

**Importance of Health and Health Care among
Nomadic Pastoralists in Somalia**

for

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Abstract

The paper reports on expressed and revealed preferences for health care among nomadic pastoralists in Somalia based on the findings of a nationally representative omnibus sample survey of pastoralist households (N = 6,650) carried out in April and June 2011. Households were asked about their own and their children's education and the educational possibilities open to them, their own and their children's health and access to health care, water and sanitation, livelihoods including livestock holdings, income, debt and expenditure over the last year, living conditions and communication with the outside world; and, at the end, were asked how they would use an unexpected remittance from a friend or relative abroad. The options given for the latter question were paying school fees, buying livestock, buying a bicycle, building a house, buying farming land, debt repayment, saving for emergencies including health care.

The findings on their use of health care are briefly summarised and then compared with the findings on their priorities for using the unexpected remittance. Unsurprisingly, given the drought and consequent loss of animals and livelihood last Spring, the highest priorities were for debt repayment (75%) and buying livestock (62%); but fewer than 5% said that they would save any of the remittance for emergencies (principally health care), compared to 26% who would pay school fees.

Clearly spending on health care was not seen as a priority compared even to paying school fees for their children, even though households actually spent more than twice as much on health care than on education.

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Keywords

Pastoralist livelihoods, Livestock loss during drought, Somalian famine,

Aim

The purpose of the paper is to compare expressed and revealed preferences for health care among nomadic pastoralists in Somalia. The data is taken from a recent (2011) survey carried out of pastoralist communities in locations representative of four of the main livelihood zones of Somalia: camel, cattle, goat and sheep; as well as mixed and agro-pastoral. Findings are presented comparing expenditure on health and health care in the context of overall expenditure with expressed priorities for spending an unexpected remittance; and how the drought in the Spring of 2011 affected those relative expenditures and priorities in different livelihood zones of the former Republic of Somalia.

Methodology

Survey Coverage and Training of the Enumerators

Eleven possible regional sites were initially selected to be representative of these four main livelihood zones in Somalia (five including the mixed zone) in March 2011, and based on their accessibility and security status the final selection was of six regions (see Figure 1): Maroodi Jeex¹, Togdheer, South Mudug, Sanaag, Gedo and Galgaduud. Eighteen enumerators including three team leaders were trained for a week for each of the six regions. In each region, a national supervisor was appointed to oversee the activities of the three teams.

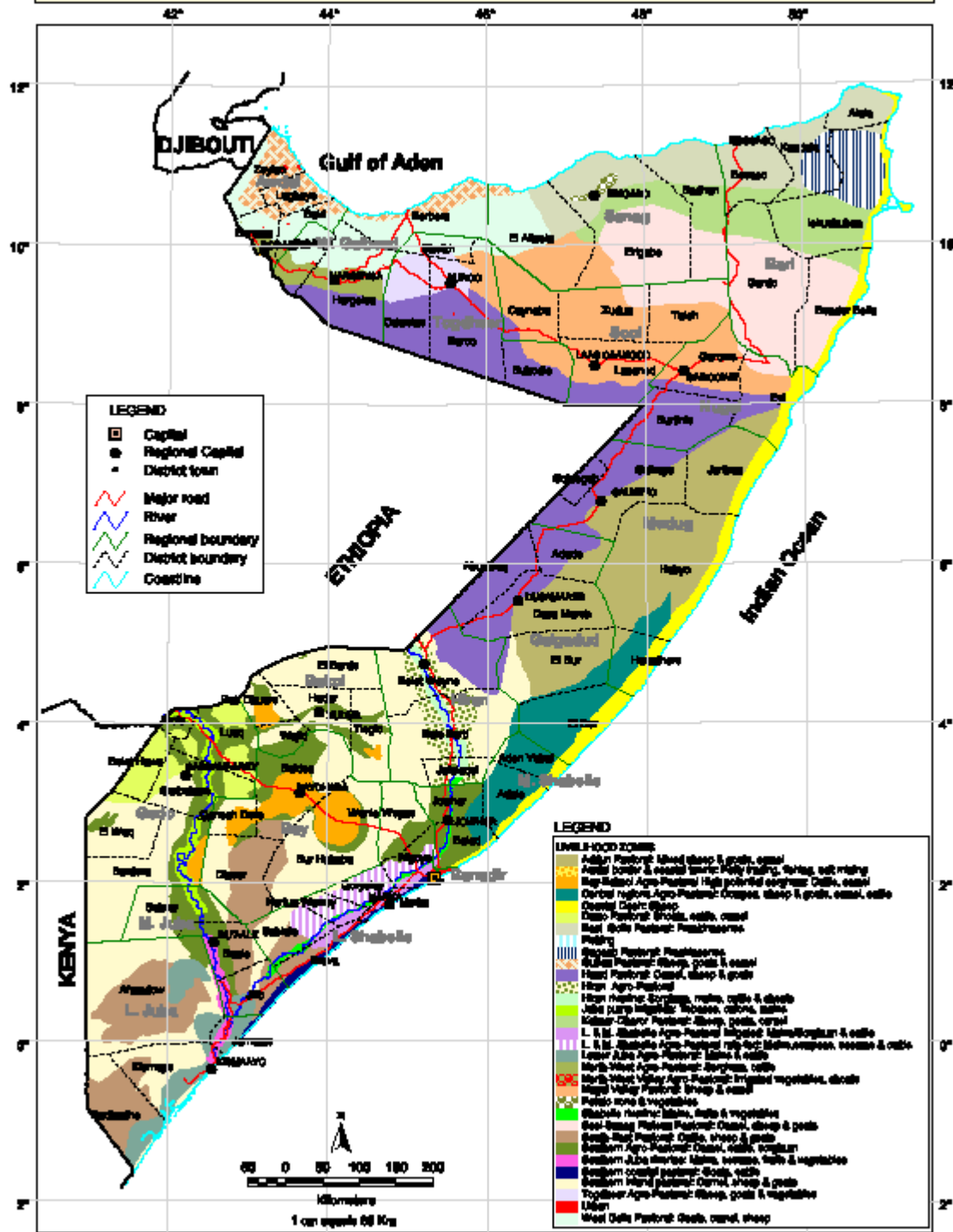
Survey Instruments

The main instrument was a Household Questionnaire with mostly closed questions². These covered the key areas of Education, Health, Livelihoods, Nutrition, Social Protection and WASH. This paper presents the findings of the Health Care sections comparing expenditure patterns with whether or not they would retain any windfall remittances for health care. Most questions asked for a Yes No response, but questions involving percentages were asked using a procedure common in Africa of proportional piling wherein the respondent is given 100 small

¹ Previously called Wooqoyi Galbeed and that name is still used; but in the remainder of report we use only Maroodi Jeex.

² In addition, interviews with key informants were conducted. Focus group discussions were held with men, young women, older women and a few with children. All survey tools (questionnaires, observation forms and guideline questions for focussed group discussions (FGD)) were developed in English, then translated into Somali and back-translated into English.

SOMALIA: LIVELIHOOD ZONES



stones and asked to divide them into piles corresponding to the percentage they would spend on each response category. The same household survey instrument was used in all six regions although the interviewers were allowed to elaborate using local languages where appropriate.

Data Collection

Fieldwork commenced in April, timed to start ahead of the expected annual rains, and was completed by mid June. The rains proved to be late (only at the end of April) and limited and conditions were very different for the pastoralist groups in each of the three separate fieldwork phases April in the North West (Maroodi Jeex and Togdheer), North East and North Central (Sanaag and South Mudug) and in June in South Central and South West

Sample Design and Expected and Achieved Size

To ensure a more representative sample of possible intra-site variations, three widely dispersed sub sites points within each regional site were identified as survey locations (Figure 2). Any intra-site variation would be an indication of the extent to which economic pressures have led households to diversifying the same livelihood zone. At each of the sub-sites, the three teams of enumerators were required to travel at least 10km to a different sampling point each of 15 days, and were expected to complete a minimum of 800 interviews (based on 4 a day for the 15 enumerators). The final total sample size for the Household Questionnaires was 6,650 (36% more than originally planned).

Figure 2 Sites and Sub-Sites

Sites	Maroodi Jeex (W. Galbeed)	Togdheer	S Mudug	Sanaag	Gedo	Galgaduud
Livelihoods	Agro-Pastoralist	Agro-Pastoralist			Camel	
Subsites	Wajaleh	Burco	Budbud	Badhan	Belet Hawa	Cadaado
	Baligubadle	Aynaba	Wisil	Hingalool	Dolooh	Caabudwaaq
	Darasalaam	Oodwayne	Bitaaale	Erigavo	Luuq	Dhusamarreeb
			Bandiiradley			
Fieldwork Dates	14 th -30 th April	14 th -30 th April	14 th -30 th April	14 th -30 th April	6 th -23 rd June	6 th -23 rd June
Expected	800	800	800	800	800	800
Achieved	1,100	900	1,100	1,150	1,500	900

Background

Civil War

The protracted, complex humanitarian and livelihoods crises in Somalia have resulted in increasing socio-economic vulnerability and worsening poverty, with almost 50% of its people in need of urgent external assistance and at least 16% of Somalia's 7.5 million³ people internally displaced. The cycle of drought in the last four to five rainy seasons has led to a significant loss of livestock, severely affecting the livelihoods of pastoral communities.

An estimated 65% of the Somali population are pastoralists⁴ whose non-sedentary way of life gives rise to a unique set of development needs and vulnerabilities to environmental changes and conflict.

Pastoralism

Camel herding dominates in the north of the region, camels being ideal milk producers in the drylands of Puntland where they are mainly reared for their milk. There is an increasing market for milk in cities and trading systems have developed in Puntland managed by women intermediaries. The system also stimulates livestock mobility, enabling recovery of the natural vegetation. Somali women are credited as critical agents of change and the commoditisation and integration of camel milk – and ultimately the pastoral way of life – has served to foster a new market and the reshaping of range resource management patterns, together with the social and environmental relations governing this (Nori 2010).

2. Findings of the Survey

2.1 Access and Use of Health Care

The overall results are shown in Table 1.

³ UNDP population figures, 2005

⁴ FAO Water Report 29 (2005)

2.1.1 Access and Distance to a Health Care Facility

Overall, 75% have access to a health care facility, varying between 43% in Galgaduud and 91% of households in Maroodi Jeex . However, on average the trip takes 4 hours, with the lowest site average in Maroodi Jeex (just over 2 hours) and the longest in Sanaag (about 6.5 hours).

2.1.2 Where Household Members Go when Sick

Overall 63% of households go to a ‘modern’ health care facility. The responses varied between 28% in Maroodi Jeex and 88% in Gedo. , A pharmacist was the source of health care for 68% overall, varying between 51% in Maroodi Jeex and 81% in Togdheer. Only 7% see a traditional practitioner, varying between 1% in Maroodi Jeex and 12% in Sanaag and Galgaduud. The pattern of health care use in Maroodi Jeex is very different from the patterns in the other sites

Table 1 Where Health Care Is Sought

Item	Access		Distance		Type of Health Care			Time Since Visit			
	N1	1	N2	2	N3	3.1	3.2	3.3	N4	4A	4B
Maroodi Jeex	1012	91	915	129	864-876	28	64	1	391	53	11
Togdheer	864	88	626	222	426-446	66	82	2	285	45	21
South Mudug	1083	63	896	193	790-896	61	26	5	580	69	5
Sanaag	1109	68	748	391	581-680	75	77	12	484	46	14
Gedo	1450	94	1087	270	726-1097	88	73	9	929	84	2
Galgaduud	1008	43	392	286	264-392	52	71	12	172	60	10
ALL	6526	75	4470	242	3651-4387	63	68	7	2841	65	8

KEY N1: Number reporting for #4.1; **4.1**: % saying they have access to a health care facility; **N2**: Number reporting on #4.2; **4.2**: Distance to health care facility (minutes); **N3**: Range of N for #4.3; **4.31**: Sought help from a modern health care facility; **4.32**: Sought help from a pharmacist; **4.33**: Sought help from a traditional practitioner; **N4**: Number reporting on length of time since visited; **4.4A**: Visited a ‘modern health care facility within last three months; **4.4B** More than a year since last time visited a ‘modern’ health care facility

By Education and Gender of Household Head within Site: The differences in Sanaag by gender of household head are substantial, with 66% of those with male heads of household compared to 43% of those with female heads of household saying that they had accessed a health care facility in the last six months.

2.2 Illness of and Treatment of Youngest Child in Household:

The results are shown in Table 2. .

2.2.1 Diarrhea and Given ORS

About 40% reported that their youngest child had had diarrhea in the last two weeks, varying between 27% in Sanaag and 59% in Gedo. Just under a quarter (24%) overall had used the pre-packaged fluid, 44% made up the fluid from a packet and 32% made up a homemade fluid. There were wide variations between sites for using a pre-packaged fluid or a packet, from 45% in Sanaag to 91% in Maroodi Jeex.

2.2.2 Cough and % to Private Pharmacy

A little over half of the youngest children in each of the sites, with small variations between 45% and 60%, had had a cough in the last two weeks. Of those who had had a cough, overall 30% went to a private pharmacist, with some variation between the sites between 17% in Togdheer and 44% in Galgaduud. Twenty eight percent (28%) went nowhere, with substantial variation between 7% in Gedo and 61% in Togdheer. Of those who had seen any health care provider, overall 41% of the youngest children had been given medicine, with substantial variations between 27% in South Mudug and 66% in Gedo. Only 3% overall had been given an injection, about half had been given a pill and just under half had been given syrup (with no substantial variations between sites).

Table 2 Illness and Treatment of Childhood Illnesses: Diarrhea and Cough

Item #	Diarrhea				Cough				Cough Medicine			
	N1	1	2A	2B	N2	3	4.8	4.14	N3	5	6.1	6.2
Maroodi Jeex	534	32	26	9	516	58	37	30	549	44	45	55
Togdheer	525	34	16	50	516	60	17	61	418	26	50	44
South Mudug	548	33	37	15	540	45	30	12	679	27	59	38
Sanaag	578	27	17	55	569	52	26	52	472	21	48	46
Gedo	1142	59	26	38	1123	57	30	7	956	66	40	46
Galgaduud	441	35	12	15	432	57	44	28	353	42	60	39
ALL	3758	40	24	32	3696	55	30	28	3427	41	47	51

Key N1: Number reporting on diarrhea; 1: % Ever had diarrhea; 2A: % Given pre-packaged ORS fluid; 2B: % Given homemade fluid; N2: Number reporting on cough; 3: % Had cough; 4.8: % Private pharmacy; 4.14: % Went nowhere; N3: Number reporting on medicine given for cough; 5: % Given any medicine for cough; 6.1: % Given pill for cough; 6.2: % Given syrup for cough

2.2.3 Fever, Sought Advice and Percent Given Medicine

Overall 46% of children had had a fever in the last two weeks with variation between the sites from 35% in Maroodi Jeex to 63% in Galgaduud. Over half (56%) of those with a fever overall had sought advice, varying between 26% in South Mudug and 92% in Galgaduud. Of those who had sought advice (about 760 overall), over 40% had been to a private pharmacist, with substantial variation between 24% in Gedo and 69% in Galgaduud, compared to 13% who had been taken to the village health worker, varying from none in Gelbeed and Galgaduud to 30% in South Mudug.

Table 3 Illness and Treatment of Childhood Illnesses: Fever

Item #	Had Fever		Sought advice				Medicine			
	N1	7	N2	8	9d	9h	N3	10	11a	11b
Maroodi Jeex	534	35	123	48	0	38	234	59	30	54
Togdheer	525	36	46	29	9	41	315	30	32	53
South Mudug	548	40	152	77	30	41	226	69	10	81
Sanaag	578	38	37	26	8	57	402	26	23	73
Gedo	1142	55	259	64	18	24	793	60	64	35
Galgaduud	441	63	147	92	0	69	283	52	26	66
ALL	3758	46	764	56	13	41	2253	49	42	53

Key N1: Number reporting on who had fever 7: % had fever; N2: Number reporting on seeking advice 8: % sought advice for fever; 9.4: % Sought advice from village health worker; 9.8: % sought advice from private pharmacy; N3: Number reporting on medicine 10: % given medicine for fever; 11A: % given an anti-malarial; 11B: % given a painkiller

Nearly half overall (49%) had been given medicine, with hardly any variation between 26% in Sanaag and 30% in Togdheer. Of these, approximately 1200, 42% overall had been given an anti-malarial of some kind and 52% had been given a painkiller of varied strengths. The balance varied between Gedo where 64% were given an anti-malarial and 35% a painkiller compared to South Mudug where 10% were given an anti-malarial and 81% a painkiller.

3 Income, Expenditure and Debt

3.1 Income

The average annual income reported on average is US\$893, but this varies substantially between regions from US\$504 in Maroodi Jeex to US\$1,212 in Sanaag. There is little variation between

households with different livelihood activities, except in Maroodi Jeex where pastoralists report an income of US\$620 and agriculturalists US\$247. Among the other sources of income, of particular interest for this paper are those who have received remittances from abroad: during the last year these were a source of income for 16% overall, varying between 9% in Maroodi Jeex and 31% in South Mudug⁵. Among those who report this as a source of income, it represents 43% of their income overall, varying between 31% in Maroodi Jeex and 60% in South Mudug and with little variation between the livelihood activities of different households. Part of the explanation may come from their proximity to international borders.

3.2 Household Expenditure

3.2 Expenditure on Main Different Types of Goods and Services (more detail available)

Food The proportion that households spent on food in the last month was 90% overall, with very little variations between the sites. Overall the average amount spent in the last month for the whole sample was US\$79 varying between US\$39 in Gedo and US\$114 in Togdheer.

Education (fees) Overall, 12% of households spent on education in the last month. The variation was between 3% in South Mudug and 27% in Gedo. For those who spent on education,

Table 4A Expenditure on Goods and Services Part A

Item #	N1	Food			Education Fees		
		8.31a	N2	8.31b	8.33a	N4	8.33b
Maroodi Jeex	972-1057	94	829	63	6	62	23
Togdheer	773	91	689	114	12	113	47
South Mudug	1060	88	940	61	3	49	22
Sanaag	1000	86	863	95	14	144	48.
Gedo	1384	99	1398	39	27	406	19
Galgaduud	964	80	784	79	6	63	33
ALL	6182	90	5503	70	12	837	29

Key N1: ; 8.31A: % Food; **N2: ; 8.31B:** \$ on food; **8.32A:** % Non-food items; **N3: ; 8.32B:** \$ on non-food items; **8.33A:** % Education fees; **N4: ; 8.33B:** \$ on education fees; overall the average amount spent on education fees in the last month was US\$29 varying

⁵ More details of the proportions saying that their income came from various sources and the estimated percentages for each possible source are available from the author for those interested.

between US\$19 in Gedo and US\$48 in Sanaag.

Health Services (human and livestock) Payment for health services in the last month was made by an average of 28% overall. The proportion in Maroodi Jeex , Togdheer and Galgaduud was between 10% and 11% and 65% in Gedo. For those who spent on health care in the whole sample, the average amount spent on health care in the last month was US\$30, varying between US\$17 in Gedo and US\$70 in Sanaag.

Water The proportion of households overall who spent income for water in the last month was 45%, varying between 21% in Galgaduud and 71% in Maroodi Jeex . For those who spent on water, the average amount spent on water in the last month was US\$55 varying between US\$18 in Gedo and South Mudug to US\$86 in Sanaag.

Table 4B Expenditure on Goods and Services Part B

Item #	Health Care Services				Water		
	N5	8.34a	N6	8.34b	8.36a	N8	8.36b
Maroodi Jeex	972-1057	11	133	20	71	616	69
Togdheer	477-883	10	86	49	48	244	79
South Mudug	1032-1196	24	261	26	43	456	28
Sanaag	807-1146	31	320	70	55	463	86
Gedo	993-1495	65	917	17	31	319	18
Galgaduud	920-1031	10	102	32	21	198	34
ALL	5201-6182	28	1819	30	45	2296	55

Key N5: Number responding to 8.34a; **8.34A:** % Health services; **N6:** Number responding to 8.34B; **8.34B:** \$ on health services; **8.36A:** % water; **N8:** Number of respondents to 8.36B;

3.3 Owing Money

Money Owed Overall, 83% of respondents said that they owed money, varying between 71% in Maroodi Jeex and 97% in Sanaag. Of those who do owe money, the average amount owed was US\$406, varying between \$140 in Maroodi Jeex and \$695 in Sanaag, with pastoralist households generally owing more than agriculturalists. These are huge amounts, given that average GDP per capita was estimated in 2009 at US\$333.

4

Assessing Priorities

Respondents were asked what would be their priorities for any additional income that they might receive; and the results are shown in Tables 7A and B.

4.1 Priorities Chosen

Overall 26% said that they would use some of the money on school fees, varying between 7% in Galgaduud and 45% in Gedo, and those two, together with 13% in Maroodi Jeex (W.Galbeed) were statistically significantly different from the overall average. Overall, 62% would have spent some of the money on buying more livestock, varying between 37% in Sanaag and 90% in Gedo and those two, together with 51% in South Mudug and 71% in Togdheer were significantly different from the overall average. Overall, 5% would spend some of the money on buying a bicycle, with very little variations between the regions. Overall, 45% would spend the money on building a house, varying between 27% in Togdheer and 61% in South Mudug and those two, together with 34% in Maroodi Jeex (W.Galbeed) were significantly different from the overall average. Overall 26% would spend the money on buying farming land, varying between 7% in Galgaduud and 45% in Gedo and those two, together with 13% in Maroodi Jeex (W.Galbeed) and 38% in Sanaag were significantly different from the overall average. Overall 75% would spend some of the money on debt repayment, varying between 32% in Maroodi Jeex,

Table 5: Priorities for Spending of Additional Income: Part A

	N2	School Fees		Buying Livestock		Buying Bicycle		Building a House	
		14.1A	14.1AP	14.1B	14.1BP	14.1C	14.1CP	14.1D	14.1DP
Maroodi Jeex	916-1000	13	3.2	59	27.5	7	2.1	34	12.7
Togdheer	579-699	28	30.2	71	52.1	2	40.7	27	32.5
South Mudug	600-1079	19	9.2	51	26.1	3	1.6	61	29.9
Sanaag	941-1029	38	31.4	37	32.8	4	33.5	38	34.8
Gedo	1227-1359	45	25.5	90	38.7	7	23.1	50	26.4
Galgaduud	940-982	7	39.4	60	48.4	5	45.3	48	41.7
ALL	5326-6137	26	16.5	62	36.2	5	5.54	45	27.7

14.1A: Using money to pay school fees; **14.1AP:** Percentage to be spent on school fees; **14.1B:** Using money to buy more livestock; **14.1BP:** Percentage to be spent on buying more livestock; **14.1C:** Using money to buy a bicycle; **14.1CP:** Percentage to be spent on buying a bicycle;

and 88% in Sanaag and those two were significantly different from the overall average. Finally, 12% would keep some of the money for emergencies especially health care, varying between 2% in Maroodi Jeex and 29% in Sanaag and those two together with South Mudug and Gagadud were significantly different from the overall average.

4.2 Percentages spent on Chosen Priorities

The overall averages of the percentages were 17% on paying school fees, 36% on buying more livestock, 6% on buying a bicycle, 28% on building a house, 18% on buying farming land, 34% on debt repayment and 12% on emergencies, and in particular unexpected need for health care..

Table 5: Priorities for Spending of Additional Income: Part B

		Buying Farming Land		Repay Debt		Emergencies (health care)	
		14.1E	14.1EP	14.1F	14.1FP	14.1G	14.1GP
Marood Jeex	916-957	44	15.2	32	6.6	2	54.8
Togdheer	579-641	15	44.1	84	38.1	19	57.1
South Mudug	600-1061	3	1.9	83	38.0	3	7.5
Sanaag	941-1082	13	36.7	88	48.0	29	41.3
Gedo	1227-1338	62	29.1	85	22.3	13	32.3
Galgaduud	940-977	5	43.0	79	51.3	3	56.9
ALL	5326-5928	26	18.3	75	33.9	12	31.3

14.1D: Using money to build a house; **14.1DP:** Percentage to be spent on building a house; **14.1E:** Using money to buy farming land; **14.1EP:** Percentage to be spent on buying farming land; **14.1F:** Using money for debt repayment; **14.1FP:** Percentage to be spent on debt repayment

Gender Differentiation: Overall, 24% of females and 29% of males would use the money to pay school fees; 63% and 61% would use the money to buy more livestock; 5% each would use money to buy a bicycle; 46% and 43% would use the money to build a house; 25% and 27% would use the money to buy farming land. Given the numbers, only the first difference – in readiness to pay school fees - is statistically significant. The only regional cases where the differences between men and women at a regional level are statistically significant are: in Sanaag with 42% male and 29% female would prefer to use the money to buy more livestock; in Sanaag with 33% male and 45% female and in Gedo with 58% male and 46% female would prefer to use the money to build a house.

5. Factors Affecting Choice of HealthCare as a Priority for Using Remittance

5.1 Bivariate Relationships: First of all we look at the relationship between whether or not there had been any expenditure on health care in the last month and choosing health care as a priority; and on the percentage spent on health care in the last month and the percentage of the remittance that they would spend on emergencies including health care. It is clear that there is a relationship between having spent on health care in the last month and future intent to retain some of the unexpected remittance or emergencies: 80% of those who had spent money on health care last month would keep some of the remittances for emergencies compared to 67% who did not spend on health care last month ($p=0.003$); but the correlation between the percentages of the total remittance that they would spend on health care, although in the right direction was low and not statistically significant (0.142 ; $p = 0.061$). We therefore decided for this presentation to focus on the former

Table 6 Expenditure on Health Care, Precarity, Reliance on Remittances and Choosing Health Care as a Priority

	Choosing Health Care as a Priority				
	Yes	No	Total	% Yes	Sig
Spent on health care	106	26	132	80.3	.003
No spend on health care	530	256	786	67.4	
Total	636	282	918	69.3	
Owed money	544	221	765	71.1	<.001
No debts	60	56	116	51.7	
Total	604	277	881	68.6	
Remittances part of income	76	58	134	56.7	0.115
Do not receive remittancea	334	187	521	64.1	
Total	410	265	655		

Next we explored whether there was any relationship between the shape of the household income and choosing health care as a priority; and in particular, on whether or not the household owed money and whether or not remittances were a normal part of their income. It is clear that there is

a strong relationships for debt: 71% of those who owed money would keep some of the remittances for emergencies (including health care) compared to 52% of those who did not owe any money ($p < .001$); but the difference between those who had received a remittance in the last year and those who had not was smaller (57% compared to 64%) and so not statistically significant although in the unexpected direction.

It is also plausible that other recent health care experiences will affect not only health care expenditure in the last month but might also affect the expressed preference of a priority is whether or not a woman in the household had a pregnancy and saw anyone for antenatal care or/ and had a modern delivery; and whether or not a child in the family recently had diarrhea, a cough or a fever. The relationships between these factors and both whether or not there was health care expenditure in the last month and choosing health care as a priority for future expenditure are shown in the Table below

Table 7 Recent health experiences, Expenditure on Health Care and Choosing Health Care as a Priority

	Expenditure on Health Care last month					Choosing Health Care as a Priority				
	Yes	No	Total			Yes	No	Total		
Antenatal Care	203	915	1118	18.2	<.001	127	28	155	81.9	.015
No antenatal care	192	1470	1662	11.6		183	74	257	71.2	
Total	395	2385	2780	14.2		310	102	412	75.2	
Modern Delivery	102	219	321	31.8	<.001	31	15	46	67.4	0.441
Not Modern delivery	285	1573	1858	15.3		201	77	278	72.3	
Total	387	1792	2179	17.8		232	92	324	71.6	
Child diarrhoea	242	1279	1521	15.9	.001	148	55	203	72.9	0.995
No child diarrhoea	261	1925	2186	11.9		229	85	314	72.9	
Total	503	3204	3707	13.6		377	140	517	72.9	
Child had cough	302	1735	2037	14.8	.019	203	62	265	76.6	0.037
No child had cough	183	1331	1514	12.1		159	74	233	68.2	
Total	485	3066	3551	13.7		362	136	498	72.7	
Child had fever	241	1471	1712	14.1	.199	163	51	214	76.2	0.033
No child with fever	231	1601	1832	12.6		188	91	279	67.4	
Total	472	3072	3544			351	142	493	71.2	

In terms of whether or not there had been any health care expenditure in the last month, all of the health experience factors, except whether or not the child had had a fever, are statistically significant in the expected direction. The relationships are in general less strong for choosing health care as a priority for spending money, and whether or not the mother chose a modern delivery and whether or not the child had diarrhoea are in fact not statistically significant.

5.2 Multivariate Analysis: Multivariate analysis has been carried out with these factors after controlling for the site (because of the wide variations shown in Table 5. The same model has been used for both whether or not they had any expenditure on health care in the last month and whether or not they would chose health care as a priority or using some of the unexpected remittance, except that eh variable ‘whether or not owed money’ has been included in the second equation.

The regression of health expenditure on health care in the last month (Table 8) shows that those households in which the last birth was delivered by a doctor or a nurse were more likely to have had health care expenditure in the last month and that, using a 10% significance level, that was also true for households where one of the children had had a cough but the opposite was true where one o the child had had a fever.

Table 8 Regression of Whether or not Expenditure on Health Care in Last month

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.668	.055		30.162	.000
Antenatal Care	-.006	.018	-.009	-.330	.742
modern_delivery	.121	.022	.129	5.520	.000
Child had diarrhoea	.010	.018	.014	.572	.567
Child had cough	.035	.018	.048	1.907	.057
Child had fever	-.030	.018	-.043	-1.685	.092

The regression whether or not they would retain some of the unexpected remittance for health care (Table 9) shows that they are more likely to retain some money if the child had had a fever

and if they owed money.

Table 9 Regression of Whether or not would retain some of remittance or health care

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.781	.189		4.123	.000
Antenatal care	.040	.047	.071	.852	.395
modern_delivery	.040	.063	.049	.645	.520
Child had diarrhea	-.074	.049	-.130	-1.489	.138
Child had cough	-.003	.046	-.006	-.075	.940
Child had fever	.099	.047	.177	2.095	.037
Owed money	.119	.063	.145	1.872	.063

6 Findings and Discussion

6.1 Income and Expenditure

The average annual income reported was about US\$900 but this varied between US\$500 in Maroodi Jeex (W. Galbeed) to over US\$1,200 in Sanaag. Major sources of income were livestock sales (reported by 65%), with sales of livestock products, casual labour, sale of agricultural produce, petty trading and remittances (reported by between 32% and 16%). These percentages varied widely from region to region; and it is noticeable that that livestock sales were a considerably more important source of income among the sites surveyed in June than those in sites surveyed earlier.

Unsurprisingly, nearly all households (90%) spent on food (average US\$79), substantial percentages on non-food items (37% with an average US\$19) and on water (45% with an average US\$55) and smaller percentages on health (28% with an average of US\$30) and on education (12% with an average US\$29), and fuel (12% with an average US\$27). Over four fifths of households (83%) owed money for an average of over US\$400. On average, household debts are nearly 3 times monthly expenditure and that is the case in all sites except Maroodi Jeex

where it is less than one month's expenditure.

6.2 Priorities for Using any Additional Income and the Future

Overall, 62% would have would spend the windfall money on buying more livestock, 45% would spend the money on building a house, 26% would spend the money on buying farming land and 26% said that they would use the money on school fees, compared to 12% on emergencies (including health care). The suggested percentages of the total windfall that they would spend if they chose a particular category follows a similar pattern although most values are smaller with the exceptions that a larger proportion (34%) would in practice would be spent on debt repayment and retained for emergencies including health care (31%).

Clearly there is a substantial difference between the percentage who spent last month on health care (28%) and the percentage who say they would retain some of the windfall monies (12%); so that, despite having to spend money on health care, it was not seen as a priority.

At the same time, although there is a significant bivariate relationship between whether or not they spent in health care in the last month and whether or not they would retain some of the windfall monies for health care, the correlation between the percentage of total expenditure and the percentage of the total windfall was low and not statistically significant. Moreover, the pattern of factors affecting whether or not they had spent on health care in the last month and whether or not they would retain some of the windfall for emergencies and in particular health care were not the same; and these differences were confirmed in the multivariate analysis.

The two measurements are measuring very different phenomena; in the post-conflict, precarious Somali context, it seems plausible to lend more credence to actual patterns of expenditure than to answers to hypothetical questions.