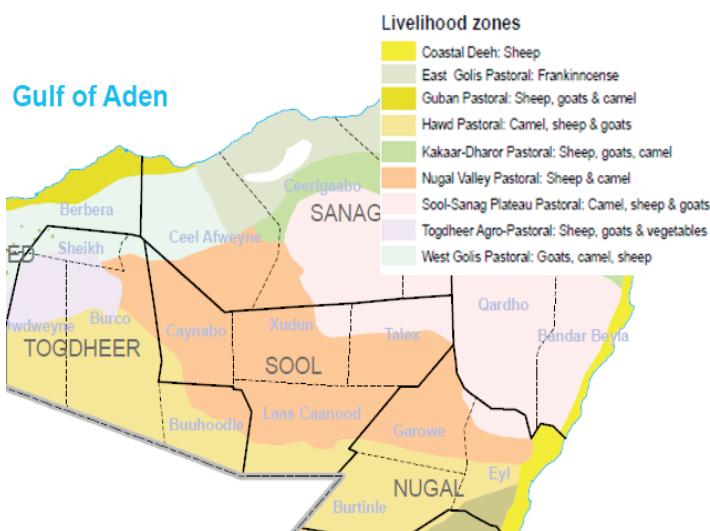


## Nugal Valley Pastoral (Sheep and Camel)

### Nugal Pastoral: Sheep and Camel

For full report see;

FSNAU Nugal Valley Pastoral Baseline Report No. VI.40,  
September, 28 or contact: [fsnauinfo@fsnau.or.ke](mailto:fsnauinfo@fsnau.or.ke),  
[www.fsnausomali.org](http://www.fsnausomali.org)


### HISTORICAL TIMELINE

Year	Season	Rank <sup>1</sup>	Events	Effects	Responses
2010 (average)	Deyr	2	• Below average rains	<ul style="list-style-type: none"> <li>• Poor pasture</li> <li>• High goat birth rates</li> <li>• Low camel low milk production</li> <li>• Normal TOT</li> </ul>	• Frequent movement within livelihood
	Gu	4	• Good rains	<ul style="list-style-type: none"> <li>• Good pasture and water conditions</li> <li>• Good livestock body conditions</li> <li>• Medium conception for camel</li> <li>• High goat birth rates</li> <li>• Improved milk production</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunities for loan repayment</li> <li>• Migration within livelihood</li> </ul>
2009 (below average)	Deyr	3	• Normal rains in lower Nugaal	<ul style="list-style-type: none"> <li>• Average pasture and water availability</li> <li>• Improved body conditions</li> <li>• High shoat conception rates</li> <li>• Low birth of all livestock</li> <li>• Lift in livestock export ban</li> </ul>	• Out-migration from Upper Nugaal to lower Nugaal using motorized transport
	Gu	1	• Drought	<ul style="list-style-type: none"> <li>• Pasture depletion</li> <li>• Water scarcity</li> <li>• High death of shoats</li> <li>• Poor TOT</li> </ul>	<ul style="list-style-type: none"> <li>• No option for migration</li> <li>• Animal hand feeding</li> <li>• Increased water trucking</li> <li>• Increased social support seeking</li> </ul>
2008 (below average)	Deyr	2	• Below normal rainfall	<ul style="list-style-type: none"> <li>• Poor pasture and water availability</li> <li>• Poor livestock body conditions</li> <li>• Water scarcity</li> <li>• Poor TOT and inflation</li> </ul>	<ul style="list-style-type: none"> <li>• Migration and frequent movement</li> <li>• Increased water trucking</li> <li>• Family splitting</li> <li>• Increased social support seeking and loan taking</li> </ul>
	Gu	2	• Below normal rainfall	<ul style="list-style-type: none"> <li>• Poor pasture and water availability</li> <li>• Poor livestock body conditions</li> <li>• Inflation</li> <li>• High food prices</li> <li>• Death of new born</li> </ul>	<ul style="list-style-type: none"> <li>• Water trucking</li> <li>• Out migration to Sool of Bari</li> <li>• Increased social support seeking</li> <li>• Family splitting</li> </ul>
2007 (slightly below average)	Deyr	2	• Below normal rainfall	<ul style="list-style-type: none"> <li>• Poor pasture and water</li> <li>• Poor livestock body conditions</li> <li>• Poor market performance</li> <li>• Poor TOT</li> <li>• Average camel milk production</li> </ul>	<ul style="list-style-type: none"> <li>• Increased water trucking</li> <li>• Migration within the livelihood</li> <li>• Increased animals sales</li> </ul>
	Gu	3	• Normal rains	<ul style="list-style-type: none"> <li>• Average pasture conditions</li> <li>• High camel milk production</li> <li>• Average livestock body conditions</li> <li>• Average TOT</li> </ul>	• In-migration
2006 (average)	Deyr	3	• Normal rains	<ul style="list-style-type: none"> <li>• Good pasture and water conditions</li> <li>• Unknown camel disease</li> <li>• Livestock export ban</li> </ul>	• No response for camel diseases
	Gu	3	• Normal rains	<ul style="list-style-type: none"> <li>• Good pasture and water availability</li> <li>• Good livestock body conditions</li> <li>• Improved herd size growth</li> <li>• Improved conception and births</li> <li>• Good milk production</li> </ul>	

## LIVELIHOOD ZONE DESCRIPTION

- Nugaal Valley pastoral livelihood zone (also called Nugaaleed) is a shallow, long and broad valley, with an extensive network of seasonal watercourses.
- Nugaal covers 48,915km<sup>2</sup> and is bordered by Sool and Kakaar-Dharor to the northeast, west Golis pastoral to the northwest, Togdheer to the west, Hawd to the south and Coastal deeh to the east.
- Nugaal Valley is a key pastoral area which spans across four regions: 10% of Nugal (Eyl and Garowe districts), 75% of Sool (Talex, Xudun, Caynabo and Laas Caanood districts), 10% of Sanag (Ceel Afweyne and Ceerigaabo districts) and 5% of Togdheer (part of Burco and Buuhoodle districts).
- The population of the area is estimated at 137,759 people (UNDP, 2005).
- The climate in the livelihood is classified as arid, with mean annual rainfall ranging between 100-150 mm and relative humidity ranging between 60-70%.
- Falling within the inter-tropical convergence zone (ITCZ), the livelihood experiences 4 seasons: *Gu* (the main rainy season), *Diraac* or *Hagaa* dry season, *Deyr* short rainy period and *Jillal* (long dry season). The mean annual temperature in Nugal ranges between 24°C-26°C and potential evapotranspiration of 2000-2500 mm per year.
- Nugaal is almost entirely covered by outcrops of the sedimentary basement rocks, which are made up of undifferentiated, unconsolidated sediments. The dominant outcrop was formed during Eocene karkar formation, which covers more than 75% of the valley and consists of inter-bedded limestones and marls with some gypsum.
- The gently undulating plateau originates south of Hargeysa and Hawd plateau, extends to south of Nugaal valley and gently slopes towards the Indian Ocean.

### Baseline reference year description

- October 2009-September 2010 was identified as the reference year for the baseline assessment because it was the most recent consumption period that the respondents could easily recall.
- The reference year was a normal year, characterised by average *Deyr* rainfall and good *Gu* rains, improved pasture, water and livestock body conditions, and increased milk availability due to high goat birth rates and favourable terms of trade.

Table 1:Commodity Prices

Average commodity prices (Shsh)	5-year average	Previous year (2009)	Reference year	% of 5-year average	% of previous year
Average of Rice	7,348	24,375	19,046	259	78
Average Wheat flour	7,773	21,958	17,586	226	80
Average of Sugar	9,165	21,875	25,154	274	115
Average of Vegetable oil	16,849	59,417	42,604	253	72
Average of Goat Export	501,392	1,428,056	1,566,750	312	110
Average of Goat Local	401,474	1,311,458	1,146,417	286	87
Average of Camel Local	3,547,830	9,623,688	9,785,625	276	102
TOT Goat (Local) to Rice	57	58	61	108	106
TOT Goat (Export) to Rice	71	12	58	82	477



## SEASONAL CALENDAR

- In the reference year, *Gu* season started in mid-April and ended in mid-June. This improved water and pasture conditions leading to improved sheep and camel productivity (peak milk yields).
- In *Hagaa* (August-September) and *Jilaal* (February-March), poor rainfall distribution deteriorated pasture and water conditions, prompting livestock migration.
- Men engaged in livestock watering, camel herding, livestock feeding, camel milking, livestock sales and food purchases, while women were more involved in house building, child caring, fetching water and preparing food.
- An emerging phenomenon associated with migration since 2005 is the increased use of motorized transport due to lack of sufficient pack animals (camel).
- Normally, pastoralists avoid migrating outside Nugaal for fear of contracting tick-borne diseases and due to the high cost of water.
- In *Gu*, minimum pastoral labour opportunities were available, thus more male herders sought labour opportunities in the urban centers, while elders were involved in social affairs such as *Dijo* paying and peacemaking.
- In *Hagaa* season, pastoralists increased the sale of livestock and livestock products (*ghee*) in order to generate income for the purchase food and non-food items. Poor households sought loans and social support.
- In mid-*Hagaa*, supply of imported goods declined due to the closure of the port and due to low demand for livestock. This reduced sales, decreased milk production and marked the onset of the hunger period (*Hagaa madoobaad*).
- The *Deyr* season was dominated by peak goat kidding and high sheep conception. In anticipation of the dry seasons, pastoralists de-stocked, migrated to good grazing areas, de-wormed livestock and increased anti-tupping aprons to control sheep mating and lambing time.
- In *Jilaal* season Nugaal pastoralists accessed labour opportunities from herding, watering, marketing, frequent movements and increased herd division into sub-species.

**Figure 1: Seasonal calendar of critical events & activities in Nugal Valley livelihood zone**

	Season	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Critical Events & Activities		Gu			Hagaa			Deyr			Jilaal		
	Rainfall		Peak					Peak					
	Water availability		Peak			Low			Peak			Low	
	Pasture availability			Peak		Low			Peak			Low	
	Livestock conception		Camel/goat					Camel/goat	sheep				
	Goat kidding		Peak						Peak				
	Sheep lambing		Peak										
	Camel calving			Peak					Peak				
	Livestock sale			Low				Peak				Low	
	Livestock migration	Peak						Peak					
	Livestock disease		Peak						Peak				Peak
	Food prices			Peak								Peak	
	Hunger period						Peak						Peak

**Table 2: Wealth Breakdown**

		Wealth group		
Characteristics		Poor	Middle	Better off
% of Population		30%	50%	20%
Household size		5-7 (6)	7-8 (8)	10-12 (11)
Number of wives		1	1-2	1-2
Livestock assets	Camel	2-4 (3)	8-12 (10)	20-25 (23)
	Shoat	50-70 (60)	100-120 (110)	180-220 (200)
	Donkeys	1	1	1-2
Income range (in millions)		31000-38000	48000-65000	71000-100'000
Food sources	Purchases	88%	82%	89%
	Own production	10%	23%	29%
	Food gifts/loans	1%		
% Energy (kcal) requirements		99	105	118
Main sources of cash income		<ul style="list-style-type: none"> <li>Livestock sales</li> <li>Agricultural labour</li> <li>Social support (zakat, gifts and remittances)</li> </ul>	<ul style="list-style-type: none"> <li>Livestock sales</li> <li>Agricultural labour</li> <li>Social support (zakat, gifts and remittances)</li> </ul>	<ul style="list-style-type: none"> <li>Livestock sales</li> <li>Agricultural labour</li> <li>Social support (zakat, gifts and remittances)</li> <li>Petty trade</li> </ul>
Other sources of cash income		Other casual labour from the construction sector for all wealth groups		
Livestock sales	Camel Export	0	0	2
	Camel local	0	1	0
	Goat Export	4	6	8
	Goat local	5	4	3
	Sheep Export	7	9	17
	Sheep local	6	4	4
Disparities in market access		local village markets	Access to village and main markets	

**Table 3: Camel herd dynamics**

Camel herd dynamics	Poor	Middle	Better off
Total camel owned at start of the reference year	3	10	23
Adult females	1	5	11
No. born during year	1	2	2
No. sold	0	1	2
No. slaughtered	0	0	0
No. died	0	0	1
No. given away	0	0	0
No. bought	0	0	0
No. lost or stolen	0	0	0
No. at end of reference year	4	11	22
% of herd growth	+33	+10	-4
% of Off-take	0	8	12


**Livestock Assets**
**Table 4: Livestock herd dynamics**

Sheep and goat herd dynamics	Sheep			Goat		
	Poor	Middle	Better off	Poor	Middle	Better off
Total shoats owned at start reface year	40	74	115	20	45	68
Adult females	20	37	55	13	25	36
No. born during year	18	30	45	14	20	35
No. sold	13	16	20	10	9	13
No. slaughtered	3	6	7	2	4	5
No. died	1	5	6	2	3	4
No. given away	1	4	4	0	3	3
No. bought	0	0	0	0	0	0
No. lost or stolen	0	0	0	0	0	0
No. at end of reference year	40	73	123	20	46	78
% of herd growth	0	-1	+7	0	+2	+15
% of Off-take	31	30	23	41	29	24



## MARKETS

- The price of export quality goat increased by 10% (from Sosh 1,428,056 to 1,566,750) when compared to the previous year and by 212% from the 5-year average. This was due to increased demand for export quality and consumption of local quality goats.
- Local goat quality market price declined by 13% when compared to the previous year while local quality camel price increased slightly by 2% in the reference year, representing a 176% increase from the 5-year average (2003-2007).
- Export quality livestock sales peaked during *Hajj* when demand increased while local quality sales peaked in the dry seasons.
- Poor households produced a limited amount of milk because they own shoats (10 lactating goats) only. However, the middle and better-off households obtained more milk due to their larger herd sizes (15-20 lactating goats and 2-3 camels, respectively).
- From their herd size, poor households obtained 600 litres of goat milk, of which 83% was sold. The middle and better-off households realized 1,700 liters and 2,370 liters (65% from camel milk and 35% from goat milk), respectively. The middle households sold about 56% of the total milk production while the better-off sold about half of their production.
- Overall milk prices show mixed trends that were influenced by seasonality. Normally, camel milk prices increase during *Hagaa* and remain steadily high throughout the short rainy season, due to limited supply of shoat milk in the markets. However, prices of milk declined in the dry period and during the *G#* season due to livestock concentration in the watering points and improved milk production in the rainy season.
- Fresh camel milk increased in *Jilaa*, slightly decreased in May and rose in *Hagaa*. This was due to the preceded drought impacts, which reduced livestock conception rates. Fresh camel milk increased by 4% (from 42,778 to 44,457 Sosh/litre) compared to the previous year and was three-times more than the 5-year average. This is due to persistent droughts, which increased off-take.
- Imported commodities (rice and wheat flour) were the main staple food items purchased by all households in the reference year. The average price of rice increased by 159% from the 5-year average and declined by 22% from the previous year, while wheat flour increased by 126% from the 5-year average and declined by 20% from the previous year.
- The price of sugar was 174% and 15% of the 5-year average and previous period (2009) prices, respectively. Vegetable oil prices appreciated by 153% from the 5-year average but declined by 28% when compared to the previous year. The increase in the average price of sugar is attributed to the increasing demand for sugarcane products in the manufacture of ethanol and other biofuel products. It is also linked to reduced production in the key sugar producing countries of the world, like Brazil.
- In the reference year, local quality goat/rice ToT increased by 6% (from 58 kg/head to 61 kg/local goat) compared to the previous year (2009) and by 8% (from 57 kg/local goat to 61 kg/goat) when compared to the 5-year average. Export quality goat to rice ToT increased significantly by 377% from the previous year but declined by 18% when compared to the 5-year average.

## Livelihood Assets

Social capital	<p><b>Formal (Zakat) and informal (other gifts):</b> Poor households access food in kind, food loans, <i>zakat</i> (livestock) and <i>zakatul fitri</i> (food). Some poor households received lactating animals from relatives in the middle and better-off wealth groups.</p> <p><b>Remittances:</b> Remittance inflows from the Diaspora and/or locally were low, with a few households in the better-off wealth group receiving remittances.</p>
Human capital	<p><b>Education:</b> services in all villages surveyed in Nugaal valley are poor. Of the 10 sampled villages, only 3 had primary schools (Gawsawayne, Garadag and Xayira), with a total number of 245 pupils, of whom 30% were girls. Most villages have access to koranic schools (<i>madrassa</i>), which are located under trees or in poorly maintained buildings.</p> <p><b>Health and nutrition:</b> There are no health facilities in the 10 villages surveyed. Generally, access and delivery of health services is poor. This is due to poor health infrastructure, lack of trained health practitioners and inadequate medical supplies. Lack of safe water for domestic use and poor sanitation are key risks predisposing people to water and vector-borne diseases. <i>Post Deyr</i> 10/11 integrated analysis shows the nutrition situation in Nugaal valley as <i>serious</i>. High morbidity, low immunization, poor water sanitation and limited health facilities are chronic health challenges.</p>
Physical capital	<p><b>Transport infrastructure:</b> Road infrastructure is poorly developed in most parts of Nugaal due to low technical and equipment capacity. Only villages located near the tarmac road that links Burao and Garowe towns have good access to the markets. Most feeder roads in the rural villages are all-weather, poorly maintained and impassable during the wet seasons.</p> <p><b>Water resources:</b> The main water sources in Nugaal valley are shallow wells, boreholes and berkads (surface water catchments). Hand-dug wells are found in the dry river beds where the water table is high, although most of these assets are in poor condition and easily exposed to contamination from human faecal matter and animal waste. Potable water for domestic use is less available in most parts of the livelihood. During critical periods, water prices are very high.</p> <p><b>Telecommunication:</b> Rural areas do not have adequate access to mobile phone telecommunication services. Few villages have access to high frequency (HF) radios.</p>



Financial capital	<p><b>Livestock:</b> The main livestock species reared in Nugaal valley are sheep, goats and camels, although sheep is the most dominant species since it generates more income through market sales.</p> <p><b>Loans &amp; Credit:</b> Access to food and cash loans/gifts by poor households was normal in the reference year, and this supplemented the food requirements. During the hunger periods which begin in August/September (<i>aamus</i>) and extend to <i>Jilaal</i>, the poor get their food and non-food items on credit from business people and make repayments when the livestock prices increase (during <i>Hajj</i>) or in the wet seasons when livestock production improves.</p>
Natural capital	<p><b>Vegetation:</b> The main vegetation in Nugaal valley consist of open grasslands, shrubs (<i>commiphora spp</i>), acacia trees and dominant grasses (<i>indigofera spp</i>). Open grasslands are productive rangelands used for seasonal grazing.</p> <p><b>Water resources:</b> Nugaal and westerly Dheere seasonal rivers form the main surface drainage system in the livelihood zone. This enhances water availability and abundance during the wet season. Springs are mainly concentrated along the coastal communities.</p>



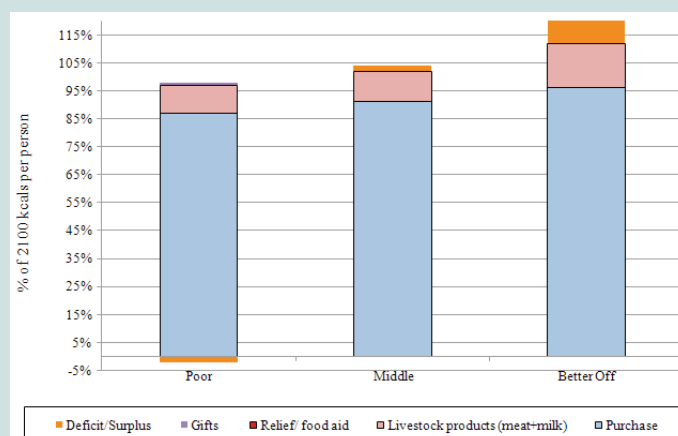
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## LIVELIHOOD STRATEGIES

### Sources of Food

- Market purchase is the major food source for all wealth groups. This is in addition to livestock products, which vary across wealth groups.
- The main staple foods consumed are cereals (rice/flour and pasta), imported sugar and vegetable oil. Beans and sorghum are sourced from other regions in Somalia, imported or as food aid.
- Poor households access fewer quantities of food items purchased from the market due low incomes compared to the middle and better-off.
- The poor purchased 30kg of rice, 27kg of wheat flour, 25kg of sugar and 4kg of vegetable oil on a monthly basis. This covers 98% of the kilocalorie intake. Livestock products constitute 10% of this energy requirement.
- Most middle and better-off households obtained 102% (24% livestock products) and 112% (29% livestock), respectively. The middle households purchased 45kg of rice, 30kg of wheat flour, 30kg of sugar and 6 liters of vegetable oil on a monthly basis, while better-off households purchased 50kg of rice, 44 kg of wheat flour, 50kg of sugar and 9 kg of vegetable oil in the same period. There was no food aid distribution or other humanitarian intervention in the reference year.

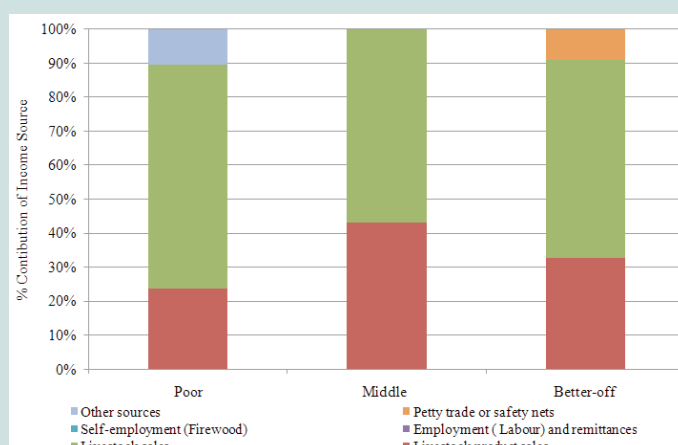
Figure 2: Sources of food



### Sources of Cash income

- The main sources of income for all wealth groups are sale of livestock and livestock products, own production sales and cash gifts for the poor.
- The middle and better-off households access additional income through petty trade and remittances.
- Income levels depend on livestock holding and market sales. The income of the poor ranges from Sosh 30,000,000 to SoSh 38,000,000 annually.
- This income is derived mainly from the sale of livestock and livestock products; loans and gifts.
- The middle households generate Sosh 48,000,000 to SoSh 65,000,000 (mainly from sale of livestock and livestock product).
- The better-off generate Sosh 90,000,000-100,000,000 annually from the sale of livestock and livestock products as well as from petty trade.
- Poor households earn the lowest income from livestock sales due to their limited export of quality livestock.

Figure 3: Sources of income



### Expenditure patterns

- Poor households spent an average of Shs 93,000 per day mainly on rice, wheat flour, sugar, oil and small quantities on non-food items.
- The middle and better-off households spent about twice and three-times, respectively, the amount used by the poor households.
- About 45% of the poor's annual income is spent on staple foods, while middle and better-off households spend 33% and 28% of their income on staple foods, respectively.
- More affluent wealth groups can afford better quality food items and have higher levels of dietary diversity than the poor.
- These wealth groups also use significant portions of their income for non-food items such as livestock inputs, household items and social services.

Figure 4: Expenditure Patterns

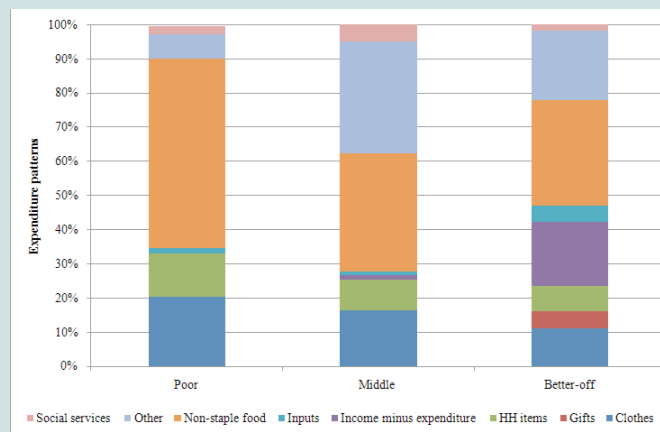


Table 5: Coping strategies

Normal coping strategies	Distress Coping Strategies		
	Poor	Middle	Better-off
<ul style="list-style-type: none"> <li>Migration with livestock (sometimes use of trucks to transport weak animals) to areas with better pasture and water conditions within the livelihood zone.</li> <li>Sharing of pack camel for transport during migration.</li> <li>Increased purchase of water (water trucking).</li> <li>Slaughtering of new born animals to save lactating females for future herd regeneration, especially for the sheep/goats.</li> <li>Increased sale of milk to enhance income generation.</li> <li>Migration of family members to villages and urban centers in search of alternative income opportunities.</li> <li>Increased seeking of gifts and sadaqa from relatives.</li> <li>Skipping meals and reducing the portions of food intake.</li> </ul>	<ul style="list-style-type: none"> <li>Increased seeking of social support</li> <li>Distress sale of livestock at low prices</li> <li>Increase engagement in self-employment.</li> <li>Increased family splitting</li> </ul>	<ul style="list-style-type: none"> <li>Distress sale of livestock at low prices</li> <li>Increased seeking of food loan</li> <li>Increased out-migration of households to villages/ urban centers</li> </ul>	<ul style="list-style-type: none"> <li>Distress sale of livestock at low prices</li> <li>Increased seeking of remittances</li> <li>Increase involvement in petty trade</li> <li>Increased livestock hand feeding</li> </ul>
<p>It is important to note that in Nugaal valley and Somalia in general, new born kids and weak animals are normally left behind in the home-ranges, as the mature and healthy animals migrate in search of water and pasture. Women would normally stay at home to care for the children and weak animals as well as kids and calves.</p>			

### Conclusions

- The findings of the baseline assessment in Nugaal valley pastoral livelihood zone show that while the poor households have access to the village markets only, the middle and better-off wealth groups have access to both village and main markets in the big towns.
- In the reference year, the prices of all imported food items increased compared to the 5-year average. In particular, the prices of rice and wheat flour were 259% and 226% higher compared to the 5-year average, respectively, but declined by about 22% and 20% from the previous year.
- The average price of local quality goat declined by 13% compared to the previous year, the price of export quality goat as well as both local and export quality camel increased, compared to the 5-year average and previous years, respectively.
- Poor households represent 30% of the entire population in the Nugaal valley pastoral livelihood zone, while the middle and better-off are 50% and 20%, respectively.
- Livestock holding and marriage arrangements vary with wealth group, with the middle and better-off wealth groups more likely to be polygamous.
- Camel herd growth in the reference year increased by 33% and 10% for the poor and middle wealth groups, as births exceeded off-take. Camel holding for the better-off wealth group decreased by 4% due to high off-take. Shoaat herd size for the better off only increased by 7% (sheep) and 15% (goats), whereas off-take of the shoats for the poor and middle increased by 20%, respectively.

### Major Hazards

- Drought/weather shocks
- Poor livestock production and marketability
- Livestock diseases
- High food price
- Water-borne diseases
- Environment Degradation



- Poor households purchase fewer quantities of food items from the market due to low incomes. The poor bought 30kg of rice, 27kg of wheat flour, 25kg of sugar and 4kg of vegetable oil on a monthly basis in the reference year. This translates to 98% of the kilocalorie intake, even as livestock products contribute 10% of the total energy requirements.
- Most middle and better-off wealth groups obtained 102% and 112% of the minimum energy needs, respectively.
- The income of the poor ranges from Sosh 30,000,000 to SoSh 38,000,000 (from sale of livestock/livestock products, loans and gifts) annually.
- The middle generate Sosh 48,000,000-65,000,000 (from sale of livestock/livestock product sales) while the better-off generate Sosh 90,000,000-100,000,000 annually from the sale of livestock/livestock products and petty trade.
- Due to low livestock holding, poor households depend more on social support and gifts to supplement own production. About 45% of the poor's annual income is spent on staple foods, while the middle and better-off households spend 33% and 28% of their income, respectively.
- The latter households also use significant portions of their income for non-food items such as livestock inputs, household items and social services.



### **Recommendations**

- Construct new and/or rehabilitate existing surface water catchment facilities as well as boreholes in order to increase household access to water and enhance livestock productivity. This could also involve the use of innovative techniques of rainwater harvesting through for instance the establishment of community earth dams and water pans.
- Improve access to and efficiency of existing basic social services. This could involve working with partners and stakeholders in the respective sectors to construct new or expand existing schools and health facilities, in addition to capacity building.
- Improve, rehabilitate and maintain existing feeder roads in order to enhance linkages between villages and village markets.
- Support the decentralization of veterinary services through the establishment of mobile veterinary services as well as conduct training for Community Animal Health Workers (CAHWs) in order to improve pastoralist access to these essential services.
- Intensify and extend soil and water conservation programmes measures in collaboration with local and international non-governmental organizations. This should aim at enhancing environmental/ecological resilience through programmes like afforestation, reforestation and building gabions to minimize run-off and erosion.
- Promote and initiate collaborative structures with local and international non-governmental organizations in order to aid capacity building at the community level so as to institute and implement community-based mechanisms for integrated rangeland management.



#### **(Footnotes)**

1 5 = an excellent season for household food security (e.g. due to good rains, good prices, good crop yields, etc) , 4 = a good season or above average season for household food security, 3 = an average season in terms of household food security, 2 = a below average season for household food security, 1 = a poor season (e.g. due to drought, flooding, livestock disease, pest attack) for household food security

### **Recent and forthcoming publications and releases**

*FSNAU Togdheer Apastoral Baseline Profile June 2011*  
*FSNAU Togdheer Apastoral Baseline Report June 2011*  
*FSNAU Addun Pastoral Baseline Profile June 2011*  
*FSNAU Addun Pastoral Baseline Report June 2011*  
*FSNAU Hawd Pastoral Baseline Profile August 2011*  
*FSNAU Hawd Pastoral Baseline Report August 2011*

*NOTE: The above publications and releases are available on the FSNAU website: [www.fsnau.org](http://www.fsnau.org)*

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