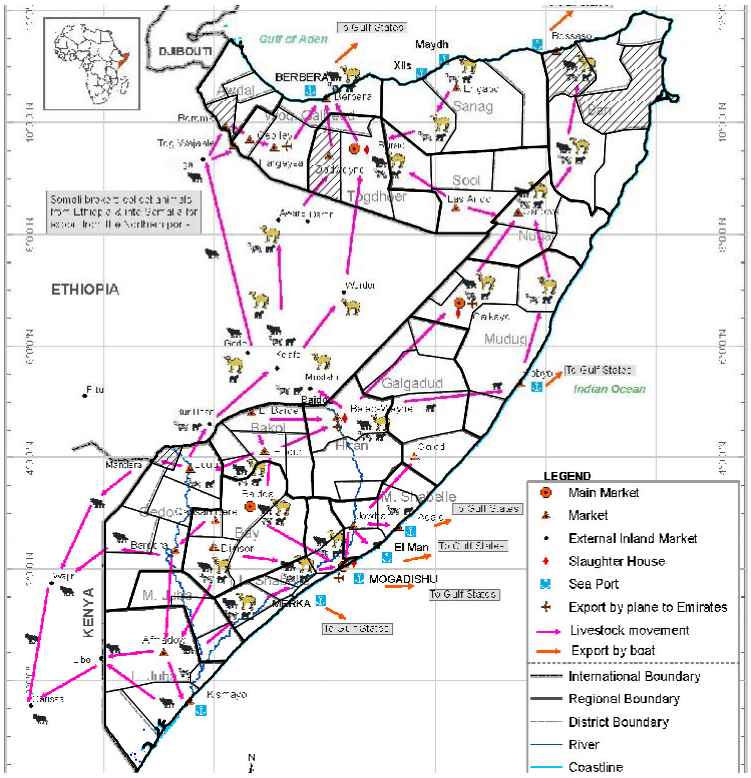

Figure 6. Map showing the main livestock market trade routes. In shaded orange are the selected districts for the impact evaluation. Source: FSNAU, FAO, Somalia Major Livestock Markets, 2006, http://www.fsnau.org

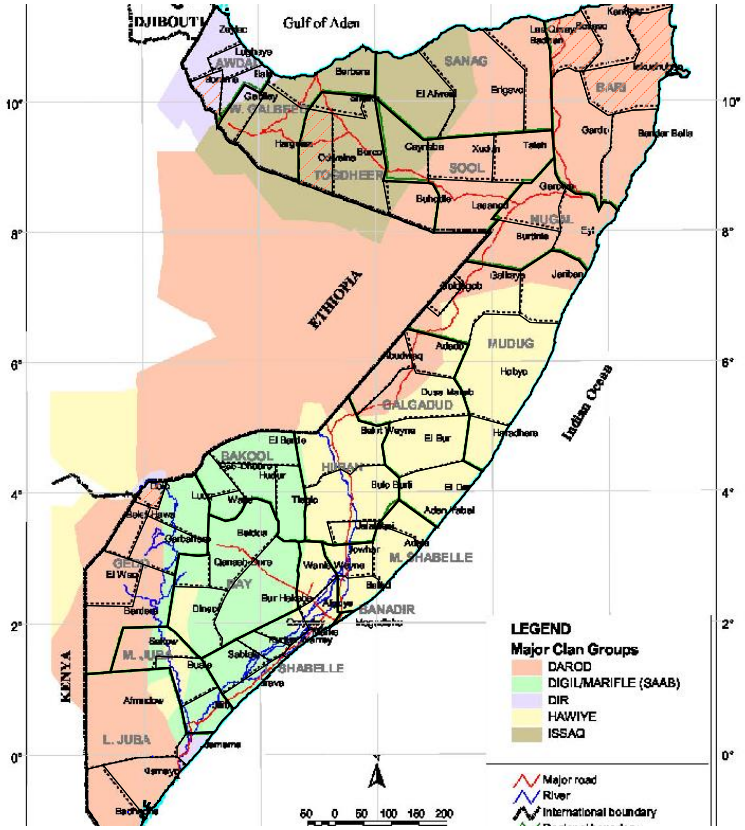

Figure 7. Somalia: Major Clans Geographic Distribution (FAO, FSNAU, 2005, www.fsnau.org)

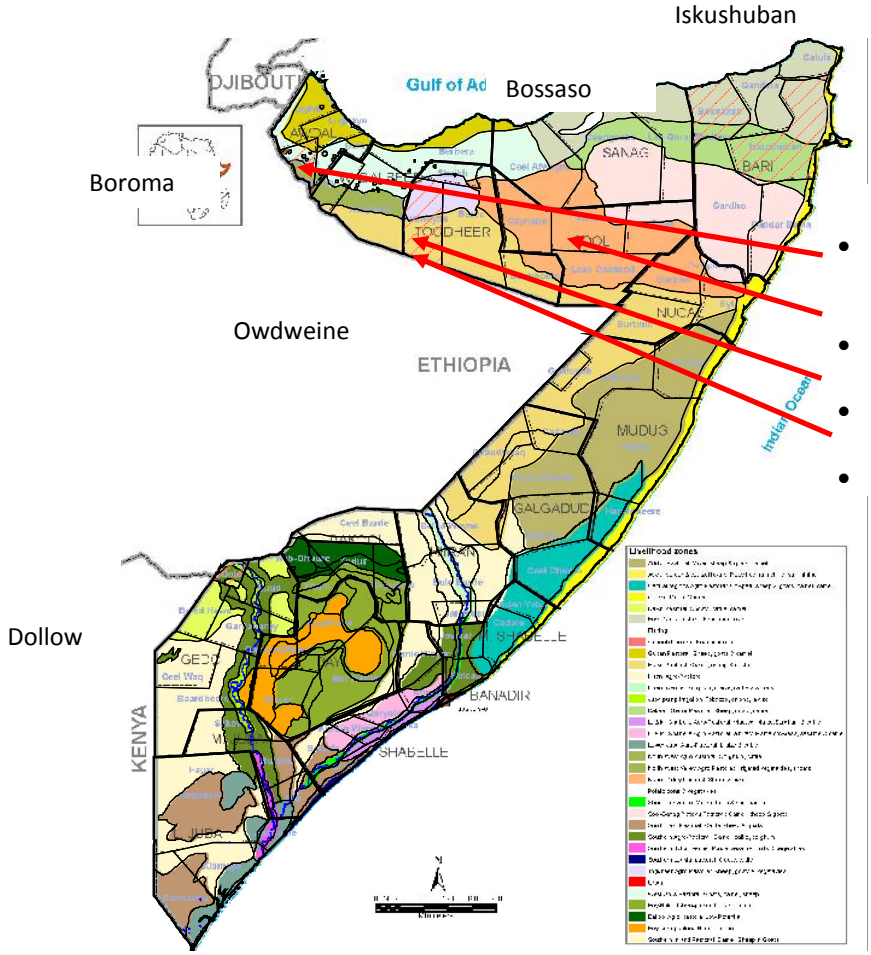

Figure 8. Somalia Livelihood Zones (FSNAU, updated 2012, http://www.fsnau.org/products/maps/livelihood-maps)

3. Sampling methodology and study design to ensure inclusion of pastoralists

The enrolment of pastoralists is an integral part of the FAO-UNICEF-WFP Resilience Strategy and its impact evaluation given the presence of pastoralists in the targeted communities. The impact evaluation is composed of repeated questionnaire-based surveys (at 12-18 months intervals) to assess the changes and benefits of the Resilience Strategy. Household heads and (if the household is not female-headed) also a wife, not necessarily the first wife, will be interviewed (FAO et al, 2012a). The (baseline) questionnaire is designed to capture movement of all household members. Enumerator teams will be drawn from WFP/UNICEF/FAO/FSNAU staff available and trained prior to the evaluation in use and completion of the questionnaires.

The following sections depict ways in which the inclusion of pastoralists can be better ensured for the Somalia Resilience Strategy specifically – but also beyond, in other contexts where mobile and semi-mobile pastoralists exist.

3.1 Consideration of season/period and movement patterns

The appropriate period for initial selection of communities for sampling (for community consultations, enrolment in impact evaluation etc.), where one would want to achieve coverage according to their relative representation within a district, is at times or seasons when pastoralists of a certain zone (see definition of pastoralist household above) are relatively concentrated in that zone and undergo little or movement.

Seasons with possible longer distance movements can be very stressful for families because decisions on where to direct the herd need to be made continuously. Also, families do not necessarily stay together. Therefore, the best period for consultation is when little or no movement takes place (e.g. when pastoralists are in a seasonal 'zone of concentration') – and when, relatively, it is not a hunger period.

Typical hunger seasons in Somalia are March (and April) for most zones – before the main rainy season (*Gu*). A secondary hunger season is in September/October before the minor rainy season (*Deyr*) [FewsNet]. After a good *Deyr* rain performance in 2012, a normal 2013 is awaited in most parts of Somalia (Seasonal Climate Update, February 5, 2013, www.fsnau.org and FEWS Net www.fews.net accessed 13 February 2013). Based on information from the FSNAU Baseline Livelihood Analyses describing patterns for four livelihood zones, seasonal considerations for sampling are proposed.

In agro-pastoralist communities, peaks of agricultural activities should also be considered – and avoided as times for sampling or consultation – since families may not have time to participate when their related workloads are high.

Movement patterns alter according to seasonal availability of pastures, but also due to security and other considerations. Early checking and confirmation of seasonal movements with local sources (e.g. through interviews with local authorities, local agencies and representatives of pastoral communities) is highly recommended. There is no substitute for local information, which may go against predictions: for example in certain districts, the best season for community consultations may be just after rains start, while in others it may be during the dry season.

3.2 Consultation, mapping and selection

Communities for the Resilience strategy's impact evaluation (and programming interventions) are selected from those initially included in community consultations and thus targeted by the resilience building programming of the three agencies. This shows that it is crucial to ensure that the initial selection for community consultations is as unbiased as possible (d'Errico, personal communication).

The appropriate period (see above) and an understanding on pastoralist group origins and movement within the district should be established prior to the consultations and as soon as possible. Following that, local leaders need to be well informed and consulted about survey *and* programming plans; pastoralist societies are often hierarchical, and correct consultation is necessary to avoid the potential loss of a whole group because a leader feels inadequately involved. If pastoralist groups of different sub-clans are present in a district, respective *sub*-clan leaders also need to be contacted in this preliminary assessment.

A sampling frame that adequately represents pastoralists is vital, and cannot be assumed: pastoralist groups and families may not be registered in existing village maps and lists. Also worth considering is that pastoralists should be represented in both the intervention and the 'control' group, since both these groups will exist in each district visited by the impact evaluation (FAO et al, 2012a).

'Zones of concentration' need to be identified in a mapping exercise. Once the best period for community consultations and selection of pastoralist households is defined, local authorities, agencies and representatives of pastoralist communities (e.g. pastoralist associations) should be consulted to indicate the locations of pastoralist groups and 'zones of concentration', and provide more qualitative information on the whereabouts and movements of groups. In a related example, mapping of zones of concentration of mobile pastoralists in Chad is regarded by the national Expanded Programme on Immunization as an important planning tool (*Figure 9*). Such maps (linked to other information such as population size data) can be compared with existing lists of villages and decided whether the currently available information is sufficient or if the list of sites – used for the selection of families – needs to be extended. Maps can also create more transparency on the selection mechanism; and they can be overlaid with other maps such as security maps.

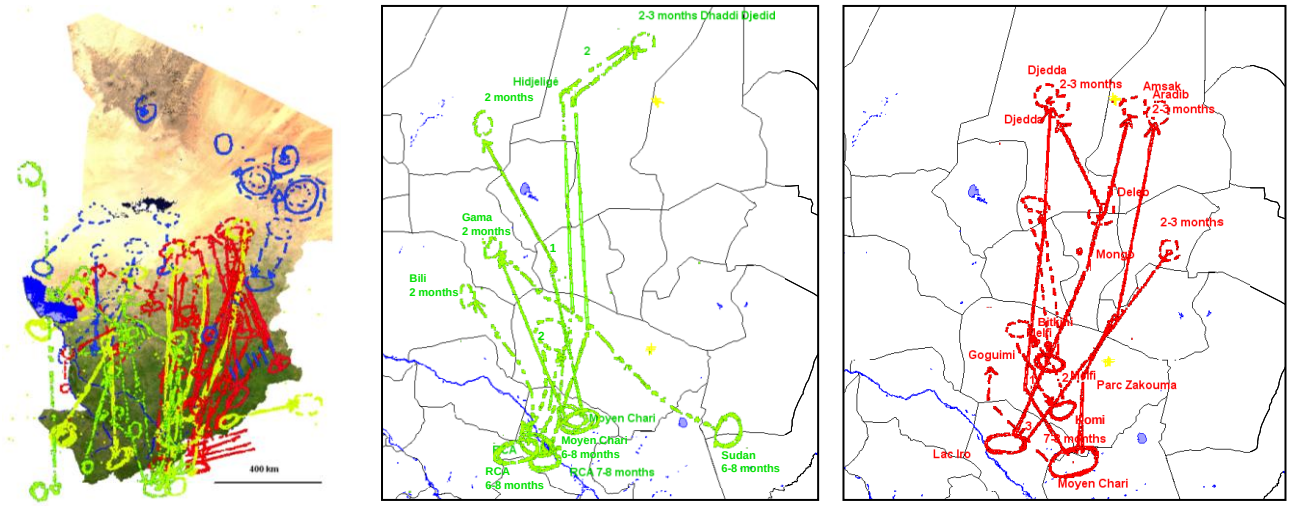

Figure 9. 'Zones of concentration' of mobile pastoralists in Chad. The different colours are for different ethnic groups. More general maps for all of Chad and detailed maps for different zones were established by participating mapping with representatives of pastoralist groups. The maps are linked to qualitative data on the best periods to access the groups. Maps can be easily digitalised and geo-referenced by use of different colour markers, and by indication of three known coordinates on the printed basic map.

Identification of households within the sampling frame must be done without bias, and could be done by random selection. Once the zones of concentration of pastoralists are defined, a random selection of households to be enrolled in the impact assessment can be done (guided by the established sample size – see section 3.3). The selection must ensure that possible biases are minimised as much as possible, while bearing in mind that although one often speaks of 'representativeness', this is difficult to show and is not well defined.

Another relevant context is rural Mongolia, inhabited mainly by mobile pastoralist groups. In contrast to most African countries (such as Somalia, whose official population census is outdated), in Mongolia there are regular livestock censuses with registration of family names (that are also used e.g. for tax purposes, but also for planning of services). In a recent 'multi-stage cluster sampling' of Central Mongolian Aimags (provinces), at the first stage *Aimags* were randomly selected proportional to size, then *Soums* (districts), then households, and finally (as the fourth stage) individuals within households/herds (simultaneous interviews and sampling of people and livestock). The households within *Soums* were selected randomly from existing lists. Eight (mixed) teams could visit over 240 mobile families within two weeks. Veterinary personnel were key in indicating the approximate locations of the families at the time of the survey (some families have moved more than 100 kms, 4-6 months after registration).

In African countries, updated lists of families rarely exist. However, it is always possible to have information on the best period for consultation/sampling, and zones of concentration. In Togo, Chad and Côte d'Ivoire, it was possible to do random selection in these zones of concentration using random coordinates. For Somalia, this would mean that the enumerators are able to use a GPS to localise the coordinates. Depending on the objectives, either all the found

'spotted' (targeted) families in a given predefined visibility range could be included, or only the first, or a systematic selection could be applied (e.g. every 5th family in a predefined transect) (*Figure 10*). The use of random coordinates can be applied within zones of concentration to avoid oversampling in very sparsely populated zones.

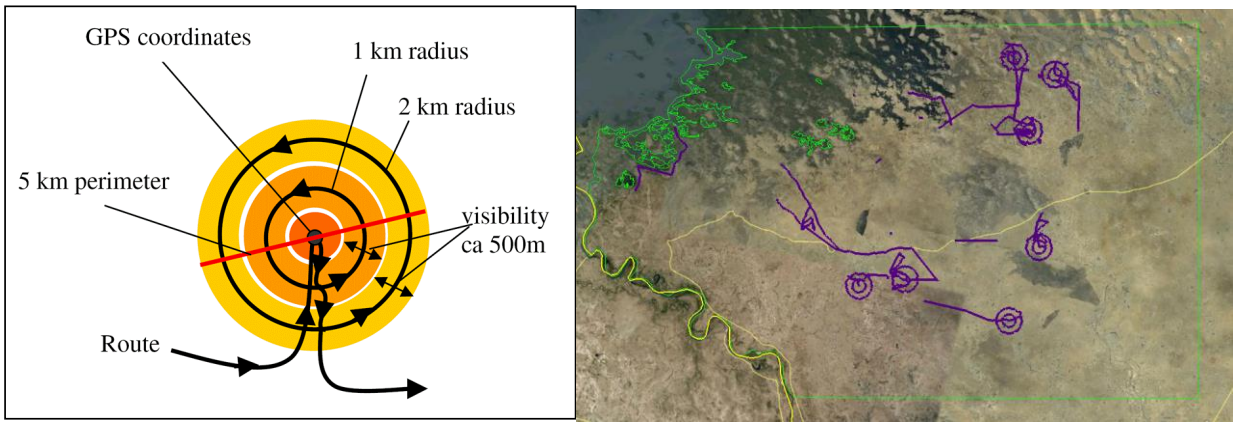

Figure 10. Zone of concentration in Chad (green delimitation). Random points, inclusion of all

The overview of best period, complementation of existing lists and possible sampling strategies should be done before the first community consultations. In the course of the consultations, lists of families can be further complemented and a random selection from these drawn for the impact evaluation.

3.3 Sample size, sampling proportional to size, and random sampling procedures

In the context of the Somalia Resilience strategy, there is no significant reason why pastoralists should not be represented (proportional to their size) in districts selected for the impact evaluation. The initial protocol calculated a necessary number of 550 pastoralist households; guided by considerations of potential loss in follow-up, available budget and human resources, and maximum time available for the study. Loss during follow-up may be slightly higher in pastoralist groups than in others, as may be the security considerations during initial community consultations. However, this can be limited and overcome by use of enumerators who can circulate in the whole district and by preparing good initial sampling and follow-up plans for families possibly moving outside the district.

The sample size calculation may need to be increased if the number of livelihoods is high (>3) in a district, and 'stratified analyses' for each livelihood are needed. A separate sample size for each livelihood will need to be increased in this case.

'Proportional to size' sampling is important – that favours larger units (such as villages, townships, or livelihoods) being included in the sample at first stage, and where equal numbers of second stage are selected (which should level-out, not perfectly but roughly), and where there should be equal chances for each individual to be included in the study – and one should compare equal with equal to avoid introducing a bias. For example, if selection of villages proportional to size is done for a village containing many households, then the more scattered pastoralist settlements should be summarised in comparable sizes; not for camps with only few families, but rather per zone of concentration of pastoralist families.

With selection of pastoralist families within a village/zone of concentration, as complete as possible a sampling frame should first be established for pastoralist villages/zones of concentration. For villages, existing lists of households can be used and then a drawing of all households is possible, or a random sampling strategy can be established (for example as described in the WHO Programme on Immunization, 1988). If it is not possible to extend existing lists of settlements, consider random point sampling as described above. A non-updated list or incomplete list of settlements (including zones of concentration of pastoralists in their zone of origin), is likely to introduce a great selection bias regarding the enrolment of pastoralist households.

3.4 Follow up of mobile pastoralist households – for panel or longitudinal data

Follow-up of pastoralist households is vital if information collected is to be part of panel or longitudinal data sets, and if those households and those livelihood groups are to be understood in ways that can inform adapted programming.

Mapping of mobility patterns (in both good and bad years) can assist follow-up, and telecommunications can be used to locate a household that has moved – either to go to them in their new place, or where necessary to communicate with them remotely if a physical visit is not possible.

In Somalia, a second impact evaluation will be conducted about 18 months after the first (baseline) evaluation (d'Errico, personal communication). It will be difficult for pastoralist interviewees to state where they will be more than one year later since they need to remain flexible according to the available natural resources and access rights. It is always theoretically possible to find the same family again (either by communicating directly with them or by asking key resource people about their whereabouts and using local guides (Schelling et al, 2005). Time, resources and security considerations play a role in this, but follow-up of interviewees needs to be ensured – regardless of whether they are in the same location as during the first interview, or still in the same district, or even if they are in a zone not physically accessible by enumerators. This is possible if mobile phone interviews are foreseen for those who cannot be joined by enumerators for the next impact evaluation interview.

Mobile phone coverage in Somalia is increasing available, including in rural zones. Carr-Hill et al (2011) found an overall proportion of 26% of households who owned at least one mobile phone (from 13% in South Mudug to 36% in Maroodi Jeex). Pastoralists in Dollow mentioned that "in emergency situations" they get market information on market prices and other things by mobile phone (FAO et al, 2012b). Pastoralist interviewees of the Hawd livelihood zone stated that in recent years, cell phones have enhanced information exchange on weather, remittances and pasture availability (FSNAU, 2011c) – and in Togdheer, the telecommunication infrastructure functions well in most villages. About four cellular telecommunication agencies, namely Telsom, Telecom, Somtel, and Nation link, operate in the livelihood zone. These communication services facilitate remittance inflows, trade activities, information and local money transfers. Agro-pastoralists benefit from the use of telecommunication services by receiving and passing information on rainfall and pasture availability, water tracking and market prices of commodities (FSNAU, 2011b).

Using the same principles, demographic surveillance systems (where information on demographic and health indicators over time is needed for planning and management of social services) are possible in mobile pastoralist settings: for example a cohort of 20 mobile pastoralist households in remote rural Chad was monitored during 18 months with periodic mobile phone calls. The study showed the feasibility of mobile surveillance of nomadic pastoralist camps and provided usable information on human and livestock population structures, pregnancy outcomes and herd dynamics as well as movement patterns of the camps. The approach was low-cost, used existing local resources, generated internally valid results and the compliance of the participants was very high. Both the head of household and a wife (often the first wife) were enrolled. The appointment for a telephone interview was taken well in advance and a reminder text sent – this to ensure that interviewees had stable network at time of the interview. An incentive (telephone credits sent to the number) was provided for compensation of their efforts. Although herd splitting occurred, the husband and the enrolled wife stayed together during the 18 months of the survey (Jean-Richard *et al,* in preparation).

Overall it is increasingly possible to reach randomly selected mobile pastoralist households by mobile phone, to safeguard their follow-up and inclusion in panel or longitudinal data. In Somalia (as well as many other places), ownership of cell phones and coverage network increases rapidly. The registration of several telephone numbers per household during the first face-to-face interview in pastoralist households is important to safeguard follow-up. The programme may need to consider purchasing a few (solar-powered) mobile phones for selected pastoralist households who state absolutely that they have no phone. If a telephone interview is agreed to (because it is not possible for enumerators to access a household), an appointment for the interview needs to be announced well ahead. It should also be confirmed, since interviewees may need to organise themselves to have a good telephone connection at the time of the interview. An incentive in the form of telephone credits is appropriate for cell phone interviews.

3.5 Possible role of animal health services in surveys and implementation

There is a relative lack of veterinary services in Somalia, despite the high demand for these within Somali pastoral (and agro-pastoral) communities (see previous section). Yet where they do exist, or are supported, they can play an important role in consultations, assessments and evaluations given their reach and access.

Veterinarians, veterinary technicians and community animal health workers know well the whereabouts of pastoralist groups and are (commonly) trusted and respected by pastoralist communities. Veterinarians should be contacted as key resource people (next to local authorities and agencies) for the compilation of lists of pastoralist communities for

selection, but could also support in establishing contact between programmes and communities. In addition, they have the infrastructure in many regions to reach pastoralists (their main clients) and so could play a direct role in this. Synergies between veterinary services and other services (i.e. sharing of cars) should be evaluated in the implementation programmes since they not only strengthen existing services but can also be key to sustainable service provision.

4. Sampling for the inclusion of pastoralists in the Somalia Resilience impact evaluation – per district

In the following sections, the livelihood zones of the five districts selected for the Somalia Resilience strategy impact evaluation are listed, and information from the four FSNAU Livelihood Baseline Analyses relevant for these districts is summarised alongside information on movement patterns. In these reports, there is little information on family splitting that could be related to movement patterns. The one exception is in the Sool livelihood report, where family splitting is listed among the coping strategies: 'Splitting of family members (1 family member takes the herd and migrates to a distant location to access water and pasture)' (FSNAU, 2011a).

Recommendations for context-specific sampling that ensures the inclusion of mobile pastoralists are given here for the five selected districts for the impact evaluation, which are as follows:

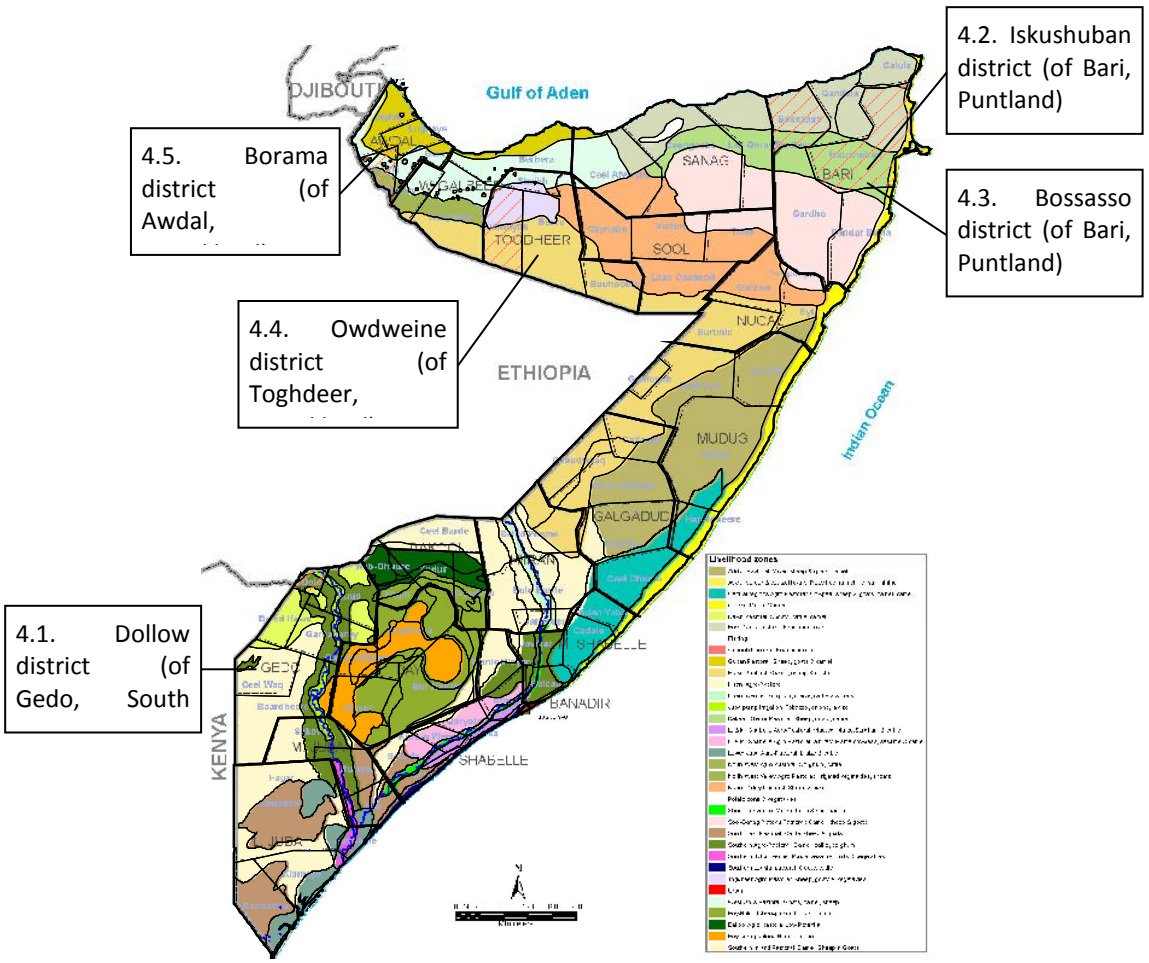

Figure 8. Somalia Livelihood Zones (FSNAU, updated 2012, http://www.fsnau.org/products/maps/livelihood-maps], with study districts marked

4.1 Dollow district (of Gedo, South Central Somalia)

In Dollow district of Gedo there are three livelihood zones, of which one is pastoral (*Figure 8*, *page 16*):

- *Juba pump irrigation zone* – tobacco, onions, maize
- Southern agro-pastoral zone – camels, cattle sorghum
- *Dawo pastoral zone* – small ruminants, cattle, camels

Note that there is high population movement through Dollow district: several UNHCR refugee camps in Ethiopia are near its borders and returnees pass through Dollow (see above section on 'Refugees').

From summaries of community consultations held to inform the FAO-WFP-UNICEF Resilience Strategy, we can conclude that a relative 'loss of pastoralism' (either because whole groups moved away permanently, especially camel herding families, or because herds and mobility are reduced) is common not only among pastoralists but also among agro-pastoralists and among those living in the urban centre (FAO et al, 2012b).

Dollow district was identified for Phase I of implementation and evaluation for the following reasons:

i) Access to Dollow is granted (airport). International UN staff members are security-cleared within the town of Dollow and up to 20km from the centre. This was essential for training of the enumerators and piloting the questionnaire. National staff and non-UN agency partners can access the remaining parts of the District. Local Companies are also allowed

ii) Both FSNAU and other non-UN agencies have collected (qualitative) information on Dollow; evidence from this data will allow the team to triangulate, confirm and check the validity of the quantitative data collected, and the information also provides inputs for the questionnaire

iii) Young local people with university degrees and field experience, working both with the three UN agencies involved and with NGOs, are present in the area (FAO et al, 2012a).

➔ In Dollow, according to UNHCR and others, there is currently much movement of returning families from refugee camps in Ethiopia through the district. Although mobile pastoralism may be more significant in the Northern districts of Somalia, in Dollow important proportions of the population are pastoralists or agro-pastoralists with a more or less mobile way of life according to the availability of pastures. Herd splitting and family splitting (most often the core family remains in the district together with lactating female animals, whereas the younger men move with the remaining livestock to other pastures) exists. But whole families also move, when no resources to feed the livestock remain.

➔ Since Dollow is the pilot district for the impact evaluation, it is important to show that pastoralist families can be included and followed, despite the fact that the initial selection of households was based on those included in the community consultations and there was a large bias of under-representation of pastoralist families [this was largely for security reasons, but the baseline survey eventually compensated for this bias through over-sampling of pastoralist households].

➔ The impact evaluation would be best done in the main rainy season *Gu* – April onwards – when (according to Ethiopian experts working for WFP) pastoralists are largely back to their villages.

➔ It will be key to record several cell phone numbers (not only of interviewees enrolled, but also of others present, for example of sons) to allow early announcement of the next interview that will take place 18 months later.

4.2 Iskushuban district (of Bari, Puntland)

The three livelihood zones in Iskushuban are all pastoralist. The Sool-Sanag Plateau pastoral livelihood zone was further described by FSNAU (*Figure 8*, *page 16*):

- East Goli pastoral zone – frankincense
- Kakaar-Dharor pastoral zone – sheep, goats, camels
- **Sool-Sanag** Plateau pastoral zone – camels, sheep and goats

From the detailed **Sool Plateau Pastoral** Livelihood Baseline Analysis (FSNAU, 2011a) the following can be learned of potential relevance to sampling:

- Due to persistent droughts and asset losses, many very poor pastoralists lost their mobility (especially through loss of pack camels) and settled in the periphery of towns, villages and water points.
- Most of the livelihood zone was once covered with scattered trees, but due to excessive tree-cutting for charcoal, firewood and grazing, vegetation cover has declined and become less diverse. In addition, there has been excessive livestock pressure (overgrazing) on limited pasture.
- Cattle – previously preferred by the middle and better-off households - have become less popular. Camels are the most important animals for nomadic pastoralists as productive females are an important source of milk for income and domestic consumption. Pack camels are useful for transporting water and household items including the *aqaal* (a nomadic house) in the dry season when migration intensifies.
- Mobility and sharing remains a key risk-reduction and coping strategy in times of resource scarcity, although numbers of pack animals are becoming more limited and localized clan rivalry is a risk when moving.
- Camel milk is a significant part of household food and an important source of income – camels have a constant lactation period (12 months or year round) compared with goats.
- Seasonality influences food purchase and consumption. As pasture and water availability increase in the wet season, livestock production rises; in the dry season livestock feed shrinks and distances between pasture and water points increases.
- In an average year, with normal rains, there is no out-migration from Sool livelihood zone but in *Jilaal* and *Hagaa*, pastoralists move closer to the water points within the livelihood zone. In a bad year, out-migration takes place to Coastal, Karkaar Dharoor, and Nugaal (*Table 1*).
- In general, patterns of migration in the livelihood zone are influenced most by seasonality. Following an average to good *Gu* season, migration is confined within the livelihood zone. Shocks associated with a bad *Hagaa* season force some pastoralists to return to their homes (or so-called 'zones of origin'), to access credit and seek social support – despite a shortage in water supply for their livestock. In the *Deyr* season average rains prompt all or most pastoralists to return, although some migrate to the coastal Deeh areas towards the end of the *Deyr* season. No abnormal migratory patterns have been seen to occur in *Jilaal*. *Figure 11* indicates livestock migration patterns in the Sool livelihood zone (FSNAU, 2011a).

Table 1 *Pattern of livestock migration in a normal and bad year (FSNAU, 2011a)*

	Pattern of livestock migration in a <u>normal year</u>	Pattern of migration in a <u>bad year</u>
	All livestock species move except lactating sheep and goats	All livestock species move since many animals are weak and migration is over long distances. Some pastoralists use lorries in transporting shoats. Migration may also involve family separation.
Gu	In normal *Gu* rains, pastoralists move within Sool plateau.	Bad *Gu* rains are associated with out-migration to: - Golis livelihood zone (Sanaag -Bari regions) - Upper Nugal livelihood zone (Sool-Sanaag regions) - Dharoor livelihood zone (Sanaag-Bari regions) - Hawd livelihood zone (Nugal-Sool-Toghdheer regions)
Hagaa	Some pastoralists return to their homes to access credit and social support despite the water shortage.	Very few pastoralists return to their home areas to access credit and social support.
Deyr	Average rains prompt all or most pastoralists to return and reunite with their families, with some moving to Coastal Deeh in *Deyr* season.	Pastoralists remain in the regions they out-migrated to.
Jilaal	Normal migration due to good *Deyr* rains	Very few pastoralists return to their home areas to access credit and social support.

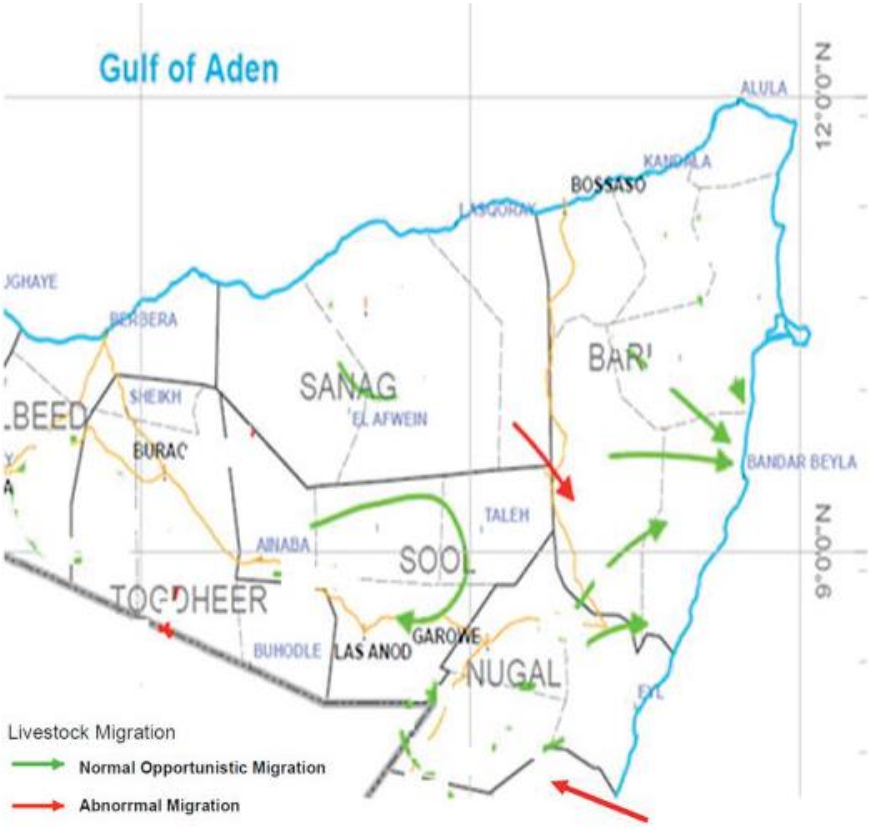

Figure 11. Livestock migratory patterns in Sool livelihood zone

Implications for initial sampling includes (most importantly) timing: Mid-*Deyr* (October/November) seems most appropriate for initial contact/consultation because in a normal year pastoralists of the zone return to their zone of origin.

4.3 Bossaso district (of Bari, Puntland)

The district of Bosssaso includes two pastoral zones (*Figure 8*, *page 16*):

- East Goli pastoral zone – frankincense
- Kakaar-Dharor pastoral zone – sheep, goats, camels

It can be assumed that for these two zones the same characteristics as described for other Northern pastoral livelihood zones are valid: export of livestock and important trade routes; predominance of camels for subsistence of pastoral families; flexibility of migration according to the season, past *Jilaal* and opportunities to access pastures.

High numbers of livestock are traded through Bossaso (for export) – it will be important to clearly distinguish between traders and pastoralist families originating in the pastoral livelihood zone. Mid-*Deyr* seems appropriate for initial selection.

4.4 Owdweine district (of Toghdeer, Somaliland)

In Owdweine district there are three different (agro-) pastoral livelihood zones (*Figure 12*). Two have been evaluated by FSNAU (Hawd pastoral and Toghdeer agro-pastoral zones), as summarised below (*Figure 8*, *page 16*):

- ***Hawd pastoral zone*** – camels, sheep and goats
- ***Togdheer Agro-pastoral zone*** – sheep, goats and vegetables
- West Golis pastoral zone – goats, camels, sheep

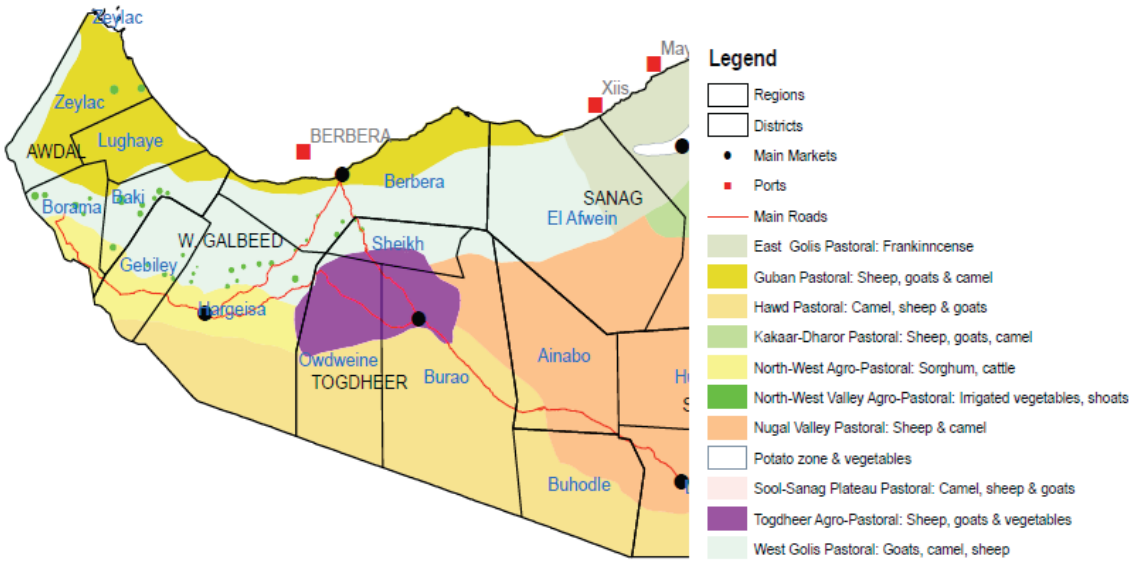

Figure 12. Livelihood zones of North-West Somalia

Hawd Pastoral Livelihood Zone (FSNAU, 2011c)

- Hawd pastoral ('forest land') is the largest livelihood zone in Somalia.
- Settlements in the Hawd pastoral zone are generally sparsely populated with temporary settlement units established by very poor, poor and middle wealth groups. However, the better-off households have semi-permanent/permanent settlements and employ the lower wealth groups to herd their livestock.
- Camel and goat holding is more prevalent in central and northern parts of Hiran and northeast Hawd, due to the presence of good browsing and grazing land. Sheep are predominant in the northwest.
- 2010 was the year when pastoralists started rebuilding lost livestock assets. This was facilitated by good livestock prices, improved livestock/cereal terms of trade, and relative political stability.
- High temperatures in *Jilaal* increase soil moisture loss and can lead to vegetation wilting (moisture deficiency) and reduced quantities of surface water and forage. This can force pastoralists to migrate, split herds, increase livestock sales or increase the use of boreholes (with potential for inter-group conflicts). Some parts of west Togdheer and South Galbeed regions experience short *Karan* rains (mid-August to September).
- Migration patterns in Hawd pastoral livelihood zone are greatly influenced by seasonality. In the reference year, migration in search of good pasture and water was confined within the livelihood zone, with significant population concentrations in areas with good pasture and water points (wells, *berkads*). However in abnormal periods or bad years, pastoralists moved outside the livelihood zone as far as the Somali region of Ethiopia.
- The dominant livestock in order of preference are goats, sheep and camels. Due to recurrent droughts over the last two to three years, herd sizes have declined by about 5% to 15%. This was the result of high off-take, death and low calving rates during the prolonged drought period.
- Camel out-migration from the Hawd pastoral zone to better grazing areas in Ethiopia, Sool and Nugaal regions mitigated the expected magnitude of asset loss and herd reduction. Camels are high-value assets and are not sold or slaughtered as often as small ruminants.
- Abnormal livestock movements to neighbouring regions or across the border to Ethiopia are common when there is low rainfall. Pastoralists observe rainfall patterns within and outside their livelihood zone. In central

regions livestock move to the watershed areas of Hawd livelihood zone in the Northwest and Northeast regions and to the Somali Region of Ethiopia. Camels move out of the valleys and clay soil areas in search of rainfall since they can survive without water for almost two weeks. Sheep and goats follow, either by truck (depending on affordability) or on foot. The risks of livestock deaths due to long distances covered are high for poor households. However sometimes better-off groups support the poor in livestock trucking through kinship support.

Gu seems an appropriate season to sample and consult with pastoralists; *Jilaal* less so. Since the better-off pastoralists tend to be in more densely populated (or settled) areas, it will be important not to exclude those in sparsely populated areas. High flexibility and diversity of pastoralist households, depending on resources, needs considering.

Toghdeer Agro-pastoral zone (FSNAU, 2011b)

- The zone is semi-arid with loam soils and mountainous terrain. In the past, the area was densely vegetated and provided favourable grazing/browsing grounds for livestock. However recently, unsustainable land use practices (especially charcoal burning), erosion from seasonal run-offs, and successive droughts are depleting vegetation and exacerbating environmental degradation.
- 65% of families engage in nomadic pastoralism and about 5% practice agro-pastoral livelihoods (concentrated in Owdweine district).
- The dominant livestock species reared are small ruminants (65% goats and 35% sheep). Camels are an important productive asset for the better-off and middle wealth groups. Cattle are close to disappearing due to high susceptibility to the impacts of drought over the last four seasons.
- Normally, livestock migration takes place within the livelihood zone. In the reference year below, normal climatic conditions triggered abnormal livestock movements. In the *Gu* season, all species migrated eastwards to Laas canood, Guban, Oog (ceynabo), Galool and Banka tuuryo. In the *Deyr* season, most animals moved to the Ethiopia border towards Haji Saalax, Laas canood and Banka Saarsaar. During the *Jilaal* and *Hagaa* some animals remained where they had migrated to due to water scarcity and resource competition in the host area, while others returned to the water points of their original livelihood zone.
- Burao market is the biggest and most important for livestock trade in Somaliland, Somalia, and Somali region (Region 5) of Ethiopia. Sale of livestock and livestock products provides the main cash income sources for most households, especially for the middle and better-off wealth groups. The dominant species for local and export sales are goats and sheep (*Figure 13*).

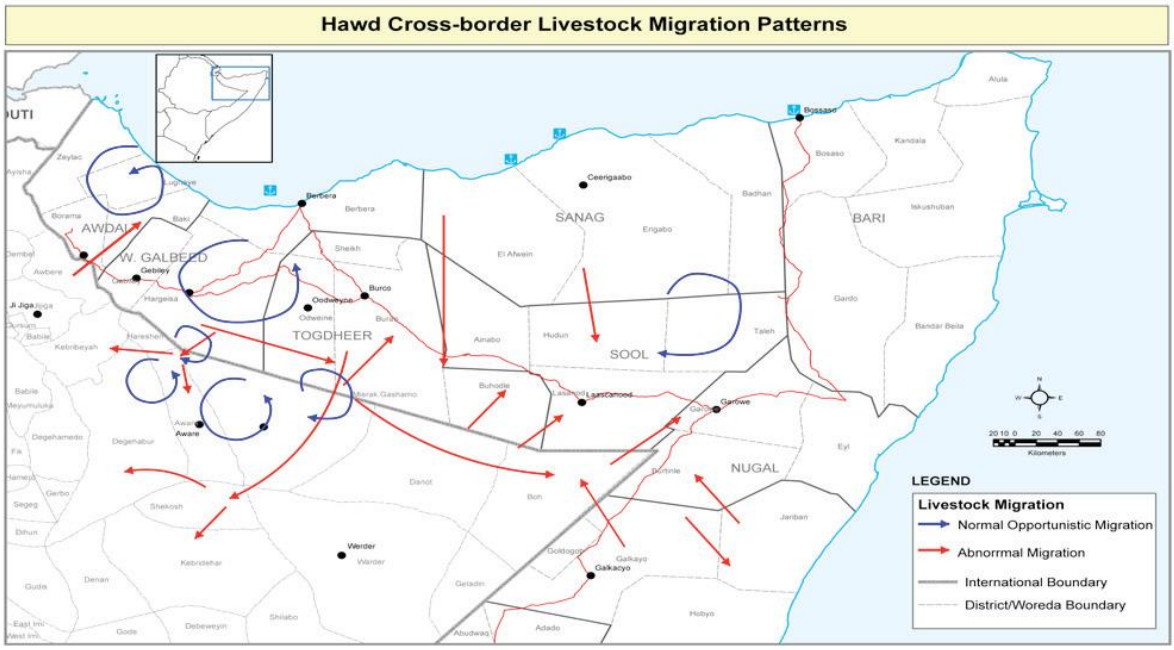

Figure 13. Migration patterns in North-West Somalia (FSNAU, 2011b)

It seems that in *Jilaal / Haaga*, during not so good years, families return to water points and 'left behind' families stay for the whole year in the District.

4.5 Borama district (of Awdal, Somaliland)

The Borama district includes four pastoral and agro-pastoral livelihood zones, whereby the North-West Agro-Pastoral livelihood zone was further assessed (*Figure 8*, *page 16*):

- North-West agro-pastoral zone – sorghum, cattle
- West Golis pastoral zone – goats, camel, sheep
- *North-West Valley agro-pastoral zone* – irrigated vegetables, small ruminants (goats and sheep)
- *Guban pastoral zone* – sheep, goats and camel

North West agro-pastoral livelihood zone (FSNAU, 2011d)

- North West agro-pastoral livelihood zone is a broad plateau that extends from northern Hargeysa to the Ethiopian border and is a prime crop (sorghum and maize) and cattle production area.
- Livestock is the primary asset, the main source of cash income when sold or when used as a source milk or butter and meat.
- During the *Gu* season normal pasture and water conditions enhance livestock production. However, in *Deyr,* poor rains result in low crop and livestock production.
- While normal coping strategies tend to be employed in *Gu,* the main response mechanisms employed in *Deyr* include seeking social support, increased self-employment in charcoal burning and firewood collection (high cost coping strategies) and out-migration of livestock in search of pasture and water.
- The dominant species of livestock kept are cattle, sheep, goats, camels and donkeys. Livestock holding by species increases across wealth groups, from poor to better-off. Of these species, camels are an important asset for the better-off and middle wealth groups. In the reference year the contribution of livestock to poor households' energy and level of income consumption was very limited due to low asset holding. Small ruminants are very significant in contributing to the poor households' food and income sources.
- Due to recurrent droughts, agro-pastoralists tend to prefer rearing camels because of their high ability to resist drought and their high value, hence the increase in the number across all wealth groups.
- Increasing variability and changes in climatic conditions are the main threat to the sustainability of the rain-fed agro-pastoral production systems in the North West (and in many other parts of the Horn of Africa).
- Labour opportunities normally coincide with peaks in agricultural activities (e.g. land preparation, weeding, crop guarding and harvesting) (*Figure 14*).

Critical events and activities	Seasons	*Gu-Karan*							*Deyr*			*Hays*		
	Months	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
	Rainfall		Peak						Peak			Peak		
	Water availability	Low	Peak			Low		Peak			Low			Low
	Land preparation							Peak					P	
	Weeding		Peak						Peak					P
	Harvesting (Sorghum-Maize)				MZ[2]			SH[3]			MZ			
	Pests and diseases			Peak						Peak				P
	Own food consumption months				Peak			Peak			Peak			
	Cereal trade					Peak			Peak					
	Livestock sales								Export				Local	
	Milk sales	Low	Peak		Low			Peak		Low				
	Labour opportunity		Peak						Peak					P
	Hunger period		Poor										Poor	

Figure 14. Seasonal calendar of the North-West Agro-Pastoral zone (FSNAU, 2011d)

Since this is an agro-pastoral zone and communities can be very busy with agricultural activities, the best period for sampling and consultations would seem to be after harvest in *Gu* (August/September). Note that nowadays many pastoralists are also increasingly involved in crop agriculture as they diversify their livelihoods to build resilience to shocks – so harvesting and other agricultural priorities need to be considered not just in agro-pastoral zones.

5. Recommendations and Conclusion

Following the district-specific guidance on securing enhanced enrolment of pastoralists in the implementation and evaluation of UNICEF-FAO-WFP Resilience Strategy in Somalia (section 4), the following more general recommendations can be made (also given at the start of this report):

- **Inclusion of mobile or semi-mobile pastoralist communities must be ensured from the start:** The exclusion of these groups from initial consultations on programming design and assessment is likely to be perpetuated through monitoring and evaluation efforts as well as programming; their initial inclusion must be stressed.

- **Timing is crucial:** The best period for conducting consultations or assessments is when pastoralists originating from a certain district have returned from seasonally-determined transhumance (pursuit of pasture and water) and have sufficient time – for example when agricultural or other demands are few. Complete information on a suitable period should be obtained from traditional and local authorities as well as agencies working in a district prior to the first community consultation or assessment. Due to inter-annual changes based on variable rainfalls, pasture availability and security, past and current information needs to be included in this planning.

- **Sampling frames must be as complete as possible, and include relevant mapping of mobility**: A rapid comparison between existing sampling frames (such as lists of villages) and information on actual pastoralist families in a certain district/location should be done. Existing lists may be outdated or incomplete, or may not capture the inter-seasonal and inter-annual variations of mobile and especially semi-mobile families. Mapping with local authorities and representatives of pastoral communities themselves (as well as of other livelihood communities where relevant) and comparison to existing sources of data on pastoralist groups will show if and how the sampling frame needs to be extended. Maps need to show movement patterns and particularly 'seasonal zones of concentration' of pastoralists: these are places pastoralist groups tend to return to and congregate at, at certain times of year (perhaps varying per good or bad years), that make appropriate locations for consultations or assessments.

- **Sampling methodology must be linked to initial consultations:** The (random) selection of households for the impact evaluation should be coupled with community consultations already held. If the villages and sites registered in existing sampling frames adequately represent pastoralist families, the same random selection procedure as for other households can be taken. If a sampling frame was extended, for example to include seasonal zones of concentration, a random selection with random coordinates can be planned.

- ***Reach* the 'hard to reach'**: Certain enumerators (used to implement survey or impact evaluation work) have greater access to remote areas than others. Before training in community consultation or impact evaluation methodology, enumerators should be chosen who can reach zones that may be restricted to others (e.g. international staff of UN agencies). This and other relevant efforts should be made to ensure that all communities are represented in the sampling frame, and there is no selection bias based on access.

- **Ensure follow-up regardless of mobility**: In many instances mobile households are 'lost' to panel or longitudinal data because their follow-up was either not possible or, more likely, not insisted on. In most cases follow-up of participants from mobile pastoralist households can and should be done – and in many contexts mobile phone coverage is one way of supporting this. Early announcement by cell phone of the date and time of arrival of the interview team is necessary for a convenient meeting point and time to be identified. If the interviewees are too far away to be reached for face-to-face interviews with enumerators – or the enrolled husband and wife are split at time of interview – then telephone interviews should be foreseen. Telephone numbers of relatives or other household members should also be registered during the initial interview to better ensure that they are reached; incentives (e.g. mobile phone credit) may also be planned.

- **Ensure good relationships and information sharing for continued inclusion of pastoralists:** As is the case for all enrolled households in the impact evaluation, continuously providing appropriate information on the goals and implications of the survey (and the corresponding programme) is crucial to minimise loss of follow-up.

- **Synergies with veterinary services:** Given the priority placed on livestock health and productivity by all pastoralists, veterinarians tend to be well trusted and to have better reach and access than other service providers. They should be contacted as key resource people (next to local authorities and agencies) when drawing up a sampling frame, selecting from it, and then accessing pastoralist communities. Models of sustainable animal health service provision in pastoralist areas can inform the delivery of other services. Synergies – for example 'One Health' models where human and animal immunisation/health initiatives are aligned in mutually reinforcing ways – can support holistic programme design that seeks to connect sector-specific work with broader outcomes of sustainable livelihoods and resilience.

In conclusion, the equitable inclusion of mobile or semi-mobile pastoralists is feasible. It may require flexibility, innovation and more careful planning – for example to align a survey with seasonal realities in both good and bad years, with movement patterns and with customary systems of leadership – but it can certainly be done. There are general lessons which can be learned about the inclusion of mobile groups in programming implementation and evaluation, some of which are presented here. At the same time the need for context-specific approaches cannot be over-emphasised, nor the role of knowledgeable local persons in informing these.

This report intends to insist not only on the feasibility of incorporating mobile groups, but also on the necessity and value of doing so. Mobility may be changing but in Somalia and beyond it is neither a new phenomenon nor one that belongs to the past. As well as it being a responsibility for agencies to include mobile or semi-mobile groups in implementation and evaluation, efforts to do so can make programmes more responsive to reality and more effective in addressing needs.

6. List of figures

7. List of tables

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