



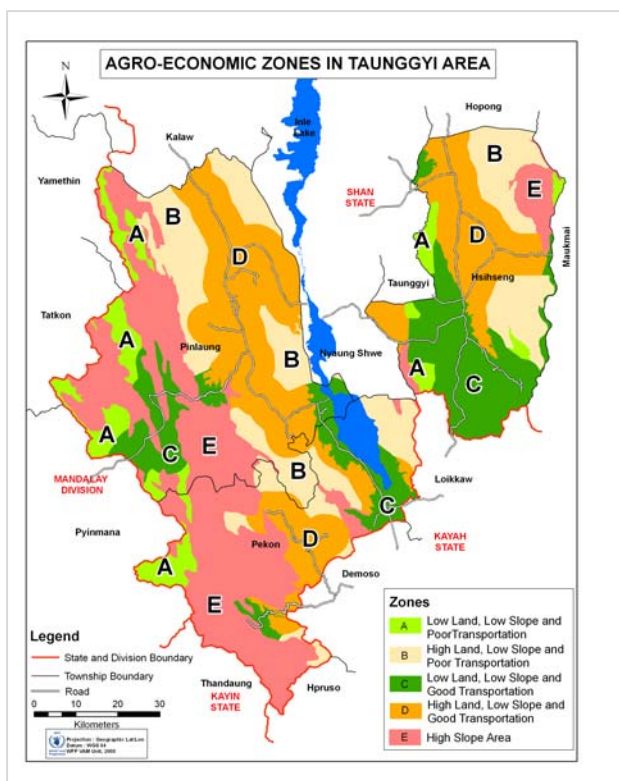
## Food Security Profile Taunggyi sub-office project areas December 2008

This Report summarizes the findings of the Food Security Profiling assessment carried out across Taunggyi sub-office project coverage areas in August 2008.

Food Security Profiling in Taunggyi Sub-Office project areas, Southern Shan State were carried out by WFP and its Cooperating Partners namely KMSS and ADRA and line department NaTaLa in Hsihseng, Pinlaung & Pekon Townships to present a snapshot of household food security in that area; 599 HHs in 54 villages were covered under three townships. It should be noted that the sample size has statistical limitations. However care was taken to ensure that the geographic coverage of the sample was considerable.

Taunggyi sub-office is situated in the capital of Shan State, Myanmar. The project area included Phekon Pinlaung and Hsihseng (the latter two coming under Special Region 6). Major ethnicity is Kayan in Phekhon Township, Pao in Pin Laung and Hsihseng Township.

Regarding ethnicities, the sample mainly consisted of Pao (46%) and Kayan (36%) ethnic groups with Shan, Inn Thar and other groups making up the rest.



From methodological/analytical perspective, the sampling of villages used probability proportional to size sampling by zoning and households were randomly selected and data collection tools used included the Household & the Key Informant Questionnaire. Zoning prior to the assessment was classified as per:

|   |               |
|---|---------------|
| Low Land, Low Slope, Poor Transportation  | <b>Zone A</b> |
| High Land, Low Slope, Poor Transportation | <b>Zone B</b> |
| Low Land, Low Slope, Good Transportation  | <b>Zone C</b> |
| High Land, Low Slope, Good Transportation | <b>Zone D</b> |
| High Slope area                           | <b>Zone E</b> |

Zoning criteria was set up based on the following criteria (1) Elevation: 1000 meter above and below (2) Slope: 30 degree above and below and (3) Transportation: 3 miles buffer from main road.

Methodology of the Food Security Profiling utilizes the methodology formulated by FANTA with special focus on household access to food (related to the frequency with which the households address their food access problems with coping mechanisms) and the dietary diversity (number of foods consumed regularly: two items per meal would mean "deficient").

## **Main findings:**

- While access to land was relatively high and uniform across zones it was seen that average size of landholdings for the sample is less than 2 acres.
- The main constraints to agriculture are the lack of availability of land and labor.
- Over 66% of agricultural HHs have no access to irrigation. As a result, rice production can fluctuate significantly from year to year and agricultural households lack alternatives that would allow them to maintain stable incomes or cope in times of poor harvest.
- There is a clear discrepancy between HHs with respect food stocks. Approximately 63% of the sample reported having stock to last them for up to 1-6 months. However nearly one-fourth of the sample is able to stock staple food for twice this period.
- Seventy two percent (72%) of the sample depend on agriculture for their primary, secondary or tertiary source of incomes. Thus agriculture for nearly three-fourth of the sample is not just a source of food but rather seen as a crucial income sourcing activity.
- As per the Household Dietary Diversity Score (HDDS) it is seen that more than 80% of HHs exhibit either deficient (55%) or moderately deficient intake (24%).
- From the Household Food Insecurity Access Scale (HFIAS) it is seen that 86% of the sample perceived themselves to be moderately (40%) or severely (46%) food insecure.
- A sizeable percentage of HHs are unable to educate their children either because of lack of sufficient money or because children are needed to supplement household labor.
- Only 4% of the sample reported receiving any education on nutrition or hygiene practices. More information needs to be obtained to determine the reason for this and to suggest effective interventions.

## **Education**

A little more than half the sample population reported having attended (or attending) primary school. Amongst children between the ages of 5 -16 years, it was seen that 56% currently attended school. The main reason put forth for non-attendance of school was expense followed by children needing to work. In other words, for a sizeable percentage of the sample, the opportunity cost of educating their children is too high.

## **Availability**

### *Land Availability and Access*

Access to land was very high and uniform across zones with the exception of Zone C. Overall, for the sample it was seen that 94% of the HHs had some access to land.

Amongst HHs that had access to land; up-land holdings were the most commonly reported (70%) followed by wet paddy land (43%) and rain-fed flatlands (28%). Notably, small gardens were the least popular type of landholding with only 14% of HHs reporting the cultivation of gardens.

Average size of landholdings was less than 2 acres per HH on average irrespective of the type of land holding. One would nominally expect to see upland rice holdings to be of greater average size than small gardens. However this not the case and differences in average size of land holding, where seen, is slight.

There is a distinct variation between average plot sizes between Zone E and the remaining zones. Zone E had the smallest average plot sizes as compared to the average size for the sample. Indeed, the

difference between average sizes of landholdings in Zone E and the sample is as much as an acre in the case of small gardens, wet land and flatland holdings. With respect to the other zones, it is seen that HHs in Zones B and C had slightly above average plot holdings.

HHs (reporting access to land) were also asked why they did not use more land. Approximately half these HHs reported that lack of land availability as the single main obstacle to expansion of agriculture. An additional 41% reported the lack of labor availability as a constraint. The fact that average plot sizes across all zones are below or close to 2 acres implies that lack of access to land is a severe constraint. It can be hypothesized that HHs that do manage to have a higher access to land face the problem of gap in supply of labor. Thus most HHs are forced to obtain the maximum out of relatively small plots of land and many such HHs (especially the ones with fewer number of adults in the age group 15 – 59) would also be hampered by lack of available labor. On the other hand, HHs with ability to buy more land and / or access labor (primarily as a result of more adult HH members) would be affected by the non-availability of land.

### Crops

Rice is the most common crop cultivated with 90% of HHs having some access to agricultural land reporting cultivation. The difference between rice and other preferred crops for cultivation is vast with 29% of farmers reporting the cultivation of maize and 23% cultivating peas or Beans. Thus while multiple cropping is practiced, less than 40% of farmers resort to this. This implies that even where farmers do resort to multiple cropping; rice would continue to be the main crop. Keeping in mind land-holding patterns and weather conditions it is not surprising that rice cultivation is most prevalent across sample. However certain implications of this almost total dependence on rice are theorized below. Other common crops grown in the area include garlic, sunflower and sesame.

### Irrigation

Only 34% of HHs (with access to land) reported having access to irrigation. This is a worrying statistic as it indicates that

- (a) Over 66% of agricultural HHs have no regular access to irrigation and instead depend on natural sources. Thus any delay in rains, change in weather conditions would have direct and far-reaching effects on livelihoods.
- (b) HH members would have to spend significant time and effort to source water for agriculture (esp. during the planting season).
- (c) Low access to irrigation combined with the fact that average land size is less than 2 acres means that agricultural yields obtained by many HH would likely be very low.

Food security in Taunggyi seems to be constrained by a combination of factors that adversely affect HH's agricultural productivity and food availability.

- 1) Reliance on Rice / Mono-cropping
- 2) Lack of land availability
- 3) Lack of Labor
- 4) Lack of Irrigation Facilities

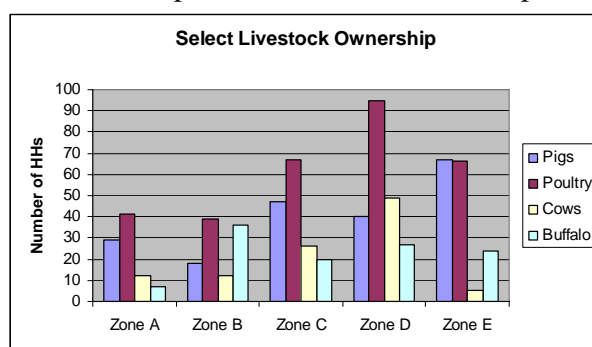
The heavy reliance on rice cultivation increases the vulnerability of the rural population, as rice farming does not provide a stable income (WB, 2006). As a result of irregular climatic conditions, rice production can fluctuate significantly from year to year and agricultural households lack alternatives that would allow them to maintain stable incomes or cope in times of poor harvest. This is especially true when the average land holding of below 2 acres per HH is taken into account.

This lack of crop diversification is probably driven by the farmer's fear of economic loss which prevents him switching to alternative crops. Among problems faced by individual farmers in growing other crops is that at most locations, the marketable supply is not large enough to attract other buyers. Further, this lack of a critical minimum supply volume of alternative crops also inhibits the agro-industry from establishing value chains of local food products.

The continuous practice of mono-cropping combined with relatively low use of agri-inputs means that soil fertility levels are constantly threatened. This, over time, will lead to decreased yields and necessitate increased inputs costs by the farmer to maintain yield levels.

### Livestock Ownership

Though reliance on income from livestock is low across the sample with 2% of the HHs reporting livestock as primary or secondary source of income; livestock ownership is relatively high. Across the sample, 51% of households reported ownership of poultry and 34% of the HHs reported ownership of pigs. Less than 19% of the HHs reported ownership of cattle. The popularity of poultry as compared to other livestock would further attest to this.



The lack of reliance on livestock to source incomes indicates that HHs that rear livestock primarily do so in order to help supplement household food. The popularity of poultry as compared to other livestock would further attest to this.

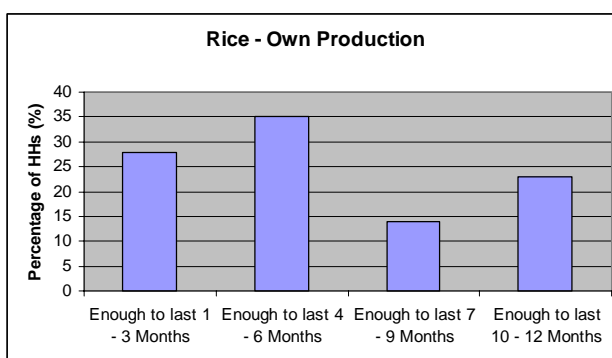
Upon analysis of livestock ownership across zones; it is seen that:

- Ownership of poultry and cattle was highest in Zone D.
- Zone E had the highest ownership of pigs.
- Overall livestock ownership in Zones A and B are lower than in other zones.

### Staple Food Stock

Households were asked to report on approximately how many months their rice stock would last them. From the data it can be seen that 63% of the sample had enough food stock to last them between 1 – 6 months (with nearly 28% of the HHs reporting stocks lasting less than 3 months). A further 23% of HHs reported having enough stock to last them 10 months to a year.

Zones A (49%) and B (43%) had the highest percentage of HHs reporting adequate staple food stock to last them between 7 months to a year. It is also seen that Zones C and D had fewer than average percentage of HHs reporting sufficient stock for a period greater than 6 months.



Thus there is a clear discrepancy between HHs. The majority are able to produce stocks to last them for up to 1-6 months. However nearly one-fourth of the sample is able to stock staple food for twice

this period. More information needs to be collected on the state of other food stocks and if indeed HHs are able to stock other crops or rely mainly on purchase during the period between harvests.

## **Access**

### *Source of Income*

The most common source of income for households was income derived from wages. Over 40% of the sample reported wages being their primary or secondary sources of income.

However, equally pertinent is the dependency on households to source income from farming / agriculture. Twenty seven percent (27%) of the HHs reported obtaining their primary income from farming. As a secondary income source farming was reported by 23% of the sample and a further 22% reported farming as their third most important source of income. In other words, 72% of the sample depends on agriculture for their primary, secondary or tertiary source of incomes. Thus agriculture for nearly three-fourth of the sample is not just a source of food but rather seen as a crucial income sourcing activity. In other food profiles (for example, Wa) it is usually seen that the most common source of income is wage earning activities and a combination of temporary, seasonal, informal activities (here being the third most common source of income). Agriculture, in these areas, is primarily a support function. This is not the case in Taunggyi.

Not much variation is seen across the zones with main income sources being wages followed by farming. The notable exception is Zone A where an equal number of HHs depend on wages earning activities and farming for their incomes. This strengthens the hypothesis (see Sources of Expenditure) made with respect to Zone A HHs being able to produce sufficient food as compared to other zones. In terms of number, Zone D had the highest number of HHs reporting the earning of income from wages and / or agriculture.

### *Sources of Expenditure*

Sampled households were asked to list their three main sources of expenditure. Food was the single most common expenditure with approximately 68% of the sample reporting food as their first source. It is interesting to note that food, while a widespread source of household expenditure, was less prevalent as compared to others states - where food was reported as a main source of expenditure by more than 90% of the sample.

Expenditure on health and farm inputs was reported as primary sources of expenditure by 12% of the sample. The fact that investment on farm / agricultural inputs accounts for a share of primary expenditure implies that for these HHs agriculture is an income generation activity and not a support activity used to source staple food.

It is also interesting to note that education and health were reported to be secondary sources of expenditures by over 23% of all sampled households. This implies that some proportion of the sample not only attach sufficient importance to key non-food expenditures (such as education & health) but are also willing to divert portions of their incomes to these expenses.

Zone D had the highest number of HHs reporting some monthly household expenditure on food, education and health. Conversely Zone A had the least number of these HHs – less than 7% of the HHs reported expenditure on food. This could also mean that more households in Zone A are able to produce sufficient food, are able to practice subsistence agriculture and hence manage to keep food expenditures to a minimum.

### *Source of Food*

Households were asked the source of their rice consumed during the prior month. Purchase (42%) was the most common means by which HHs obtained rice followed by dependence on own production (35%).

It was seen that 90% of all HHs with access to land reported the cultivation of rice. The fact that less than half of these HHs source rice from own production could be due too one of the below reasons:

1. HHs grow less quantities of rice and hence resort to purchase for their entire rice consumption.
2. Agriculture productivity is low and households with less access to land are unable to depend on own production to satisfy all their rice needs.
3. HHs that can source all their rice requirements from their own production would most likely be HHs with access to larger tracts of land and who are able to maximize agricultural production.

Thus one section of agricultural HHs are able to practice agricultural at a level that allows them to produce enough staple crop for self-consumption and another sizeable portion of HHs are unable to do so and resort to purchase, for all or part of their HH rice requirements.

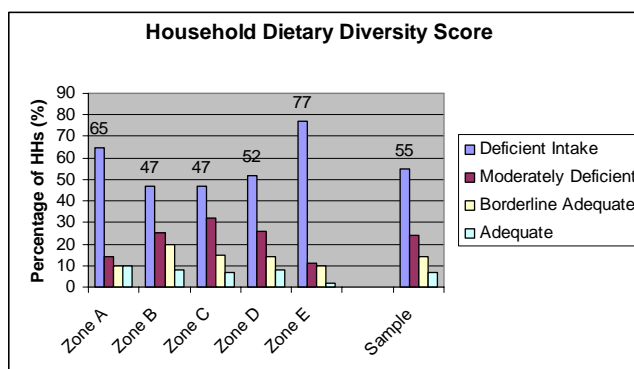
Approximately 16% of the sample reported sourcing food on credit, by borrowing, by exchanging items for food and / or working for food. It should be noted that these activities are to a greater or lesser degree – coping strategies. The fact that 16% of the sample resort to these activities to source a staple food while 35% of the sample rely on own production points to significant disparities across the sample in access to staple food (which could be a function of poverty, lack of access to land and lack of employment opportunities).

### *Household Dietary Diversity Score*

Approximately 80% of HHs exhibit either deficient (55%) or moderately deficient intake (24%). Furthermore, less than 7% of HH were seen to have adequate consumption.

Across Zones;

- Zone E had the highest percentage of HHs with deficient intake (77%) as compared to a sample average of 55%.
- Surprisingly Zone A (despite having the highest percentage of food secure HHs) had a relatively high number of HHs with deficient dietary intake – 65%. A possible reason for this could be that in this zone for most households staple foods constitute a major share of food consumption thus resulting in low dietary diversity.
- It should be noted here that despite the above; Zone A also reported the highest percentage (10%) of HHs with adequate dietary diversity.
- There is a clear difference between Zone E and D and the other zones in terms of HDDS.



This should not be taken to mean that HHs in Taungyyi are lacking food; rather that there is a too high a dependence on staple foods and consumption of various food groups across sample is low. The reasons for this could be any one or more of the below factors:

- The lack of availability of land results in HHs mainly growing one crop (the staple crop of the region) and for HHs relying on subsistence agriculture, consumption would thus largely be confined to staple crops.
- The greater availability of staple crops would bring down the price locally and thus food insecure households (typically lacking income sources) will consume more staple foods as they are cheaper.
- Households lacking sufficient income cannot access enough non-staple foods to improve their dietary intake despite spending considerable share of income on food.

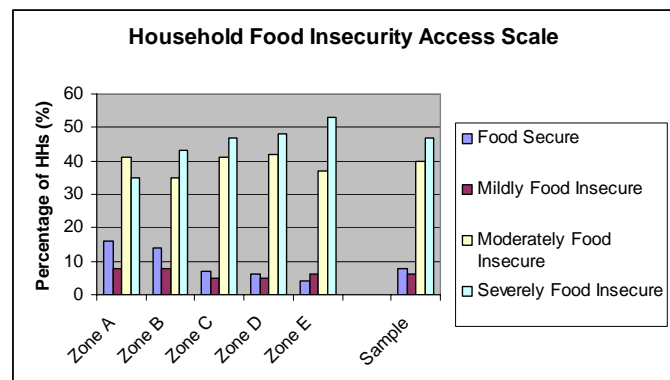
### *Household Food Security Access*

The Household Food Insecurity Access Scale is a series of questions regarding the household's perception of its own food security status. Questions asked (in indicative order of increasing food insecurity) include worrying about not having enough food, not eating preferred foods, reducing the frequency or quantity of food eaten, and skipping meals.

Using the HFIAS classification it was seen that 86% of the sample perceived themselves to be moderately (40%) or severely (46%) food insecure. Only 8% of the HHs believed themselves to be food secure.

Across zones the following patterns emerged:

- Zone A and B have the highest percentage of food secure (16% & 14% compared to a sample average of 8%) and mildly food insecure HHs (8% compared to a sample average of 6%).
- Furthermore, Zone A has the lowest percentage of severely food insecure HHs (35% compared to a sample average of 47%).
- Zone E and D have the highest percentage of moderate and severely food insecure HHs (approximately 90%). In Zone E more than half the HHs (53%) were reported to be severely food insecure.
- Zones A and B have a similar percentage of moderate and severely affected HHs.
- There is a clear difference between Zone E and D and the other zones in terms of HFIAS.



### **Utilization**

**Frequency of Meals** - Across the sample it was seen that approximately 88% of the households ate 3 meals a day. However across zones, clear discrepancies are seen. Zone E had the lowest percentage of HHs reporting the consumption of 3 meals a day; 66% as compared to a sample average of 88%. Similarly Zone A had 75% of its HHs reporting consuming 3 meals a day. These figures (for Zone A & E) are far less when compared to Zone B, C and D. Furthermore, Zone E also had the highest number of HHs reporting eating 2 meals a day; 34% as compared to 12% across the sample.

**Access to water** – Households were asked about the source of their drinking water. Protected wells (or other protected sources) were the most common with more than half the sample (51%) reporting these

as their main source of drinking water. Piped water was reported to be a source by 17% of the sample. In other words, 68% could source their drinking water from protected sources. However it should be noted that dependence on water from unprotected sources poses a serious health risk for the 32% of HHs reporting the utilization of water from unprotected sources.

**Latrine Facilities** – Taunggyi, when compared to some other regions in the country, has a relatively high access to latrine facilities. Approximately 8% of the sample reported having no access to latrines while 89% reported using either fly-proof latrines (60%) or pit latrines (29%).

**Health Education** – Only 4% of the sample reported receiving any education on nutrition or hygiene practices. It is unclear if this extremely low figure is a result of respondents not understanding the question or if indeed the sample area has seen no coverage in health extension activities. Thus more information on this needs to be obtained and if indeed it is the latter (no coverage) then steps need to be initiated to remedy this situation.

An almost complete absence of basic hygiene and health awareness amongst the sample indicates severe potential health risks, particularly for children (the threat of diarrhea, malaria and spread of water borne diseases).

#### **Food and Non-Food Aid**

Approximately 39% of the sampled households reported receiving some kind of food assistance; primarily thru the Food for Education program. The food for education program has an increased relevance in the context of the food security situation in Taunggyi as it provides a key cost-saving to beneficiary HHs.

Clear variations in the receiving of food aid are seen across the zones. Zone A had the lowest percentage of HHs reporting receiving some food aid; 20%. On the other hand more than 45% of households in Zone D and E reported receiving assistance.

Less than 2% of the sample reported receiving assistance in the form of Food for Work or Training. Furthermore, less than 1% of the sample reported receiving other (non-WFP) food assistance.

It is seen that approximately 10% of the sample reported receiving any non-food aid. Four percent of the sample reported receiving some agricultural (non-food) assistance and a further 6% reported receiving other forms of assistance (aid unrelated to agriculture, livestock and income generation activities).



## Conclusion and recommendations

The biggest problems affecting HH Food Security in Taunggyi areas seem to be related to food access issues. The lack of land, labor and water for irrigation compounds the problems faced by HHs that need to source incomes and / or food from land holdings of less than 2 acres. Furthermore, the fact that 72% of HHs depend on agriculture for their incomes implies that there are very few non-agricultural income earning opportunities (apart from casual labor) in the area. This could be the main reason why there is a high proportion of HHs reporting the inability to send their children to school because of either the expenses involved or to help around the house.

The above findings are strengthened by data on Utilization. Households are able to produce, consume and stock staple food; but have far less access to other foods, with the net result being 80% of the sample exhibits low dietary diversity. This is primarily because the lack of availability of land results in HHs mainly growing the staple crop and for those HHs forced to rely on subsistence agriculture; consumption would largely be confined to staple crops.

## Recommendations

1. Zones E & D need immediate attention as these zones have the highest percentage of moderately and severely food insecure HHs across the sample.
2. A sizeable percentage of HHs are unable to educate their children either because of lack of sufficient money or because children are needed to supplement household labor. Thus, there is a clear need for Food for Education activities, which can act as a powerful incentive for HHs to send or keep their children in school.
3. The fact that HHs, on average, have access to less than 2 acres of land suggest that HHs (especially larger HHs with more adult males) are unable to maximise their income-earning potential. Thus Food for Work and Food for Training interventions can have high relevance and be an effective tool to mitigate food insecurity.
4. Since HHs depend on relatively small areas of land (and there is a lack of land availability) it becomes crucial that HHs are able to increase agricultural productivity. Agricultural extension activities (with regards to input, cropping practices, access to markets etc) can help households make optimum use of their land.

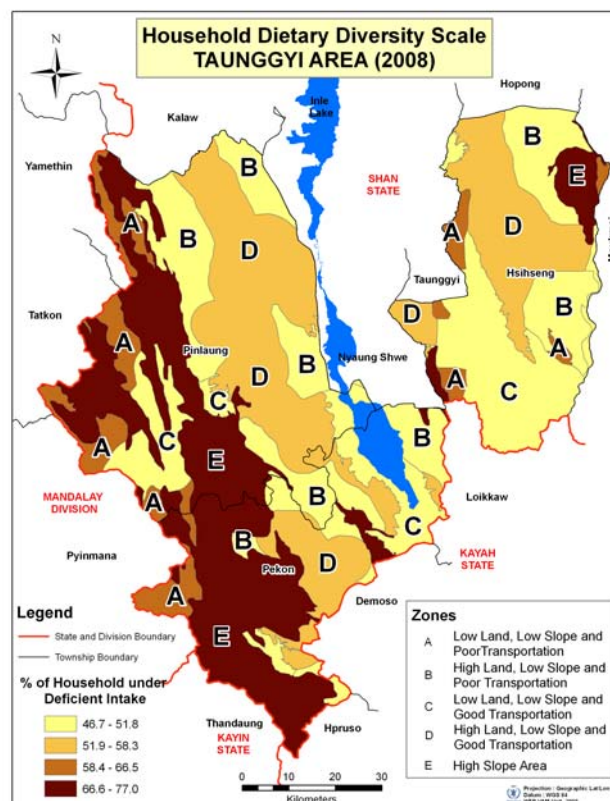
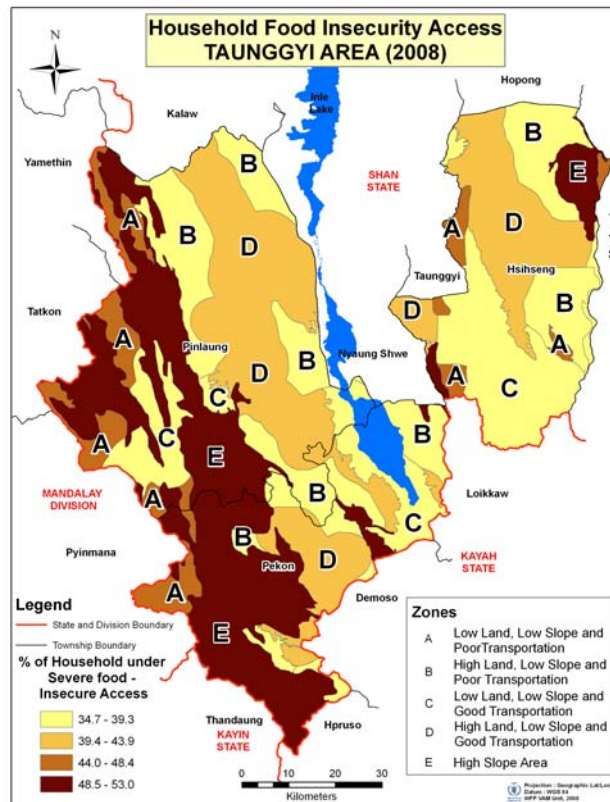
Note: The maps on the following page

- (1) Spatial distribution of food insecure HHs as per the Household Food Insecurity Access Scale
- (2) Spatial distribution of deficient dietary intake as per Household Dietary Diversity Scale

For questions or comments concerning any aspect of this report, please contact:

Mr. Siddharth Krishnaswamy, WFP Myanmar

[Siddharth.Krishnaswamy@wfp.org](mailto:Siddharth.Krishnaswamy@wfp.org)



## ANNEX

### Food Security Interventions

The below is a model that lists the various kinds of possible interventions and linking these to intended beneficiaries. For the purpose of this model, beneficiary types have been classified based on access to agricultural land.

#### Recommended Interventions for livelihood groups

| livelihood                 | Total Land acre | Households |    | Availability |   |   |   | Accessibility |   |   |   |   |    |    |    | Utilization |    |    |    |    |    | codes for intervention  |
|----------------------------|-----------------|------------|----|--------------|---|---|---|---------------|---|---|---|---|----|----|----|-------------|----|----|----|----|----|---|
|                            |                 | number     | %  | 1            | 2 | 3 | 4 | 5             | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13          | 14 | 15 | 16 | 17 | 18 |   |
| Below subsistence          | <2              | 117        | 30 | x            | x | x | x | x             | x | x |   | x | x  | x  | x  | x           | x  | x  | x  | x  | x  | <b>Productive Asset</b><br>1.Small gardens<br>2.input distribution<br>3. Promoting small livestock for women<br>4.Community forestry management   |
| Subsistence                | 2 to <3         | 47         | 12 |              | x | x | x |               | x | x | x |   |    | x  |    | x           | x  | x  | x  | x  | x  |   |
| Small Holders              | 3 to <5         | 88         | 22 |              |   |   | x |               | x | x |   |   |    | x  |    | x           | x  | x  | x  | x  | x  | <b>Economic asset and food</b><br>5. Food for work<br>6. Food for education<br>7. Food for training<br>8.Market stabilization/subsidized sales  |
| Small Holder in transition | 5 to <8         | 75         | 19 |              |   |   |   |               | x |   |   |   |    | x  |    | x           | x  | x  | x  | x  | x  |   |
| Median                     | 8 to <10        | 22         | 6  |              |   |   |   |               | x |   |   |   |    |    |    | x           | x  | x  | x  | x  | x  | <b>Health hygiene &amp; sanitation</b><br>9.Cash for work<br>10.Micro finance<br>11.Formal credit<br>12.Mother and child nutrition  |
| Median in transition       | 10 to <15       | 19         | 5  |              |   |   |   |               | x |   |   |   |    |    |    | x           | x  | x  | x  | x  | x  |   |
| Large                      | 15 to <20       | 15         | 4  |              |   |   |   |               | x |   |   |   |    |    |    | x           | x  | x  | x  | x  | x  | <b>Other interventions relevant to any FS pillar</b><br>13. Increase number of protected source of water<br>14. Increase number of fly proof latrines<br>15.Health education on nutrition and hygiene |
| Very large                 | 20 and >        | 9          | 2  |              |   |   |   |               | x |   |   |   |    |    |    | x           | x  | x  | x  | x  | x  |   |
| Landless                   |                 | 251        | 39 | x            | x | x | x | x             | x | x | x | x | x  | x  | x  | x           | x  | x  | x  | x  | x  | 16. Makes information on market available<br>17. Improve monitoring system on FS<br>18. Enhance decentralization of FS issue  |

## Criteria for Zoning

The below model was used to develop criteria on which the sample was classified into Zones.

