

# LIVELIHOOD BASELINE PROFILE



# Northwest Agro-Pastoral (Sorghum and Cattle)

# HISTORICAL TIMELINE

Year	Season	Rank <sup>3</sup>	Event(s)	Effects	Responses
2010 (average)	Deyr	2	<ul> <li>Poor rains</li> <li>Water crisis</li> <li>Crop disease</li> </ul>	Poor crop production Average milk production Average livestock body condition Stable milk prices	Increased water trucking Increased seeking of social support
	Gu Karan	4	Good rains Floods Pest infestation	Good crop production Increased milk production Low cereal prices	Normal coping strategies
low average)	Deyr	2	Poor rains	Poor crop and livestock production Poor pasture and water conditions Increased cereal prices	Increased seeking of social support Increased self employment like charcoal burning and collection of firewood Outmigration of livestock
2009 ( <i>be</i> l	Gu Karan	3	Normal rains	Average cereal production Normal water and pasture conditions Average milk production Stable cereal prices	Normal coping strategies Normal migration of livestock
08 (average)	Deyr	3	Normal rains High inflation	Average crop and livestock productions High prices of imported cereals Devaluation of Somaliland shilling	Increased livestock sales
20	Gu Karan	3	Normal rains	Low availability of local cereals due impact of pests	Normal coping strategies
2007 (average)	Deyr	3	Army worm infestation	Poor crop production Increased cereal prices Increased imported food commodities Low purchasing power	Increased seeking of social support Farms tillage support
	Gu Karan	3	Normal rains	Average crop production Average livestock production Stable cereal prices	Normal coping strategies
2006	Deyr	3	Normal rains	Average crop production Average livestock production Stable cereal prices	Normal coping strategies



# LIVELIHOOD ZONE DESCRIPTION

North West Agro-Pastoral (NWAP) livelihood zone extends west of Togdheer agro-pastoral livelihood and is bordered by West Golis Pastoral to the North, Hawd Pastoral to the south and Zone 5 of Ethiopia to the west.

For full report see; FSNAU Hawd Pastoral Baseline Report No. VI.40, September, 14 or contact: fsnauinfo@fsnau.or.ke, www.fsnausomali.org

- NWAP lies between latitudes 9<sup>o</sup> 17' to 10<sup>o</sup> 10' N and longitudes 44<sup>o</sup> 43' to 42<sup>o</sup> 50' E, and occupies approximately 6590 km<sup>2</sup>.
- Topography ranges from 1700 -1050 m Above sea level.
- NWAP is a prime crop (sorghum and maize) and cattle production area.
- The livelihood exhibits bimodal rainfall: with the main Gu/Karan rains lasting from April-August and Hays rains from January-March.
- Temperatures in March-October range from 30-35°C and drop to 11°C from October to February. Parts of the area have been under sorghum and maize cultivation since the 1930s and in the 1990s it was the only significant area of sedentary cultivation in Somalia.
- Most of NWAP is composed of scattered acacia trees, but in the arid areas of the northeast, grasslands give way to a combination of low brushes and grass clumps.
- The main water sources are Ballis (rainwater catchment) in the slopes of the Golis mountains and shallow wells in the northern part.
- Crop, livestock production and trade are the socio-economic activities in the livelihood that contribute significantly to meeting HH food consumption needs.

#### **Baseline reference year description**

April 2010-March 2011 was selected as the reference year for the baseline because the period was an average consumption year, characterised by average climatic conditions (good Gu/Karan rains), political stability (peaceful presidential elections in June 2010), good crop production, increased milk production, stable milk prices, low cereal prices, average livestock body conditions, and use of normal coping strategies by most poor HHs.

Region	District	Livelihood system	Livelihood Zone	Estimated Population of Livelihood Zones
	Baki	Agro-Pastoral	NW Agro-pastoral	8,678
Awdal	Borama	Agro-Pastoral	NW Agro-pastoral	66,348
	Lughaye	Agro-Pastoral	NW Agro-pastoral	1,133
Woqooyi	Gebiley	Agro-Pastoral	NW Agro-pastoral	35,813
Galbeed	Hargeysa	Agro-Pastoral	NW Agro-pastoral	34,378
Grand To	tal	146,350		

# Table 1: Population Estimates

Source: UNDP Somalia, 2005 Population Estimates.

# Table 2: Population Estimates



Good Sorghum yield

Average commodity prices in Hargeisa and Boroma markets (SIsh)	5-year average	Previous year	Reference year	Reference year as % of 5-year average	Reference year as % of previous year
Average of Cattle Local Quality	871,508	1,331,260	1,175,208	135	88
Average of Camel Local Quality	1,551,638	1,524,792	1,332,193	86	87
Average of Goat Local Quality	146,650	225,510	292,396	199	130
Average of Goat Export Quality	179,025	308,156	341,396	191	111
Average of Red Sorghum (1kg)	1,417	2,697	2,317	164	86
Average of White Sorghum (1kg)	1,511	2,974	2,364	156	79
Average of Imported Red Rice (1kg)	2,749	4,838	4,606	168	95
Average of Wheat Flour 1kg	2,633	3,872	3,464	132	89
Average of Vegetable Oil (1 litre)	7,128	9,650	9,406	132	97
Average of Sugar	3,049	4,925	5,485	180	111
Average of Water (Drum)	7,792	5,400	6,333	81	117
Average of Daily Labor Rate	27,033	28,385	29,167	108	103

# SEASONAL CALENDAR

- Peak Gu (April-June) and Karan (June/July-August) rains were realized, with the areas around east Golis mountains and Guban of North West receiving Hays rains from January to mid-March.
- Peak surface water (Ballis) resources were availabile from May and October, but water trucking increased in late February to early March, coinciding with the cessation of Hays.
- Land preparation begins in October (before Hays) and late March (before Gu/Karan). The middle and better-off use tractors, oxen traction while the poor use hand ploughing and oxen.
- The cost of hiring a tractor to plough for one hour is approximately USD 10, with the tractor being able to plough 1 ha in 4.2 hours.
- Long duration (6 months or Elmijama) sorghum and short cycle (3 months) maize varieties are the main cereal crops planted, with sorghum planted at the end of March-mid-April and harvested in October, while maize is planted in February-March and harvested in July.
- Three crop harvests are realized in a year. Sorghum is harvested in *Gu/Karan*, while Badhayso and Dhayro (short cycle) maize is harvested in early April and October, respectively. Another short (3-months) cycle sorghum variety is cultivated in Gebiley region.
- Seed broadcasting is the main seed sowing method, although dry sowing (*Shinni* aware) is also used in the dry season. Weeding (*Harrameyn*) is normally done using oxen or manually (*Goos*), throughout the growing season. Thinning (*Baaqbaaq*) is done using oxen after seed germination.
- Crop pests and disease outbreaks coincide with the weeding periods (mid-march to June and November-December).
- Harvested crops are mainly stored in underground pits (*Bakaar*), while a few HHs use drums (*Fuusto/Barmiil*). Underground pits are highly susceptible to pest attacks and soil moisture levels, contributing to post-harvest losses.
- No major livestock migration occurred in the reference year.
- Peak trade in cereal commodities occurs after every harvest, while labour opportunities coincide with the peak of agricultural activities (land preparation, weeding, guarding and harvesting).

Seasonal calendar of critical activities and events in NWAP																	
Seasons			Gu-Karan								Deyr			Hay	s		
	Months	Apr		May	Jun		July	Aug	Sep	)	Oct	Nov	Dec	Jan	Feb	Mar	
	Rainfall	F	Peak									Peak		Peak			
	Water availability	Low		Peak				Low			Peak		Low			Low	
ies	Land preparation										Peak					Р	
tivit	Weeding		Peak		·							Peak				F	þ
dac	Harvesting (Sorghum-Maize)						MZ <sup>1</sup>			S	H <sup>2</sup>		N	1Z			
anc	Pests and diseases		Pea	ak								Peak	(				Ρ
ints	Own food consumption months						Peak			Ρ	eak		P	eak			
eve	Cereal trade							Peak				Peak					
cal	Livestock sales											Export				Local	
Criti	Milk sales	Low		Peak			Low				Peak	Low					
	Labour opportunity	Peak								Ρ	eak					F	þ
	Hunger period	Poor													P	oor	

# Figure 1: Seasonal calendar critical events & activities in Hawd pastoral livelihood zone

#### **Table 3: Wealth Breakdown**

		Poor ( <i>Danyare</i> )	Middle (Dhexdhexaad)	Better-off (Ladane)		
% HHs		30 (25-35)	50 (45-55)	20 (15-25)		
HH Size		6	7	10		
HH Characteristics		1	1	1-2		
Water access: Berkads		0	0	1		
Market access		Village markets	Main markets	Main markets		
Schooling (# of children)	)	1	1	2		
Livestock		Camel: 0; Shoats: 55 (50-60); Donkey: 0-1	Camel: 5 (4-6); Shoats: 125(100-150); Donkey: 1-2; Berkads: 0-1	Camel: 14 (12-15); Shoats: 200 (150- 250): Donkey: 1-2: Berkads: 1-2		
Rainfed land owned (ha	/Qodi)	1.5 (7.5 Qodi)	4 (20 Qodi)	6 (30 Qodi)		
Land cultivated	Rainfed	1	2	5		
Main crops grown	For sale	Sorghum	Sorghum and maize	Sorghum and maize		
Main crops grown	For food	Sorghum and maize	Sorghum and maize	Sorghum and maize		
Primary decision	For sale	Both spouses	Both spouses	Both spouses		
making on crop	For food	Both spouses	Both spouses	Both spouses		
Own cereal consumption (months)		4-6 (5)	8-10 (9)	> 12		
Main sources of cash income		Livestock sales and Livestock products sale	Livestock sales and Livestock product sale	Livestock sales and Livestock products sale		
Other sources of cash income		Casual labour, Credit and Social support	Casual labour, Self employment and Credit	Small scale trade and Remittances		

# Table 4: Crop production and changes in land cultivated

Crop	Nature of yea	ır	Cultivated Farm Area in hectares (ha)				
	Bad	Normal/Average	Good	WG	2001/02	2009/10	Change
Sorghum (50 kg bags)	1-2	2.5-3	5-6	Poor	0.6-1.0 (0.8)	1	+ 25%
Maize (50 kg bags)	1.5-2	3-4	6-7	Middle	1.0-2.0 (1.5)	2	+ 33%
				Better off	2.0-3.0 (2.5)	5	+ 100%

# Tabe 5: Change in livestock holding by wealth group (2002-2010)

Wealth group	Livestock	2001/2002 baseline	2009/2010 baseline	% change
	Camel	0	4	
Poor	Cattle	3-5 (4)	3	+25%
	Sheep and Goats	5-20 (12)	18	+50%
	Camel	0	8	100%
Middle	Cattle	6-10 (8)	5	-37%
	Sheep and Goats	20-40 (30)	32	+7%
Better off	Camel	4-8 (6)	15	+150%
	Cattle	3-5 (4)	10	+150%
	Sheep and Goats	5-20 (13)	73	+562%



Land preparation with Tractor Gbiley, W Galbeed

# MARKETS

- In the reference year, the average price of local quality cattle increased by 35% from the 5-year average, but declined by 12% from the previous year.
- Local quality camel price declined by 14% and 13% compared to the 5-year average and to the previous year respectively.
- Prices of both local and export quality goats increased by 30% and 11% respectively, when compared to the 5-year average and 2009.
- The increase in market prices was due to good *Gu/Karan* rains, improved quality of saleable animals, high export demand during *Hajj* and increased local consumption.
- In the reference year poor HHs sold an average of 774 litres of fresh cattle milk, the middle wealth group sold about 2360 litres (66% from camel and 34% from cattle) and better-off households sold 2600 litres (67% from camel and 33% from cattle).
- Fresh camel milk prices were 7% lower than in 2009, but 5-13% higher than the 5-year average.
- Average daily wage labour rates increased by 8% from the 5-year average and by 3% from the previous year.
- Locally produced maize and sorghum (white/red) declined by 21% and by 14% compared to the previous year, but increased by 56% and 64% when compared to the 5-year average, respectively.
- The price of imported red rice increased by 68% from the 5-year average price and by 5% from 2009, while wheat flour increased by 32% when compared to the 5-year average and declined by 11% from 2009.
- Average prices of imported foods decreased in the reference year with the exception of Sugar, which increased by 80% and 11% compared to the 5-year average and to the previous year, respectively. Cooking oil price was 32% above the 5-year average.
- Labour to sorghum terms of trade (ToT) increased by 29% compared to the previous year, equivalent to 4 days' consumption for a poor household of 7 people. Labour to sorghum terms of trade (ToT) dropped by 34% from the 5-year average due to inflation and to the global food crisis which resulted in an increase in commodity prices. Local goat to rice ToT increased by 37%. Imported rice to milk ToT was lower than local rice to milk ToT.
- Good Gu/Karan rains increased cattle milk to white sorghum ToT by 9% from the previous year.

# Livelihood Assets

Social capitals	Social support: Social support network is strong. The better-off and some middle households receive remittances and access loans in times of crisis. Goos (inter-communal collaboration in farming activities), is practiced throughout the growing season. Neighbourhood support (community money contributions for the vulnerable), food gifts, kinship support and religious obligation are common in the livelihood. Formal support ( <i>Zakat</i> ) and Informal support (other gifts): Obligatory Zakat is given annually by the better-off to the poor, and is in the form of livestock and crops. The middle and better-off also donate meat, milk, dry food contributions and loans in cash and/or in kind to poor HHs.	
Human capital	Household size and composition: The Poor (Danyare) have 5-7, the middle (Dhexdhexaad) 6-8 and better off (Ladane) 9-11 members. Most HHs are male-headed (90% for the poor and 95% each for the middle and better-off). Most poor HHs and middle groups are monogamous, while the better off have 1-2 wives. <i>Education</i> : Both formal and non-formal schools are available in most villages, although the infrastructure is poor. Enrolment and attendance is regular for children in the better off wealth group, and irregular for children in the poor and middle wealth groups. More boys (60%) than girls (40%) attend formal schools. Among the better off, at least 2 boys and 1 girl go to school, whereas 1 boy and 1 girl attend formal school among the poor and middle. <i>Health and nutrition</i> : The main health facilities available in NWAP are health centers, private clinics and hospitals. Remoteness of most poor villages, high transport and consultation costs (10,000-15,000 Slsh) and drugs constrain access to basic health services.	
Physical capital	<i>Transport:</i> All weather roads form the main transport systems in NWAP, but are inaccessible in the wet season. <i>Telecommunications:</i> About 4 cellular agencies: (Telsom, Telecom, Somtel, and Nation link) operate in the livelihood. Communication services facilitate remittance flows, local money transfers sharing information on rainfall and pasture availability, water trucking and market prices of commodities. <i>Water infrastructure:</i> The main water sources are water catchments and shallow wells. Most of the better off and part of the middle have at least 1 <i>berkad</i> . In the wet season, water is available, but in <i>Jilaal</i> , water is purchased at sometimes high costs for 3-4 months.	
Financial assets	<i>Loans and credit access:</i> Access to cash loans is normal for the middle and better-off wealth groups. Poor HHs own Smaller farms and have no or very limited access to loans since their repayment ability is very limited. <i>Livestock:</i> Sale of livestock and livestock products provide the main financial capital. In the reference year, normal <i>Gu/Karan</i> rains ensured normal pasture, fodder and crop harvests, translating to good livestock body conditions, improved livestock production, enhanced marketability of saleable animals, increased incomes and purchasing power of HHs. Women from all wealth groups sell most livestock products, although those in the middle and better off wealth groups engage in petty trade and small businesses.	
Natural capital	Water resources: Most water catchments (Ballis) and shallow wells are recharged by seasonal rains. Short periods of water trucking, in some places increased transport costs to 500-800 Slsh 20 litre jerrican of water. <i>Environmental resources</i> : The main soil type in the livelihood zone is loamy-clay, which supports rain-fed farming. The terrain is undulating. In most of NWAP scattered canopy and acacia have been degraded by overgrazing, intensified cultivation, charcoal and indiscriminate tree cutting. As a result, soil erosion and gully formation has increased leading to land degradation (lowering land productivity).	

#### Sources of cash income

- Sale of livestock and livestock products is the primary source of cash income for all wealth groups, followed by selfemployment, agricultural labour and crop sales. Urban towns provide the main labor markets for rural communities during times of crisis.
- The major portion of the poor households' income comes from the sale of livestock products (40%), sale of livestock (11%), self-employment (26%), agricultural labour (16%) and crop sales (8%). Due to increased number of livestock species, the middle wealth group sold 1 local cattle, 8 goat/sheep, livestock products and crops for income.
- The better-off households get about 81% of their income from the sale of livestock and livestock products. Crop sales contribute 12% and remittances 7% to household income.

# Sources of Food

- In the reference year, poor households obtained their main food items through market purchase, own production, relief food aid, and gifts. The amount of grain harvested by the poor was estimated at 18.4 bags of 50kg each (11 bags of sorghum and 7.4 bags of maize), of which 56% (10 bags) was consumed, enabling the poor to only meet 34% of their minimum energy required.
- Purchase of imported rice, wheat flour and non-staple (sugar and vegetable oil) foods accounted for 46% of the energy requirements of the poor.
- The poor obtained 1100 litres of milk (86% from cattle and 14% from goat). The consumption of milk accounted for 7% of the total kcal intake.
- Additionally, poor households obtained 10% of their food needs from food aid and gifts.
- Crop and livestock products accounted for about 64% and 67% of the kcal intake for the middle and better off, while nonstaple food covered about 44% and 49%, respectively. This implies that 108% and 116% kcal per person/day are covered for these two wealth groups.

# *Sources of Expenditure*

- Households in the poor wealth group spent 14% of their income on staple food, 24% on non-staple food, 12% on HH items and 19% on clothes.
- The amount spent on staple food also includes other costs related to food preparation (salt, kerosene, soap etc) and water for domestic use.
- The middle and better-off households spent most of their income on farm inputs (19% and 20% respectively), nonstaple purchase (16% and 14% respectively) and clothes (15% and 13% respectively).
- The middle and better-off households spent more on livestock (water, salt, fodder and drugs) and agricultural (tractor ploughing, planting, sowing, weeding, harvesting and storage, and other forms of agricultural labour) inputs.

#### Figure 3: Sources of Income





#### Figure 4: Sources of Food



Figure 5: Expenditure patterns of wealth groups



Major Hazards

# **COPING STRATEGIES**

- · Consumption, rather than sale, of crop surpluses
- Decreased food intake and increased preference for cheaper foods
- Excessive collection and sale of firewood for income
- Girls involve themselves in sheep/goat herding and engage in domestic chores
- Increased charcoal burning and sale (environmental risks)
- Normal remittance income
- Increased sale/slaughter of livestock (sustainable)
- · Intensification of local agricultural labour activities
- Intensification of self-employment activities (firewood, charcoal, building poles)
- Men and boys engage in increased social support and gift seeking
- Reduced expenditure on productive inputs (fertilizer, livestock drugs etc)
- Reduced expenditure on water
- Reduced expenditure on non-essential items like cigarettes, ceremonies, festivals, expensive clothing, more expensive staples
- Women devote more time in domestic work, with assistance from the girls

# CONCLUSION

The findings of the baseline assessment show that average climatic conditions facilitated good production, which sustained the poor for 4-6 months and the better-off for more than 12 months. The price of locally produced white and red sorghum declined by 21% and by 14% from the previous year, but increased by 56% and by 64% from the 5-year average, respectively. Cultivated area increased from the 2001/2002 baseline by between 25% and 100% across all wealth groups. Camel growth rates among the middle and better-off were 14% and 7%, respectively. Own production accounts for 34% of their minimum energy requirements, while purchase of imported staple (rice, wheat flour) and non-staple (sugar and vegetable oil) foods contribute 46% to the total kcal intake for the poor. The poor spend most of their income on staple and non-staple foods, including costs of food preparation, soap and water for domestic use, while the middle and better-off spend more than the poor on farm inputs, nonstaple food purchase and clothes. The main chronic hazards affecting HHs in north west agro-pastoral livelihood are: drought, inflation, insecurity, pests and diseases, chronic water shortages and environmental degradation. In the reference year, households reduced expenditure on non-essential items, decreased food intake, shifted to consuming cheaper foods, increased social support/remittance seeking, labour migration and charcoal burning.

# RECOMMENDATIONS

- Improve and expand water infrastructure through drilling of new boreholes and repair dilapidated ones, particularly in Rako, Waaciye, College and Adinsone in Qardho district.
- Build community capacity for the promotion, adoption and use of rainwater harvesting techniques in order to improve livelihood and food security as well as adapt to periodic climate-induced water stress.
- Develop and implement rangeland management programmes (water and soil conservation) in consultation with the local community, government authorities and local and international non-governmental organisations.
- Institute and implement regulations on charcoal production and management of private enclosures in order to reduce environmental degradation and enhance sustainability.
- Improve access to veterinary, educational and health services through establishment of schools and health posts in remote areas as well as extension of essential livestock services to the rural areas.
- Build capacity and mobilize resources to identify and establish alternative income generating options. This should aim at reducing the potential long-term impacts of unsustainable income generating activities like charcoal burning and venturing on alternatives that integrate appropriate technology (rainwater harvesting and irrigation farming), value addition and diversification of agricultural activities.
- Improve agricultural techniques through the adoption of modern (mechanized) farming methods and conserve agriculture in order to enhance productivity and agro-ecological resilience (soil and water conservation).

(Footnotes)

1 Maize 2 Sorghum

3 Ranking of season: 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 Toghdeer Apastoral Baseline Profile June 2011 FSNAU Toghdeer Apastoral Baseline Report June 2011 FSNAU Addun Pastoral Baseline Profile June 2011 FSNAU Addun Pastoral Baseline Report June 2011 FSNAU Sool Plateu Pastoral Baseline Profile August 2011 FSNAU Sool Plateu Baseline Report August 2011

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