WFP

An Analysis of the Food Security Situation in Selected Areas across Kokang

Vulnerability Analysis & Mapping Unit (VAM)
May 2010

ACKNOWLEDGEMENTS

For questions or comments concerning any aspect of the survey and this report, please contact:		
Mr.Chris Kaye	Country Director	Chris.Kaye@wfp.org
Ms.Sarah Gordon-Gibson	Deputy Country Director	Sarah.Gordon-Gibson@wfp.org
Mr. Siddharth Krishnaswamy	VAM Officer	Siddharth.Krishnaswamy@wfp.org

EXECUTIVE SUMMARY

➢ Sixty four percent (64%) of the sample can be classified as being food insecure with 42% of the sample classified 'Borderline' and 22% as 'Poor'.

➢ Kokang has one of the highest percentage of HHs classified as severely food insecure i.e. having poor food consumption at 22%. This is higher than results seen in other WFP program areas.

➢ Low food availability, which is due to the inability of farmers to increase the poor agricultural productivity, is the main cause of household food security.

➢ Almost half all farmers (49%) in the sample across Kokang reported the inability to afford agricultural inputs as the primary constraint to farming. Another twenty one percent (21%) reported lack of labor availability to be the main constraint. Thus 70% of all farmers are unable to farm productively because of lack of income which restricts access to basic inputs or lack of labor.

➢ Food insecurity is highest in certain areas of Laukai and Kon Kyan townships (represented by Zones C & A). Zone C has the highest percentage of HHs with Poor food consumption – 39% of HHs as compared to a sample average of 22%.

Selected Sample Villages in Kokang Special Region.1
Food Security Monitoring - 2010

➢ In Zones B and D 14% of farmers reported relying on food assistance as their *primary* source of rice in the previous month.

➢ Seventy seven percent (77%) of the sample reported currently being in debt and needing to repay their loan.

➢ Only 59% of all primary aged children attended or were enrolled in school at the time of the survey. Zone C had the lowest percentage of girls enrolled in primary school.
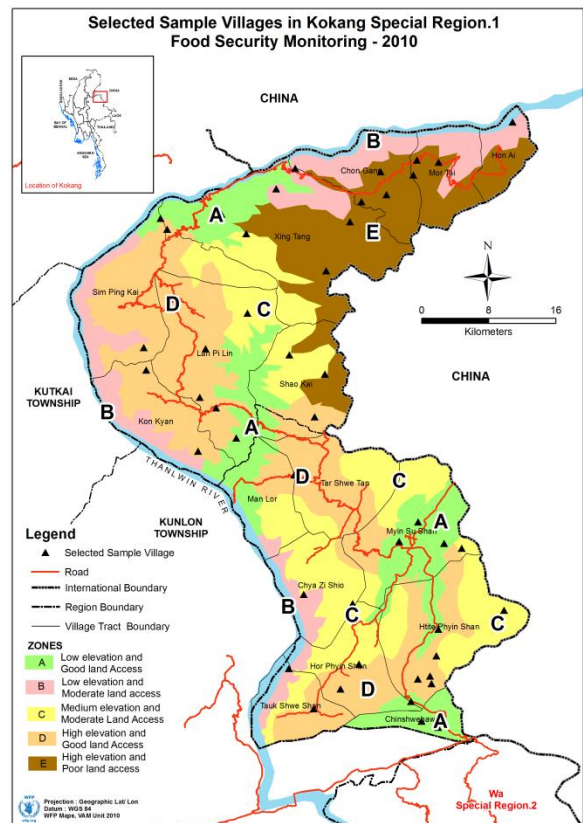
➤ Thirty percent (30%) of the sample report only one income earner and this is a telling statistic keeping in mind the average HH size is 6. This implies that in case of any shock (drought, crop failure, disease outbreak, high post harvest losses etc) to the HH, these HHs will be unable to adapt or cope easily

Recommendations

1. Given the fact that the Kokang area has one of the highest percentage of severely food insecure HHs, in which some areas report nearly 40% of the HHs as being severely food insecure, there is no doubt that WFP needs to expand food assistance programs across the Kokang area. In particular, food assistance programs need to be scaled up parts of Laukai and Kon Kyan townships.

2. The area under Zone C (Medium elevation and Moderate land access) is markedly worse off with respect to food availability and access and thus any program expansion needs to specifically start from here.

3. Less than 60% of primary school aged children were enrolled at the time of this survey. Thus, it is urged that WFP necessarily scale up Food-for Education programs with a priority towards schools in Zone C.

4. WFP's partners and the IO / NGO community are particularly encouraged to address the problem of low access to key agricultural inputs. The present low food availability can only be increased by increasing a farmer's access to basic inputs such as seeds and fertilizers. A continuing lowered food availability in Kokang will result in an increase is food prices which will lower access to food and exacerbate the already serious food insecurity problem.

Methodology
A sample of 480 HHs was selected from 48 villages based on Probability Proportional to Size (PPS). Villages were randomly selected and households in villages were selected by systematic random sampling based on village lists obtained from village / community leaders.

Data collection was undertaken by 20 enumerators. The fact that WFP could access the services of this significant number of qualified field enumerators is largely due to the timely assistance from various agencies working in Kokang and the efforts of our sub-office staff (see Acknowledgment).

WFP VAM conducted the field enumerators training over the course of 3 days at our sub-office in Laukai. The training included a module on food security, intensive training on the questionnaire, group work, role play, field testing and a feedback session. Following this improvements were made to the questionnaire and upon finalization of the same, teams began the data collection process.

Data entry & cleaning was carried out by 3 data entry personnel under the supervision of the VAM unit in Yangon.
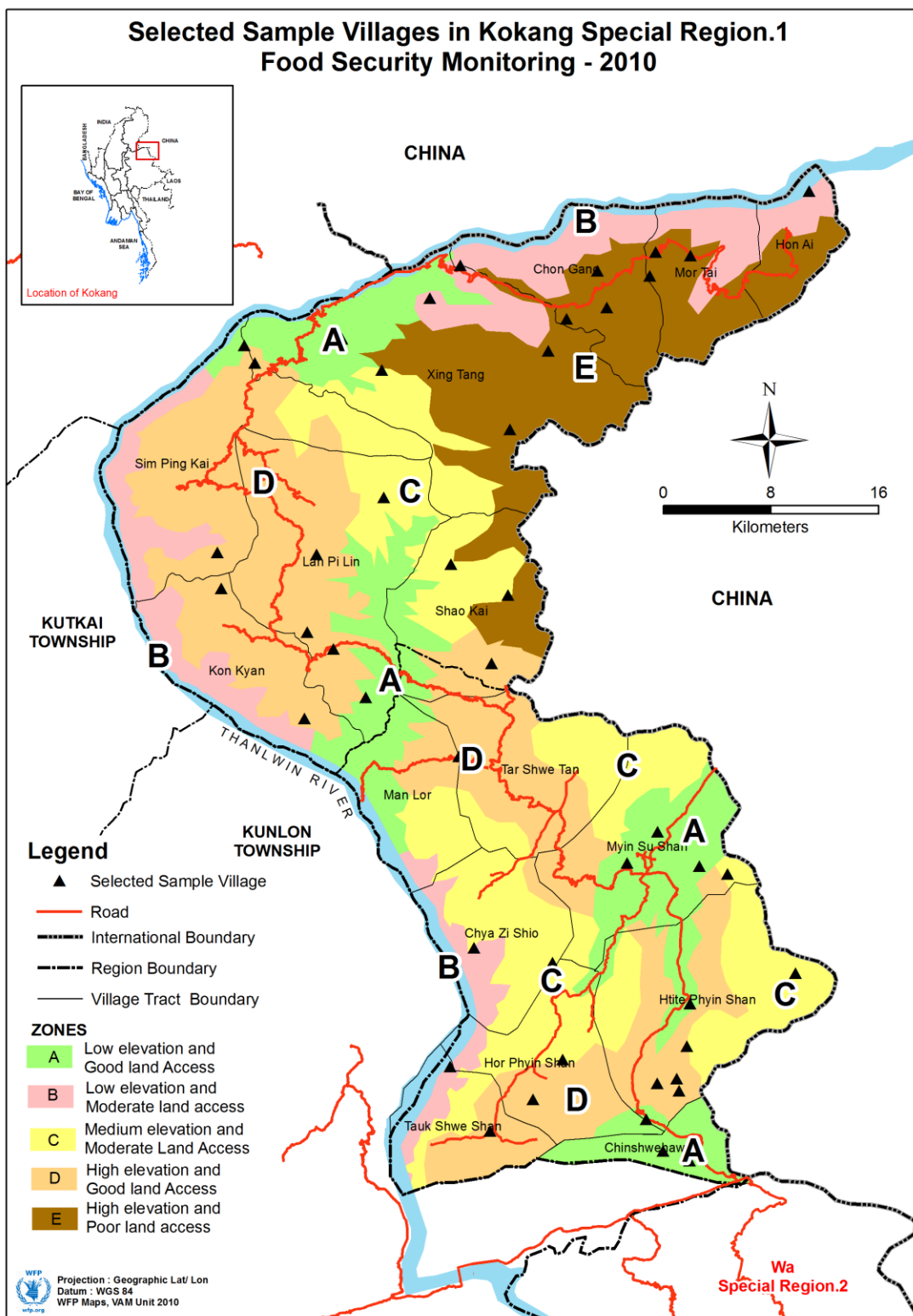
Zoning
The state was divided into zones based on various indices including agro-climatic characteristics, altitude, access to main roads, type of agriculture practices etc (Table 1). Care was taken to ensure that the sample was calculated based on population data per zone so that zones were adequately represented in the sample.

Table 1: Zone Characteristics

Zone	Description/characteristics	Township
Zone A	• Low elevation • Good land access	Laukai and Kon kyan
Zone B	• Low elevation • Moderate land access	Laukai and Kon Kyan
Zone C	• Medium elevation • Moderate land access	Laukai and Kon Kyan
Zone D	• High elevation • Good land access	Laukai and Kon Kyan
Zone E	• High elevation • Poor land access	Kon Kyan

Map 1: Sample Area, by Zone

Selected Sample Villages in Kokang Special Region.1
Food Security Monitoring - 2010

CHINA

Location of Kokang

CHINA

B

Hon Ai

Chon Gang

Mor Tai

A

Xing Tang

E

N

Sim Ping Kai

D

C

0   8   16
Kilometers

Lan Pi Lin

Shao Kai

CHINA

KUTKAI
TOWNSHIP

B

Kon Kyan

A

D

C

Tar Shwe Tan

Man Lor

KUNLON
TOWNSHIP

Myin Su Shan

A

Legend

▲   Selected Sample Village

Chya Zi Shio

Road

International Boundary

B

Region Boundary

C

Htite Phyin Shan

C

Village Tract Boundary

ZONES

A   Low elevation and
       Good land Access

Hor Phyin Shan

B   Low elevation and
       Moderate land access

D

C   Medium elevation and
       Moderate Land Access

Tauk Shwe Shan

Chinshwehaw

A

D   High elevation and
       Good land Access

E   High elevation and
       Poor land access

Wa
Special Region.2

THANLWIN RIVER

Projection : Geographic Lat/ Lon
Datum : WGS 84
WFP Maps, VAM Unit 2010

6

Demography

Across the sample it was seen that approximately 15% of households were headed by women.

Regarding HH size, the average figure for the sample was 6 members per HHs with very little difference between the zones with the exception of Zone C (Medium elevation and Moderate land access), which had an average HH size of 5 members.

Education

Respondents were asked to provide the number of eligible primary aged children in the HH (irrespective of their being enrolled in primary school). Then respondents were asked about the number of actual primary school aged children in their household who were currently enrolled in school. It was seen that for the entire sample there were a total of 877 primary school aged children. However only 514 children were reported to be currently attending school. In other words only 59% of all primary aged children attended or were enrolled in school at the time of the survey. The breakdown for boys and girls is seen in the below table.

Table 2: Enrollment Rates for Primary School Aged Children in the Sample

	Number of Primary School Aged Children	Number of Children Enrolled in Primary School	Percentage of Primary School Aged Children Enrolled (%)
Boys	458	290	63 %
Girls	419	224	53 %
Total	877	514	59 %

When disaggregating the above data by zone, it is seen that Zone C (Medium elevation and Moderate land access) had the lowest percentage of girls enrolled in primary school; 35% as compared to the sample average of 53%. In contrast 75% of all children in Zone A (Low elevation and Good land access) were currently enrolled in school.

Figure 1: Enrollment Rates – By Gender & By Zone
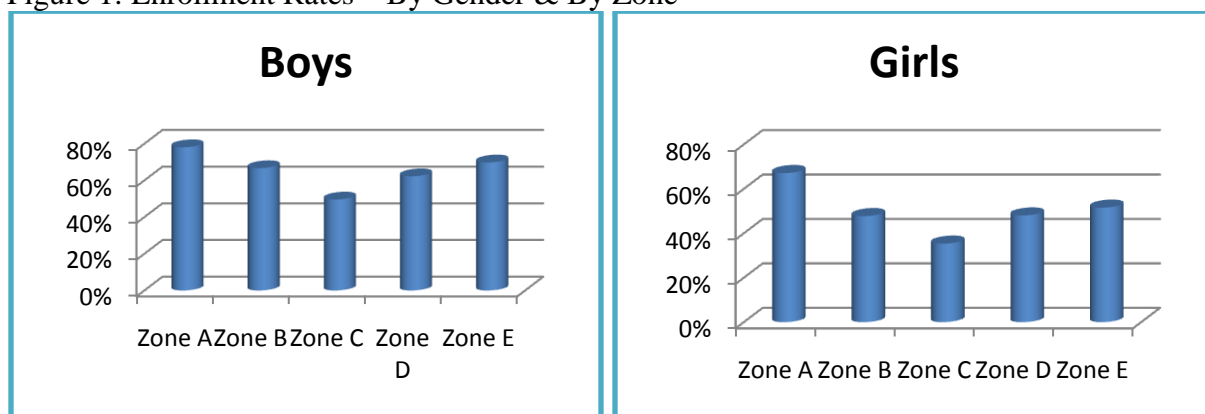
The average cost incurred by a HH that did send a child to primary school was 350 Yuan per year which is approximately 100 UD dollars. This is a sizeable amount especially when the

reliance on debt is taken into account (see Credit / Debt section). A high level of variance is also seen across zones. Zones B (Low elevation and Moderate land access) and D (High elevation and Good land access) had the lowest average expenditure per child at around 280 Yuan. By contrast in Zone C (Medium elevation and Moderate land access), HHs report spending an average of 490 Yuan per year in order to send a child to primary school, which would explain the low enrollment rate in this zone.

Food Availability

Agriculture

Land Availability and Access

Access to land was very high and uniform across zones. Overall, for the sample it was seen that 97% of the HHs reported some access to land.

While land access is relatively good, the amount of land accessed in terms of acres is also relatively high when compared to other parts of the country. The average size of rain-fed plot of land was 11 acres while upland plots on average were 7 acres. Not surprisingly Zone A (Low elevation and Good land access) had the highest average sizes of agricultural land per HH while Zone E (High elevation and Poor land access) had the least.

It is important to note that despite access to land and average land sizes both being relatively high; there are a sizeable percentage of small farmers. Thirty one percent (31%) of all farmers have less than 4 acres of land. While the presence of a small percentage of large farmers inflates the sample average (of average land size), the smaller farmers will produce far less amounts especially given the common constraints reported which inhibit productivity (see below).

The most common type of land accessed was upland plots which were used by 47% of all farmers followed by rain-fed flat land (34%) and wet paddy land (20%).

Nearly every farmer accessed land by virtue of ownership with only 6% of the farmers renting land in kind – returning a portion of harvest to the owner in lieu of rent.

Crops
Sixty seven percent (67%) of the farmers reported the cultivation of rice. While rice was the most common crop cultivated in terms of number of farmers; in terms of acreage rice accounted for 25% of all agricultural land under cultivation (for the sample). Thus rice is commonly grown in smaller areas for HH consumption and / or to reduce reliance on purchase.

Maize (37% of all land cultivated by sample) and Sugarcane (23%) are the other crops that are widely grown across Kokang area. Maize is also the most common crop with respect to number of farmers with 93% of all farmers reporting its cultivation.

The below set of tables depict the percentage of farmers growing a crop and the percentage of acres the crop represents.

Figure 2: Main Crops Cultivated – by Percentage of Farmers
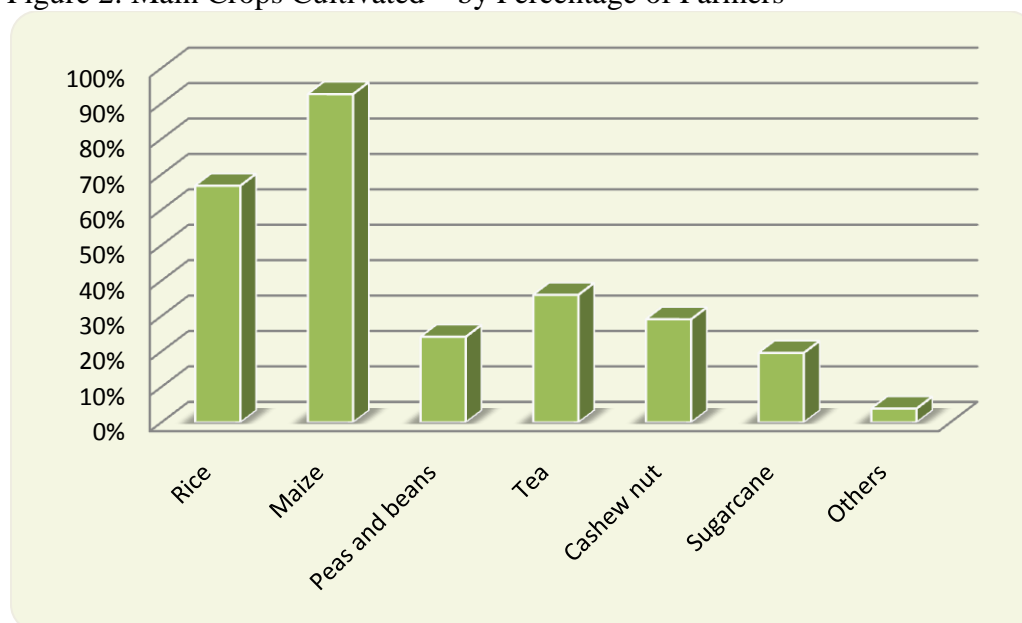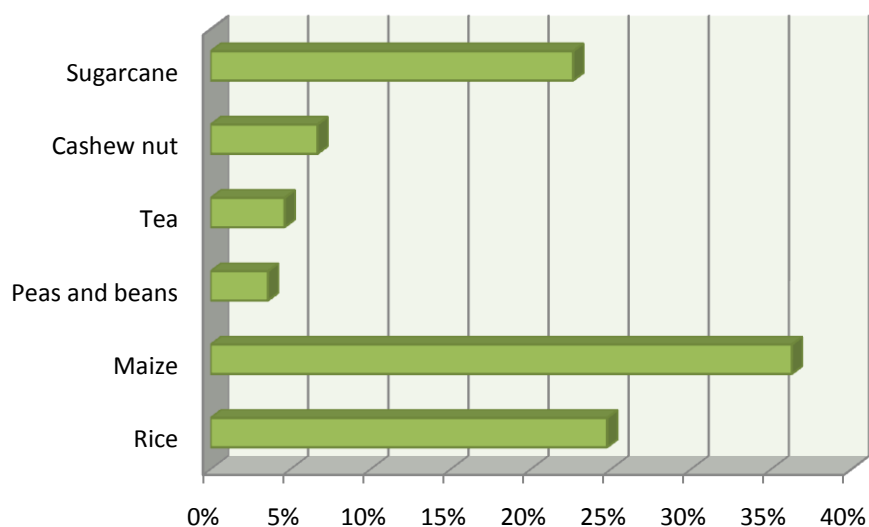

Figure 3: Main Crops Cultivated – by Percentage of Area

Cropping Patterns

The majority of the farmers practice multi-cropping with such HHs mostly cultivating two (47% of farmers) to three (26%) crops. Approximately 13% of farmers reported the cultivation of only one crop. A small percentage of farmers (4%) reported the cultivation of more than 5 crops;

9

such farmers typically being large farmers with greater access to land. HHs that farmed 2 crops would most commonly farm maize and rice or maize and cashew nut. Sugarcane was mainly cultivated by large farmers with access to 20 or more acres.

In Zones D (High elevation and Good land access) and E (High elevation and Poor land access), more than half of all farmers reported planting 3 or more crops while other zones saw a lesser percentage of farmers practising multi-cropping. Both Zones D and E are characterized by poor land access and it is thus probable that farmers depend on multi-cropping to maximize their limited access to land. This would also mean that the total yields obtained would be limited as multi-cropping is mainly to provide the HH with a varied source of foods and such HHs will not be able to sell any substantial quantities to earn incomes.

Figure 4: Number of Crops Cultivated by a HH
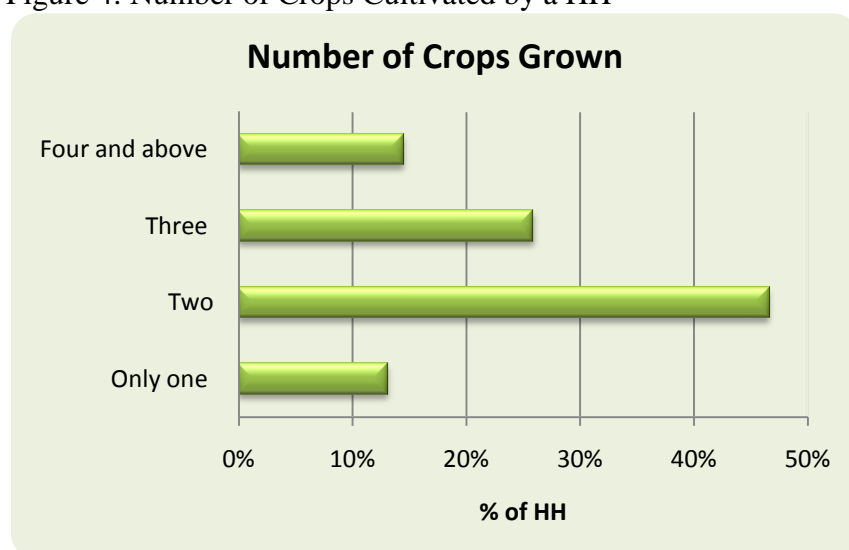
Irrigation
On average nearly forty five percent (45%) of the sample reported having access to irrigated land. This is significantly higher than the irrigation access reported in other areas; for example 21% in Kachin (Dec'09), 28% in Lashio (March'10), 22% in NRS (Sept'09) etc.

Amongst the 45% of farmers reporting access to irrigated land; the highest percentage was seen in zones D (High elevation and Good land access) and E ((High elevation and Poor land access). Ironically Zones with good access to land had low access to irrigation systems and instead largely rely on natural sources for water for their agricultural needs.

Figure 5: Access to Irrigation, By Zone
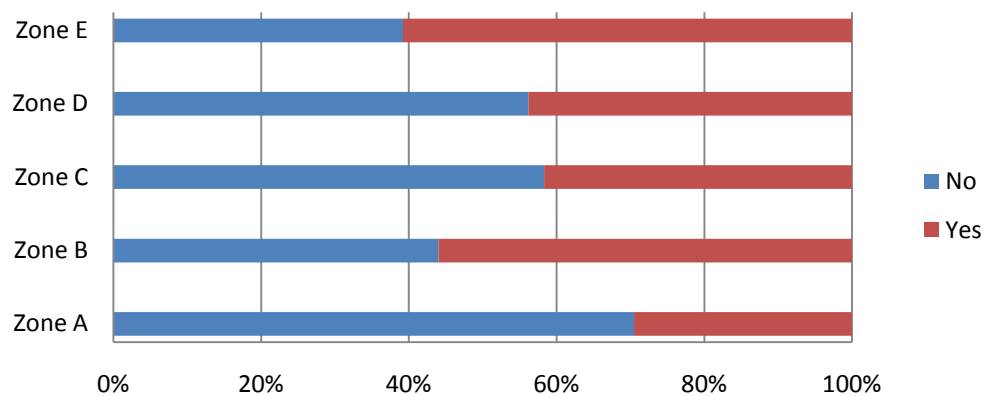
Labor

Households with access to land were asked if they hired casual labor to help cultivate their land. Twenty percent (20%) of farmers reported hiring labor with the highest incidence in Zone A (Low elevation and Good land access). However the inability to afford labor and the unavailability of sufficient labor are the main constraints preventing farmers from hiring labor (see sub-section on Constraints to agriculture). Thus there are a significant proportion of farmers who require labor but are unable to access it.

Livestock

Ninety four percent of the sample (94%) report ownership of livestock. Surprisingly pigs (93%) not poultry (87%) was the most commonly owned livestock. The percentage of HHs reporting ownership comes down slightly, to 90%, if HHs with less than 10 heads of poultry is excluded.

Ownership of cows and buffalo was relatively high as compared to other areas of the country – 33% & 40% respectively - amongst HHs reporting livestock ownership. Cows and buffalo are the most valuable assets and efforts to increase ownership levels will have a direct and positive impact on household food security.

Fifty six percent (56%) of all HHs reporting livestock ownership had between two and three kinds of livestock. These most commonly being pigs, poultry and buffalo.

Constraints to Agriculture

HHs were asked to list the main constraint or obstacle to farming. *From the data it is clear that the inability to increase the low agricultural productivity is the biggest threat to HH food security across the state.*

Figure 6: Main Constraints to Farming

Constraints to farming
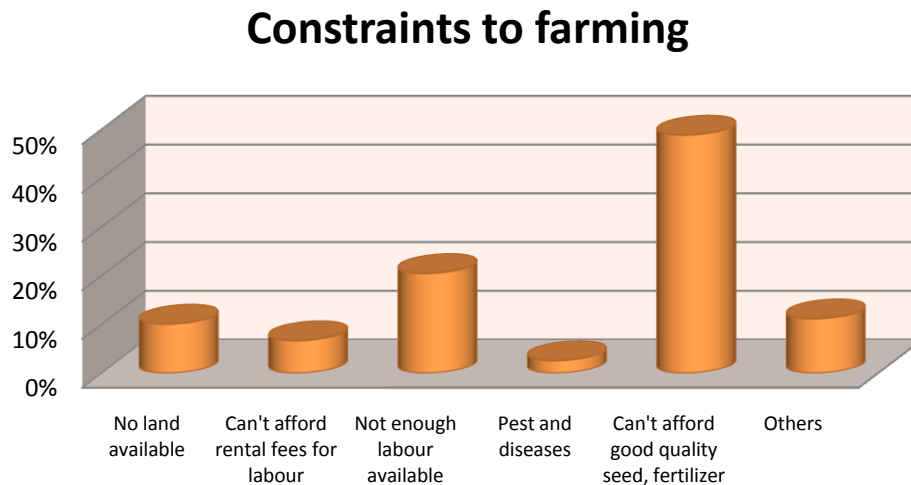
The most commonly reported constraints to farming were:
1) Inability to afford good quality seeds, fertilizers and agricultural inputs
2) Lack of sufficient labor
3) Lack of available arable land to buy or rent
4) Inability to afford labor

Almost half all farmers (49%) in the sample across Kokang reported the inability to afford agricultural inputs as the primary constraint to farming. Another twenty one percent (21%) of farmers reported lack of labor availability to be the main constraint. Thus 70% of all farmers are unable to farm productively because of lack of income which restricts access to basic inputs or lack of labor.

It is crucial to note that the main constraint is the lack of income to obtain key inputs that would enable agriculture to become productive. Farming HHs are unable to afford inputs as farming does not provide the HHs with any income. The lack of utilization of inputs means that for most HHs, farming is largely a subsistence activity.

The lack of inputs would also mean that farming barely provides sufficient food for households. In such a situation HHs are unable to maximize their advantage of having available land and nor are they able to rely on farming to produce sufficient food and rely on other activities for some income.

Food Access

Source of Staple Food

Households were asked the source of rice consumed during the prior month. The most common means by which HH sourced rice for household consumption was:

1. Purchase – 43%
2. Own Production – 37%
3. Food assistance – 8%
4. Exchange work for food – 7%

The reliance on own production is fairly low when compared to data collected from Kokang or Lashio in the past 4 months. Keeping in mind that nearly the entire sample has access to land, the reliance on own production for the staple crop is relatively low. This underlines the finding reported above that farmers tend to grow rice in very small areas mainly for HH consumption. Thus when this small quantity (related to low productivity) is exhausted, HHs will necessarily have to rely on purchase to meet their rice needs.

Reliance on food aid was highest in Zones B (Low elevation and Moderate land access) and D (High elevation and Good land access). In both these zones, 14% of farmers reported relying on food assistance as their *primary* source of rice in the previous month. It is thus imperative that any expansion in WFP operations in Kokang necessarily focus on these 2 zones.

Note: The above data represents all zones with the exception of Zone E (High elevation and Poor land access). Data pertinent to this section collected from Zone E seems to be flawed and has hence been excluded for this sub-section.

Sources of Income

Households were asked to list their sources of income and it is seen that the most common source for households was income derived from wages. Nearly half the sample (45%) reported wages being one of their main sources of income. Keeping in mind that more than 95% of the sample practice agriculture; the reliance on agriculture to source incomes is very low – 25% of sample. This underlines the earlier finding that agriculture is not productive and majority of the HHs cannot depend on it as a source of income. The third most commonly cited source of income was from the sale of livestock. Other sources of income such as petty trade, sale of handicraft and arts accounted for less than 6% of the sample.

Maps 2 & 3: Main Source of Income – Farming & Wages (Casual Labor)
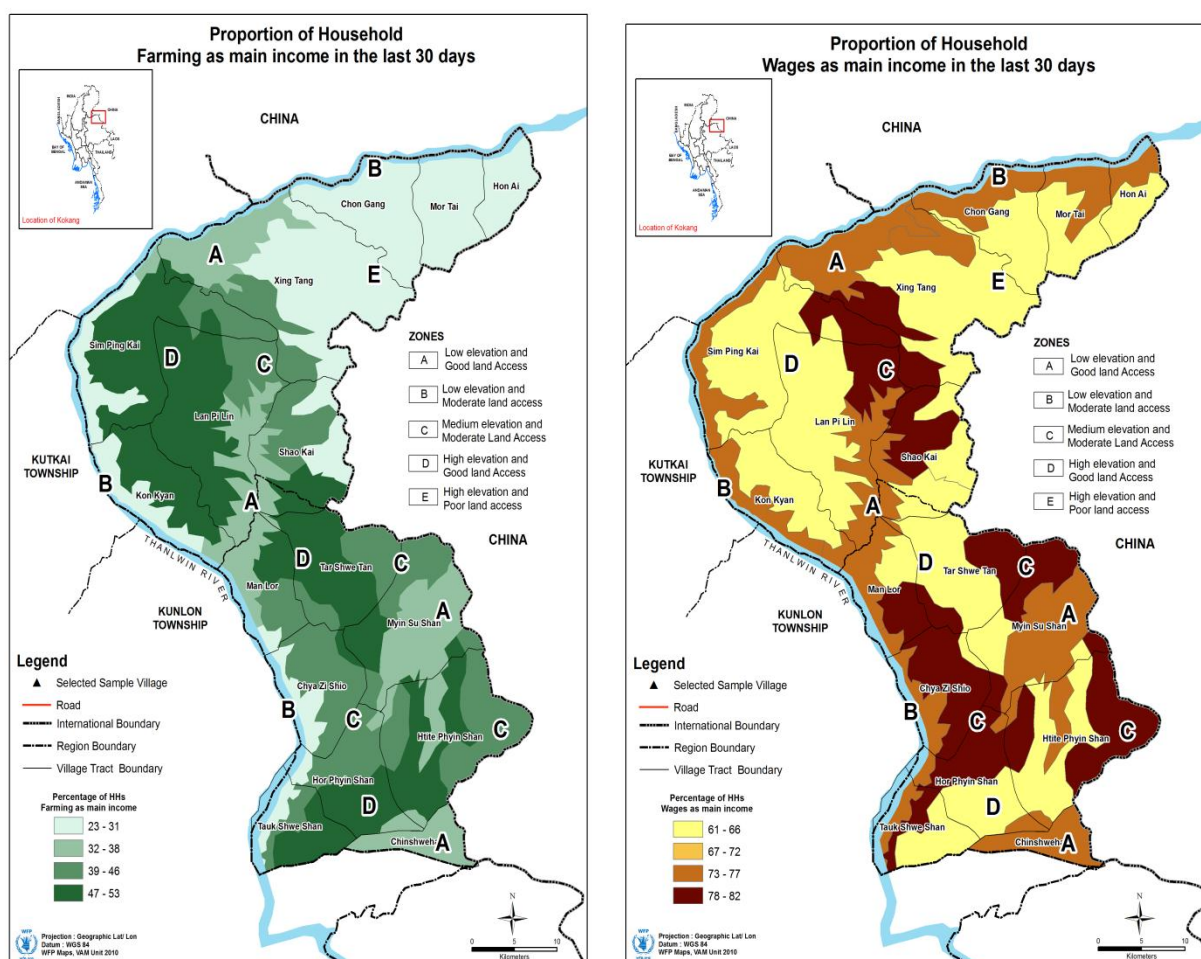
Disaggregating the data across zones the following is seen:

Table 3: Common Sources of Income;

		Zone
1	Zones with highest percentage of HHs (within that township) reporting a reliance on agriculture as a source of income	D
2	Zones with lowest percentage of HHs (within that township) reporting a reliance on agriculture as a source of income	B & E
3	Zones with highest percentage of HHs (within that township) reporting a reliance on wages as a source of income	A & B
4	Zones with highest percentage of HHs (within that township) reporting a reliance on sales of livestock as a source of income	D & E

Sources of Expenditure

Map 4: HHs Reporting Agricultural Inputs as a Main Expenditure
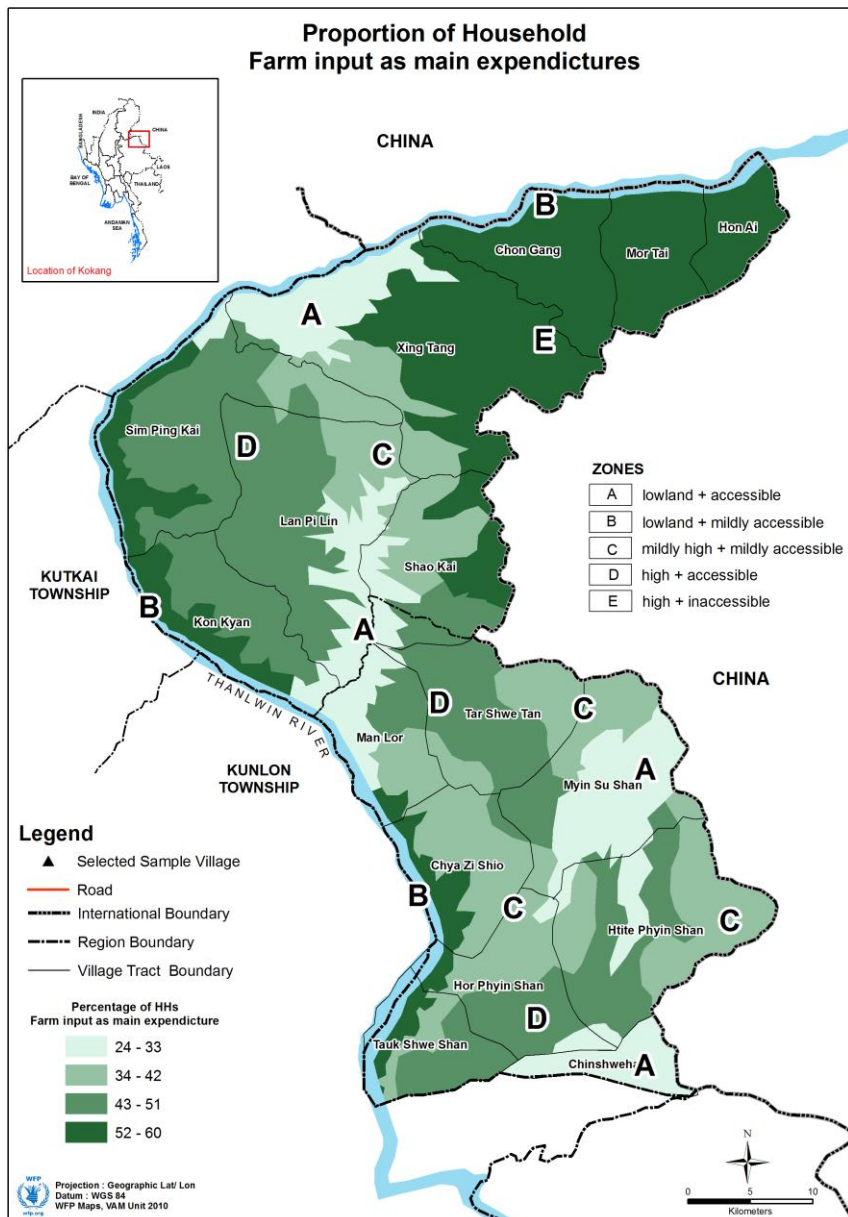
Data on expenditure for food and non-food items, such as education, health transport, etc. were collected to better understand household resource allocation. The most common expenses incurred by the sample include food, education, agricultural inputs and utilities.

Nearly half the sample report agricultural input as one of their 3 main expenditure items. On average HHs that report agricultural inputs as an expense spend 40% of their monthly expenditure on this. Food, as an expense accounts for 51% of all HH monthly expenditure. Thus the opportunity cost of agricultural inputs is extremely high. HHs that are forced to spend on such inputs will not be able to spend on other key items such as health and education or even buy

sufficient food. On the other hand, HHs that do not spend on inputs will, in all probability, be unable to produce sufficient food.

Access to Credit / Debit

Seventy seven percent (77%) of the sample reported currently being in debt and needing to repay their loan. This indicates that the majority of HHs are unable to source enough food or incomes in order to meet basic needs.

The main reasons for sampled HHs obtaining loans can be seen in the below figure.

Figure 7: Main Reasons for Household Debt

Main Reason for Debts
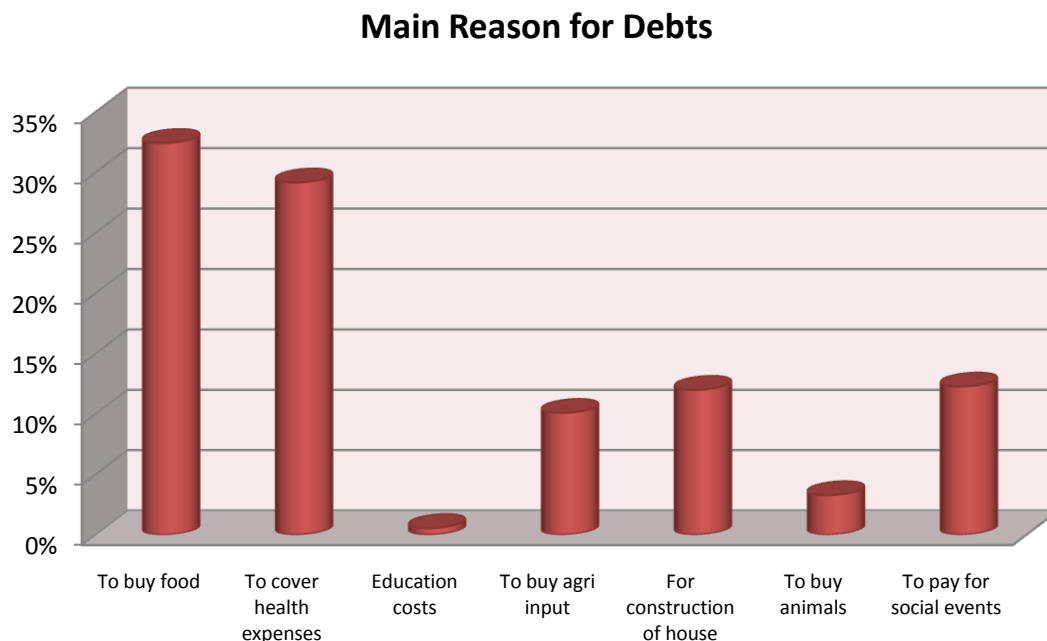
From the above data it is seen that:
- HHs undertake debt mainly to meet food needs (by definition a short term objective) and not to achieve longer term goals such as to help start a business or be used as an investment
- Less than 1% of the sample reported undertaking loans in order to send children to school. This is not to suppose that education is not important to HHs but rather, that HHs in Kokang perceive food and factors that affect income generation (ill health and agricultural inputs) as the most urgent requirements.
- There is an unusually high percentage of HHs reporting the undertaking of debt to pay for social events (12%) and for house construction (12%). Such a pattern has not been seen before in other surveys conducted by WFP in the recent past.

Map 5: Percentage of HHs with Debt, by Zone

**Proportion of Household
Debt to pay back at the moment**
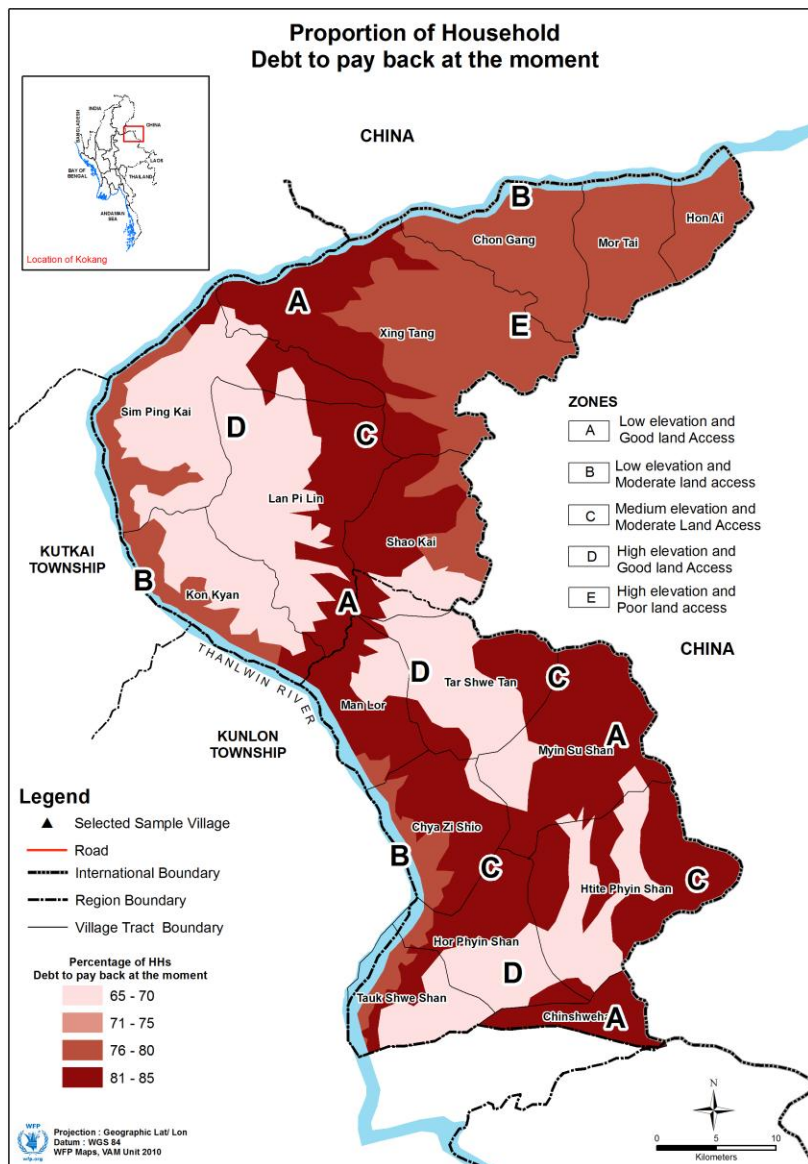
A wide variation in the amount (in monetary terms) of loan undertaken is also seen. Zone A (Low elevation and Good land access) and Zone E (High elevation and Poor land access) had the highest percentage of HHs undertaking large loans (2000 Yuan and above). Fifteen percent (15%) of the sample reported taking loans of 5000 Yuan or more. However a sizeable percentage of HHs (23%) also reported only undertaking loans for smaller amounts (up to 500 Yuan).

Figure 8: Amount of Debt, in Yuan
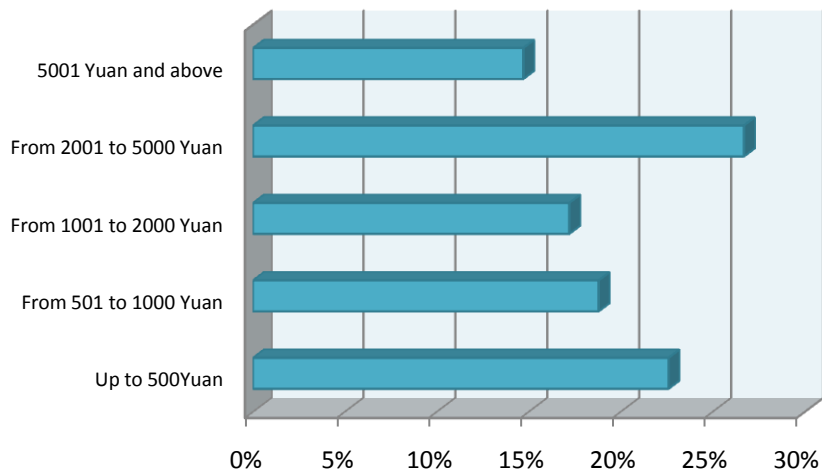
Food Consumption

Food Consumption Score (FCS)
Information was collected on the dietary diversity of the HH with respondents being asked to list the number of days a particular food item was consumed by the HH in the 7 days prior to the interview. Thus a '0' for Fruits would indicate that a HH did not consume any fruit in the previous 7 days while a '4' would indicate consumption 4 days out of 7 etc. The mean food consumption score for a 7 day period for the sample was then calculated

Food Consumption Groups were formulated and it is seen that approximately 64% of the sample can be classified as being food insecure. Forty two percent (42%) of the sample can be classified as being 'Borderline' and 22% as 'Poor'. In other words, 36% of the sample depicts adequate food consumption.

Table 4: Food Consumption Scores across Zones

		Percentage of the Sample (%)		
		Poor	Borderline	Acceptable
1	**Zone A**	16	37	47
2	**Zone B**	16	58	26
3	**Zone C**	39	38	23
4	**Zone D**	22	45	33
5	**Zone E**	11	42	36

Note: Figures have been rounded

Map 6: Poor and Borderline Food Consumption

Proportion of Household
Poor and Borderline Food Consumption

CHINA

Location of Kokang

Hon Ai

Chon Gang

Mor Tai

A

Xing Tang

E

B

ZONES

A	Low elevation and Good land Access
B	Low elevation and Moderate land access
C	Medium elevation and Moderate Land Access
D	High elevation and Good land Access
E	High elevation and Poor land access

Sim Ping Kai

D

C

Lan Pi Lin

Shao Kai

KUTKAI TOWNSHIP

B

Kon Kyan

A

CHINA

THANLWIN RIVER

Man Lor

D

Tar Shwe Tan

C

Myin Su Shan

A

KUNLON TOWNSHIP

Legend

▲   Selected Sample Village

——   Road

▪▪▪▪   International Boundary

▪-▪-   Region Boundary

——   Village Tract Boundary

Chya Zi Shio

B

C

Htite Phyin Shan

C

Hor Phyin Shan

D

Tauk Shwe Shan

Chinshweha   A

Percentage of HHs Poor and Borderline-Food Consumption Score

	49 - 56
	57 - 63
	64 - 70
	71 - 77

WFP
wfp.org

Projection : Geographic Lat/ Lon
Datum : WGS 84
WFP Maps, VAM Unit 2010

N

0   5   10
Kilometers

Analyzing food consumption data across townships it can be seen that food consumption patterns in Zones C, D and B are lower or worse-off than consumption patterns seen in the other zones. In these 3 zones approximately 72% of all HHs fall under the Poor or Borderline food consumption category. Furthermore, Zone C (Medium elevation and Moderate land access) has the highest percentage of HHs with Poor food consumption – 39% of HHs as compared to a sample average of 22%.

Shocks

Respondents were asked to list the 3 main shocks or difficulties faced by their household in the past 6 months. Once the respondent had listed the shocks he or she was then requested to list the shocks in order of severity from 1 (most severe) to 3 (less severe).

Based on all the responses, the following patterns were seen with respect to main shocks

The most common shocks affecting HHs were
1. The lack of employment opportunities and reduced wages
2. Sickness / HH expenditure on health
3. Debt to reimburse
4. Unable to farm / practice agriculture productively
5. High post harvest losses

Lack of income combined with low food availability severely restricts an HH's ability to access food. The lack of basic agricultural inputs results in low yields which are then further lowered due to post harvest and storage losses. To compound matters, some HH's are forced to divert crucial monies in order to meet health expenses at the HH level. This further reduced HH food security.

Note: Approximately 16% of HHs across the sample reported sickness of a family member as an obstacle to food security. The questionnaire was not designed to obtain further information on type of sickness, duration etc but there is an urgent need to obtain more relevant details. Irrespective of the sickness the widespread prevalence means that these HHs are adversely affected since (a) the HH's income generating potential is reduced, and (b) HHs need to divert scarce resources on health expenses.

Table 5: Most Commonly Reported Shocks – By Zone

Most Commonly Reported Shock(s)	Zone
Sickness / HH expenditure on health	D / E
The lack of employment opportunities and reduced wages	E / B / A
Debt to reimburse	C / A
Unable to farm / practice agriculture productively	D / E
High post harvest losses	D / E

Maps 7 & 8: HHs Affected by Household Expenditure on Health & Loss of Employment