



Reports



Household Food Security and
Vulnerability Survey
in Rural Tajikistan
conducted in November 2004

Tajikistan

July 2005

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Table of Contents

Executive Summary.....	1
Part I - Background.....	15
Section 1.1 - Overview.....	15
Section 1.2 - History.....	15
Section 1.3 – Economy.....	16
Section 1.4 – Agriculture.....	16
Section 1.5 – Water and sanitation.....	17
Section 1.6 – Education.....	17
Section 1.7 – Social security / protection.....	17
Part II – Objectives and methodology.....	19
Section 2.1 – Objectives.....	19
Section 2.2 – Methodology and data collection tools.....	19
Section 2.3 – Creating zones of homogeneous district clusters.....	19
Section 2.4 – Sampling.....	22
Section 2.5 – Data collection.....	22
Section 2.6 – Data entry and analysis.....	22
Section 2.7 – Limitations of the study.....	23
Part III – Community interview results.....	25
Section 3.1 – Women’s community interviews.....	25
Section 3.2 – Men’s community interviews.....	29
Section 3.3 – Comparison between women’s and men’s groups.....	34
Part IV – Household survey results by homogeneous district clusters.....	39
Part V – Women and child nutrition and health.....	81
Section 5.1 – Women’s health.....	82
Section 5.2 – Micronutrient malnutrition.....	85
Section 5.3 – Child nutrition and health.....	86
Section 5.4 – Knowledge of HIV and AIDS.....	89
Part VI – Household food consumption typologies.....	93
Section 6.1 – Creation of household food consumption groups.....	93
Section 6.2 – Household food consumption groups.....	94
Section 6.3 – Analysis of expenditure.....	105
Section 6.4 – Geographic distribution of household food consumption groups.....	107
Part VII – Recommendations for programme interventions.....	111
Section 7.1 – Overview of WFP-supported programme options.....	111
Section 7.2 – Recommendations – most food insecure districts.....	112
Section 7.3 – Possible areas of intervention for all zones.....	114
Annex I – Descriptive tables – household questionnaire.....	117
Annex II – Women and child health tables.....	127
Annex III – Data tables – food consumption typologies.....	131

Executive Summary

WFP Tajikistan, with support from the Vulnerability Analysis and Mapping (VAM) units from WFP Afghanistan, Cairo and Rome, completed a household food security and vulnerability survey in rural Tajikistan. Planning for the survey began back in August 2004 and data collection took place in November with data entry completed at the end of 2004. Analysis took place from February-May 2005 with the final report being submitted in June of the same year.

The primary objective of the 5,150 household survey was to obtain a better understanding of food insecurity and vulnerability among rural households at sub-regional levels throughout the country in a non-emergency setting, in particular answering the questions:

- Who are the hungry poor?
- How many are they?
- Where do they live?
- What are the underlying causes of food insecurity?
- Is there a role for food assistance?

Coverage and methodology

The Country Office with the support of VAM/HQ and VAM/ODC decided to carry out a household food security and vulnerability survey with a health component. The survey was designed to draw samples of resident rural households at a sub-regional level. In order to achieve this, spatial analysis and principal component and cluster analyses were used to create clusters of districts that were homogeneous in terms of elevation and land cover. From each of these 14 Zones (clusters) a two stage probability sampling method was used to select villages and households with a sample size calculated to provide an estimate of food insecurity with 90% confidence.

In total, 5,155 households in 429 rural communities (villages) in 217 Jamoats within 55 districts and were surveyed across the country. From this sample, health and nutrition information was collected for more than 4,000 women of reproductive age (15-49 years) and 3,500 children less than five years of age. In addition, there were 429 community interviews for men and women separately that allow for better understanding of their different views and roles in relation to household food security and vulnerability.

Community interviews

Women's roles in farming - A total of 429 women's groups across 14 zones were asked if women engage in farming activities. The findings were similar by region in that in around 80% of the sample communities, women were engaged in farming – as high as 88% of those in GBAO. In most cases the production is kept for home consumption with a few bartering or selling locally or to traders. Only in GBAO did 20% of the women's groups indicate that women were not allowed to keep their own production.

Decision-making - Women's groups were asked about decision-making processes in their communities for key household activities. The analysis shows that decision making responsibilities vary by region and by type of decision. Men have a greater role in deciding about large household purchases while women have the final decision on what to cook, in most communities. Decisions about visits are the responsibility of both the woman and her husband. Women in GBAO appear to have a greater decision making role than those in other regions.

Women's status - Nearly 70% of the women's groups agreed that a husband is justified in hitting or beating his wife when she neglects the children. Around 60% of the groups also agreed that it's OK when the woman goes out without telling her husband and when she argues with her husband. However, only 47% of the groups thought it was justified when the woman burns the food. By region, it was clear that the women in GBAO most often thought a husband was justified in hitting his wife, especially for going out without telling him (88%), neglecting the children and burning the food (83%). In DRD, women thought that a husband was justified in hitting his wife, especially for neglecting the children (82%), for arguing with her husband (79%) and for going out without telling him (74%). Domestic violence was less tolerated in communities within the Khatlon region, except for neglecting children, where 70% of the women's groups thought it was justified. The

Executive Summary

women Sughd were least tolerant of this behaviour as less than half of the communities thought a man was **ever** justified in hitting his wife as compared to 86% in Khatlon, 94% in DRD and all of the groups in GBAO.

Education - Most of the communities had a functioning primary school near their community – 91% in Sughd, 89% in DRD, 86% in GBAO and 78% in Khatlon. The physical condition of the schools was mostly average to poor, according to the women. The best conditions were found in Sughd, where nearly 70% of the communities had a school in average or good condition, while a quarter had one in poor condition. In DRD, more than 40% of the communities had a school in poor physical condition while more than half the communities in Khatlon had a school in poor condition

According to the women, the highest estimated levels of primary school enrolment are found among children in the Direct Rule Districts, followed by GBAO. The lowest levels are found in Khatlon region. The differences between boys' and girls' enrolment are not much with the greatest being found in the Khatlon region where slightly fewer girls are enrolled and attending school.

When asked about the reasons children do not attend school, by region, the most common response in Sughd was illness or disease (40%), followed by lack of clothes/uniform/shoes (34%) and lack of equipment/books (28%). In DRD, these issues were also the most often reported. However, in Khatlon region, the women's groups also named cost/economic reasons (30%) as an important factor. In GBAO, 46% of the communities mentioned distance as a factor that prevented children from going to school.

Health - Women's groups were also asked about availability and access to health care from the community. Only 47% of the communities had a functioning health centre/clinic, ranging from more than 60% in Sughd and GBAO to 38% in DRD and only 34% in Khatlon communities. Nearly all health centres were Government run but only 20% were described as being in good physical condition. Three-quarters of these clinics/health centres functioned at a good or average level with the rest described as 'irregular' or not functioning at all. The greatest problems were found in Khatlon and GBAO.

The women were also asked about the availability of drugs at these clinics/centres – around 10% of the communities said that drugs were readily available in their clinics, ranging from 17% in Khatlon to 4% in Sughd. Nearly 40% of the communities said drugs were **not** available in their local clinics – nearly half of those in Sughd.

For the entire sample, the most commonly reported illnesses in **children** were diarrhoea (31%), flu/cold (31%), malnutrition (25%), goitre (18%) and anaemia (16%). By region, the most common illness in Sughd children were anaemia (36%), flu/cold (30%), and malnutrition while in DRD the most commonly reported childhood illnesses were diarrhoea (41%), flu/cold (38%) and typhoid (26%). In Khatlon, the main childhood illness problems were malnutrition (47%), diarrhoea (27%), anaemia (26%), and goitre (25%) while in GBAO, the problems were more typical – flu/cold (52%) and diarrhoea (29%).

For **adults**, the most commonly reported illnesses were goitre (32%), anaemia (30%) and flu/cold (22%). By region, the main problems in Sughd were anaemia (57%), goitre (26%) and flu/cold (17%) while in DRD they were goitre (34%), flu/cold (29%) and typhoid (21%). Anaemia (46%) was also the most commonly named illness for adults in Khatlon, followed by goitre (40%) and rheumatism (28%) while in GBAO they were flu/cold (46%), kidney disease (23%) and rheumatism (23%).

Lastly, the women were asked to name the **main problems** with **health services** for people in their communities. Overall, 44% of the communities named lack of doctors/specialists, followed by a lack of medicine (39%), lack of hospital (29%) and a lack of clinics (28%).

Population movements - Male members of the community were asked of their perception of population movements into and out of their communities over the previous five years. By region, there were some clear migration patterns where more than 60% of the communities in Sughd and DRD felt that there was no migration at all. Equal numbers of communities in Khatlon felt there were more arrivals and more departures. However, in GBAO, more than 70% of the communities stated that there were more departures in the past five years.

Economy - The men's groups were asked to name the four main source of income for members of their community, in order of importance. For the communities in Sughd, the main income activities were non-agricultural wage labour (66%), sales of field crops (50%), livestock sales (50%), and pension (38%). For the communities in DRD, the most important income activities are livestock sales (49%), remittances (45%), non-agricultural wage labour (39%) and agricultural wage labour (35%). The communities in the Khatlon sample relied mostly on sales of field crops (60%), followed by remittances (50%), livestock sales (45%) and agricultural wage labour (45%) for earning income. The income earning activities in the GBAO sample were different from the rest of the regions in that the most often named income source was remittances (54%), followed by livestock sales (49%), cash crop sales (33%), and pension (31%).

For the sample of women's community interviews, the most common income earning activities for women were agricultural wage labour (39%), sale of field crops (32%), pension (32%), sale of orchard products (31%), remittances (29%) and livestock sales (19%). There are clear differences between the regions in terms of women's income activities. Agricultural activities are more important in Sughd and Khatlon while remittances and livestock sales are definitely more important in GBAO. Pension holds about the same importance for all four regions while in DRD, there is no particular activity that stands out from the rest.

The groups were then asked if the current main income activities had changed in the past five years, nearly 20% of the communities indicated that they had, ranging from only 7% of the Sughd communities to 17% in DRD and 26% in both Khatlon and GBAO. For Sughd, the main reason for change was a change in access to land. In DRD, 42% of the communities with change indicated it was due to labour migration and money transfers. In Khatlon, the main reason for change as indicated by the men's groups was due to economic and political stability (55%). In GBAO, the main reason cited for change in income sources was improved market access (40%).

Infrastructure, access to credit and migration - The men's groups were asked that if access to their community by road was blocked during certain times of the year. For each region, around 40% of the sample communities have seasonal accessibility problems except in GBAO where there were problems in more than 70% of the sample communities.

More than 90% of the communities have access to electricity or generators, ranging from a low of 85% in Sughd to a high of 97% of the sample communities in DRD. In addition, around 95% of the households in these communities can access electricity – in Sughd, about 10% of the communities with electricity said that only a few households have access.

In total less than 40% of the communities had access to credit. However, there were regional differences in that 80% of the sample communities in GBAO had access to credit as compared to only about one-third in each of the other regions.

The men's groups were also asked if people in the community leave temporarily to look for work. Seasonal migration is common in more than 90% of the sampled communities – nearly all of those in the DRD sample. In Sughd communities, most of those who migrate go outside Tajikistan to look for non-agricultural wage labour (53%) or regular employment/salary (42%). The same is for those migrants in DRD communities, but some also go outside the country to do trading. In Khatlon, again, the majority of migrants leave the country but in about 20% of the communities, they also go to a city or town to work, with most seeking non-agricultural wage labour (56%) or employment/salaried work (41%). In GBAO, almost all migrants leave Tajikistan to look for work with most seeking non-agricultural labour (65%) or employment/salary (35%).

Agriculture - In nearly 60% of the sample communities, the men's groups indicated that an agricultural extension officer never visits. However, in Sughd, the extension officer visits once a month in 20% of the communities, as compared to only 12% in GBAO and 8% in DRD and Khatlon regions. In the Sughd sample, the agricultural extension officer is from the Ministry of Agriculture in 47% of the communities. The three main agricultural extension services they provide are on the use of seeds (64%), mechanization (46%) and irrigation (42%).

Executive Summary

The agricultural extension officers in the DRD sample are from international NGOs (26%), local NGOs (21%) and the Ministry of Agriculture (20%). They provide training/extension services mostly on the use of seeds (67%) and fertilizers (45%) and irrigation (33%). More than half the agricultural extension officers in the Khatlon sample were from the Ministry of Agriculture and another third were from local NGOs. The main services they provide are in the use of seeds (70%) and fertilizers (54%) as well as mechanization (30%), post-harvest services (30%) and irrigation (26%). Lastly, in the GBAO sample, the agricultural extension officers were mostly from the Ministry of Agriculture (83%) and international NGOs (56%). They provide services and training on animal husbandry (72%), the use of seeds (67%) and the use of fertilizers (56%).

The men's groups were then asked about the main crops/fruits grown by the people in the community. In Sughd, nearly 90% of the communities were producing wheat, followed by potatoes (66%), vegetables (66%), apples (30%) and grapes (28%). Tobacco and rice are grown in about 24% of the surveyed communities. Nearly 80% of the communities in the DRD sample were producing wheat, followed by potatoes (61%), vegetables (61%), apples (40%), maize (26%) and cotton (25%). In Khatlon, nearly all of the communities are producing wheat (95%), followed by potatoes (42%), cotton (42%), vegetables (37%) and maize (35%). The main crops grown by communities in the GBAO sample are potatoes (100%), wheat (92%), vegetables (58%) and apples (29%). Three-quarters of the sampled communities had tractors available for farmers – 89% of the Khatlon sample but only 40% in GBAO. On average there were 2 tractors per community.

Livestock - Almost all of the communities reported owning cattle, ranging from 90% in the DRD sample to 99% in Sughd while oxen were also found in most communities. Donkeys were found in every community in Khatlon but only in two-thirds of the GBAO communities. Horses were found in 60% of the communities, ranging from only 25% in the GBAO sample to 82% in the Khatlon sample. Yaks were found in only 20% of the sampled communities – 14% in Sughd and 23% each in DRD and GBAO regions. The highest levels of yak ownership were found in the surveyed communities in *Khojamaston* (90%), *Shahrinav* (80%), *Fayzobod* (78%) and *Baljuvon* (75%) district samples.

Goats were found in more than 90% of the surveyed communities – they were present in all communities in the GBAO sample. Sheep were also found in nearly all communities but were less likely to be found in *Varzob* (67%) and *Tursunzoda* (71%) samples. Poultry were also universally found but with slightly lower ownership in Sughd (92%) and GBAO (93%) regions although poultry were found in only 47% of the sample communities in *Ayni* district and neither goats nor poultry in *Murghob*.

The greatest problems facing livestock in Sughd were a lack of pasture (68%), lack of veterinary treatment (50%) and not enough water (48%). In DRD, the main problems were a lack of vaccinations (47%), not enough pasture (45%) and lack of veterinary treatment (43%). For Khatlon communities, the main problems were also lack of veterinary treatment (58%), not enough pasture (46%) and not enough water (44%). In addition, 7% of the communities reported theft to be a problem. More than 60% of the communities in GBAO said there was a lack of vaccinations while half cited a lack of veterinary treatment and/or not enough water as problems facing livestock.

Markets - To better understand issues of food availability and access, the men's groups were asked about seasonal availability of food in local markets. Analysis shows that for the GBAO sample, food is more often available throughout the year in 90% of the communities in winter and in all communities for the remainder of the year. Food availability in the DRD sample is also quite good. However, in only 66% of the communities in Sughd and 71% in Khatlon could residents find food in their local markets during the winter. It also appears that there are some communities with no access to a permanent food market.

The price of 50 kilograms of wheat flour was consistent between the regions, at about 50 *somoni* with the exception of GBAO where it was 56 *somoni* per 50 kg bag. The price of potatoes per kilogram was around 0.3 *somoni* in Sughd but as high as 0.5 *somoni* in Khatlon. The price of beans per kilogram was consistent in all regions (1 *somoni*/kg) while the price of vegetables was much higher (per kilogram) in GBAO – 0.8 as compared to 0.5 *somoni*/kg.

The selling prices for livestock varied a bit more by region with the selling price of cattle being highest in DRD at 700 *somoni* per head and lowest in Sughd, at 500/head. Sheep ranged from a low of 100 *somoni*/head in GBAO to 170/head in DRD and Khatlon. The price of goats was most consistent, ranging from 70 *somoni*/head in Sughd to 85/head in GBAO. Lastly, the selling price of one chicken was as high as 10 *somoni* in GBAO and as low as 5 *somoni* in Sughd.

Immediate priorities - Both the women's and men's groups were asked about the three main immediate priorities for their communities. The answers ranged from the need for clean water to requiring seeds to requiring gymnasiums. In Sughd, the immediate priorities were similar to the overall sample, with access to safe drinking water being a top priority – slightly more so for the women's groups. This was followed by improved availability and access to quality health care. The men's groups more often cited improvements in educational infrastructure and equipment as well as improvements in roads. The 5th most often named priority for the men's groups in Sughd was related to improvements in water management through irrigation and canals while women preferred improved access to electricity and power.

Although the actual priorities were the same between men and women in the DRD sample, the order of priority were different. Men named road construction/rehabilitation most often while women prioritized access to safe drinking water and improved access to health care. School construction and rehabilitation was a priority for both as was improved access to electricity and power, which was named more often by the men's groups.

Both the men and women in the Khatlon sample prioritized drinking water, improved health access and improved access to quality education in the same order and similar levels. The women's groups had less of an interest in seeing improvements in roads through reconstruction or rehabilitation than the men.

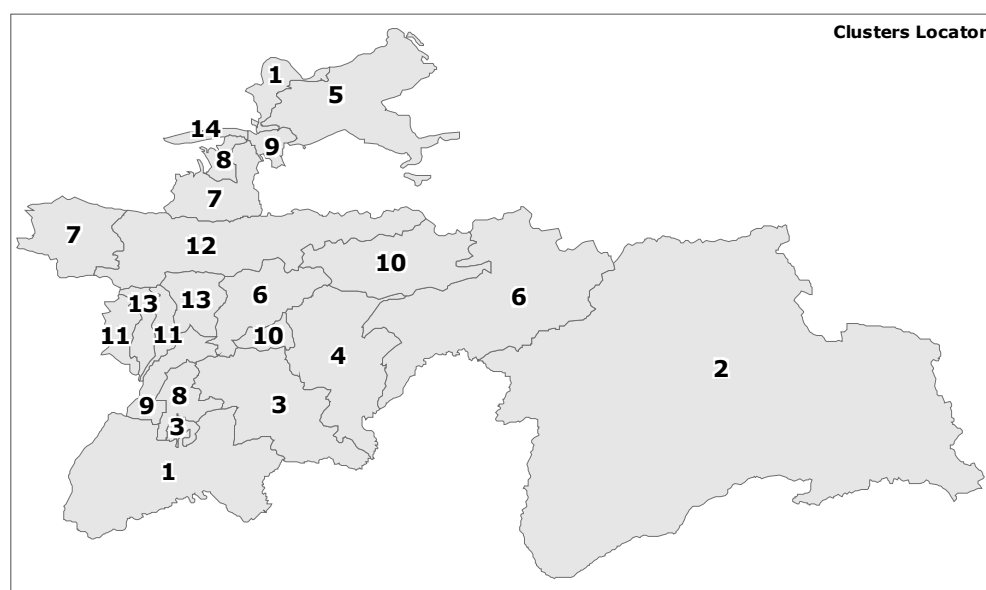
The priorities for the groups in the GBAO sample were different from the other regions in that improved access to quality education was the top priority, followed by better access to electricity/power. The men preferred improved access to safe drinking water, road construction, improved water management and better access to quality health care. The women discussed a problem in accessing food and the need for a food store in their communities.

Longer term priorities - men only - The men's group were also asked about the longer-term priorities for their communities in terms of development. The analysis shows that the longer-term priorities are not that different than the short term priorities, probably indicating that the men's groups know that assistance and changes take a long time to realize. The main topics again were health, education, infrastructure and drinking water access with more emphasis on health and roads. In Khatlon, one-fifth of the men's groups indicated the need for telephone services in their communities while 19% of the men's groups

Household findings by Zone

As mentioned earlier, the country was divided into homogeneous district clusters or Zones for purposes of providing sub-regional results from the household survey. In total, 14 zones were identified and sampled. This section presents analysis that has identified five main livelihoods practiced by people in rural Tajikistan. Each Zone is characterized by one of these livelihoods and is then briefly described. More detailed information can be found in Part IV of this report. The map below identifies the location of the 14 district cluster zones.

Executive Summary



The five major livelihood groups found in the analysis include households whose livelihood is dependent mainly on:

1. Mainly agriculture: Zones 4, 7, 10, 12
2. Mainly labour: Zones 1, 9, 14
3. Agriculture and secondarily on labour: Zones 3, 8, 11
4. Labour and secondarily on agriculture: Zones 5, 13
5. Remittances: Zones 2, 6

Zone 1: *Farkhor, Jilikul, Kolkhozobod, Mastchoh, Nosir Khisrav, Panj, Qabodiyon, Qumsangir, Saraband, Shahrituz, and Vakhsh*

- 30% of households in the sample are elderly headed. Hence, percentage of pensioners is very high with 16 % of households having both male and female pensioners in the household.
- A high percentage of households have no access to credit. Conversely, the highest percentage of households (for the sample) purchase food on credit regularly.
- Sizable portion of income from remittances indicates that they have family members living elsewhere. This is probably the reason for higher percent of elderly households in the zone.
- While agricultural wage labour is an important source of income, agriculture per se is not (compared to other zones). A possible reason could be the inability of the household to maximise agricultural potential with respect to land utilization (since households have younger members working elsewhere).

Zone 2: *Ishkoshim, Murghob, Roshtqala, Rushon, Shughnon, and Vanj*

- The households in this zone have a high percentage of female and elderly headed households; hence there is a higher percentage of income from remittances and/or pension. A high percentage of income from remittances suggests that male members of the household have left the zone to try and source more lucrative work elsewhere. This would account for the higher income from remittances and the higher percent of female headed households.
- Cattle are an important source of income (and a resource) for this zone. This is probably because the income-generating potential of these households is lower as compared to other groups (since more female and elderly headed households). This hypothesis is strengthened by the fact that this zone owns highest percentage of goats and sheep (double the average for the sample).
- High percentage of income from other sources suggests that households are engaged in various informal and temporary activities to source income.

- Households face the problem of over-crowding with the highest percent of households having 4 or more members in a room.
- For this zone, firewood remains the main source of cooking and heating. This would imply that in time: (a) Natural resources around the zone will be depleted (b) As natural resources near the home are depleted, the average amount of time taken daily to source fire-wood by members of an household will increase; (c) Sourcing of fire-wood will occupy a member of a household who could instead have been sourcing income/food.
- Majority of households depend on a pond, river or stream for water.

Hence households in this zone most probably live in smaller houses with low or no access to electricity (Note: Electricity consumption for this zone is lowest for the sample). Further, majority of households have no access to running water and are not located near a public tap or well. Not surprisingly, this zone has the lowest percentage of households accessing safe water.

Zone 3: *Bokhtar, Danghara, Kulob, Hamadoni, Norak, Timurmaliq, Vose, and Yovon*

- The income sourcing patterns for this group is more or less the average sourcing pattern for the sample. Income for this zone is equally dependent on both agriculture and labour.
- Households of this zone are adversely affected by:
 - a) An above average percentage of household head being disabled
 - b) Overall poor housing conditions
 - c) Low reliance on livestock
 - d) A high percentage of households have to pay for their dwelling. Hence their non-food expenditure increases.

Zone 4: *Baljuvon, Khovaling, Miminobod, Shurobod, Nurobod, and Roghun*

- A high percentage of income is derived from agriculture; mainly from sale of field crops and orchards. Reasonable income from the sale of orchards points to farmers practising specialized agriculture with access to niche markets and access to infrastructure (packaging, transportation, freight etc).
- It should be noted that agricultural households of this zone are also more vulnerable than other agricultural households in this sample. In this zone, households almost exclusively rely on rainwater for the irrigation of their presidential land and collective dekhans. Further, since their main source of income is from the sale of field crops and orchards, any adverse change in weather would affect their livelihood directly.
- Livestock, primarily horses and donkeys, contribute to income.
- Labour is not an important source of income (relative to the sample).
- High percentage of female headed households.
- High percentage of households having at least one member disabled.
- High percentage of households with no access to credit.
- High percentage of enrolled boys (in school) from this zone being absent for 1 week or more. Because of the higher rate of female headed households and members with disability, boys are probably made to work when income is low or during peak labour durations, such as agricultural harvest.
- A significant percentage of households own their current dwelling so rent would not be an integral part of the household's non-food expenditure.

Zone 5: *Asht, Ghafurov, Isfara, and Konibodom*

- Income generation patterns of this zone are similar to Zone 3. However households of this zone rely more on wage labour (both agricultural and non-agricultural).
- Agriculture is multi-dimensional with similar contributions from orchards, livestock, cash and field crops.
- Pension accounts for substantial portion of income (relative to sample).
- Like Zone 3, high percentages of households pay for their dwelling so their non-food expenditure increases.
- Households of this zone have the highest access to credit through friends/relatives. This hints at the existence of a safety net for this zone. Hence none of the households have to "always" borrow food on credit.

Executive Summary

Zone 6: *Darvoz, Jirgatal, Vahdat, and Tavildara*

- This zone has the highest percentage of female headed households.
- Further, remittances account for 29% of the household income. The highest contribution (compared to its contribution in all other zones) for the sample.
- Both the above factors taken together imply that most probably the male head of the household (and other adult males) have left the zone and are employed more lucratively in bigger cities.
- This would also explain the below average (for sample) contribution to income from sale of crops and from labour.
- This zone has a high percentage of households with girl children absent from school for at least a week. The figure is identical to Zone 4, except in Zone 4 the absentees were boys. The possible reasons for this are:
 - a) A high percentage of households are dependent on firewood for fuel and heating and girls are used to fetch these.
 - b) Low percentage of households with access to safe water.
- Hence households need to source water and firewood on a daily basis.

Zone 7: *Ghonchi, Panjakent, and Shahriston*

- Income contributions are mainly from the sale of field and cash crops and labour.
- Low reliance on pension, remittances and income from other sources.
- Though 55% of the households have no access to credit, only 6% of households in this zone “always” purchase food on credit (as compared to an average of 18% for the sample). This implies that households can either source food through agriculture or labour.
- The above is strengthened by the fact that this zone has the lowest percentage of female headed households thus implying that most households have at least one male potential earner.

Zone 8: *Istaravshan, Khuroson, and A. Jomi*

- Income contribution is similar to Zone 7. However percent contribution by agriculture is less.
- Sizable contribution from wage labour implies that most households have at least one or more contributing adult male.
- Households of this zone are smallest across the sample but have the highest percentage of members and households head who are disabled.
- This zone has the highest contribution to income from petty trade.

Zone 9: *Rudaki, Spitamen, and Jabbor Rasulov*

- Lowest reliance on agriculture as a source of income. In this zone, agriculture is mainly a support function; to supplement an income earned from labour, remittances and small businesses.
- Households have the highest number of dependents. Further, households in this zone are more likely to have a boy or girl absent from school for periods of a week or more. This implies that some households may be using children to source income through temporary labour as a coping strategy.
- The high percentage of household heads being disabled strengthens the above hypothesis.
- This zone has the highest percentage of households using animal manure as a cooking fuel, thereby saving on potential non-food expenditure.

Zone 10: *Fayzobod, Gharm, and Tojikobod*

- Agriculture accounts for 50% of the total income. However the agriculture is specialized and the bulk of the income is derived from the sale of orchard products. Farmers are most likely progressive or part of a co-operative and can access services like refrigerated transportation or high quality packaging.
- Sizable contribution from remittances implies members have moved out in search of lucrative labour.
- High ownership of goats, sheep and cattle account for the highest contribution from livestock to income in sample.

- Lowest percentage of households that have children absent from school (for long periods) implying that children enjoy better health and/or lack of money for the household is never serious enough to affect education.
- This zone has the highest percentage of households that need not pay for their dwelling, so rent is not a fixed expenditure for most.

Zone 11: Hissor and Tursunzoda

- Income is mainly dependent on agriculture, remittances and other sources.
- Agriculture is intensive and income is mainly from the sale of field and cash crops.
- Nearly half the households own at least 2 oxen or yak.
- Two-thirds of the households have no access to credit.
- Highest percentage of households living in 'poor' quality houses.

Zone 12: Ayni and Kuhistoni Mastchoh

- More than 60% of a household's income is from agriculture which is mainly based on field crops, livestock, cash crops and orchards, in descending order of contribution.
- Households of this zone have the highest access to collective dekhans with a high average acreage of nearly 20 hectares. These households probably utilize their household members for agricultural labour to the maximum effect/potential.
- Highest ownership of cattle, oxen and yaks and a high ownership of donkeys, goats and sheep.
- Low dependence on other income generating activities including labour, pension, trade or business.
- Households have the largest average size in the sample with nearly 50% of the households having 8 or more members. However percentage of dependents in a household is below the average for the sample implying that households have more potential income earners than any other group.
- Only 14 % of these households do not pay for their dwelling. Thus for the majority of the households, rent is a non-food expenditure. However overall housing quality for this zone is much better than average.
- Nearly the complete sample for the zone is dependent on firewood for cooking fuel and more than half of the households also require it for heating.
- Highest usage of charcoal amongst all households (32% against a sample average of 4%). Hence, this is additional non-food expenditure.

Zone 13: Shahrinav and Varzob

- Income, while spread out between agriculture and wage labour, is mainly dependent on wage labour and skilled work. The zone enjoys a relatively large contribution from petty trade. Agriculture consists of mainly cash crops.
- Like Zone 12, these households are large with half the sample having 8 or more members. However this zone has a higher percentage of dependents per household.
- The contribution to income from skilled labour was the highest for the sample implying that these households had access to a steady and relatively high income.
- Households with boys or girls absent from school were the highest in the sample. It is possible that large families with more dependents may be forced to keep their children back for short periods (help needed at home during harvest, to source temporary casual labour, care for other children, etc).
- This zone has the highest percentage of households having no access to credit, resulting in more than 77% of households having to "sometimes" purchase food on credit.

Zone 14: Zafarobod

- Households are mainly dependent on agricultural wage labour, which contributes 45% of total household income. Such labour would most probably be seasonal and low paying.
- Smallest households in the sample with majority of the households having less than 8 members. Further lowest percentage of dependents and disabled members are found in this group. Hence the percentage of non-contributing members is low.
- The zone has a high percentage of boys being absent. Most probably during agricultural season to supplement the household income through temporary wage labour.

Executive Summary

- While for the sample, 87% of households have access to a garden plot of average size 8 ha; for Zone 14 the average size of the sample is just 0.8 ha. This is a negligible area (relative to the sample). However zone 14 has the highest access to presidential land, which may not be as valuable to a household's livelihood as it initially suggests. (see below). Hence this zone relies mainly on labour.

Agriculture

Garden Plots – More than 90% of the sample has access to land. However, this is mainly in the form of garden plots. On average for the sample 58% of these plots are self-owned while 35% of the households have been given plots by the state. Most households grow potatoes and vegetables which would presumably be used for home consumption and sale. The notable exceptions are Zones 5 and 13. These households mainly use their garden plots for producing cash crops (grapes in the case of Zone 5 and fruit/nut trees in the case of Zone 13). Both these zones have below average access to presidential land, individual dekhans and collective dekhans.

Presidential Land – More than 40% of all households sampled have access to Presidential land mainly given by the state. However the quality and fertility of this land is unknown. From the tables we see that most zones that have the highest access to presidential lands also have the highest percentage of households that use fertilizers, pesticides and herbicides. This could imply that land quality is poor hence the greater the percentage of households that have access to land the greater the percentage of households that buy agrochemicals. This adversely impacts profitability and utility of the land to the household. Further, if climatic conditions have not been very good, then yields are likely to be low regardless of whether fertilizers have been used.

Agrochemical Usage of Zones with High Access to Presidential Land

	% HH with access to Presidential land	% HH using fertilizers for field crops	% HH using pesticides/herbicides for field crops
Zone 14	76%	36%	15%
Zone 7	54%	12%	11%
Zone 12	49%	10%	12%
Zone 8	47%	22%	23%
Sample Average	43%	12%	8%

The one exception to the above is Zone 1, which seems to have relatively high access to Presidential land but low percent of households relying on pesticides and fertilizers. However as noted earlier, it is probable that households within this zone are unable to utilize their land fully. The above table strengthens this hypothesis.

The most common crop cultivated is wheat followed by maize. The planting patterns for Presidential land are more or less the exact opposite of that of garden plots. Thus households as a whole prefer to grow vegetables and potatoes in garden plots and cereals on Presidential lands.

Individual Dekhans – Only 14% of the sample has access to individual dekhans with an average size of 13 hectares. However this figure is misleading. If Zone 2 is ignored then 10% of the sample has access to an average area of 10 hectares. More than 70% of the households in Zone 2 have access to individual dekhans of 17 hectares. As noted above, households in Zone 2 have a high percent of income coming in from remittances and this zone has a higher percent of female headed households. This suggests that male members of the household have left the zone to try and source more lucrative work elsewhere. This hypothesis is strengthened since despite the far greater land area, households in Zone 2 derive less than the sample average from the sale of cash crops and field crops. However any opportunity cost incurred from lower utilization of agriculture seems to be made up by the remittances sent home.

Collective Dekhans - Zones that have a high reliance on agriculture are also the zones that have a high percentage of households accessing Collective Dekhans. This is not a coincidence. The zones that have been identified as basing their livelihood mainly on agriculture – Zones 4,7,10 & 12 – are also the zones that have the highest access to collective dekhans in the sample. The zone with the highest number of its households accessing collective dekhans is also the zone that obtains the highest contribution from agriculture – Zone 12. It implies that households that are agriculture efficient to begin with, be it in terms of labour, know-how, access to lands or access to inputs- are the most benefited from forming these groups. Indeed, their efficiency is further increased upon

their forming such groups. Now, all households involved have an even greater access to agricultural expertise, markets and labour.

Women & child health

Pregnancy & nursing status – While percentage of pregnant women was relatively low across the sample, an average of 6%; both Zones 6 and 12 had the highest percentage of pregnant women and high percentage of women who were breastfeeding at the time of survey. It is to be noted that Zone 6 has the highest number of female headed households and that in Zone 12 households are of the largest average size. For the sample, Zone 4 had the highest percentage of women breastfeeding at the time of the survey. This zone too has a high percentage of female headed households.

Overall health – Women and children from households in the Zone 11 sample have the worst overall health. More than 5 % of the women in Zone 11 have had diarrhoea or fever in the 2 weeks prior to the survey, as compared to a sample average of 1.5 percent. Further, the highest percentages of children having suffered from fever, cough or diarrhoea in the 2 weeks prior to the survey were found in Zone 11. Other zones samples with children and women suffering from poor health are Zone 6 and Zone 7.

Water and sanitation - Less than half the sample has access to water from an improved source. However, only 1.7% of the households have no toilet. The zones with the least access to water are Zones 2 and 6. Overall in Zone 2, 85% of the households do not have access to water from an improved source and 10% of the households have no toilets.

AIDS awareness and attitudes – More than 40% of all households in the sample have ever heard of HIV or AIDS. However knowledge and attitudes about AIDS is low across the sample. There are households across the sample believe that HIV/AIDS is transmitted through witchcraft, mosquitoes or by sharing a meal. Further, in Zones 8, 10 and 11 less than 22% of the households had ever heard of AIDS.

Food consumption profiling

Using data on dietary diversity (number of different staple and non-staple foods consumed during the week prior to the survey), the frequency of consumption, sources of the foods consumed (purchased, own production, borrowed, or gifted) and per capita monthly expenditure, seven homogeneous groups of food consumption typologies were identified, using multivariate analysis. The seven distinct household typologies can be clustered into four groups – very poor food consumption, poor consumption, adequate consumption and good food consumption. Their characteristics are:

Households with very poor food consumption (Groups A & B) – 27% of the sample households can be characterized as having very poor food consumption. They are of two types:

- **Chronically food insecure (Group A - 10%)** – These households are characterized by daily consumption of only wheat/bread with potatoes, vegetables and fruits consumed only 4-5 days per week. They have the lowest dietary diversity. Nearly 60% of their food comes from own production while 7% (highest) is received as a gift. They also have the highest share of total expenditure for food (74%). Sale of field crops is the most important contributor to income. Households are characterized by high levels of crowding, lowest asset ownership and high exposure to shocks. The women have the lowest levels of vitamin A supplementation and the highest prevalence of diarrhoea while children also have lowest vitamin A supplementation and the highest levels of morbidity.
- **Very vulnerable to food insecurity (Group B - 17%)**: These households have only slightly better consumption than Group A with daily consumption of carbohydrates and fats. More than 80% of their food comes from purchase and the rest from own production. They have a high share of household expenditure for food (71%) while income is largely based on wage labour (32%) with only 21% of income coming from agriculture – the lowest in the sample. They are characterized by low percentage of female headed households, low numbers of assets and very low livestock ownership. They have low access to health services and lowest percentage of households having ever heard of HIV/AIDS.

Households with poor food consumption (Groups C & D) - 27% of the sample households consume staple items plus at least one non-staple food on a daily basis while

Executive Summary

consuming other non-staples sometimes. They are characterized by different access to the food they consume but overall, they are borderline food insecure.

- **Borderline – reliance on production (Group C – 9%):** While households in this group have poor food consumption in terms of diversity, they probably just manage to consume the minimum in terms of calories. About half the food they consume comes from own production – mostly wheat, potatoes, vegetables and fruits. They spend proportionately less on food. For income they rely on agricultural activities. They have the highest percentage of female- and elderly-headed households. They have a lower than average asset ownership and average ownership of livestock. The women have the lowest use of antenatal care and the children have the highest reported rates of illness.
- **Borderline – reliance on purchase (Group D – 18%):** These households have poor food consumption and below average level of well being indicators (assets and expenditure), although the main income source is wage labour. These households rely on purchase for more than 80% of their food. Households are characterized by a high percentage of dependents. All other indicators are average except these households have the best access to credit.

Households with adequate food consumption (Group E) – 18% of the households have adequate food consumption characterized by daily consumption of staples with frequent consumption of dairy products. Food is accessed both by purchase and production, including milk and eggs. A large part of the cereal consumed is purchased, thus food expenditure is about two-thirds of total. Income comes from agricultural activities (28%), pensions (12%) and remittance (7%), which is the highest in the sample. The households are also characterised by high percentage of dependents, higher asset ownership, including productive assets, high access and utilization of health services. About 20% of these households benefit from school feeding programmes.

Households with good food consumption (Groups F & G) – 28% of the households have good food consumption with daily consumption of staples plus dairy and eggs and frequent consumption of meat and/or beans. They are characterized by the different ways the access their food.

- **Better-off with reliance on production (Group F - 22%):** These households manage to consume the many staple food items as well as a variety of other foods, increasing the diversity of the diet. Half of the food consumed comes from own production, especially, dairy products, eggs, vegetables, and fruit. Some of the other foods are produced or purchased. They have the lowest percentage expenditure for food in the sample (63%) with the highest share for social events or celebrations. Income is from agriculture (31%) with fairly high contributions from remittances (15%). The households are characterized by very high asset and livestock ownership but some lower utilization of some health services.
- **Better-off with reliance on purchase (Group G - 6%):** The consumption of these households is the same as the previous group except that they consume beef every day, which is purchased. Overall, nearly 70% of the food they consume is purchased but food expenditure is only 63% of total, with meat accounting for 8 percent. More than one-third of their income is from crop sales and 20% of income from agricultural wage labour. The households are characterized with the lowest percentage of: elderly headed households, large households and crowded households. They have the highest number of assets and luxury assets and high access and utilization of health services. They also have the lowest percentage of households reporting shocks.

Geographic distribution of food insecurity¹

Zone 1 - Overall has a **medium to high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. Pockets of **chronically** and **very vulnerable** households were found in *Shahrituz, Jilikul, Kolkhozobod, and Mastchoh*.

Zone 2 - Overall, the GBAO region has a **low** percentage of **chronically food insecure** and **very vulnerable to food insecurity**. One village characterized as majority of **chronically** and **very vulnerable** households was found in *Murghob* district. Several **borderline** villages were found along the Afghanistan border, in *Rushon, Sughnon, Roshtqala* and *Ishokoshim*.

¹ Note: These descriptions are averages for the zones and not for each individual district within each zone.

Zone 3 - Overall has a **medium to high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. Pockets of **chronically** and **very vulnerable** villages were found in and around *Vose* and *Kulob* districts.

Zone 4 - Overall is classified as having a **very high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. A few **better-off** villages were found in western parts of *Baljuvon* and *Muminobod* districts.

Zone 5 - Overall is classified as having a **high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. All of the sample villages in *Asht*, *Isfara* and *Konibodom* are either **borderline** or **chronically** or **very vulnerable** villages. Several villages in *Ghafurov* district were classified as **better-off** and were mixed in with **borderline** or **chronically** or **very vulnerable** villages.

Zone 6 - Overall, this region has a **low** percentage of **chronically food insecure** and **very vulnerable to food insecurity**. A few **borderline** villages were found in southern *Vahdat* district.

Zone 7 - Overall is classified as having a **very high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. A few **average** villages found in each district.

Zone 8 - Overall, this region has a **fairly low** percentage of **chronically food insecure** and **very vulnerable to food insecurity**. Some **borderline** and **chronically** and **very vulnerable** villages found in *Khuroson* district. Most villages in *A. Jomi* were **better-off**.

Zone 9 - Overall is classified as having a **very high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. A few **better-off** villages found in northern *Rudaki* and *Djabbor Rasulov* districts.

Zone 10 - Overall, this region has a **lower than average** percentage of **chronically food insecure** and **very vulnerable to food insecurity**. Several **chronically** and **very vulnerable** households found in southern *Gharm* and throughout *Tojikobod* districts.

Zone 11 - Overall has a **medium to high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. A few **better-off** villages in *Tursunzoda* district, along the Uzbekistan border.

Zone 12 - Overall is classified as having a **high** percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**. **All** villages in *Ayni* district have the of majority **chronically** and **very vulnerable** households. **Almost all** villages in *Kuhistoni Mastchoh* district are the majority of **better-off** households.

Zone 13 - Overall, this region has a **fairly low** percentage of **chronically food insecure** and **very vulnerable to food insecurity**. In *Shahrinav* district, there is a mix of villages that are either majority **chronically** and **very vulnerable** or **better-off**. In *Varzob*, the majority of villages are **better-off** with a few **borderline** in the southern part of the district.

Zone 14 - In *Zafarobod* district, there are mostly **better-off** villages with a few **chronically** and **very vulnerable** plus one **borderline** village.

Executive Summary

Part I – Background

Section 1.1 - Overview

Tajikistan is situated in Central Asia, with an irregular border that reflects historical and geographical peculiarities of the Tajik nation's settlement in the region. Neighbouring countries are Kyrgyzstan in the north, Uzbekistan in the west, Afghanistan in the south and China in the east. Tajikistan has a population of 6.7 million (2005, est.) and covers an area of 143,000 square kilometres, stretching for 700 km from east to west and 350 km from north to south.

The western part of the country is Turan lowland; desert and half-desert plots of land graduating into foothills. In the east, the country rises to the mountain ranges of Tien-Shan and the Pamirs, the highest mountain ranges in Central Asia. Mountains occupy 93% of the land in Tajikistan with more than half of the country located at an altitude of more than 3,000 meters. In the south-western regions, the climate is characterized by various types of weather, characteristic of many temperate, continental regions of the world. Along the north and east are mountains ranges (including the Pamirs) with dry, cold summers and dry severe winters.

Tajikistan has an average population density of 42.3 persons per square kilometre. Dushanbe, the capital, is the largest city in the country, with approximately 600,000 inhabitants. Tajikistan is composed of a number of ethnic groups with Tajiks comprising about 65% of the total population. The Uzbeks (25%), Russians (3.5%), Ukrainians, Byelorussians, Tatars, Kazakhs, Kyrgyz, Karakalpaks and Turkmen live also in Tajikistan. The mountainous Badakhshan region is populated by Pamir nationalities (frequently called the Mountainous Tajik).

According to the Constitution of Tajikistan, the state language of the republic is Tajik language. The Constitution, at the same time, guarantees all the people living in Tajikistan the right and the opportunity to use freely their native language. The people of Pamir use the Tajik language as literary one. The language of interethnic dialogue remains Russian language where about 30% of the ethnic Tajiks and a considerable part of the other groups mastered over the 80 years. In the mountainous Badakhshan the functional language of interethnic dialogue is Tajik. The languages of the mass media (newspapers, radio and television) are primarily Tajik as well as Russian and Uzbek languages. Literacy is estimated to be around 99% for the population aged 15 years and older.

The country is divided administratively into provinces (singular – viloyat, plural – viloyatho) - Khatlon and Sughd - and one autonomous province (Gorno-Badakhshan) which are further divided into 58 districts and 372 sub-districts (358 jamoats and 14 town areas).

Tajikistan has one of the lowest per capita GDPs among the 15 former Soviet republics. In terms of overall contribution to the GDP, 23.7% comes from agriculture, 24.3% from industry, which are mainly just one large aluminium plant, hydropower facilities and small factories in light industry and food processing. The rest of the GDP comes from services. The main agricultural products are cotton, grain, fruits, grapes and vegetables while the main livestock are cattle, sheep and goats.

Section 1.2 - History

The Republic of Tajikistan is a relatively young state. Its inhabitants have an ancient history and the majority of them reside outside the Republic in countries such as Afghanistan where there are 4.2 million Tajiks. In Uzbekistan there are another 1 million Tajiks and others live in neighbouring countries. The ancestors of the Tajiks are east Iranian peoples which inhabited the ancient states of Bactria and Sogdiana in the 6th and 7th centuries BC. In the 9th century AD after a long period of Arabic occupations and the adoption of Islam, Sogdian and Bactrian languages were replaced by the Farsi-Dari-Tajiki language. The Tajik nation became part of the Samanid state that had its capital in Bukhara in the 9th and 10th centuries AD. Turks overthrew the Samanids and the Tajiks were under the reigns of many conquerors including Ghengis Khan, and Tamerlane.

In the second half of the 19th century Central Asia was divided with part of the region being annexed to Afghanistan which was allied with Britain and the other, including the Bukharan Emirate, became a protectorate of Russia. The Russians made reforms in

Part I - Background

education, self-management and agriculture which contributed to the economic growth and general progress of the area but the Bukharan Emirate, especially eastern Bukhara, remained apart as a backward feudal country. In 1921 the Red Army replaced the Bukharan Emirate and created the Bukharan Soviet Republic and in 1924, the Tajik Autonomous Soviet Socialist Republic was formed, dividing Tajikistan and Uzbekistan. The main regional political and cultural centres, Bukhara and Samarkand, were left within the boundaries of Soviet Uzbekistan. The newly formed republic of Tajikistan was administered and standardized by Russians, overriding many traditions of the different ethnic groups. A new industrial basis was established and collectivization of agricultural lands was mandated, leading to purges of non-compliant peasant farmers. The result of these years of Soviet rule was that Tajikistan was completely integrated into the Soviet economic complex and become deeply dependent on Moscow.

Independence was declared in 1991 and the ensuing struggle for power led to a civil war that lasted from 1992 to 1997. There have been no major security incidences in recent years while attention by the international community in the wake of the war in Afghanistan has brought increased economic development assistance.

Section 1.3 - Economy

Historically, Tajikistan was the poorest country in the former Soviet Union and it remains the same compared to other ex-Soviet Union countries, although, since 1999 the poverty rate has dropped by approximately 18 percent¹. It seems that the structural reforms and privatization schemes introduced by the state have only been partly successful – mainly proving beneficial to people who already have at least some resources - and not the poorest of the poor. Hence the link between poverty reduction and economy growth (GDP) is not strongly evident.

Some of the main obstacles to economic growth are:

- Widespread corruption
- Though overall unemployment rates are falling, most of this increase in employment is concentrated in the agriculture sector. Conversely there is no improvement of employment rates in sectors like manufacturing, transport, health or education. Thus while the unemployment rates seem to be on the decline; it is restricted to a few sectors.
- The industrial sector is being adversely affected by corruption, lack of investment (entry-barriers), political situation and lack of imports and exports.
- Poverty did not decline equally across various regions of Tajikistan. Poverty declined by 26% in Direct Rule Districts (DRD), 15% in Sughd, 13% in GBAO and Khatlon and 12% in the capital of the country, Dushanbe. There are various reasons for this – labour migration, access to markets, reliance (or lack thereof) on middlemen, presence of social safety nets and health of household for example.
- The highest overall poverty rates are in GBAO (84%) and Khatlon (78%).
- Khatlon and Sughd have the highest share of the poor - 40% and 32% respectively. This is followed by DRD region (17%), Dushanbe (7%) and GBAO region (4%).

Section 1.4 - Agriculture

Tajikistan has only 5.4% of arable land with 93.7% of the remaining land being mountainous. While privatization did occur in Tajikistan, its impact on land reforms is debatable as even after the reorganization of *Sovkhoz*es and *Kolkhoz*es (Government farms) ownership of the land still remained with the government. Further, it seems that farmers have often been subject to intimidation by local Government authorities who threaten them with the suspension of their right to access land if they (the farmers) would not meet demands, as the land ownership still remains with the Government. Reports also show that for those *Sovkhoz*es and *Kolkhoz*es farms that were converted into collective dekhan farms; the chief of the *Sovkhoz* or *Kolkhoz* was “re-elected” as chief for the dekhan farms. Therefore, the management remained untouched except for those individual dekhan farms which had their own farms.

¹ Republic of Tajikistan Poverty Assessment Update, World Bank, January 2005

There are four main types of agricultural land:

1. **Kitchen garden** – refers to land that Government had given to people to cultivate for their own consumption during the Soviet Union era. It is attached to the household. In return, one member of the beneficiary's family had to work for *Sovkhoz* or *Kolkhoz*.
2. **Presidential lands** are lands which were distributed according to Presidential decree in 1996 in order to supplement a household's kitchen garden and improve its food security situation.
3. **Rented land** is a piece of land that is rented out of a large farm such as a *Sovkhoz* and *Kolkhoz* or a collective *dekhan*.
4. **Dekhan farms** are those farms that are a result of the reorganization of *Sovkhoz*es and *Kolkhoz*es.

Section 1.5 - Water and sanitation

Access to clean drinking water represents a major problem for the Tajik population. In a recent study, more than 40% of drinking water samples tested was considered unclean. Further, nearly 30% of the population collects water from more than 500m away from their dwelling while about half of the population use less than 20 litres water per day for drinking, food preparation, washing and bathing.

In recent UNICEF and the Action Against Hunger surveys nearly all of their sample population was using some kind of toilet facilities. However despite the fact that the majority of the people have access to some sort of facilities, these facilities are extremely unhygienic. Further, only 40% of the women interviewed reported that they wash their hands with soap after using the toilet.

Section 1.6 - Education

Between the time of Tajikistan's independence and the year 2003, enrolment rates for education have fallen by 4 percent. Further, the rate of enrolment for basic education has been declining steadily especially in urban areas where non-enrolment was 6% for boys and 18% for girls after the completion of grade four. In rural areas non-enrolment reached 4% for boys and 7% for girls. There is an important gender disparity in terms of attending school in Tajikistan where boys are more likely to accomplish general education than girls. The main reason for the declining rate of enrolment is the household's lack of money.

However, education in Tajikistan has also been adversely affected by:

- Poor quality infrastructure of schools and dilapidated condition of school buildings
- Lack of basic equipment
- Steady decline in the quality of teaching as teachers are underpaid and hence lack motivation to enter the profession
- Increase in poverty has resulted in many children having to earn income
- Lack of shoes and clothes

Section 1.7 - Social security / protection

In Tajikistan, the state offers three types of social protection schemes.

1. **Cash Compensation Program** - In order to reduce drop-out rates of children from school, the government of Tajikistan introduced a Cash Compensation Program aimed to target 20% of the poorest children (households with a maximum of three children per family) in each school. The children were selected by school commissions made up of parents, teachers and local community representatives. The benefits were given upon condition of full attendance of the student. Although 0.8 million people were recognized to be eligible for this program, in reality only a small share received payments.
2. **Pension** – The state has begun to offer pensions for men above the age of 63 and women over 58 years of age. Pensions are calculated according to the number of years worked by the individual. Elderly people not entitled to get a normal pension could be eligible under a separate social pension scheme.
3. **Unemployment benefits** - Unemployment benefits were offered to people registered as unemployed at their local employment office. The unemployment benefits are equal to 50% of the average wage for the last two months prior to the individual's unemployment.

Part I - Background

Part II – Objectives and methodology

WFP Tajikistan, with support from the Vulnerability Analysis and Mapping (VAM) units from WFP Afghanistan, Cairo and Rome, completed a household food security and vulnerability survey in rural Tajikistan. Planning for the survey began back in August 2004 and data collection took place in November. Data entry was completed at the end of 2004. Analysis began in February 2005 with the final report being submitted in June of the same year.

Section 2.1 - Objectives

The primary objective of the 5,150 household survey was to obtain a better understanding of food insecurity and vulnerability among rural households at sub-regional levels throughout the country in a non-emergency setting, in particular answering the questions:

- Who are the hungry poor?
- How many are they?
- Where do they live?
- What are the underlying causes of food insecurity?
- Is there a role for food assistance?

Section 2.2 - Methodology and data collection tools

The Country Office with the support of VAM/HQ and VAM/ODC decided to carry out a household food security and vulnerability survey with a health component. The survey was designed to draw samples of resident rural households at a sub-regional level. In order to achieve this, spatial analysis and principal component and cluster analyses were used to create clusters of districts that were homogeneous in terms of elevation and land cover. From each of these 14 Zones (clusters) a two stage probability sampling method was used to select villages and households with a sample size calculated to provide an estimate of food insecurity with 90% confidence. The clustering and sampling are described in greater detail in Section 2.3 below.

The household questionnaire was developed to collect quantitative information on household demography, housing and amenities, household and animal assets, income sources & contribution, agriculture, expenditures; food consumption, household exposure to risks & shocks and coping strategies as well as women and child health.

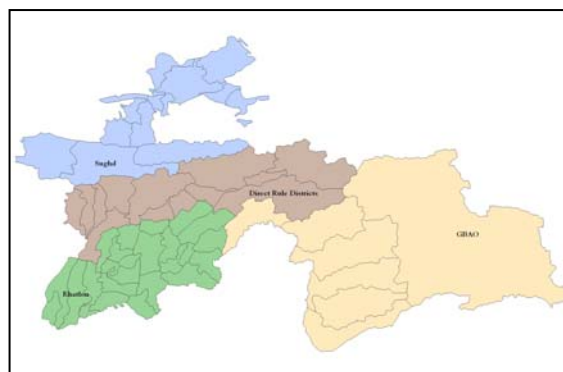
The women's community questionnaire was designed to collect quantitative and qualitative information on women's income activities and access to natural resources, daily activities for women and children, decision making and domestic violence, access to education and enrolment, access and utilization of health care, main health problems of adults and children, community roles and community priorities for development.

The men's community questionnaire was designed to collect information on community demographics & migration, income activities and changes, roads, electricity and credit, agricultural activities and extension, livestock and pasture, market availability and access, market prices, community roles and community priorities for development. The questionnaires were prepared in English and then translated into Russian for actual data collection.

Section 2.3 – Creating zones of homogeneous district clusters

Tajikistan is divided in 4 Regions and 58 districts and since one of the main goals of the survey was to provide information on household food security and vulnerability in rural areas at a sub-regional level, it was important to develop a strategy which allowed results to be presented at some level below the region.

Neither Regions nor district could be used to stratify the sampling because of too few (4 Regions) or too many (58 districts) classes. A different zoning was therefore needed in order to have a number of classes large enough to depict



Part II – Objectives and methodology

homogeneous zones within the country, but also reasonable in terms of survey budget and data collection time. In order to preserve information at district level – for easier comparison with other sources statistical data – the decision was made to group districts into 10-15 classes instead of creating new zoning units.

First, districts were described in terms of land cover, elevation and population density, and then they were grouped according to the combination of the three variables.

The data available for use are as follows:

- Land Scan Oak Ridge 2002 Population Dataset - The LandScan data set is a worldwide population database compiled on a 30" X 30" latitude/longitude grid. Census counts (at sub-national level) were apportioned to each grid cell based on likelihood coefficients, which are based on proximity to roads, slope, land cover, nighttime lights, and other data sets. LandScan has been developed as part of the Oak Ridge National Laboratory (ORNL) Global Population Project for estimating ambient populations at risk. The LandScan files are available via the internet in ESRI grid format by continent and for the world, and in ESRI raster binary format for the world.
- USGS GTOPO30 - GTOPO30 is a global digital elevation model (DEM) with a horizontal grid spacing of 30 arc seconds (approximately 1 kilometer). GTOPO30 was derived from several raster and vector sources of topographic information.
- Land Cover GLC2000 - The GVM unit of the JRC has produced a global land cover classification for the year 2000 (GLC2000), in collaboration with over 30 research teams from around the world. It is a grid dataset based on interpretation of SPOT Vegetation remotely sensed data, at 1 km resolution, and it adopts LCCS standard legend.
- Tajikistan administrative map, vector - Downloaded from UN coordination for Tajikistan web site, it had to be cleaned and standardized with available naming convention.

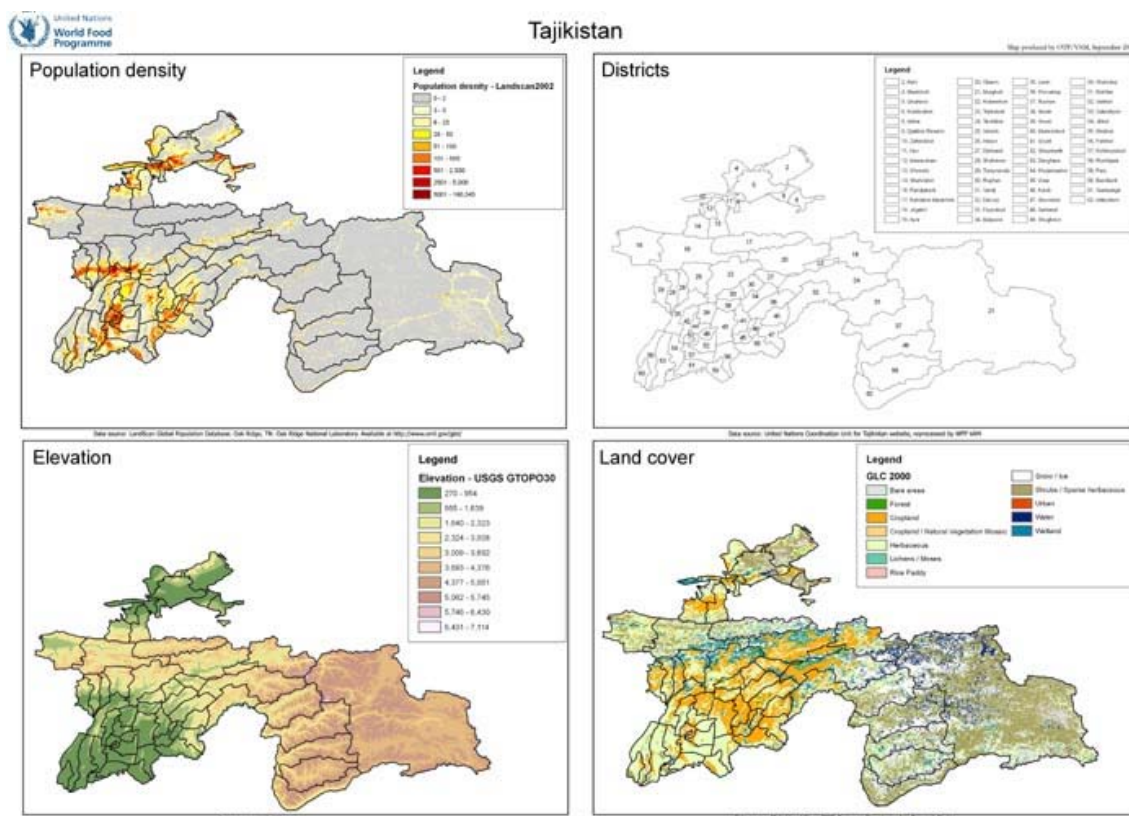
For the analysis the data was prepared in order to ensure that all layers were in the same coordinate system and had the same extent in order to be processed and combined. First, vector format administrative boundaries had to be converted into grid format (ArcGIS Spatial Analyst or ArcInfo command).

Since population density in the country is mainly dependent upon elevation and most of the country has very low population density values, it was decided **not** to consider population density as zoning factor at this stage, since it would have cut off too large of areas.

The GLC2000 land cover legend was aggregated into 12 classes, and elevation data was classified in two broad classes: below 2000 meters and above 2000 meters. The re-classified land cover and elevation layers were then intersected (ArcInfo *combine* command) and classes with few pixels were aggregated into similar classes, up to a 9 class grid.

Combining the resulting grid with the district layer and performing "Zonalstat" analysis the distribution of each of the nine classes within the 58 districts plus their percent area coverage were obtained.

Food Security and Vulnerability Survey 2004 – WFP Tajikistan



Most of the districts contained all 9 classes but in different percentages which made it difficult to characterize them. Therefore a Principal Component Analysis (PCA) method was chosen to identify the distribution of the main groups of variables.

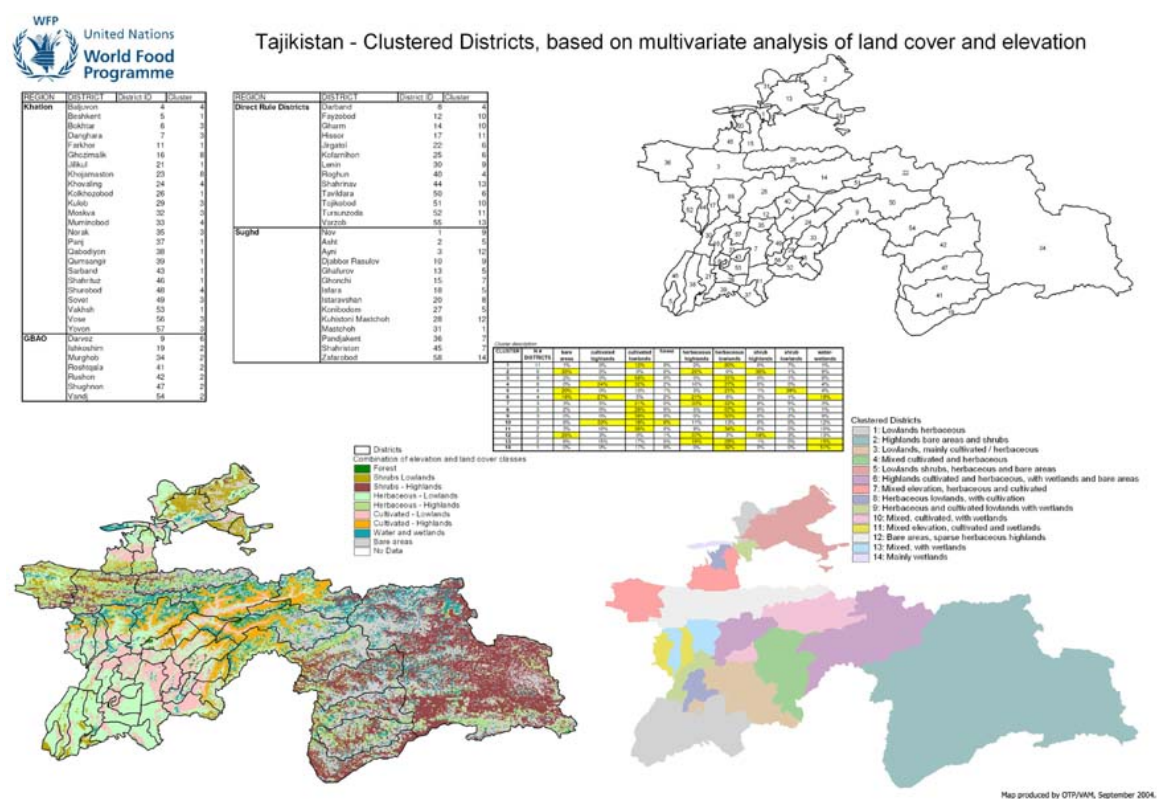
An excel table of area percentage was prepared with the nine classes as columns and the 58 districts as rows. It was then imported in ADDATI software and analyzed through Principal Component Analysis and Non-Hierarchical Clustering. The output table described 16 clusters, which were manually reduced to 14 by re-grouping similar clusters, likely because a cluster contained only one district that was similar enough to another cluster to allow for re-grouping without jeopardizing the statistical integrity of the exercise. However, cluster 14 still contains one district that is so unique from all the others that it remained a unique and separate group.

Cluster description

CLUSTER	N # DISTRICTS	bare areas	cultivated highlands	cultivated lowlands	forest	herbaceous highlands	herbaceous lowlands	shrub highlands	shrub lowlands	water-wetlands
1	11	1%	0%	12%	0%	0%	80%	0%	7%	1%
2	6	35%	0%	0%	0%	20%	0%	36%	1%	9%
3	8	2%	0%	58%	0%	0%	31%	0%	1%	8%
4	6	0%	24%	32%	2%	10%	27%	0%	0%	4%
5	4	20%	0%	13%	1%	3%	21%	1%	39%	4%
6	4	16%	27%	5%	2%	21%	8%	3%	1%	18%
7	3	3%	5%	21%	0%	33%	22%	8%	5%	3%
8	3	2%	0%	28%	0%	0%	67%	0%	1%	1%
9	3	0%	0%	38%	0%	0%	50%	0%	2%	9%
10	3	6%	33%	18%	6%	11%	13%	0%	0%	12%
11	2	3%	10%	36%	0%	9%	34%	0%	0%	10%
12	2	25%	3%	0%	1%	37%	3%	18%	3%	13%
13	2	6%	15%	17%	0%	19%	28%	1%	0%	15%
14	1	0%	0%	17%	0%	0%	32%	0%	0%	51%

Part II – Objectives and methodology

The analysis resulted in the 14 zones of relatively homogeneous district clusters **based upon the spatial data only**. A consolidated map of the process and product is presented below.



Section 2.4 - Sampling

A list of all communities and their populations for each of the district cluster zones was provided by WFP Tajikistan. Communities not included in the sample frame included Dushanbe and any town larger than 1500 persons or village smaller than 80 persons.

A two-stage cluster sampling was applied; the first stage was to draw a sample of 20 or 30 clusters (in total 429 clusters) depending on the population size of each zone. The second stage was to randomly select 12 to 15 households in each sampled community using probability sampling techniques. A total of 5,155 households were interviewed, which allows comparisons between Zones but is not precisely representative of the population at district level.

Section 2.5 - Data collection

The design of the assessment methodology, data analysis and final reporting was done by the WFP Vulnerability Analysis and Mapping (VAM) units of Tajikistan, Afghanistan and Rome. The data collection was organized and carried by WFP Tajikistan with support from WFP Afghanistan. After several days of training and field-testing, enumerators (WFP and partner staff) were divided into teams, each with a leader and sent to the field. The data collection process which took place during the month of November was regularly monitored by WFP staff members.

Section 2.6 – Data entry and analysis

The household questionnaires were designed by VAM Afghanistan staff so that the data could be entered using an electronic scanner. Since the scanner belonged to WFP Afghanistan, the completed questionnaires were sent to Kabul for scanning, supervised by the VAM unit in that office. The community questionnaire data entry screens were developed in Microsoft Excel by VAM Afghanistan and data entry was also supervised by

their team. All data files were exported and converted into SPSS format. All data were analysed using SPSS software, versions 11.5 and 12.0, except for the Principal Component Analysis (PCA) and cluster analysis which were done using ADDATI 5.3c software. VAM-HQ staff were responsible for all analysis and reporting which was partially conducted in Dushanbe but with the majority of the work taking place in Rome.

Section 2.7 – Limitations of the study

As with all large scale household surveys there are some limitations of the study which will be highlighted in this section. They do not render the study useless but rather help to better define the uses of the findings in the appropriate context.

- **Creation of homogeneous district clusters** – The use of spatial data to cluster districts mathematically has limitations in that other important characteristics like remoteness or nearness to important commercial opportunities, road quality, etc. are not considered. However, district level data sets with socio-demographic and economic variables were not readily available. These district clusters are homogeneous only in terms of elevation and land cover. The analysis found that, in fact, there were some that were very heterogeneous in terms of household food security. However, this technique allowed for the study to be representative below the regional level.
- **Representativeness** - The findings are representative of the average for the district clusters (zones) only. They do not differentiate between districts nor do they account for variation within a district. They do, however, allow for comparison between zones and cover the entire country.
- **Precision of GPS data collection** – When trying to use the GPS coordinate data to plot the location of each village in the sample, problems with the data quality were discovered, but only for some.
- **Translation of questionnaires** – There were a few problems in translation of the questionnaire that were only discovered after the fact. However, they were few.
- **Data entry** – The questionnaires were formatted so that data could be scanned directly from the questionnaire forms into a database. During data cleaning and analysis it was discovered that there were still a few problems with this technology which created additional time for data cleaning.

Part II – Objectives and methodology

Part III – Community interview results

For each sampled village in the survey, two different community interviews were conducted – one for men only and another for women only. The questionnaires used were complementary yet overlapped in a few key areas. The results are presented by topic, by group.

Section 3.1 - Women's community interviews

3.1.1 – Women's roles in farming

A total of 429 women's groups across 14 zones were asked if women engage in farming activities. The findings were similar by region in that 78% of the women's groups in Sughd said that women definitely were engaged in farming activities, followed by 81% in DRD, 82% in Khatlon and 88% in GBAO. However, there were some differences, by region, in how the products were used. In Sughd, DRD and Khatlon, around 90% of the groups said that produce from women's farming activities was mostly kept for home consumption, with about 5% indicating that these products are sold or bartered locally. In a few groups (4%) the women's production is sold or bartered to traders. However, in GBAO, only two-thirds of the women's groups indicated that the produce is kept for home consumption while more than 20% indicated that the women were not allowed to keep their production. In the remaining few communities, the produce was sold or bartered locally or with traders.

3.1.2 – Access to natural resources

Only 17% of the women's groups indicated that they had access to natural resources such as forests/forest products and wild plants and animals. The best access and utilization of these natural resources was found in women from Khatlon region where 26% of the groups utilized wild plants/bushes and 22% used forests and forest products. In DRD, 15 of the women's groups accessed wild plants and bushes while 13 were using forests and forest products.

3.1.3 – Sources of income for women

For the sample of women's community interviews, the most common sources of income for women were agricultural wage labour (39%), sale of field crops (32%), pension (32%), sales of orchard products (31%), remittances (29%) and livestock sales (19%). By region, the following are the results:

Sughd

Agricultural wage labour – 54%
Sales of field crops – 37%
Sales of orchard products – 33%
Pension – 31%
Other wage labour – 29%
Cash crop sales – 23%

Khatlon

Agricultural wage labour – 50%
Pension – 41%
Sales of field crops – 39%
Sales of orchard products – 31%
Remittances – 24%
Collection of wild foods/plants – 19%

Direct Rule Districts

Sales of orchard products – 35%
Agricultural wage labour – 31%
Remittances – 30%
Pension – 27%
Sales of field crops – 24%
Livestock sales – 22%

GBAO

Remittances – 71%
Livestock sales – 67%
Sales of field crops – 31%
Pension – 26%

The above results clearly show differences between the regions in terms of women's sources of income. Agricultural sources are more important in Sughd and Khatlon while remittances and livestock sales are definitely more important in GBAO. Pension holds about the same importance for all four regions while in DRD, there is no particular activity that stands out from the rest.

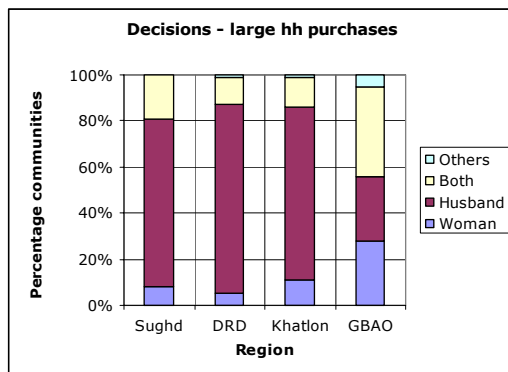
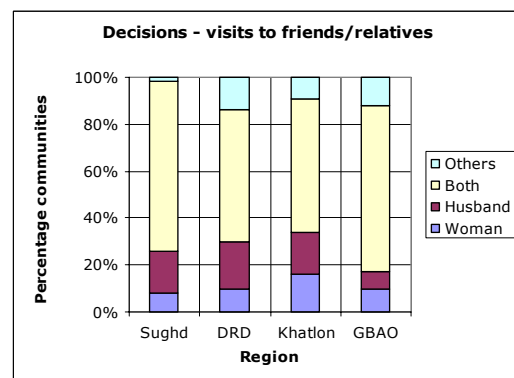
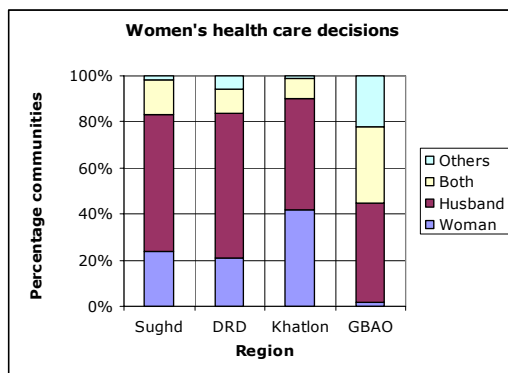
Part III – Community survey results

3.1.4 - Daily activities for women

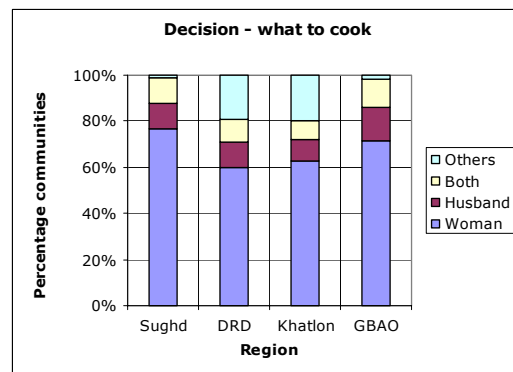
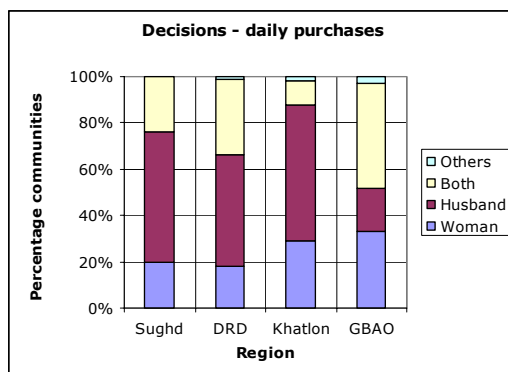
According to the community interviews, the main activities for most women were: cooking and serving meals, collecting water, collecting firewood, tending their houses and gardens and looking after their children. However in some regions other activities were also practised. For example, in Sughd women in 55% of the communities mentioned sewing as a typical daily activity indicating that women in this region were most probably earning income through tailoring and sewing. Similarly more women from the GBAO region were engaged in making and selling handicrafts.

3.1.5 – Decision-making

Women’s groups were asked about decision-making processes in their communities for key household activities. They are presented in the five charts below.



These five charts show that decision making responsibilities vary by region and by type of decision. Men have a greater role in deciding about large household purchases while women have the final decision on what to cook, in most communities. Decisions about visits are the responsibility of both the woman and her husband. Women in GBAO appear to have a greater decision making role than those in other regions.



3.1.6 – Women’s status

During the interviews, the women were asked the following question: “Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations....?”

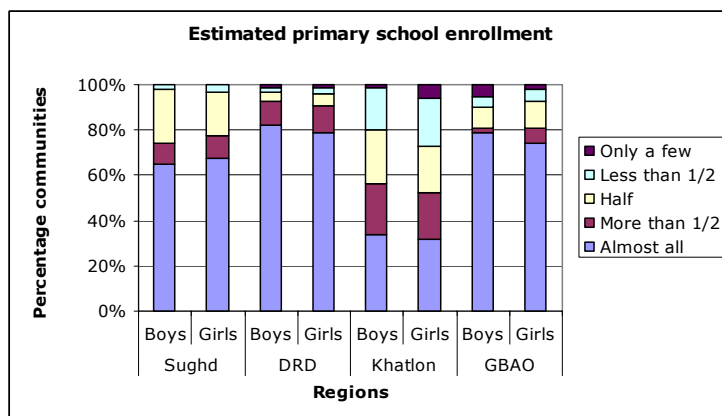
Nearly 70% of the women’s groups agreed that a husband is justified in hitting or beating his wife when she neglects the children. Around 60% of the groups also agreed that it’s OK when the woman goes out without telling her husband and when she argues with her husband. However, only 47% of the groups thought it was justified when the woman burns the food. By region, it was clear that the women in GBAO most often thought a husband was justified in hitting his wife, especially for going out without telling him (88%), neglecting the children (83%) and burning the food (83%). In Direct Rule Districts, women thought that a husband was justified in hitting his wife, especially for neglecting the children (82%), for arguing with her husband (79%) and for going out without telling him (74%). Domestic violence was less tolerated in communities within the Khatlon region, except for neglecting children, where 70% of the women’s groups thought it was justified. The women Sughd were least tolerant of this behaviour as less than half of the communities thought a man was **ever** justified in hitting his wife as compared to 86% in Khatlon, 94% in DRD and all of the groups in GBAO.

3.1.7 - Education

The women’s groups were asked about availability of schools to the children in their communities. Most of the communities had a functioning primary school near their community – 91% in Sughd, 89% in DRD, 86% in GBAO and 78% in Khatlon. Most of the schools were Government schools with a few private schools available. In GBAO, all of the communities had a Tajik school while 88% of the communities in Khatlon had a Tajik school and 11% an Uzbek. There were more communities with Uzbek schools in DRD (30%) and Sughd (40%).

The physical condition of the schools was mostly average to poor, according to the women. The best conditions were found in Sughd, where nearly 70% of the communities had a school in average or good condition, while a quarter had one in poor condition. In DRD, more than 40% of the communities had a school in poor physical condition while more than half the communities in Khatlon had a school in poor condition. Although nearly three-quarters of the communities in GBAO had a school in good or average physical condition, 17% reported the presence of a school in unacceptable condition. Most of the women’s groups reported that the schools in their communities were in average or good functioning condition. However, around 30% of the communities in DRD and Khatlon reported the presence of a school that functioned irregularly or not at all.

According to the chart on the right, the highest estimated levels of primary school enrolment are found among children in the Direct Rule Districts, followed by GBAO. The lowest levels are found in Khatlon region. There are few differences between boys’ and girls’ enrolment but with the greatest being found in the Khatlon region.



When asked about the reasons children do not attend school, the most common response was the lack of appropriate clothes/uniform/shoes (62%), followed by a lack of equipment or books (35%) and illness or disease (32%). By region, the most common response in Sughd was illness or disease (40%), followed by lack of clothes/uniform/shoes (34%) and lack of equipment/books (28%). In DRD, these issues were also the most often reported. However, in Khatlon region, the women’s groups also named cost/economic reasons (30%) as an important factor. In GBAO, 46% of the communities mentioned distance as a factor that prevented children from going to school.

Part III – Community survey results

When asked about the greatest needs to improve the access to primary education in their communities, the women gave the following responses: equipment/books (55%), heating (39%), teachers (33%), and school building re-construction/repairs (24%). By region, the top needs in Sughd were the same as the entire sample, while women in DRD named heating as the main need (49%) and in GBAO, they also felt that children needed uniforms/clothes/shoes (25%) to improve attendance.

3.18 - Health

Women's groups were also asked about availability and access to health care from the community. Only 47% of the communities had a functioning health centre/clinic, ranging from more than 60% in Sughd and GBAO to 38% in DRD and only 34% in Khatlon communities. Nearly all health centres were Government run but only 20% were described as being in good physical condition – 30% of those in GBAO communities. Nearly 60% were described as being in average physical condition, 22% in poor condition and 4% overall described as 'unacceptable' – 15% of those in GBAO. Three-quarters of these clinics/health centres functioned at a good or average level with the rest described as 'irregular' or not functioning at all. The greatest problems were found in Khatlon and GBAO.

The women were also asked about the availability of drugs at these clinics/centres – around 10% of the communities said that drugs were readily available in their clinics, ranging from 17% in Khatlon to 4% in Sughd. Nearly 40% of the communities said drugs were **not** available in their local clinics – nearly half of those in Sughd.

The groups were also asked where most women in the communities delivered their babies and who assisted in the deliveries. As expected, in nearly all communities, babies are delivered at home on some occasions. However, in more than 30% of the communities in Khatlon and 40% in GBAO, babies are also delivered in local clinics while in Sughd and DRD, in more than 40% of the communities babies are delivered in a maternity ward. Babies are delivered in hospitals in only 10% of communities in all regions except GBAO (20%). Most deliveries are assisted by midwives (56%), followed by obstetricians (46%) and friends/relatives (27%). In GBAO, babies are delivered by doctors in 30% of the communities while only 5% of the communities reported that friends/relatives deliver babies.

For the entire sample, the most commonly reported illnesses in **children** were diarrhoea (31%), flu/cold (31%), malnutrition (25%), goitre (18%) and anaemia (16%). By region, the most common illness in Sughd children were anaemia (36%), flu/cold (30%), and malnutrition while in DRD the most commonly reported childhood illnesses were diarrhoea (41%), flu/cold (38%) and typhoid (26%). In Khatlon, the main childhood illness problems were malnutrition (47%), diarrhoea (27%), anaemia (26%), and goitre (25%) while in GBAO, the problems were more typical – flu/cold (52%) and diarrhoea (29%).

For **adults**, the most commonly reported illnesses were goitre (32%), anaemia (30%), flu/cold (22%) and kidney disease (16%). By region, the main problems in Sughd were anaemia (57%), goitre (26%) and flu/cold (17%) while in DRD they were goitre (34%), flu/cold (29%) and typhoid (21%). Anaemia (46%) was also the most commonly named illness for adults in Khatlon, followed by goitre (40%) and rheumatism (28%) while in GBAO they were flu/cold (46%), kidney disease (23%) and rheumatism (23%).

Lastly, the women were asked to name the **main problems** with **health services** for people in their communities. Overall, 44% of the communities named lack of doctors/specialists, followed by a lack of medicine (39%), lack of hospital (29%) and a lack of clinics (28%). In Sughd, the main problems were lack of medicine (30%) or doctors/specialists (26%) as well as poor quality of services (26%). In DRD, the most common complaint was a lack of doctors or specialists (65%), as well as lack of medicine (43%), hospitals (33%) and clinics (30%). Women in Khatlon also noted the lack of doctors or specialists as the main problem (47%), followed by a lack of clinics (40%) and medicine (39%). Lastly, in GBAO, the most often named problem was a lack of medicine (54%) and the fact that treatment was too far away (54%).

Section 3.2 – Men’s community interviews

3.2.1 - Population movements

Male members of the community were asked of their perception of population movements into and out of their communities over the previous five years. On average, for all zones approximately 55% of the respondent groups felt that the population of their community has remained the same while 10% responded that there have been an equal number of departures from and arrivals to their community. In around 20% of the communities, the groups stated that there were more departures from their village and in 13% they felt there were more arrivals.

By region, there were some clear migration patterns where more than 60% of the communities in Sughd and DRD felt that there was no migration at all. However, around 20% of the Sughd communities felt that there were more arrivals while more than 20% of the DRD communities felt there were more departures. Equal numbers of communities in Khatlon felt there were more arrivals and more departures. However, in GBAO, more than 70% of the communities stated that there were more departures in the past five years.

3.2.2 – Land mines and insecurity

Only 14 of the 426 men’s groups interviewed indicated that there were land mines in or around their community – 3% overall but in 10% of the sampled communities in GBAO. When asked if the community had been affected by insecurity in the past 2 years, 17% responded in the affirmative, ranging from 15% of the communities in Sughd and DRD to 20% in GBAO and 22% in Khatlon. The perceived insecurity was highest in north-western districts bordering Uzbekistan. For those communities affected, they were to indicate whether the source was land, livestock, water or political affiliation.

More than half the affected communities indicated that water was the source of the insecurity – three-quarters of the affected in Sughd and nearly 60% in Khatlon. Land was the second greatest source of insecurity as indicated by nearly 60% of the insecure communities in Sughd and more than 40% of those in DRD. Political insecurity was cited by less than 10% of the communities in Sughd and DRD and none in Khatlon or GBAO.

3.2.3 – Economy and access to natural resources

The men’s groups were asked to name the four main sources of income for members of their community, in order of importance. For the communities in Sughd, the main income sources were non-agricultural wage labour (66%), sales of field crops (50%), livestock sales (50%), and pension (38%). For the communities in DRD, the most important income sources were livestock sales (49%), remittances (45%), non-agricultural wage labour (39%) and agricultural wage labour (35%). The communities in the Khatlon sample relied mostly on sales of field crops (60%), remittances (50%), livestock sales (45%) and agricultural wage labour (45%) for earning income. The income sources in the GBAO sample were different from the rest of the regions in that remittances (54%) were the most often named source of income, followed by livestock sales (49%), cash crop sales (33%), and pension (31%).

The groups were then asked if the current main income activities had changed in the past five years, nearly 20% of the communities indicated that they had, ranging from only 7% of the Sughd communities to 17% in DRD and 26% in both Khatlon and GBAO. More than half the communities in the districts of *Baljuvon*, *Khovaling*, *Muminobod*, *Shurobod*, *Nurobod* and *Roghun* indicated that their income earning activities had changed.

Reasons for the change in income earning activities varied from region to region. For Sughd, the main reason for change was a change in access to land. In DRD, 42% of the communities with change indicated it was due to labour migration and money transfers, followed by agricultural constraints (39%), while 29% of the changed communities indicated that employment and income opportunities were better now than before. In Khatlon, the main reason for change as indicated by the men’s groups was due to economic and political stability (55%). In GBAO, the main reason cited for change in income sources was improved market access (40%).

The men were then asked to list the three most important natural resources available for men to use to earn income. Surprisingly, most of the communities indicated there were no

Part III – Community survey results

natural resources available to earn income. In Sughd, a few men's groups could access the forest and forest products to earn income (19%) while others named wild plants/bushes and birds as potential sources of income. In DRD, only 20% of the men's groups said they had access to natural resources for earning income mostly wild plants and bushes. Similarly, in the Khatlon sample 30% of the groups could use the forest or forest products and 28% could access wild plants or bushes to earn income. In GBAO, most communities did not access natural resources in order to earn income.

Around two-thirds of the men's groups felt that life for the people in their community was better than it was 10 years ago. Only 13% felt that life was worse while 22% felt that it was the same as before. By region, 70% of the communities in Sughd felt that life was better and only 8% felt it was worse. However, in DRD, even though 60% of the communities felt that life was better than 10 years before, 20% felt it was worse for the people of their community. Sixty percent of the communities in Khatlon felt that life was better while only 12% felt it was worse while 90% in GBAO felt life was better – no communities felt that life was worse than before.

The main reasons life is different for the people in Sughd are improved access to land (37%), labour migration (32%) and increased opportunities to raise and sell cattle (23%). For communities in DRD, the main reasons cited were political and economic stability (38%), labour migration (22%), and improved access to land (18%). Political and economic stability (42%) was the most often cited reason why life is better for the people in Khatlon, followed by improved access to land (25%) and markets (16%) and labour migration (16%). However, in GBAO, the main reason life is better now than 10 years ago was due to external support (56%) and political and economic stability (31%).

3.2.4 – Infrastructure, access to credit and migration

The men's groups were asked that if access to their community by road was blocked during certain times of the year. In total, more than 40% of the sample communities had access problems at some point during the year. For each region, around 40% of the sample communities have seasonal accessibility problems except in GBAO where more than 70% of the sample communities were inaccessible during the year. However according to the men's groups, for those with access problems, the average time the access road is impassable in GBAO is 3.8 months, which is lower than the other regions. In Khatlon, the average amount of time the roads are blocked is 5 months, according to the men's groups. For the other regions, the time is between 4 and 4.5 months.

More than 90% of the communities have access to electricity or generators, ranging from a low of 85% in Sughd to a high of 97% of the sample communities in DRD. In addition, around 95% of the households in these communities can access electricity – in Sughd, about 10% of the communities with electricity said that only a few households have access.

In total less than 40% of the communities had access to credit. However, there were regional differences in that 80% of the sample communities in GBAO had access to credit as compared to only about one-third in each of the other regions. Main sources of credit for those with access were relatives/friends in Sughd (82%), DRD (63%) and Khatlon (94%). However 31% of the communities in DRD with access to credit could access through charities or NGOs while one-quarter in Sughd used a bank or credit union. In GBAO, about half the communities with access to credit could go to the bank or credit union or to charities or NGOs.

The men's groups were also asked if people in the community leave temporarily to look for work. Seasonal migration is common in more than 90% of the sampled communities – nearly all of those in the DRD sample. In Sughd communities, most of those who migrate go outside Tajikistan to look for non-agricultural wage labour (53%) or regular employment/salary (42%). The same is for those migrants in DRD communities, but some also go outside the country to do trading. In Khatlon, again, the majority of migrants leave the country but in about 20% of the communities, they also go to a city or town to work, with most seeking non-agricultural wage labour (56%) or employment/salaried work (41%). In GBAO, almost all migrants leave Tajikistan to look for work with most seeking non-agricultural labour (65%) or employment/salary (35%).

Lastly, the men's groups were asked about existing community development projects. In most communities, there were no projects, according to the participants. In Sughd only

30% of the communities had such projects with 23% involved in the construction of a school building. In DRD 18% of the communities were building schools and 17% had drinking water projects. The same was for Khatlon but only 7% were building schools and 6% had drinking water projects. There were slightly more projects in the GBAO sample – 20% with drinking water projects and 15% involved in the construction and maintenance of a health care facility.

3.2.5 - Agriculture

The men were asked to estimate the percentage of households accessing agricultural land from various sources. In Sughd, 45% of the households access collective dekhani land while 28% access land through renting and another 15% access individual dekhani land. Only 9% own land and 7% have long-term leases. For the DRD sample, about 40% of the households in the sample communities owned agricultural land while over 30% access through renting, 17% through collective dekhani and 7% each through long term lease and individual dekhani. In Khatlon, about one-third of the households in the sampled communities access their land through collective dekhani while one-quarter own their land, 20% rent and 9% access through individual dekhani. Land access in GBAO is more homogeneous with 60% accessing through individual dekhani and 25% through ownership. About 10% of the households in the sampled communities access land through collective dekhani.

In nearly 60% of the sample communities, the men's groups indicated that an agricultural extension officer never visits. However, in Sughd, the extension officer visits once a month in 20% of the communities, as compared to only 12% in GBAO and 8% in DRD and Khatlon regions. In another 20% of the communities, the agricultural extension officer comes once during the main agricultural season. In only 9% of the sampled communities the officer comes to visit only when there are pest problems.

In the Sughd sample, the agricultural extension officer is from the Ministry of Agriculture in 47% of the communities and from a local NGO in another 35% of the communities. The three main agricultural extension services they provide are on the use of seeds (64%), mechanization (46%) and irrigation (42%). In addition, for the communities with farmers' associations, the main extension services/training they provide are provision of employment (71%), training on records/bookkeeping (59%), provision of agricultural equipment (35%) and marketing (35%).

The agricultural extension officers in the DRD sample are from international NGOs (26%), local NGOs (21%) and the Ministry of Agriculture (20%). They provide training/extension services mostly on the use of seeds (67%) and fertilizers (45%) and irrigation (33%). The farmers' associations tend to mostly provide employment (41%), communal labour (28%) agricultural equipment (22%) and agricultural inputs (22%).

More than half the agricultural extension officers in the Khatlon sample were from the Ministry of Agriculture and another third were from local NGOs. The main services they provide are in the use of seeds (70%) and fertilizers (54%) as well as mechanization (30%), post-harvest services (30%) and irrigation (26%). The farmers' associations mostly provide employment (77%) as well as communal labour (36%), agricultural inputs (32%) and agricultural equipment (27%).

Lastly, in the GBAO sample, the agricultural extension officers were mostly from the Ministry of Agriculture (83%) and international NGOs (56%). They provide services and training on animal husbandry (72%), the use of seeds (67%) and the use of fertilizers (56%). Farmers' associations were found in only 5 of the sample communities where they provided services and training on marketing of agricultural and livestock/livestock products.

The men's groups were then asked about the main crops/fruits grown by the people in the community. In Sughd, nearly 90% of the communities were producing wheat, followed by potatoes (66%), vegetables (66%), apples (30%) and grapes (28%). Tobacco and rice are grown in about 24% of the surveyed communities. Nearly 90% of the communities growing wheat do not sell their produce while the rest sell at a local market. For the communities growing potatoes, more than half sell them at the local market while another one-quarter do not sell at all. In about 15% of the communities, potatoes are bartered or exchanged. Vegetables are sold in a local market in about half the communities growing them while the other half don't sell.

Part III – Community survey results

Nearly 80% of the communities in the DRD sample were producing wheat, followed by potatoes (61%), vegetables (61%), apples (40%), maize (26%) and cotton (25%). Most of the communities growing wheat do not sell their produce. However, in 13% of them the wheat is sold in a local market. The same applies for maize but selling locally occurs in about one-third of the maize producing communities. Potatoes are sold locally in about 40% of the communities and, in another 40% they are not sold at all. In about 10% of the communities, potatoes are sold in another market. About one-third of the cotton producing communities do not sell their produce while the rest are sold in a variety of market settings.

In Khatlon, nearly all of the communities are producing wheat (95%), followed by potatoes (42%), cotton (42%), vegetables (37%) and maize (35%). In nearly 70% of the communities, wheat is not sold while in 22% it is sold at a local market. The potatoes are sold locally in 40% of the communities while in 44%, they are not sold while for vegetable growing communities, over 40% do not sell, around 30% sell locally and another 15% sell to private traders. Cotton is not sold in nearly 80% of the communities while for the rest it is sold to private traders. Lastly, over half of the maize growing communities do not sell, 29% sell at local markets and 15% sell to private traders.

The main crops grown by communities in the GBAO sample are potatoes (100%), wheat (92%), vegetables (58%) and apples (29%). More than 60% of the communities do not sell their potatoes while 16% sell locally and another 16% barter or exchange them. Vegetables are mostly kept by the villagers with only 14% of the communities bartering or exchanging them.

Three-quarters of the sampled communities had tractors available for farmers – 89% of the Khatlon sample but only 40% in GBAO. On average there were 2 tractors per community.

3.2.6 – Livestock and pasture

Almost all of the communities reported owning cattle, ranging from 90% in the DRD sample to 99% in Sughd. The lowest levels of cattle ownership were found in the sampled communities of *Kofarnihon* district (32%). Oxen were also found in most communities yet were least likely to be found in mixed elevation cultivated areas in *Hissor* (81%) and *Tursunzoda* (65%) districts. Donkeys were found in every community in Khatlon but only in two-thirds of the GBAO communities. They were least likely to be found in *Shahrinav* (20%) district. Horses were found in 60% of the communities, ranging from only 25% in the GBAO sample to 82% in the Khatlon sample. Nearly all of the communities surveyed in *Fayzobod*, *Gharm* and *Tojikobod* districts had horses as compared to only 7% of the communities in *Ayni* and 27% in *Kuhistoni Mastchoh* districts. Yaks were found in only 20% of the sampled communities – 14% in Sughd and 23% each in DRD and GBAO regions. The highest levels of yak ownership were found in the surveyed communities in *Khojamaston* (90%), *Shahrinav* (80%), *Fayzobod* (78%) and *Baljuvon* (75%) district samples.

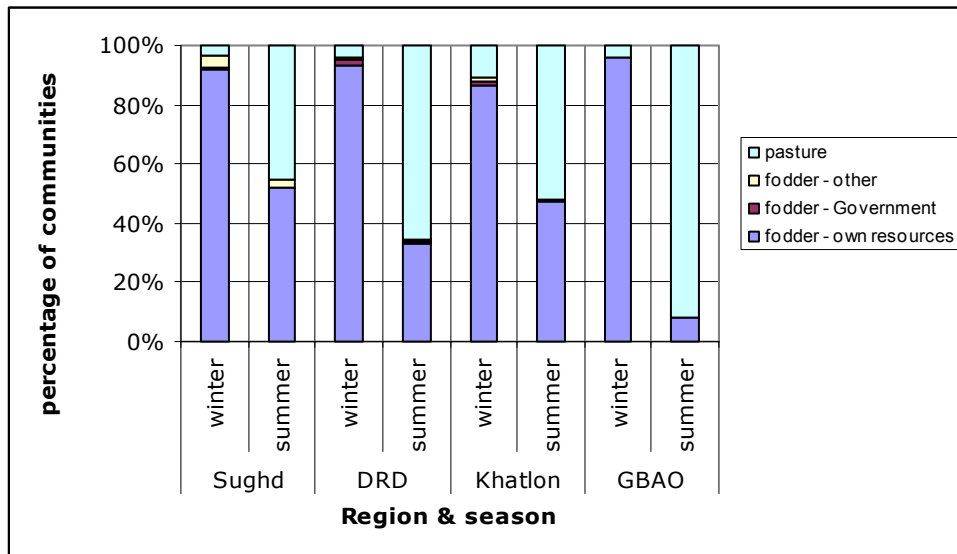
Goats were found in more than 90% of the surveyed communities – they were present in all communities in the GBAO sample. Only one-third of the communities sampled in *Istaravshan* owned goats. Sheep were also found in nearly all communities but were less likely to be found in *Varzob* (67%) and *Tursunzoda* (71%) samples. Poultry were also universally found but with slightly lower ownership in Sughd (92%) and GBAO (93%) regions although poultry were found in only 47% of the sample communities in *Ayni* district and neither of the two in *Murghob*.

Men's groups were asked the main sources of water for livestock, choosing from streams/ponds, rainwater/snowfall or hand pumps. In Sughd, 85% of the communities got water from streams/ponds, as did 91% in DRD, 88% in Khatlon and 98% in GBAO. Water was collected from rain or snowfall for 10% of the communities in Sughd and 18% in Khatlon. Hand pumps were used by 7% of the communities in Sughd to provide drinking water for livestock.

The main problems facing livestock in the communities were lack of pasture (51%), lack of veterinary treatment (49%), not enough water (36%) and lack of vaccinations (36%). Only 3% of the communities cited theft as a problem. The greatest problems in Sughd were a lack of pasture (68%), lack or veterinary treatment (50%) and not enough water (48%). In DRD, the main problems were a lack of vaccinations (47%), not enough

pasture (45%) and lack of veterinary treatment (43%). For Khatlon communities, the main problems were also lack of veterinary treatment (58%), not enough pasture (46%) and not enough water (44%). In addition, 7% of the communities reported theft to be a problem. More than 60% of the communities in GBAO said there was a lack of vaccinations while half cited a lack of veterinary treatment and/or not enough water as problems facing livestock.

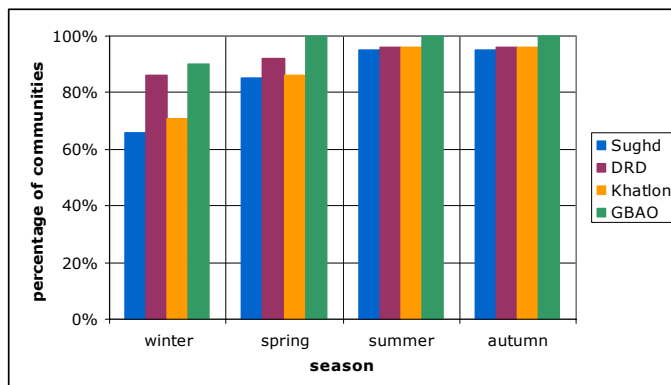
The men’s groups were asked to provide estimates on the main sources of livestock feed, by season. They estimated the percentage by season for pasture and fodder (by source). The results, by region, are presented in the graph below. The main point to notice is that during the winter, the majority of livestock feed comes from fodder from one’s own resources while in the summer, livestock feed is mainly from pastures. This is most extreme in the GBAO communities while less for the Sughd communities where, in the summer, a higher percentage of livestock feed still is from a farmer’s own resources. A small percentage of winter fodder in DRD comes from the Government.



Finally, they were asked to describe the pasture situation in their communities for the 2004 season as being ‘excellent’, ‘good’, ‘average’ or ‘poor’. For half the communities in the sample, the season was described as ‘average’ while more than 20% said it was ‘poor’. Only 5% said the pasture was ‘excellent’ in 2004 and the rest (25%) described it as being ‘good’. Eighty percent of the communities in the Sughd sample described the pasture conditions as being ‘average’ while 17% said they were ‘poor’. In DRD, 38% described the conditions as ‘good’ and 34% said they were ‘average’. In Khatlon, nearly half described them as being ‘average’ while 27% said they were ‘poor’ and the rest were ‘good’ or ‘excellent’. Pasture conditions were relatively better in GBAO with half described as ‘good’ and the rest as ‘average’ or ‘poor’.

3.2.7 – Markets

To better understand issues of food availability and access, the men’s groups were asked about seasonal availability of food in local markets. The chart on the right outlines the seasonal changes in food availability in local markets, by region. It appears that for the GBAO sample, food is more often available throughout the year in 90% of the communities in winter and in all for the remainder of the year. Food availability in the DRD sample is also quite good. However, in only 66% of the communities in



Part III – Community survey results

Sughd and 71% of the communities in Khatlon residents could find food in their local markets during the winter. It also appears that there are some communities with no access to a permanent food market.

The men’s groups were also asked about options for trading for those people who cannot access permanent settled markets. In Sughd, 28% of the communities noted that these people will buy and sell goods with provincial large-scale traders, while 22% will barter with large-scale traders from Dushanbe and 17% will barter with district large-scale traders. In one-quarter of the communities people do not barter or trade with large traders. The situation was different for the DRD communities in that 61% reported that people will not barter or trade with large scale traders if they don’t have access to permanent settled markets. Only 15% reported buying or selling goods with large-scale traders from Dushanbe and 12% reported barter/trading from these same sources. In Khatlon, communities were more likely to either barter or trade with large scale traders within the district (32%) or to not barter or trade at all (53%). In GBAO, the communities either bartered/traded within the district (31%) or with large-scale traders from Dushanbe (38%).

Market purchasing prices (median – in *somoni*) for selected food commodities are presented in the table below, by region. The price of 50 kilograms of wheat flour was consistent between the regions, at about 50 *somoni*, with the exception of GBAO (see below table). The price of potatoes per kilogram was around 0.3 *somoni* in Sughd but as high as 0.5 *somoni* in Khatlon. The price of beans per kilogram was consistent in all regions while the price of vegetables was much higher (per kilogram) in GBAO.

Region	50 kgs wheat flour	1 kg potatoes	1 kg beans	1 kg vegetables
Sughd	50 somoni	0.3 somoni	1.0 somoni	0.425 somoni
DRD	50 somoni	0.4 somoni	1.0 somoni	0.50 somoni
Khatlon	50 somoni	0.5 somoni	1.0 somoni	0.50 somoni
GBAO	56.5 somoni	0.4 somoni	0.95 somoni	0.80 somoni

The selling prices for livestock varied a bit more by region as indicated in the table below. The selling price of cattle was highest in DRD at 700 *somoni* per head and lowest in Sughd, at 500/head. Sheep ranged from a low of 100 *somoni*/head in GBAO to 170/head in DRD and Khatlon. The price of goats was most consistent, ranging from 70 *somoni*/head in Sughd to 85/head in GBAO. Lastly, the selling price of one chicken was as high as 10 *somoni* in GBAO and as low as 5 *somoni* in Sughd.

Region	Cattle	Sheep	Goats	Chicken
Sughd	500 somoni	120 somoni	70 somoni	5 somoni
DRD	700 somoni	170 somoni	80 somoni	6 somoni
Khatlon	600 somoni	170 somoni	80 somoni	7 somoni
GBAO	600 somoni	100 somoni	85 somoni	10 somoni

Section 3.3 – Comparison between women’s and men’s groups

The following section compares responses/perceptions of the women’s and men’s groups in understanding decision making at the community level as well as priorities for their communities.

3.3.1 – Decision -making

According to the women’s community interview in the sample of villages, 84% of the communities had a decision-making committee within the community, which was the same as the men’s group interviews. However, the percentages varied by region and between women’s and men’s groups. According to the women in Sughd, 84% of the communities had such a committee as compared to 78% as described by the men’s groups. In DRD, the women reported such as committee in 93% of the communities as compared to 96% for the men. In GBAO, it was 85% for men and 88% for women while in Khatlon, the

answers were exactly the same for men and women, with 70% of the communities having such a committee.

The selection of committee members is done by men only in one-third of these communities while in the other two-thirds, it is done by both men and women – the same response for both men’s and women’s group interviews. In about half of these communities in DRD and Khatlon, both men and women are active in choosing the committee members while in Sughd, about 75% of the communities are chosen by both men and women. However, in the GBAO sample, nearly all the decision-making committees are chosen by both men and women. These answers were almost exactly the same for both the women’s and men’s community interviews.

In more than 60% of the communities, women are on these decision-making committees, ranging from only half in DRD and Khatlon, to more than 70% in Sughd and as high as 95% in GBAO. In all regions, both men and women are comfortable working alongside each other on these community decision making committees, in most communities. In about three-quarters of these committees, they decide on community access to and use of resources. However, there are differences between the women’s and men’s interview groups (by region).

For Sughd, around 70% of the women’s groups said that the committee decides on access and use of resources as compared to only 53% of the men’s groups. In DRD, the answer was ‘yes’ for around 70% of the women’s groups but only 64% of the men’s groups while in GBAO the women said ‘yes’ in 95% of the interviews as compared 85% of the men’s groups. The greatest difference was found in Khatlon where around 70% of the women’s groups indicated that the decision making committee was responsible for deciding on the access and use of community resources while only 44% of the men’s groups indicated the same.

The table below summarizes the community interview findings on community access to and use of natural resources, by gender and region. In almost all sectors, women felt that the decision making committee had more control over community access to and use of resources, especially for water and agricultural land. The exception was in GBAO. However, it appears that in GBAO the community decision making committee has more authority in deciding on the use of all community resources. In most areas, the committees appear to have more influence on who accesses the resources as opposed to the actually use of the resources.

Region	Water				Agricultural land				Natural resources			
	Access to		Use of		Access to		Use of		Access to		Use of	
	W	M	W	M	W	M	W	M	W	M	W	M
Sughd	42%	29%	45%	26%	54%	23%	18%	22%	7%	3%	0	1%
Direct Rule	39%	32%	51%	46%	26%	16%	18%	30%	6%	1%	2%	6%
Khatlon	35%	15%	50%	25%	42%	16%	30%	21%	17%	5%	2%	2%
GBAO	46%	70%	77%	55%	51%	60%	59%	57%	31%	15%	8%	15%
Total	40%	30%	53%	36%	39%	22%	26%	28%	12%	4%	2%	4%

3.3.2 – Immediate priorities

Both the women’s and men’s groups were asked about the three main immediate priorities for their communities. The answers ranged from the need for clean water to requiring seeds to requiring gymnasiums. The following tables show the results by region and comparing the responses given by men and women.

Overall, the greatest immediate need around the rural areas is improved access to safe drinking water supplies – more than half the communities in the survey indicated this was a priority. Improved access to health care as well as improvements in education access and infrastructure were the second and third priorities for both sexes. Men more often named road construction and rehabilitation as a priority although it ranked 4th for both men and women. Lastly, improvements in rural electrification were important for both in terms of access and availability.

Part III – Community survey results

Total

Men	Women
Drinking water – 51%	Clean water – 53%
Medical facilities/staff/ambulance – 43%	Medical point/hospital - 44%
School construction/improvements/equipment – 41%	Schools – 37%
Road construction/rehabilitation – 39%	Improved roads – 27%
Electricity/transformers/power plants – 28%	Access to electricity/power plant – 24%

In Sughd, the immediate priorities were similar to the overall sample, with access to safe drinking water being a top priority – slightly more so for the women’s groups. This was followed by improved availability and access to quality health care. The men’s groups more often cited improvements in educational infrastructure and equipment as well as improvements in roads. The 5th most often named priority for the men’s groups in Sughd was related to improvements in water management through irrigation and canals while women preferred improved access to electricity and power.

Sughd

Men	Women
Drinking water – 53%	Clean water – 60%
Medical facilities/staff/ambulance – 44%	Medical point/hospital – 43%
School construction/improvements/equipment – 41%	Schools – 33%
Road construction/rehabilitation – 39%	Roads – 29%
Irrigation/canals/flood control – 17%	Electricity/power – 18%

Although the actual priorities were the same between men and women in the DRD sample, the order of priority were different. Men named road construction/rehabilitation most often while women prioritized access to safe drinking water and improved access to health care. School construction and rehabilitation was a priority for both as was improved access to electricity and power, which was named more often by the men’s groups.

Direct Rule Districts

Men	Women
Road construction/rehabilitation – 47%	Clean water – 47%
Drinking water – 46%	Medical point/hospital – 47%
Medical facilities/staff/ambulance – 43%	Schools – 38%
School construction/improvements/equipment – 42%	Roads – 35%
Electricity/transformers/power plants – 33%	Electricity/power – 25%

Both the men and women in the Khatlon sample prioritized drinking water, improved health access and improved access to quality education in the same order and similar levels. The women’s groups had less of an interest in seeing improvements in roads through reconstruction or rehabilitation than the men.

Khatlon

Men	Women
Drinking water – 62%	Clean water – 67%
Medical facilities/staff/ambulance – 46%	Medical point/hospital – 51%
School construction/improvements/equipment – 38%	Schools – 38%
Road construction/rehabilitation – 30%	Electricity/power – 24%
Electricity/transformers/power plants – 28%	Roads – 14%

The priorities for the groups in the GBAO sample were different from the other regions in that improved access to quality education was the top priority, followed by better access to electricity/power. The men preferred improved access to safe drinking water, road construction, improved water management and better access to quality health care. The women discussed a problem in accessing food and the need for a food store in their communities.

GBAO

Men	Women
School construction/improvements/equipment – 49%	Schools – 38%
Electricity/transformers/power plants – 49%	Electricity/power – 38%
Drinking water – 41%	Lack of food – 25%
Road construction/rehabilitation – 36%	Medical point/hospital – 20%
Irrigation/canals/flood control – 31%	Food store – 20%
Medical facilities/staff/ambulance – 28%	Water & roads – 18%

3.3.3 - Longer term priorities - men only

The men's group were also asked about the longer-term priorities for their communities in terms of development. As illustrated below, they are not that different than the short term priorities, probably indicating that the men's groups know that assistance and changes take a long time to realize. The main topics again were health, education, infrastructure and drinking water access with more emphasis on health and roads. In Khatlon, one-fifth of the men's groups indicated the need for telephone services in their communities while 19% of the men's groups in GBAO wanted better income earning opportunities.

Sughd region

- Road construction/rehabilitation – 49%
- Medical facilities/staff/ambulance – 29%
- School construction/improvements/equipment – 27%
- Drinking water – 21%

Direct Rule Districts

- School construction/improvements/equipment – 35%
- Medical facilities/staff/ambulance – 27%
- Road construction/rehabilitation – 25%
- Drinking water – 18%

Khatlon region

- Road construction/rehabilitation – 34%
- Medical facilities/staff/ambulance – 32%
- School construction/improvements/equipment – 29%
- Drinking water – 20%
- Telephone line/service – 20%

GBAO region

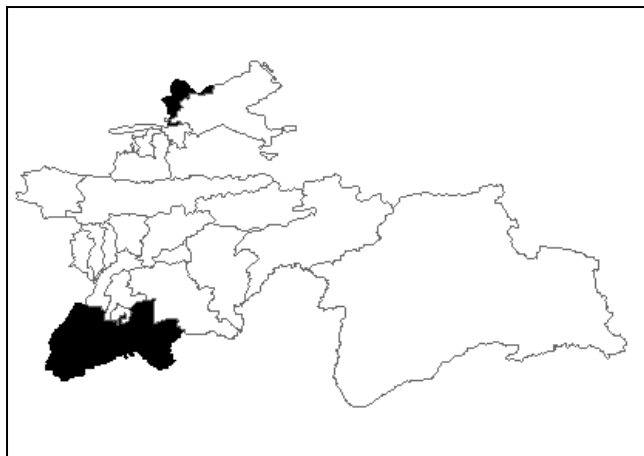
- Medical facilities/staff/ambulance – 22%
- Jobs/factories/higher salaries – 19%
- Electricity/transformers/plants – 19%
- Community/cultural centre/theatre – 19%

Part IV – Household survey results by homogenous district clusters

The results of the household survey and part of the community interview results are presented in this section, by homogenous district clusters (**zones**), in order to provide a snapshot of the food security and vulnerability situation at sub-regional levels.

Zone 1 – Herbaceous lowlands

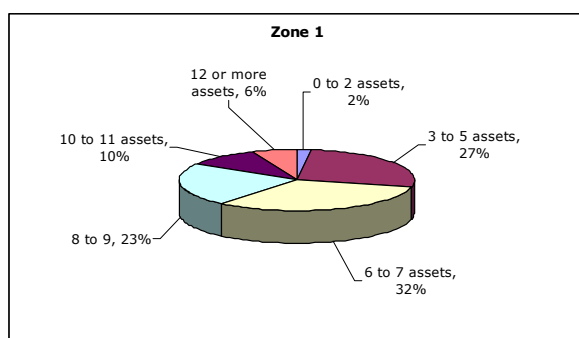
- Districts: Farkhor, Jilikul, Kolkhozobod, Mastchoh, Nosir Khisrav, Panj, Qabodiyon, Qumsangir, Saraband, Shahrituz, and Vakhsh
- Sample size: 33 communities and 400 households.
- Households: 52% Tajik, 42% Uzbek and 6% Turkmen.
- Household headship: 15% female headed households with an average age of 53 years. Nearly 90% of female heads are widowed. Average age of male headed households was 49 years, the oldest of all sample zones. Thirty percent of sample households are headed by elderly (60+ years), which was also the highest of all zones.
- Household size & composition: Average household size is 7.6 persons with 44% of sample households having 8 or more members. On average over 45% of household members were dependents (< 15 years or > 59 years). One quarter of the households had a male pensioner, 28% had a female pensioner and 16% had both, all among the highest in the sample zones.
- Literacy: Almost all heads of household were literate with an average of 10.3 years of schooling. For the spouse, 97% were literate, with an average of 9.2 years of schooling.
- Disabled members: In the sample, 15% of the households had a member who was disabled and of those, 7% had a disabled head of the household – these were among the lowest of all zones.
- Primary school children enrolment and absenteeism: For the sample households, 58% had at least one boy and 53% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, about 20% of both boys and girls had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-two percent of the households owned their dwelling – the lowest of all zones, and most were living in a single-family house and 80% of the households paid cash to live in their homes, which was among the highest of all zones. Just over 10% of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: Only about one-fifth of the houses were considered to be in 'good' condition with another one-third classified as 'temporary' or 'incomplete' shelters. Most of the houses had walls made of unfired bricks and a roof made of asbestos sheeting – among the highest of all zones. More than half had a floor made of earth/mud while 40% had a wooden floor. Seventy percent of the floors were covered with moquette while 21% had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: Nearly all houses had a connection to electricity but only two-thirds were reliant on electricity as the main source of lighting while the rest used kerosene lamps. For cooking, over half used firewood while another 25% used animal manure and 14% relied on brushwood. More than 80% used stoves for heating, one of the highest percentages of all zones.
- Drinking water and bathing facility: Only 46% of the households used drinking water from an improved source while 44% relied on drinking water from a pond, river or stream. The source of drinking water was located on the housing premises for one-third of the households (among the highest) while another 49% could reach their water



Part IV – Household survey results by homogeneous district clusters

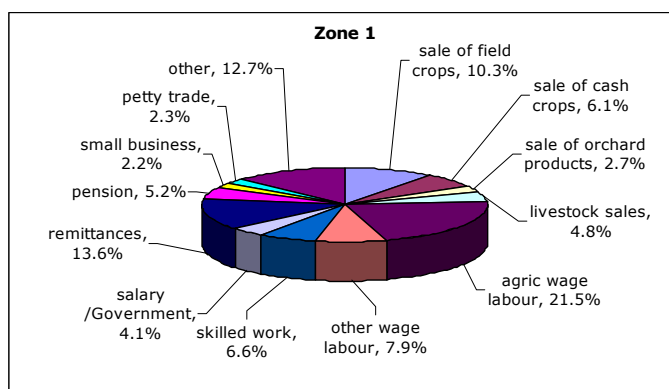
source in less than one-half hour. Over one-half of the households had access to a private bathing facility.

- **Access to and use of credit:** Nearly two-thirds of the households had no access to credit, which was one of the highest of all zones, while one-third could access credit from friends or relatives. Only 21% ever purchase food on credit and of those households, just over 40% 'always' relied on credit to purchase food.
- **Animal ownership:** Nearly 70% of the households owned cattle, with an average of 2 animals per owning household. About one-third of the households owned oxen or yaks (1 animal on average), 5% owned horses and one-quarter owned donkeys (one of the lowest of all zones). Nearly 20% of the households owned goats, with an average of 4 animals per owning household while 17% owned sheep (3 on average) – among the lowest of the zones. More than 50% owned poultry (5 birds on average).
- **Household asset ownership:** Most households owned a quilt (highest of all zones) with only one-third owning a bed. Just over 20% owned a table and/or chairs. Carpets/kilims were owned by more than 60% of the households while 56% owned a lantern and 60% owned a stove. For productive assets, 46% owned farming equipment (among the highest levels), 85% with basic carpentry tools, 31% with a sewing machine and 12% with a trailer or cart. Fewer households owned transportation assets such as a bicycle (23% - the highest of all zones) or motor bike (5% - highest of all zones). Assets related to communication included radio (30%), television (65%) and



VCR/DVD (5%). On average, of the total number of assets owned by a household, over one-quarter were 'productive assets' – could be used to generate income or produce food, which was one of the highest of all the zones. The chart above shows the distribution of sample households by asset ownership category. This distribution is similar to that found for the entire sample.

- **Household income:** For the Zone 1 sample, the most often named sources of income were agricultural wage labour (47%), remittances (26%), salary/Government job (23%), pension (22%) and sales of field crops (20%). As indicated in the chart on the right, agricultural wage labour contributed more than 21% of the total income for these households while remittances contributed 13.6% and other activities contributed 12.7% of total income. However, salary/Government wages only contributed about 4% to total income for these households and pension, only 5 percent.



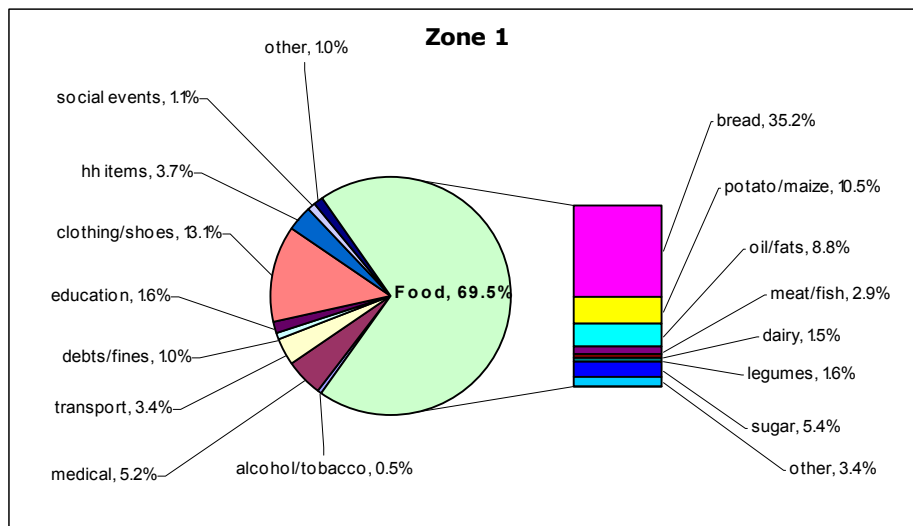
- **Land access and garden plots¹:** Ninety percent of the households had access to land, with 86% having a garden plot with an average size of 0.1 hectares. More than 60% of the households owned outright some of their land while another 43% had been given some garden plot land by the State. The main crops cultivated in garden plots were vegetables (67%), potatoes (57%), maize (40%), wheat (38%) and fruit/nut trees (20%). The main source of water for these garden plots was from irrigation (89%).
- **Presidential land²:** More than half the households had access to Presidential land, among the highest of all zones. The main sources of water are from rain (33%) and

¹ Also known as kitchen garden and include the land on which the house is built. Most plots were given during the Soviet times. They differ from region to region in size and quality of land.

² Was distributed to those families who requested it according to family size, with 75,000 ha distributed under Presidential decree. These plots are typically smaller than others and of variable quality.

irrigation (67%). Most households grow wheat (89%) and some also are growing maize (44%) and rice (11%).

- **Individual dekhan land³:** Only 4% of the households have access to individual dekhan land – the lowest in the sample.
- **Collective dekhan land⁴:** Only 9% of these households had access to collective dekhan farms – the lowest in the sample. The average size of the farm is quite large -30 hectares, irrigated by rivers or canals. Of these few farmers, the majority are producing cotton (86%) on collective lands.
- **Main sources of traction and seeds:** The main source of traction among these farming households is tractor (68% - second highest of all zones), with only 5% of farmers relying on animal traction. Most of the seeds for field crops come from purchase or own stock, with 9% of households receiving seeds from NGOs. For the garden plot, all the seeds are purchased or from own stock.
- **Fertilizer use and sources:** Only 5% of households were using fertilizer for field crops, among the lowest of all zones, while 49% were using fertilizer in their garden plots – the highest of all zones. Most of the fertilizer for field crops was purchased or from own stock but 13% of the households indicated they received fertilizer from NGOs. Almost all fertilizer for garden plots was purchased or from own stock.
- **Use of pesticides/herbicides:** Use of these chemicals was low for both field crops (3%) and garden plots (10%). The source for field crops was purchase and from NGOs while all of the pesticides/herbicides used in garden plots was purchased.
- **Expenditures:** As indicated in the chart below, nearly 70% of total monthly expenditure for the households in the Zone 1 sample was for food. Within food expenditure, 35% goes for bread/wheat flour, followed by 10.9% for potatoes/maize and 8.8% for oils/fats. The highest non-food expenditure category is for clothing/shoes (13.1%), followed by medical (5.2%), household items (3.7%) and transportation (3.4%).



- **Covariate shocks⁵:** Just over half the households in this zone had experienced at least one covariate shock or event. The most often reported shock was sudden price fluctuations (60%), followed by drought or irregular rains (46%), landslides/erosion (23%) and unusually high levels of crop pests and diseases (21%).

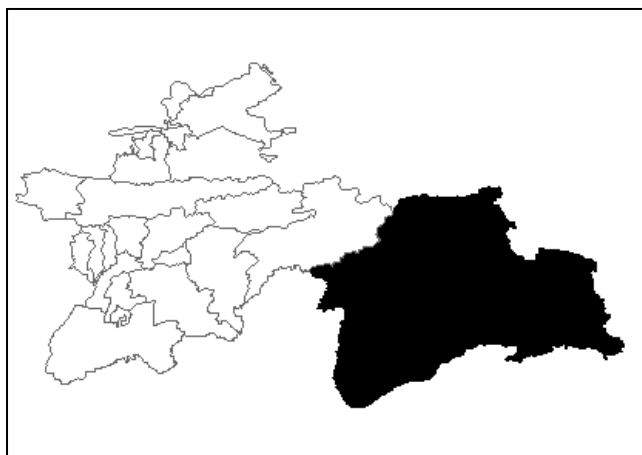
³ Land given by the State Committee of Land, beginning in 1992 where there is an individual owner with a land certificate of ownership.

⁴ Collective dekhan land was given to a group of farmers along with one certificate indicating the name and plot of each member of the collective.

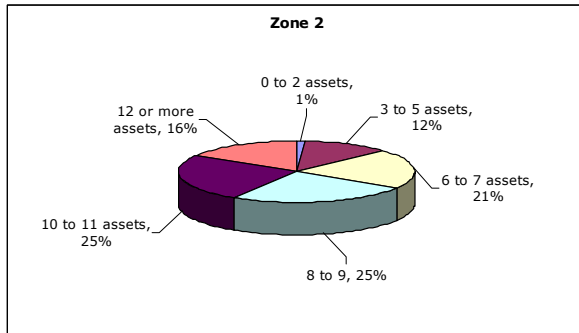
⁵ Any natural, political or economic shock or event that can affect the welfare of the household.

Zone 2 – Highlands with bare areas and shrubs

- Districts: *Ishkoshim, Murghob, Roshtqala, Rushon, Shughnon, and Vanj*
- Sample size: 33 communities and 396 households.
- Households: 98% Tajik, 2% Kyrgyz.
- Household headship: 18% female headed households (highest of all the zones) with an average age of 51 years. Nearly 90% of female heads are widowed. Average age of male headed households was 46 years. One-quarter of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.6 persons with 43% of sample households having 8 or more members. On average over 45% of household members were dependents (< 15 years or > 59 years). Twenty-two percent of the households had a male pensioner, 26% had a female pensioner and 13% had both.
- Literacy: Almost all heads of household were literate with an average of 9.6 years of schooling, the lowest of all zones. For the spouse, 90% were literate (lowest of all zones), with an average of 9.1 years of schooling.
- Disabled members: In the sample, 19% of the households had a member who was disabled and 10% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 64% had at least one boy and 52% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 21% of boys and 17% of girls had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-seven percent of the households owned their dwelling and most were living in a single-family house. Only 31% of the households paid cash to live in their homes while the rest paid nothing. More than 25% of the households were very crowded with 4 or more persons per room – the highest in the sample zones.
- Housing conditions & construction materials: More than half of the houses were considered to be in 'good' condition with only 8% classified as 'temporary' or 'incomplete' shelters. Most of the houses had walls made of stones, by far the highest of any of the zones. More than half had a roof made of wooden beams and mud while the rest have asbestos sheeting. About 40% have a floor made of earth or mud and half have a wooden floor – one of the highest of all zones. More than 40% of the floors were covered with moquette while 24% had a cover of woollen felt and 17% had carpets or kilims.
- Electricity, lighting, cooking fuel & heating: Nearly all houses had a connection to electricity but only one-quarter were reliant on electricity as the main source of lighting while the rest used kerosene lamps – the highest of all zones. For cooking, nearly 75% used firewood while another 10% used animal manure and 10% relied on brushwood. Nearly 40% used stoves for heating while the rest use firewood - the highest of all zones.
- Drinking water and bathing facility: Only 15% of the households used drinking water from an improved source – the lowest of all sample zones. Nearly 80% got their drinking water from a pond, river or stream. The source of drinking water was located on the housing premises for only 10% of the households while three-quarters of the households could reach their water source in less than one-half hour. Less than 15% of the households had access to a private bathing facility.
- Access to and use of credit: About 40% of the households had no access to credit, while 45% could access credit from friends or relatives and 27% of the households relied on NGOs for credit – the highest of all zones. Sixty percent ever purchase food on credit and of those households – the highest of all zones. Around 30% of these 'always' relied on credit to purchase food.

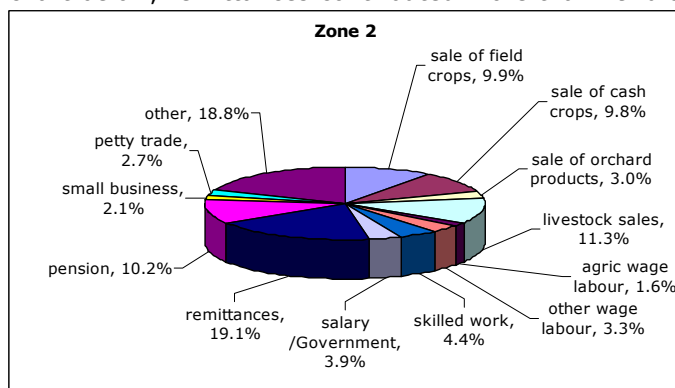


- **Animal ownership:** More than 80% of the households owned cattle – one of the highest of all zones - with an average of 2 animals per owning household. About one-third of the households owned oxen or yaks (1 animal on average), 2% owned horses and one-quarter owned donkeys (the lowest of all zones). More than 80% of the households owned goats, with an average of 4 animals per owning household while 64% owned sheep (3 on average) – among the lowest of the zones. More than 50% owned poultry (5 birds on average).
- **Household asset ownership:** Ninety percent of the households owned a quilt with 60% owning a bed – the highest of all zones. Around 70% owned a table and/or chairs, also the highest of all zones. Carpets/kilims were owned by 69% of the households while half owned a lantern and only 4% owned a stove – the lowest of all zones. For productive assets, 25% owned farming equipment, 96% with basic carpentry tools (highest), 54% with a sewing machine (high) and 4% with a trailer or cart. Fewer households owned transportation assets such as a bicycle (5%) or motor bike (4%). Assets related to communication included radio (54%), television (60%) and



VCR/DVD (18% - high). On average, of the total number of assets owned by a household, over 22% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households tend to have more assets than the other sampled zones.

- **Household income:** For the Zone 2 sample, the most often named sources of income were pension (39%), remittances (32%), livestock sales (27%) and salary/Government job (25%). As indicated in the chart below, remittances contributed more than 19% of the total income for these households while income from 'other' activities contributed 18.8%, livestock sales gave 11.3% and pension contributed 10.2% of total income. However, salary/Government wages only contributed about 4% to total income for these households while crop sales (field and cash) together contributed nearly 20 percent.

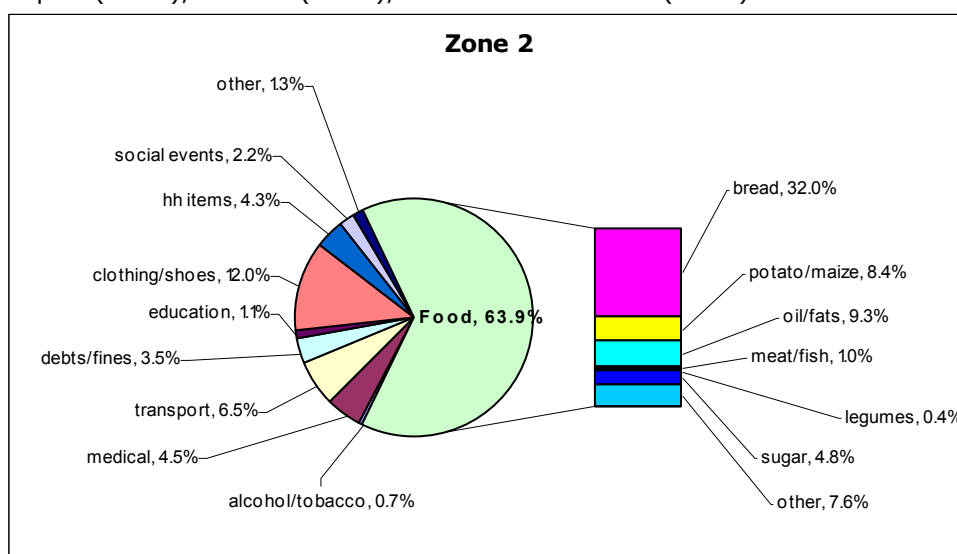


- **Land access and garden plots:** Nearly 95% percent of the households had access to land, with 88% having a garden plot with an average size of 0.07 hectares. Less than 30% of the households owned outright some of their land while another 71% had been given some garden plot land by the State. The main crops cultivated in garden plots were potatoes (77%), vegetables (53%), fruit/nut trees (41%), and wheat (26%). The main sources of water for these garden plots are from irrigation (46%) and springs (44%).
- **Presidential land:** Just over 20% of the households had access to Presidential land, the lowest of all zones. The main sources of water are from irrigation (55%), rain (27%) and spring (13%). Households grow wheat (68%) and potatoes (46%) and some also are growing vegetables (26%).
- **Individual dekhan land:** Nearly three-quarters of the households have access to individual dekhan land – the highest in the sample. The water for these farms comes from rivers/canals (42%) and springs (49%). Most households are growing wheat (85%), as well as potatoes (68%) and vegetables (22%).
- **Collective dekhan land:** Only 7% of these households had access to collective dekhan farms – the lowest in the sample. The average size of the farm is 10 hectares, irrigated

Part IV – Household survey results by homogeneous district clusters

by rivers/canals or rain. Of these few farmers, the majority are producing wheat (64%) or potatoes (27%) on collective lands.

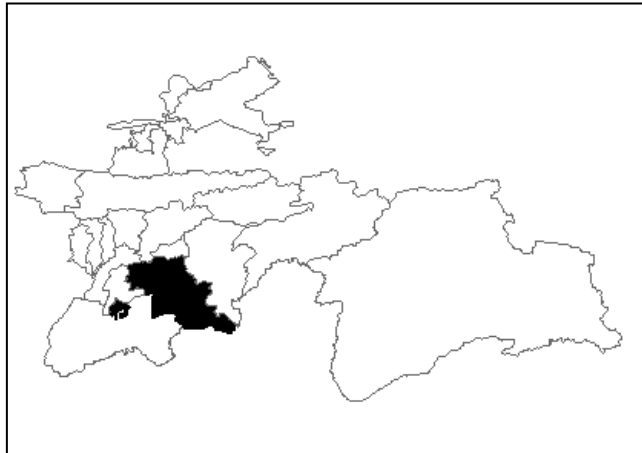
- **Main sources of traction and seeds:** The main source of traction among these farming households is animal (86% - highest of all zones). Most of the seeds for field crops come from purchase or own stock, with 8% of households receiving seeds from NGOs, and 16% on credit. For the garden plot, the seeds are from the same sources.
- **Fertilizer use and sources:** One-quarter of the households were using fertilizer for field crops, among the highest of all zones, while 18% were using fertilizer in their garden plots only yet 39% used it on both types of systems. Nearly 70% of the households relied on purchase for field crops fertilizer while 28% acquired it on credit. This was the same for fertilizer used on garden plots.
- **Use of pesticides/herbicides:** Use of these chemicals was low for both field crops (12%) and garden plots (3%). The sources for field crops were equal among purchase, NGOs, and credit which were the same for the pesticides/herbicides used in garden plots.
- **Expenditures:** As indicated in the chart below, 64% of total monthly expenditure for the households in the Zone 2 sample was for food. Within food expenditure, 32% goes for bread/wheat flour, followed by 9.3% for oils/fats and 8.4% for potatoes/maize. The highest non-food expenditure category is for clothing/shoes (12%), followed by transport (6.5%), medical (4.5%), and household items (4.3%).



- **Covariate shocks:** A high percentage of the households (78%) the households in this zone had experienced at least one covariate shock or event. The most often reported shock was damaging frosts (52% - the highest of all zones), followed by unusually high levels of crop pests/disease (45%), restricted access to markets (39% - highest) and unusually high levels of livestock diseases (26%).

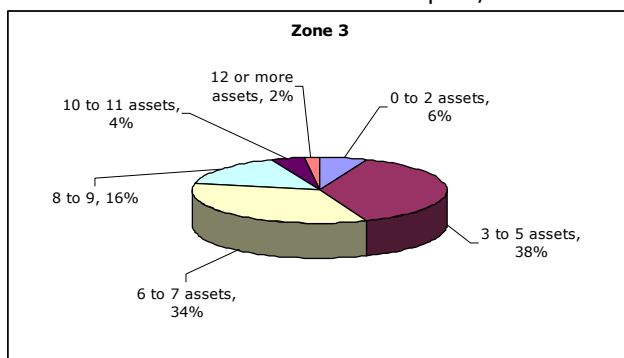
Zone 3 – Lowlands, mainly cultivated or herbaceous

- Districts: Bokhtar, Danghara, Kulob, Hamadoni, Norak, Timurmaliq, Vose, and Yovon
- Sample size: 33 communities and 392 households.
- Households: 89% Tajik, 11% Uzbek.
- Household headship: 17% female headed households with an average age of 45 years – the youngest of all zones. Only 74% of female heads are widowed, also the lowest of all zones. Average age of male headed households was 46 years. Just over 20% of sample households are headed by elderly (60+ years) – the lowest of all zones.
- Household size & composition: Average household size is 7.6 persons with 45% of sample households having 8 or more members. On average over 45% of household members were dependents (< 15 years or > 59 years). Twenty percent of the households had a male pensioner, 25% had a female pensioner and 11% had both.
- Literacy: Almost all heads of household were literate with an average of 10.0 years of schooling. For the spouse, 95% were literate, with an average of 9.2 years of schooling.
- Disabled members: In the sample, 23% of the households had a member who was disabled (one of the highest) and 12% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 61% had at least one boy and 57% had at least one girl (highest of all zones) aged 6-14 years enrolled in school. For those enrolled children, 25% of boys and 22% of girls had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-four percent of the households owned their dwelling but only 78% were living in a single-family house – the lowest of all zones. In addition, 14% of the sample households were reportedly living in a shack or temporary dwelling. More than half of the households paid cash to live in their homes while the rest paid nothing. Over 15% of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: Only 13% of the houses were considered to be in 'good' condition, the lowest of all zones. More than 40% were classified as 'temporary' or 'incomplete' shelters. Most of the houses had walls made of unfired bricks while 62% had a roof of asbestos sheeting and 17% had a roof made of wooden beams and mud. More than 80% have a floor made of earth or mud while nearly 60% of the floors were covered with moquette and the rest had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: Nearly all houses had a connection to electricity and 86% were reliant on electricity as the main source of lighting - the rest used kerosene lamps. For cooking, nearly 60% used firewood while another 20% used animal manure and 10% each relied on electricity or brushwood. Nearly 80% used stoves for heating while the rest use firewood.
- Drinking water and bathing facility: More than half the sample households used drinking water from an improved source. Over 30% got their drinking water from a pond, river or stream, 27% from public tap and 18% from a well with a pump. The source of drinking water was located on the housing premises for only 18% of the households while three-quarters of the households could reach their water source in less than one-half hour. However, for 10% of the households, the source of drinking water was at least a half day away. More than half of the households had access to a private bathing facility.
- Access to and use of credit: More than half of the households had no access to credit, while 44% could access credit from friends or relatives. Over 40% ever purchase food on credit and of those households most rely on this source only 'sometimes' or 'rarely'.



Part IV – Household survey results by homogeneous district clusters

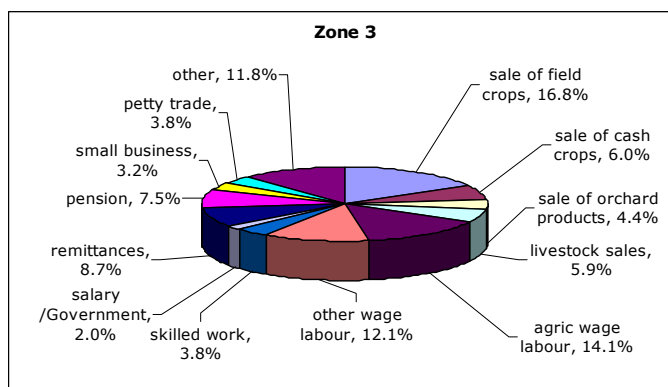
- **Animal ownership:** More than 60% of the households owned cattle with an average of 2 animals per owning household. Just less than 20% of the households owned oxen or yaks (1 animal on average), 5% owned horses but 38% owned donkeys. Only 28% of the households owned goats, with an average of 3 animals per owning household while just 17% owned sheep (2 on average) – among the lowest of the zones. More than 60% owned poultry (5 birds on average).
- **Household asset ownership:** Nearly 90% of the households owned a quilt but with only 14% owning a bed – the lowest of all zones. Only 10% owned a table and/or chairs, also the lowest of all zones. Carpets/kilims were owned by 59% of the households



while 54% owned a lantern and 66% owned a stove – the highest of all zones. For productive assets, 14% owned farming equipment, 62% with basic carpentry tools, 30% with a sewing machine and 15% with a trailer or cart (highest). Fewer households owned transportation assets such as a bicycle (7%) or motor bike (1% - lowest). Assets related

to communication included radio (28% - lowest), television (59%) and VCR/DVD (4% - low). On average, of the total number of assets owned by a household, 20% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households tend to have fewer assets than the other sampled zones.

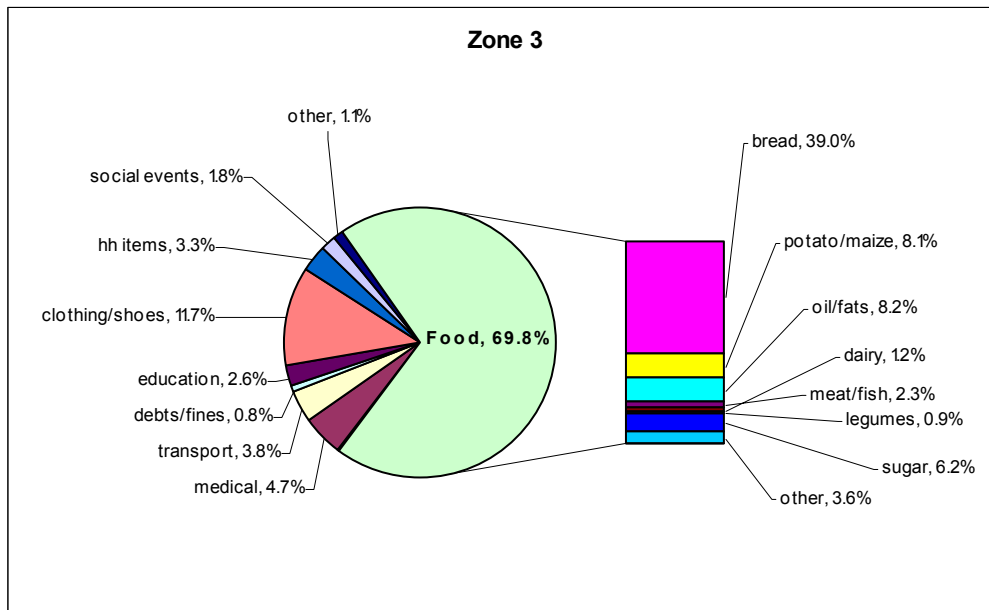
- **Household income:** For the Zone 3 sample, the most often named sources of income were sales of field crops (33%), agricultural wage labour (29%), other wage labour (28%), pension (27%) and remittances (25%). As indicated in the chart below, sales of field crops contributed nearly 17% of the total income for these households while income from agricultural wage labour activities contributed 14.1%, other wage labour gave 12.1% of total income. However, remittances only contributed about 8.7% to total income for these households and pension only gave 7.5% of total income.



- **Land access and garden plots:** Nearly 95% percent of the households had access to land, with 90% having a garden plot with an average size of 0.1 hectares. Nearly 80% of the households owned some of their land outright while another 21% had been given some garden plot land by the State. The main crops cultivated in garden plots were potatoes (63%), vegetables (61%), maize (25%), and wheat (23%). The main sources of water for these garden plots are from irrigation (52%) and rain (30%).
- **Presidential land:** Forty-five percent of the households had access to Presidential land which was given by the State. The main sources of water are from irrigation (45%), rain (42%) and pump (13%). Households grow wheat (85%) and maize (34%) and some also are growing vegetables (13%) and potatoes (12%).
- **Individual dekhan land:** Only 10% of the households have access to individual dekhan land. Most households rely on rain as water for these farms. Most households are growing wheat (90%).
- **Collective dekhan land:** Only 10% of these households had access to collective dekhan farms – among the lowest in the sample. The average size of the farm is 15 hectares, irrigated by rivers/canals or rain. Of these few farmers, some are producing wheat (48%), cotton (38%) or potatoes (25%) on collective lands.
- **Main sources of traction and seeds:** The main source of traction among these farming households is human (48%) – among the highest of all zones, while 35% of the

households use a tractor. Most of the seeds for field crops and garden plots come from purchase or own stock.

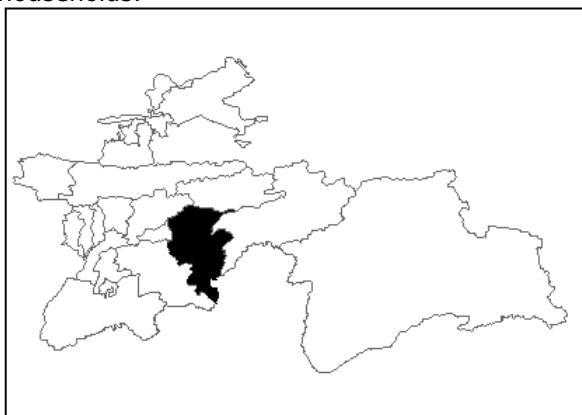
- **Fertilizer use and sources:** Only 13% of the households were using fertilizer for field crops, while 26% were using fertilizer in their garden plots and 15% used it on both types of systems. More than 90% of the households relied on purchase for any kind of fertilizer.
- **Use of pesticides/herbicides:** Use of these chemicals was less than 5% for both field crops and garden plots – among the lowest of all zones. For the few farmers who used them, most acquired these chemicals through purchase.
- **Expenditures:** As indicated in the chart below, 70% of total monthly expenditure for the households in the Zone 3 sample was for food. Within food expenditure, 39% goes for bread/wheat flour, followed by 8.2% for oils/fats and 8.1% for potatoes/maize. The highest non-food expenditure category is for clothing/shoes (11.7%), followed by medical (4.7%), transport (3.8%), and household items (3.3%).



- **Covariate shocks:** A high percentage of the households (80%) in this zone had experienced at least one covariate shock or event. The most often reported shock was sudden price fluctuations (68% - the highest of all zones), followed by drought/irregular rains (47% - high), unusually high levels of human disease (33% - highest) and unusually high levels of livestock diseases (28%).

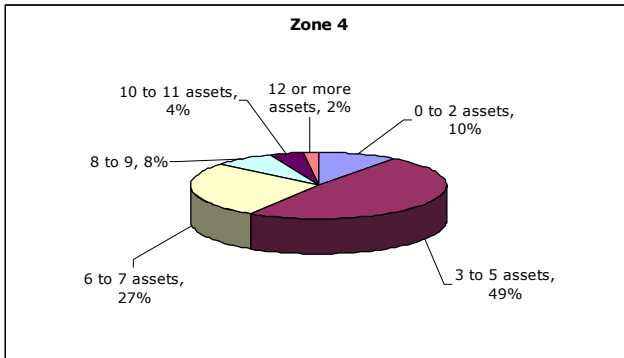
Zone 4 – Mixed elevation cultivated or herbaceous lowlands

- Districts: Baljuvon, Khovaling, Miminobod, Shurobod, Nurobod, and Roghun
- Sample size: 33 communities and 400 households.
- Households: 95% Tajik, 5% Uzbek.
- Household headship: 18% female headed households – one of the highest of all zones - with an average age of 50 years. More than 80% of female heads are widowed. Average age of male headed households was 48 years. One-quarter of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.8 persons with 45% of sample households having 8 or more members. On average 47% of household members were dependents (< 15 years or > 59 years). Twenty-one percent of the households had a male pensioner, 26% had a female pensioner and 12% had both.
- Literacy: Almost all heads of household were literate with an average of 10.3 years of schooling – one of the highest of all zones. For the spouse, 92% were literate, with an average of 9.4 years of schooling.
- Disabled members: In the sample, 23% of the households had a member who was disabled (one of the highest) and 11% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 63% had at least one boy and 52% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 39% of boys and 28% of girls had been absent for one week or more in the past month – among the highest of all zones. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Almost all of the households owned their dwelling and 94% were living in a single-family house. Only 10% of the households paid cash to live in their homes while the rest paid nothing. Over 15% of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: One quarter of the houses were considered to be in 'good' condition. Nearly 40% were classified as 'temporary' or 'incomplete' shelters. Most of the houses had walls made of unfired bricks while 73% had a roof of asbestos sheeting and 13% had a roof made of wooden beams and mud. More than 90% have a floor made of earth or mud (highest) while 43% of the floors were covered with moquette and 53% had a cover of woollen felt – the highest of all zones.
- Electricity, lighting, cooking fuel & heating: Only 87% houses had a connection to electricity – the lowest of all zones. Eighty percent were reliant on electricity as the main source of lighting while the rest used kerosene lamps. For cooking, 60% used firewood while another 15% each used animal manure or brushwood. Over 70% used stoves for heating while the rest use firewood.
- Drinking water and bathing facility: Just less than half the sample households used drinking water from an improved source. Nearly half got their drinking water from a pond, river or stream, 22% from public tap and 21% from a well with a pump. The source of drinking water was located on the housing premises for one-quarter of the households while the rest could reach their water source in less than one-half hour. Nearly 70% of the households had access to a private bathing facility.
- Access to and use of credit: Sixty-five percent of the households had no access to credit (high) while 34% could access credit from friends or relatives. Nearly half ever purchase food on credit and of those households 80% rely on this source only 'sometimes' or 'rarely'.
- Animal ownership: Nearly 80% of the households owned cattle with an average of 2 animals per owning household. Just less than 30% of the households owned oxen or yaks (1 animal on average), 14% owned horses (highest) and 61% owned donkeys (highest). Nearly 60% of the households owned goats, with an average of 3-4 animals



per owning household while 38% owned sheep (3 on average). Sixty-five percent owned poultry (6 birds on average).

- **Household asset ownership:** Over 90% of the households owned a quilt but with only 13% owning a bed – the lowest of all zones. Only 11% owned a table and/or chairs, also the lowest of all zones. Carpets/kilims were owned by 47% of the households (low) while 43% owned a lantern (lowest) and 43% owned a stove (low). For

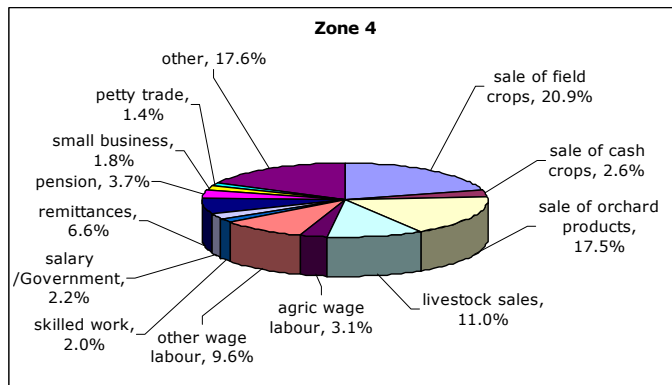


productive assets, 13% owned farming equipment (low), 50% with basic carpentry tools (lowest), 29% with a sewing machine and 3% with a trailer or cart (lowest). Fewer households owned transportation assets such as a bicycle (3% - lowest) or motor bike (< 1% - lowest). Assets related to communication included radio (38%), television (56%) and

VCR/DVD (3% - lowest). On average, of the total number of assets owned by a household, 17% (lowest of all zones) were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have the fewest number and diversity of assets than the other sampled zones.

- **Household income:** For the Zone 4 sample, the most often named sources of income were sales of orchard products (43%), sales of field crops (37%), livestock sales (29%) and other wage labour (28%). Pension and remittances were named only by 15% and

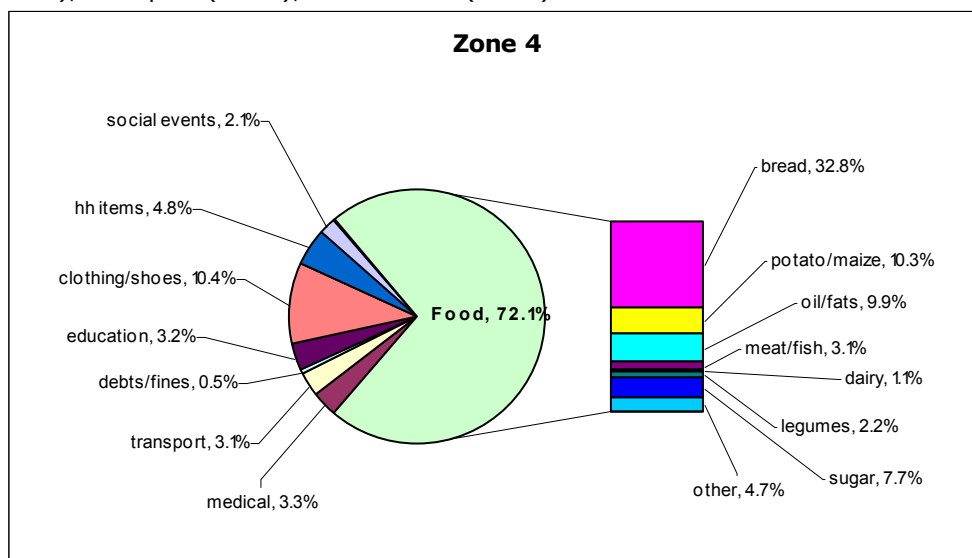
16% of the households respectively. As indicated in the chart on the right, sales of field crops contributed nearly 21% of the total income for these households while income from sale of orchard products and 'other' activities contributed to more than 17% each. Livestock sales gave 11.0% and other wage labour gave 9.6% of total income. However, pension only contributed about 3.7% to total income for these households and remittances only gave 6.6% of total income.



- **Land access and garden plots:** More than 95% of the households had access to land, with 88% having a garden plot with an average size of 0.1 hectares. Only 37% of the households owned some of their land outright while another 49% had been given some garden plot land by the State. The main crops cultivated in garden plots were fruit/nut trees (69%), vegetables (61%), potatoes (47%), and wheat (14%). The main sources of water for these garden plots are from rain (44% - highest) and irrigation (39%).
- **Presidential land:** Forty-three percent of the households had access to Presidential land which was given by the State. The main sources of water are from rain (90%) and irrigation (8%). Households grow mostly wheat (90%) and maize (34%).
- **Individual dekhan land:** Only 6% of the households have access to individual dekhan land. Nearly 70% of these households rely on rain for these farms with the rest using irrigation or springs. Most households are growing wheat (65%) or potatoes (22%).
- **Collective dekhan land:** Nearly 40% of these households had access to collective dekhan farms – among the highest in the sample. The average size of the farm is 10 hectares, irrigated mostly by rain. Of these farmers, the majority are producing wheat on collective lands.
- **Main sources of traction and seeds:** The main source of traction among these farming households is animal (52%), while 26% of the households use human traction and the rest use a tractor. Almost all of the seeds for field crops and garden plots come from purchase or own stock.

Part IV – Household survey results by homogeneous district clusters

- **Fertilizer use and sources:** Only 4% of the households were using fertilizer for field crops (lowest), while 19% were using fertilizer in their garden plots (very low) and 15% used it on both types of systems. More than 95% of the households relied on purchase for fertilizer for any kind of agriculture.
- **Use of pesticides/herbicides:** Use of these chemicals was less than 2% for both field crops and garden plots – among the lowest of all zones - with 6% of households using them for both types of cultivation. For the few farmers who used them, most acquired these chemicals through purchase with a few receiving from NGOs or Government.
- **Expenditures:** As indicated in the chart below, 72% of total monthly expenditure for the households in the Zone 4 sample was for food – among the highest of all zones. Within food expenditure, 32.8% goes for bread/wheat flour, followed by 10.3% for potatoes/maize and 9.9% for oils/fats and 7.7% for sugar. The highest non-food expenditure category is for clothing/shoes (10.4%), followed by household items (4.8%), transport (3.1%), and medical (3.3%).



- **Covariate shocks:** More than 70% of the households in this zone had experienced at least one covariate shock or event. The most often reported shock was sudden price fluctuations (45%), followed by unusually high level of crop pests and diseases (35%), unusually high levels of livestock disease (31%) and drought/irregular rains (27%).

Zone 5 – Shrub or herbaceous lowlands and some bare areas

- Districts: Asht, Ghafurov, Isfara, and Konibodom

- Sample size: 33 communities and 401 households.

- Households: 36% Tajik, 61% Uzbek and 3% Kyrgyz.

- Household headship: 13% female headed households – one of the lowest of all zones - with an average age of 52 years. Ninety percent of female heads are widowed. Average age of male headed households was 48 years. Nearly one-quarter of sample households are headed by elderly (60+ years).

- Household size & composition:

Average household size is 7.5 persons with 42% of sample households having 8 or more members. On average 47% of household members were dependents (< 15 years or > 59 years). Twenty-three percent of the households had a male pensioner, 27% had a female pensioner and 13% had both.

- Literacy: Almost all heads of household were literate with an average of 10.2 years of schooling – one of the highest of all zones. For the spouse, 96% were literate, with an average of 9.0 years of schooling – the lowest of all zones.

- Disabled members: In the sample, 16% of the households had a member who was disabled (one of the lowest) and 8% had a disabled head of the household.

- Primary school children enrolment and absenteeism: For the sample households, 56% had at least one boy and 52% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 17% of boys and 16% of girls had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.

- Housing type and ownership: Almost all of the households owned their dwelling but only 76% (lowest) were living in a single-family house with the rest living in part of a house. Nearly 60% of the households paid cash to live in their homes while the rest paid nothing. Only 7% of the households were very crowded with 4 or more persons per room – among the lowest of all zones.

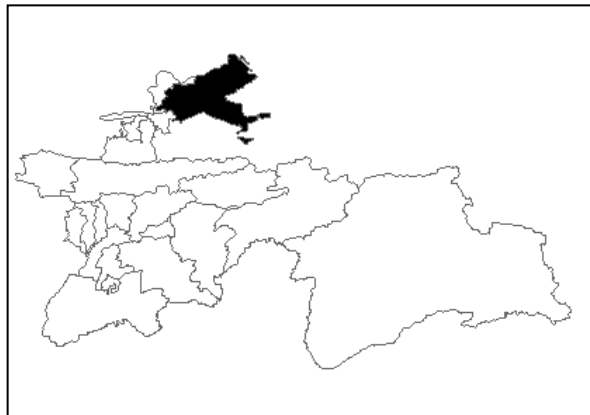
- Housing conditions & construction materials: More than 30% of the houses were considered to be in 'good' condition. Less than 20% were classified as 'temporary' or 'incomplete' shelters. Most of the houses had walls made of unfired bricks while half had a roof of asbestos sheeting and 37% had a roof made of wooden beams and mud. More than 60% have a floor made of earth or mud while 63% of the floors were covered with moquette and the rest had a cover of woollen felt.

- Electricity, lighting, cooking fuel & heating: All the houses had a connection to electricity – the highest of all zones. Consequently, more than 90% were reliant on electricity as the main source of lighting. For cooking, nearly 60% used firewood while 13% used electricity and 10% relied on brushwood. Over 30% used stoves for heating while the rest use firewood or electricity.

- Drinking water and bathing facility: Nearly 70% of the sample households used drinking water from an improved source – the highest of all zones. More than 40% got their drinking water from a well with a pump, 20% from public tap and only 17% from a pond, river or stream. The source of drinking water was located on the housing premises for only 8% of the households while three-quarters could reach their water source in less than one-half hour. Only 15% of the households had access to a private bathing facility.

- Access to and use of credit: Thirty-six percent of the households had no access to credit (low) while 62% could access credit from friends or relatives. Only 21% ever purchase food on credit and of those households all rely on this source only 'sometimes' or 'rarely'.

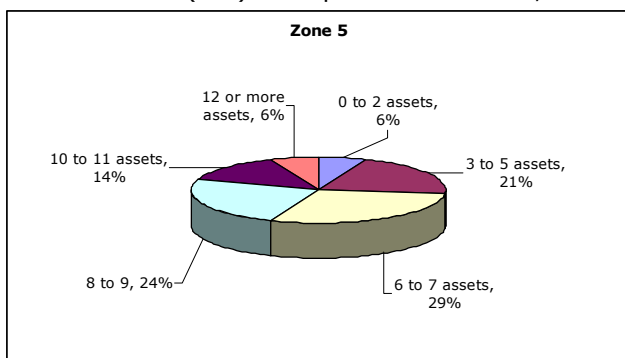
- Animal ownership: Over 60% of the households owned cattle with an average of 2 animals per owning household. Twenty percent of the households owned oxen or yaks (1 animal on average), only 2% owned horses (lowest) and 27% owned donkeys. Over 20% of the households owned goats, with an average of 4 animals per owning



Part IV – Household survey results by homogeneous district clusters

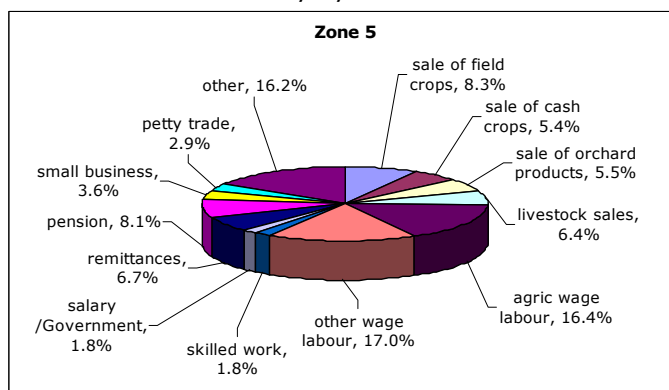
household while 27% owned sheep (3 on average) and half the households owned poultry (5 birds on average).

- **Household asset ownership:** Over 75% of the households owned a quilt (lowest) but with only 30% owning a bed. Around 40% owned a table and/or chairs. Carpets/kilims were owned by 46% of the households (low) while 44% owned a lantern and 39% owned a stove (low). For productive assets, 24% owned farming equipment, 88% with basic carpentry tools, 48% with a sewing machine and 5% with a trailer or cart (low). More households in this zone owned transportation assets such as a bicycle (33% - highest) or motor bike (5% - highest). Assets related to communication included radio (40%), television (77% - high) and VCR/DVD (5%). On average, of the total number of assets owned by a



household, 28% (highest of all zones) were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have an average number and diversity of assets than the other sampled zones.

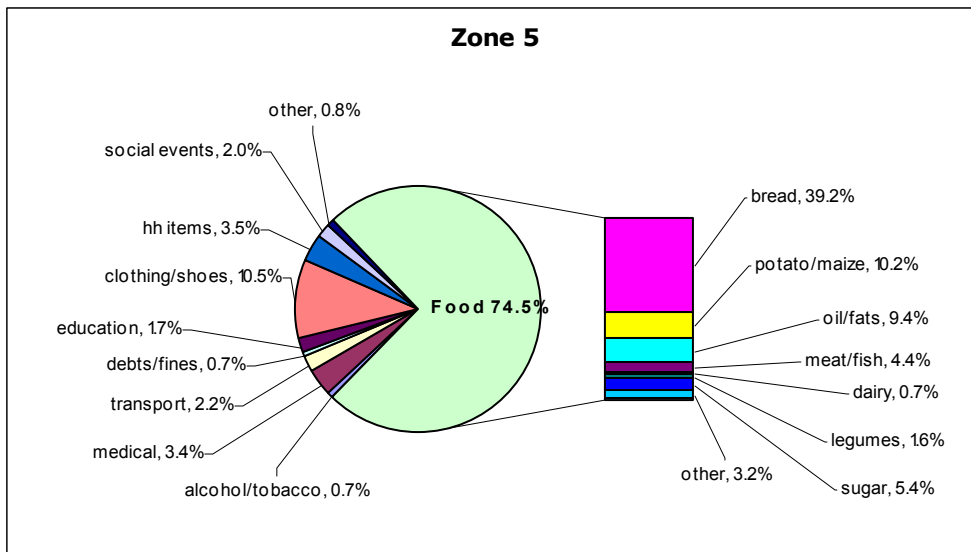
- **Household income:** For the Zone 5 sample, the most often named sources of income were other wage labour (40%), agricultural wage labour (32%), pension (22%) and salary/Government job (17%). Pension was named only by 14% of the households. As indicated in the chart on the right, other wage labour contributed 17% of the total income for these households while income from agricultural wage labour and 'other' activities contributed to more than 16% each, sales of field crops gave 8.3% and pension gave 6.7% of total income. However, remittances only contributed about 6.7% to total income for these households.



- **Land access and garden plots:** Around 90% of the households had access to land, with 86% having a garden plot with an average size of 0.06 hectares. Only 42% of the households owned some of their land outright while another 50% had been given some garden plot land by the State and 21% had inherited garden plot land. The main crops cultivated in garden plots were fruit/nut trees (62%), vegetables (46%), potatoes (22%), grapes (21%) and wheat (21%). The main sources of water for these garden plots are from irrigation (58%) and rain (19%).
- **Presidential land:** Forty-one percent of the households had access to Presidential land which was given by the State. However, 21% of the households accessed Presidential land through renting or sharecropping. The main sources of water are from irrigation (75%) and rainfall (14%). Households grow mostly wheat (59%), maize (39%), vegetables (17%) and potatoes (14%).
- **Individual dekhan land:** Only 5% of the households have access to individual dekhan land. Nearly 60% of those households rely on irrigation as water for these farms with the rest using rain water or springs. Most households are growing wheat (47%), potatoes (33%), vegetables (27%) or cotton (13%).
- **Collective dekhan land:** Just twelve percent of these households had access to collective dekhan farms. The average size of the farm is only 4 hectares, irrigated mostly by rivers or canals. Of these farmers, most are producing cotton (67%) or wheat (25%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are tractor (46%) and human (46%). Most of the seeds for field crops are

from purchase/own stock, with 14% of households receiving seed from the Government. All seeds used in garden plots come from purchase or own stock.

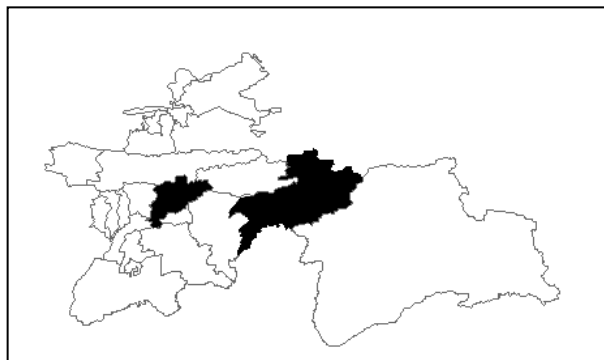
- **Fertilizer use and sources:** Only 7% of the households were using fertilizer for field crops, while 38% were using fertilizer in their garden plots (high) and 15% used it on both types of systems. Most of the households relied on purchase for fertilizer for any kind of agriculture but 9% received fertilizer for field crops from the Government.
- **Use of pesticides/herbicides:** Use of these chemicals was 3% for field crops but 22% of the households used them for their garden plots –the highest of all zones. Only 4% of households used them for both types of cultivation. For the few farmers who used them, most acquired these chemicals through purchase with a few receiving from NGOs or Government.
- **Expenditures:** As indicated in the chart below, 74.5% of total monthly expenditure for the households in the Zone 5 sample was for food –the highest of all zones. Within food expenditure, 39.2% goes for bread/wheat flour, followed by 10.2% for potatoes/maize and 9.4% for oils/fats, 5.4% for sugar and 4.4% for meat/fish. The highest non-food expenditure category is for clothing/shoes (10.5%), followed by household items (3.5%), medical (3.4%), and transport (2.2%).



- **Covariate shocks:** Only 28% of the households in this zone had experienced at least one covariate shock or event. For these households, the most often reported shock was sudden price fluctuations (37%), followed by floods (30% - high), unusually high levels of crop pests and diseases (24%), drought/irregular rains (24%), and high winds/storms (23%).

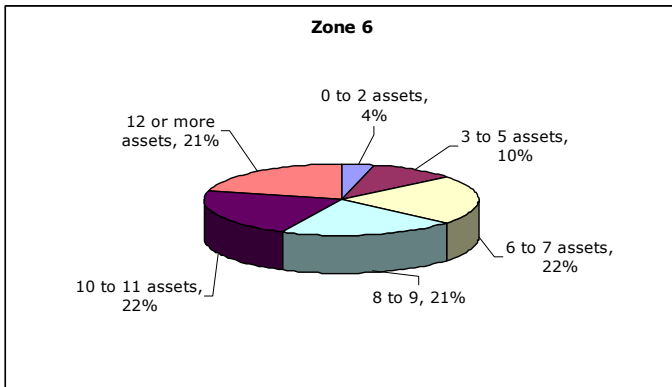
Zone 6 – Cultivated and herbaceous highlands, with wetlands and bare areas

- Districts: Darvoz, Jirgatal, Vahdat, and Tavildara
- Sample size: 33 communities and 395 households.
- Households: 93% Tajik, 4% Uzbek and 3% Kyrgyz.
- Household headship: 19% female headed households – the highest of all zones - with an average age of 47 years. Only 77% of female heads are widowed – one of the lowest of all zones. Average age of male headed households was 48 years. Over 20% of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.5 persons with 42% of sample households having 8 or more members. On average 45% of household members were dependents (< 15 years or > 59 years). Twenty percent of the households had a male pensioner, 19% had a female pensioner (lowest) and 11% had both.
- Literacy: Almost all heads of household were literate with an average of 9.9 years of schooling. For the spouse, 92% were literate, with an average of 9.2 years of schooling.
- Disabled members: In the sample, 15% of the households had a member who was disabled and 6% had a disabled head of the household – the lowest of all zones.
- Primary school children enrolment and absenteeism: For the sample households, 52% had at least one boy (lowest) and 55% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 12% of boys and 28% of girls (high) had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Almost all of the households owned their dwelling and 94% were living in a single-family house. Only 11% of the households paid cash to live in their homes while the rest paid nothing. Thirteen percent of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: Sixty percent of the houses were considered to be in 'good' condition – among the highest of all zones. Just over 10% were classified as 'temporary' or 'incomplete' shelters. Eighty percent of the houses had walls made of unfired bricks while 15% had stone walls. Most had a roof of asbestos sheeting with only 7% having a roof made of wooden beams and mud. Nearly 80% have a floor made of earth or mud while 78% of the floors were covered with moquette and 14% had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: Nearly all the houses had a connection to electricity but only 78% were reliant on electricity as the main source of lighting – the rest used a kerosene lamp. For cooking, 77% used firewood while 9% used animal manure and 5-6% relied on brushwood or electricity. Over half used stoves for heating while the rest use firewood or electricity.
- Drinking water and bathing facility: Only 29% of the sample households used drinking water from an improved source – one of the lowest of all zones. Half of the households got their drinking water from a pond, river or stream, 18% from public tap and only 8% was piped. The source of drinking water was located on the housing premises for only one-quarter of the households while most of the rest could reach their water source in less than one-half hour. Nearly 70% of the households had access to a private bathing facility.
- Access to and use of credit: Thirty-three percent of the households had no access to credit (lowest) while half could access credit from friends or relatives and 22% from a charity or NGO. Over 40% ever purchase food on credit and of those households, one-quarter stated they 'always' rely on credit for food purchases.
- Animal ownership: Nearly 70% of the households owned cattle with an average of 2 animals per owning household. Nearly 40% of the households owned oxen or yaks (2 animals on average), 8% owned horses and 35% owned donkeys. Nearly 60% (high) of the households owned goats, with an average of 5 animals per owning household



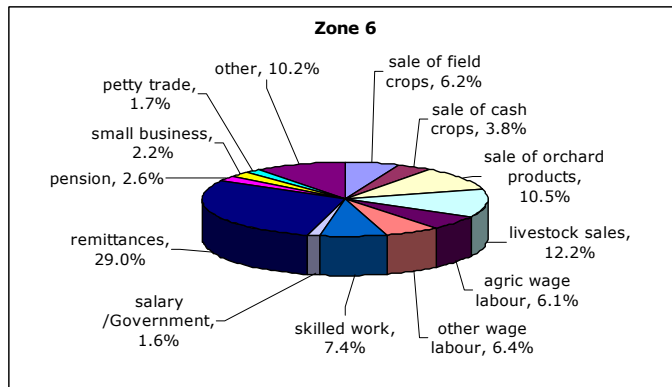
while 34% owned sheep (4 on average) and 65% of the households owned poultry (6 birds on average).

- **Household asset ownership:** Eighty-five percent of the households owned a quilt with 37% owning a bed. More than 35% owned a table and/or chairs. Carpets/kilims were owned by 75% of the households (highest) while 76% owned a lantern (high) and 65% owned a stove (high). For productive assets, 45% owned farming equipment (high), 92% (very high) with basic carpentry tools, 61% with a sewing machine (highest) and 13% with a trailer or cart (high). Fewer households owned transportation assets such as a bicycle (15%) or motor bike (2%). Assets related to communication included



radio (61% - highest), television (72%) and VCR/DVD (21% - highest). On average, of the total number of assets owned by a household, 26% (high) were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have the best asset ownership in terms of number and diversity of assets than the other sampled zones.

- **Household income:** For the Zone 6 sample, the most often named sources of income were remittances (43%), sales of orchard products (29%), livestock sales (25%), agricultural wage labour (24%) and other wage labour (21%). Pension was named only by 14% of the households. As indicated in the chart on the right, remittances contributed 29% of the total income for these households while income from livestock sales gave 12.2%, and sales of orchard products gave 10.5% to the household income. 'Other' activities contributed to more than 10%, skilled work 7.4% while pension gave only 2.6% of total income.

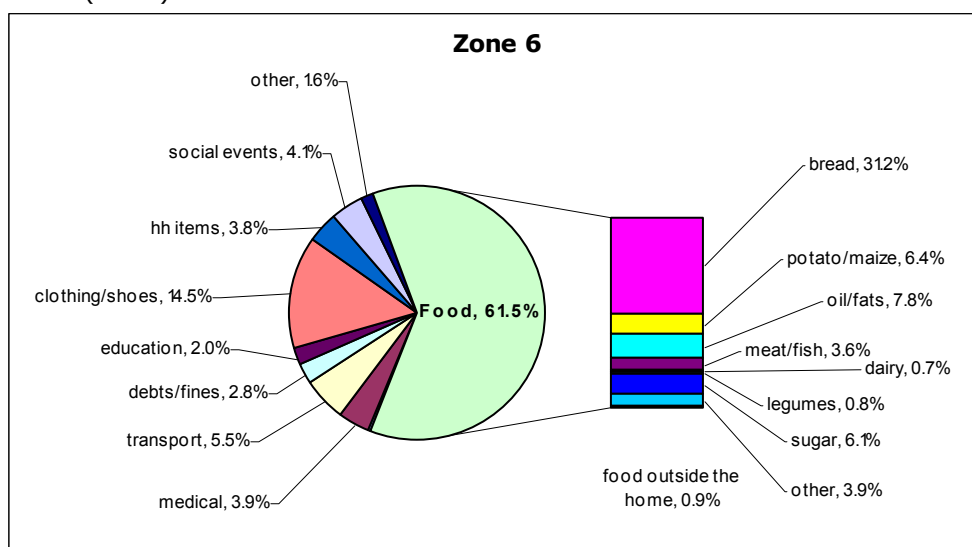


- **Land access and garden plots:** Almost all of the households had access to land, with 92% having a garden plot with an average size of 0.06 hectares. More than 60% of the households owned some of their land outright while another 21% had been given some garden plot land by the State and 20% had inherited garden plot land. The main crops cultivated in garden plots were potatoes (68%), vegetables (63%), fruit/nut trees (61%) and wheat (21%). The main sources of water for these garden plots are from irrigation (49%) and springs (17%).
- **Presidential land:** Nearly 30% of the households had access to Presidential land which was given by the State. The main sources of water are from irrigation (39%) and rainfall (26%). Households grow mostly wheat (56%), vegetables (27%), potatoes (27%) and maize (14%).
- **Individual dekhan land:** Nearly 20% of the households have access to individual dekhan land. More than half of those households rely on irrigation as water for these farms with the rest using rain water or springs. Most households are growing wheat (52%), potatoes (46%) or vegetables (38%).
- **Collective dekhan land:** Seventeen percent of these households had access to collective dekhan farms. The average size of the farm is 0.01 hectares, irrigated mostly by rivers/canals or rain. Of these farmers, most are producing wheat (61%), potatoes (31%) or vegetables (11%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are human (42%), animal (30%) and tractor (28% - low). Almost all of the

Part IV – Household survey results by homogeneous district clusters

households get their seeds for field crops and garden plots are from purchase or own stock.

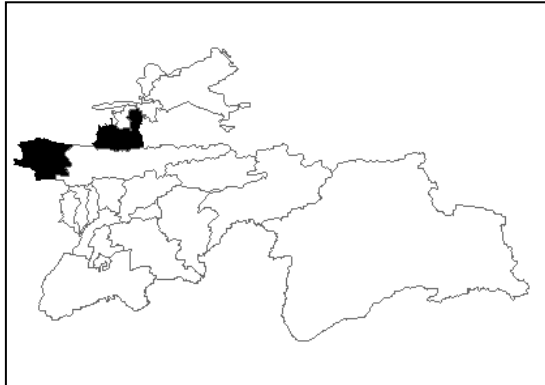
- **Fertilizer use and sources:** Only 11% of the households were using fertilizer for field crops, while 38% were using fertilizer in their garden plots (high) and 20% used it on both types of systems. Most of the households relied on purchase for fertilizer for any kind of agriculture but 7% acquired fertilizer for field crops on credit.
- **Use of pesticides/herbicides:** Use of these chemicals was 8% for field crops, 10% of the households used them for their garden plots and 12% used them for both types of cultivation. For the few farmers who used them, most acquired these chemicals through purchase with a few receiving from NGOs or Government.
- **Expenditures:** As indicated in the chart below, 61.5% of total monthly expenditure for the households in the Zone 6 sample was for food –the lowest of all zones. Within food expenditure, 31.2% goes for bread/wheat flour, followed by 7.8% for oils/fats, 6.4% for potatoes/maize and 6.1% for sugar. The highest non-food expenditure category is for clothing/shoes (14.5%), followed by transport (5.5%), social events (4.1%), and medical (3.9%).



- **Covariate shocks:** More than 60% of the households in this zone had experienced at least one covariate shock or event. For these households, the most often reported shock was unusually high levels of crop pests and diseases (56% - very high), followed by unusually high levels of livestock diseases (37% - high), sudden price fluctuations (31%) and restricted access to markets (29%).

Zone 7 – Mixed elevation, herbaceous and cultivated

- Districts: Ghonchi, Panjakent, and Shahrison
- Sample size: 33 communities and 400 households.
- Households: 33% Tajik, 65% Uzbek and 2% other.

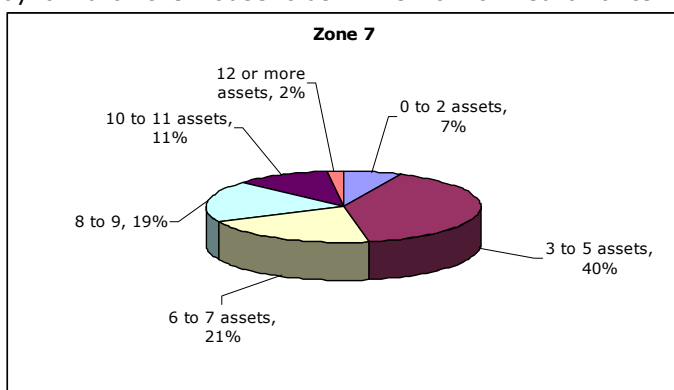


- Household headship: 14% female headed households with an average age of 52 years. Nearly 90% of female heads are widowed – one of the highest of all zones. Average age of male headed households was 48 years. Twenty-seven percent of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.6 persons with 42% of sample households having 8 or more members. On average 44% (low) of household members were dependents (< 15 years or > 59 years). Twenty-three percent of the households had a male pensioner, 27% had a female pensioner (high) and 14% had both.
- Literacy: Ninety-five percent of heads of household were literate (lowest) with an average of 10 years of schooling. For the spouse, 94% were literate, with an average of 9.3 years of schooling.
- Disabled members: In the sample, 23% of the households had a member who was disabled and 12% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 54% had at least one boy and 52% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 3% of boys (lowest) and 10% of girls (lowest) had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Almost all of the households owned their dwelling and 87% were living in a single-family house. One-quarter of the households paid cash to live in their homes while the rest paid nothing. Eight percent of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: One-third of the houses were considered to be in 'good' condition while another third were classified as 'temporary' or 'incomplete' shelters. Eighty-two percent of the houses had walls made of unfired bricks while two-thirds had a roof of asbestos sheeting with 29% having a roof made of wooden beams and mud. Ninety percent have a floor made of earth or mud while half of the floors were covered with moquette and 45% had a cover of woollen felt – one of the highest of all zones.
- Electricity, lighting, cooking fuel & heating: Nearly all the houses had a connection to electricity and 88% were reliant on electricity as the main source of lighting – the rest used a kerosene lamp. For cooking, 67% used firewood while 16% used animal manure and the rest relied on brushwood or electricity. Over half used stoves for heating while the rest use firewood.
- Drinking water and bathing facility: One-third of the sample households used drinking water from an improved source. More than half of the households got their drinking water from a pond, river or stream, 20% from public tap and the rest was piped or from a well with a pump. The source of drinking water was located on the housing premises for only one-third of the households while most of the rest could reach their water source in less than one-half hour. Only one-quarter of the households had access to a private bathing facility.
- Access to and use of credit: More than half of the households had no access to credit while 42% could access credit from friends or relatives. Nearly 40% ever purchase food on credit and of those households nearly all purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: Nearly 70% of the households owned cattle with an average of 1 animal per owning household – the lowest of all zones. Only 16% of the households (lowest) owned oxen or yaks (1 animal on average), 2% owned horses (lowest) but 48% owned donkeys. Nearly 40% of the households owned goats, with an average of

Part IV – Household survey results by homogeneous district clusters

3 animals per owning household while 22% owned sheep (3 on average) and 67% (high) of the households owned poultry (5 birds on average).

- **Household asset ownership:** Nearly 90% of the households owned a quilt with 28% owning a bed. Around 20% owned a table and/or chairs. Carpets/kilims were owned by 62% of the households while half owned a lantern and 56% owned a stove. For

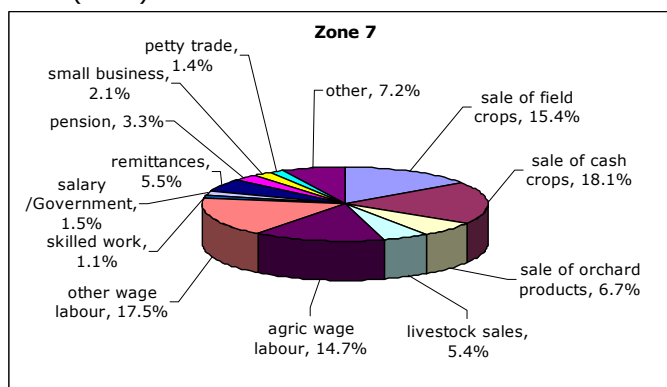


productive assets, only 7% owned farming equipment (lowest), 71% with basic carpentry tools, 35% with a sewing machine and 11% with a trailer or cart. Fewer households owned transportation assets such as a bicycle (5% - low) or motor bike (3%). Assets related to communication included radio (57% - high), television (73%)

and VCR/DVD (5%). On average, of the total number of assets owned by a household, 19% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have average asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

- **Household income:** For the Zone 7 sample, the most often named sources of income were non-agricultural wage labour (47%), sales of cash crops (36%), field crop sales (31%), and agricultural wage labour (28%). Pension and remittances were named only

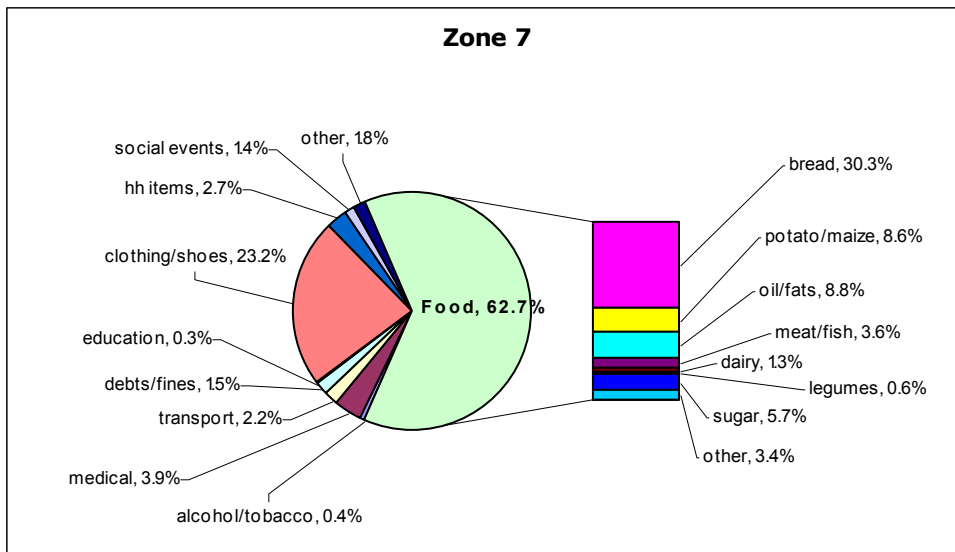
by 14% of the households. As indicated in the chart on the right, cash crop sales contributed to 18.1% of the total income for these households while income from other (non-ag) wage labour gave 17.5%, and sales of field crops gave 15.4% to the household income. Agricultural wage labour contributed to nearly 15%, while remittances contributed 5.5% and pension gave only 3.3% of total income.



- **Land access and garden plots:** Almost all of the households had access to land, with 92% having a garden plot with an average size of 0.06 hectares. More than half of the households owned some of their land outright while another 47% had been given some garden plot land by the State and 20% had inherited garden plot land. The main crops cultivated in garden plots were vegetables (68%), potatoes (67%), fruit/nut trees (29%) maize (20%) and wheat (14%). The main sources of water for these garden plots are from irrigation (59%), rain (20%) and springs (12%).
- **Presidential land:** More than half of the households (very high) had access to Presidential land most which was given by the State. The main sources of water are from irrigation (49%) and rainfall (38%). Households grow mostly wheat (67%), maize (21%), vegetables (18%), rice (17%) and barley (15%).
- **Individual dekhan land:** Sixteen percent of the households have access to individual dekhan land. More than 60% of those households rely on irrigation as water for these farms with the rest using rain water or springs. Most households are growing wheat (68%), potatoes (27%) or vegetables (24%).
- **Collective dekhan land:** More than one-third of these households had access to collective dekhan farms. The average size of the farm is 11 hectares, irrigated mostly by rivers/canals or rain. Of these farmers, most are producing wheat (62%), vegetables (18%) or potatoes (12%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are tractor (53% - high), human (37%) and animal (10% - low). Almost all

of the households get their seeds for field crops and garden plots are from purchase or own stock.

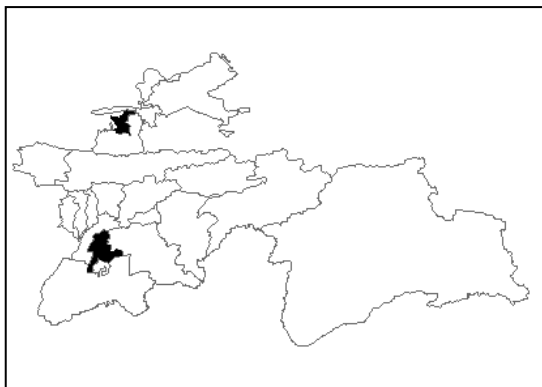
- **Fertilizer use and sources:** Only 12% of the households were using fertilizer for field crops, while 33% were using fertilizer in their garden plots and 33% (high) used it on both types of systems. Most of the households relied on purchase for fertilizer for any kind of agriculture system.
- **Use of pesticides/herbicides:** Use of these chemicals was 11% for field crops, 21% (highest) of the households used them for their garden plots and 20% (high) used them for both types of cultivation. For the few farmers who used them, most acquired these chemicals through purchase.
- **Expenditures:** As indicated in the chart below, 62.7% of total monthly expenditure for the households in the Zone 7 sample was for food – one of the lowest of all zones. Within food expenditure, 30.3% goes for bread/wheat flour, followed by 8.8% for oils/fats, 8.6% for potatoes/maize and 5.7% for sugar. The highest non-food expenditure category is for clothing/shoes (23.2% - very high), followed by medical (3.9%), household items (2.7%) and transport (2.2%).



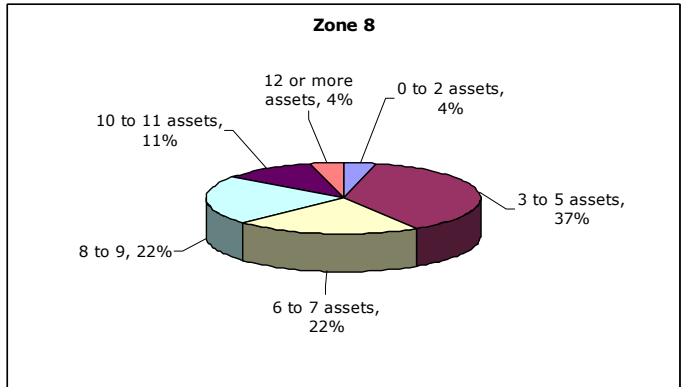
- **Covariate shocks:** More than 60% of the households in this zone had experienced at least one covariate shock or event. For these households, the most often reported shock was drought or irregular rains (60% - highest), followed by sudden price fluctuations (35%), unusually high levels of crop pests and disease (30%), damaging frosts (23%) and unusually high levels of human disease (22%).

Zone 8 – Herbaceous lowlands with cultivation

- Districts: Istaravshan, Khuroson, and A. Jomi
- Sample size: 33 communities and 388 households.
- Households: 77% Tajik and 23% Uzbek.
- Household headship: 15% female headed households with an average age of 48 years. Nearly 80% of female heads are widowed. Average age of male headed households was 48 years. Twenty-six percent of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.3 persons (lowest) with 41% of sample households having 8 or more members (lowest). On average 45% of household members were dependents (< 15 years or > 59 years). Twenty-four percent of the households had a male pensioner, 27% had a female pensioner (high) and 13% had both.
- Literacy: Ninety-seven percent of heads of household were literate with an average of 9.9 years of schooling. For the spouse, 92% were literate, with an average of 9.2 years of schooling.
- Disabled members: In the sample, 24% of the households had a member who was disabled (highest) and 13% had a disabled head of the household – also the highest of all zones.
- Primary school children enrolment and absenteeism: For the sample households, 59% had at least one boy and 49% (low) had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 24% of boys and 23% of girls had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Almost all of the households owned their dwelling and 87% were living in a single-family house. Over 40% of the households paid cash to live in their homes while the rest paid nothing. Twelve percent of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: Only 23% of the houses were considered to be in 'good' condition while one-third were classified as 'temporary' or 'incomplete' shelters. Eighty-seven percent of the houses had walls made of unfired bricks while nearly three-quarters had a roof of asbestos sheeting with 12% having a roof made of wooden beams and mud. Over 80% have a floor made of earth or mud while half of the floors were covered with moquette and 40% had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: All the houses had a connection to electricity but only 55% were reliant on electricity as the main source of lighting – the rest used a kerosene lamp or other sources. For cooking, 51% used firewood while 25% used brushwood and the rest relied on animal manure or electricity. Over 80% (highest) used stoves for heating while the rest use firewood.
- Drinking water and bathing facility: More than half of the sample households used drinking water from an improved source. However, nearly 40% of the households got their drinking water from a pond, river or stream, 32% from public tap and the rest was piped or from a well with a pump. The source of drinking water was located on the housing premises for only 29% of the households while most of the rest could reach their water source in less than two hours. Only one-third of the households had access to a private bathing facility.
- Access to and use of credit: Nearly 40% of the households had no access to credit while 59% could access credit from friends or relatives. Nearly 50% ever purchase food on credit and of those households three-quarters purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: Only 60% of the households owned cattle (lowest) with an average of 2 animals per owning household. Over 30% of the households owned oxen or yaks (1 animal on average), 5% owned horses but 46% owned donkeys. Over 30% of the households owned goats, with an average of 3 animals per owning household while 30% owned sheep (3 on average) and 63% of the households owned poultry (5 birds on average).



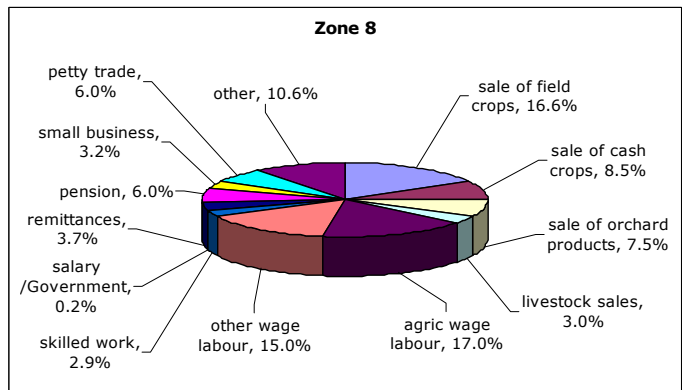
- **Household asset ownership:** Nearly 90% of the households owned a quilt with only 20% owning a bed. Around 15% owned a table and/or chairs (low). Carpets/kilims were owned by 62% of the households while 42% (lowest) owned a lantern and 55% owned a stove. For productive assets, 36% owned farming equipment, 84% with basic carpentry tools, 20% with a sewing machine (lowest) and 14% with a trailer or cart (high). Fewer households owned transportation assets such as a bicycle (8%) or motor bike (3%). Assets related to communication included radio (39%), television (60%) and VCR/DVD (5%). On average, of the total number of assets owned by a household, 26% (high) were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have average asset ownership in terms of number and diversity of assets when compared to the other sampled zones.



Around 15% owned a table and/or chairs (low). Carpets/kilims were owned by 62% of the households while 42% (lowest) owned a lantern and 55% owned a stove. For productive assets, 36% owned farming equipment, 84% with basic carpentry tools, 20% with a sewing machine (lowest) and 14% with a trailer or cart (high). Fewer households owned transportation assets such as a bicycle (8%) or motor bike (3%). Assets related to communication included radio (39%), television (60%) and VCR/DVD (5%). On average, of the total number of assets owned by a household, 26% (high) were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have average asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

Fewer households owned transportation assets such as a bicycle (8%) or motor bike (3%). Assets related to communication included radio (39%), television (60%) and VCR/DVD (5%). On average, of the total number of assets owned by a household, 26% (high) were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have average asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

- **Household income:** For the Zone 8 sample, the most often named sources of income were agricultural wage labour (41%), sales of field crops (35%), other wage labour (32%), sales of cash crops (25%), pension (25%) and sales of orchard products (22%). Remittances were named only by 13% of the households. As indicated in the chart on the right, wage labour contributed to 17% of the total income for these households while income from field crops sales gave 16.6%, and non-ag. wage labour gave 15% to the household income. Pension contributed to 6%, while remittances contributed to only 3.7% of total income.

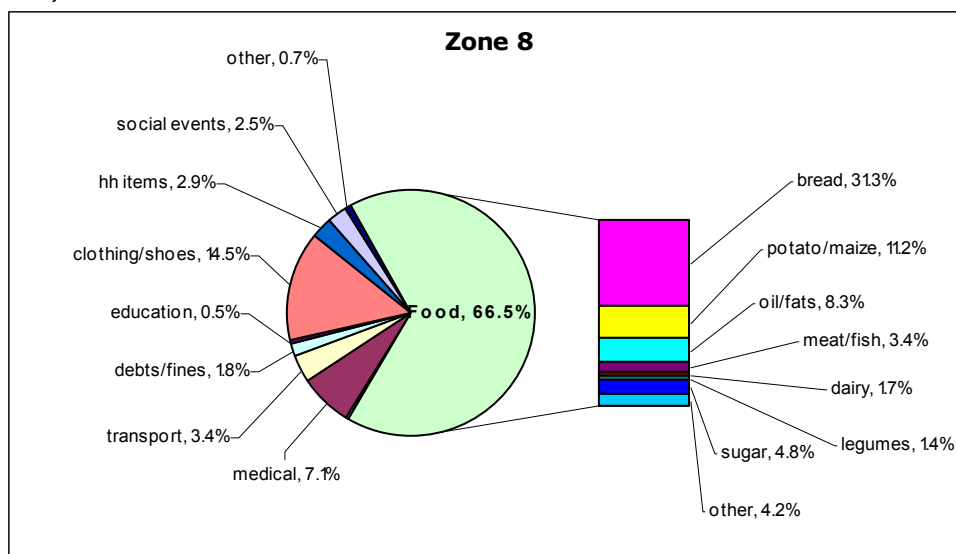


- **Land access and garden plots:** Only 88% of the households had access to land, with 80% having a garden plot (lowest) with an average size of 0.1 hectares. Nearly 75% of the households owned some of their land outright while another 26% had been given some garden plot land by the State and 36% had inherited garden plot land. Nearly 15% of the households indicated they rented some land for garden plots – one of the highest in the sample zones. The main crops cultivated in garden plots were vegetables (51%), potatoes (42%), fruit/nut trees (38%) wheat (38%) and maize (19%). The main sources of water for these garden plots are from irrigation (61%) and rain (30%).
- **Presidential land:** Nearly half of the households (high) had access to Presidential land most which was given by the State. However about one-quarter of the households owned this type of land and another and/or rented it. The main sources of water are from rainfall (50%) and irrigation (47%). Households grow mostly wheat (85%), barley (28%) and maize (19%).
- **Individual dekhan land:** Only 6% of the households have access to individual dekhan land. Nearly half of those households rely on rainfall as water for these farms with the rest using irrigation or springs. Most households are growing wheat (60%), potatoes (40%) or vegetables (20%).
- **Collective dekhan land:** Only 15% of these households had access to collective dekhan farms. The average size of the farm is 5 hectares, irrigated mostly by rainfall or rivers/canals. Of these farmers, most are producing wheat (50%), vegetables (37%) or vegetables (15%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are tractor (49% - high), human (34%) and animal (18%). Almost all of

Part IV – Household survey results by homogeneous district clusters

the households get their seeds for field crops and garden plots are from purchase or own stock.

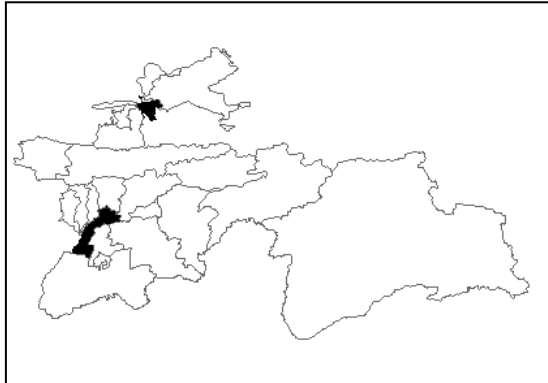
- **Fertilizer use and sources:** Over 20% of the households were using fertilizer for field crops (high), while 25% were using fertilizer in their garden plots but only 9% (lowest) used it on both types of systems. Most of the households relied on purchase for fertilizer for any kind of agriculture system.
- **Use of pesticides/herbicides:** Use of these chemicals was 23% for field crops (highest), 12% of the households used them for their garden plots and 7% (low) used them for both types of cultivation. For the few farmers who used them, most acquired these chemicals through purchase.
- **Expenditures:** As indicated in the chart below, 66.5% of total monthly expenditure for the households in the Zone 8 sample was for food. Within food expenditure, 31.3% goes for bread/wheat flour, followed by 11.2% for potatoes/maize, 8.3% for oil/fats and 4.8% for sugar. The highest non-food expenditure category is for clothing/shoes (14.5%), followed by medical (7.1% - high), transport (3.4%) and household items (2.9%).



- **Covariate shocks:** Nearly 70% of the households in this zone had experienced at least one covariate shock or event. For these households, the most often reported shock was drought or irregular rains (57% - high), followed by sudden price fluctuations (42%), unusually high levels of crop pests and disease (40%), unusually high levels of livestock diseases (28%) and restricted access to markets (27%).

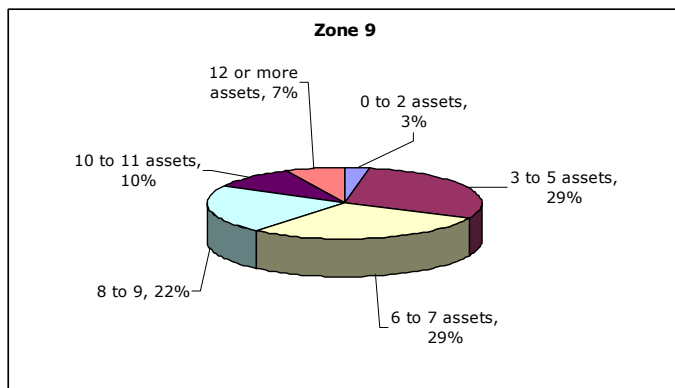
Zone 9 – Herbaceous and cultivated lowlands with wetlands

- Districts: Rudaki, Spitamen, and Jabbor Rasulov
- Sample size: 33 communities and 390 households.
- Households: 72% Tajik and 27% Uzbek.
- Household headship: 13% female headed households with an average age of 49 years. Over 85% of female heads are widowed. Average age of male headed households was 46 years. Twenty-four percent of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.7 persons with 42% of sample households having 8 or more members. On average 49% (highest) of household members were dependents (< 15 years or > 59 years). Twenty-one percent of the households had a male pensioner, 24% had a female pensioner and 13% had both.
- Literacy: Ninety-seven percent of heads of household were literate with an average of 10.3 years of schooling. For the spouse, 92% were literate, with an average of 9.1 years of schooling.
- Disabled members: In the sample, 20% of the households had a member who was disabled and 12% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 58% had at least one boy and 55% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 33% of boys and 32% of girls (high) had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-five percent of the households owned their dwelling and 90% were living in a single-family house. Over 55% of the households paid cash to live in their homes while the rest paid nothing. Twelve percent of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: One-third of the houses were considered to be in 'good' condition while one-quarter were classified as 'temporary' or 'incomplete' shelters. Eighty-two percent of the houses had walls made of unfired bricks while 11% had walls made of fired bricks. More than 80% had a roof of asbestos sheeting. Two thirds have a floor made of earth or mud while the rest were made of wood. Three-quarters of the floors were covered with moquette and 21% had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: Nearly all the houses had a connection to electricity and 84% were reliant on electricity as the main source of lighting – the rest used a kerosene lamp. For cooking, 36% used animal manure (highest) while 32% used firewood, 18% used electricity and the rest relied on brushwood. Over 70% used stoves for heating while the rest use firewood.
- Drinking water and bathing facility: More than half of the sample households used drinking water from an improved source. The main source of drinking water for 27% of the households was through a piped system (highest), while 24% got their drinking water from a pond, river or stream and 12% from a well with a pump. The source of drinking water was located on the housing premises for 26% of the households while another 45% could reach their water source in less than one-half hour. Nearly 60% of the households had access to a private bathing facility.
- Access to and use of credit: More than half of the households had no access to credit while 44% could access credit from friends or relatives. Nearly 40% ever purchase food on credit and of those households almost all purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: Only 60% of the households owned cattle (lowest) with an average of 2 animals per owning household. More than one-quarter of the households owned oxen or yaks (1 animal on average), 6% owned horses but 28% owned donkeys. Nearly 30% of the households owned goats, with an average of 3 animals per owning household while only 16% (low) owned sheep (2 on average) and 41% (very low) of the households owned poultry (5 birds on average).



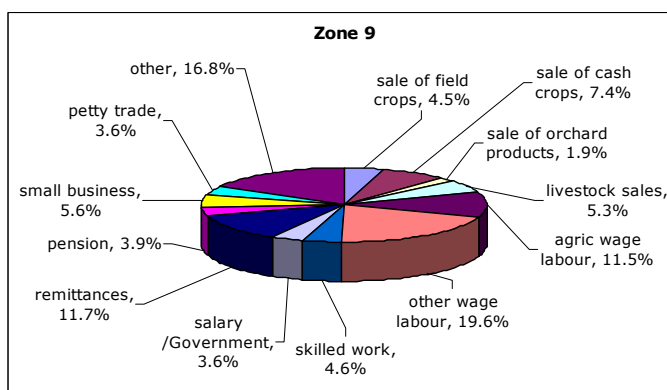
Part IV – Household survey results by homogeneous district clusters

- **Household asset ownership:** Over 80% of the households owned a quilt with 26% owning a bed. Around 20% owned a table and/or chairs. Carpets/kilims were owned by 57% of the households while 44% (low) owned a lantern and 67% owned a stove (high). For productive assets, 14% owned farming equipment, 82% with basic carpentry tools, 39% with a sewing machine and 5% with a trailer or cart. Fewer households owned transportation assets such as a bicycle (14%) or motor bike (4%). Assets related to communication included radio (55% - high), television (82% - very high) and VCR/DVD (8%). On average, of the total number of assets owned by a household, 20% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have average asset ownership in terms of number and diversity of assets when compared to the other sampled zones.



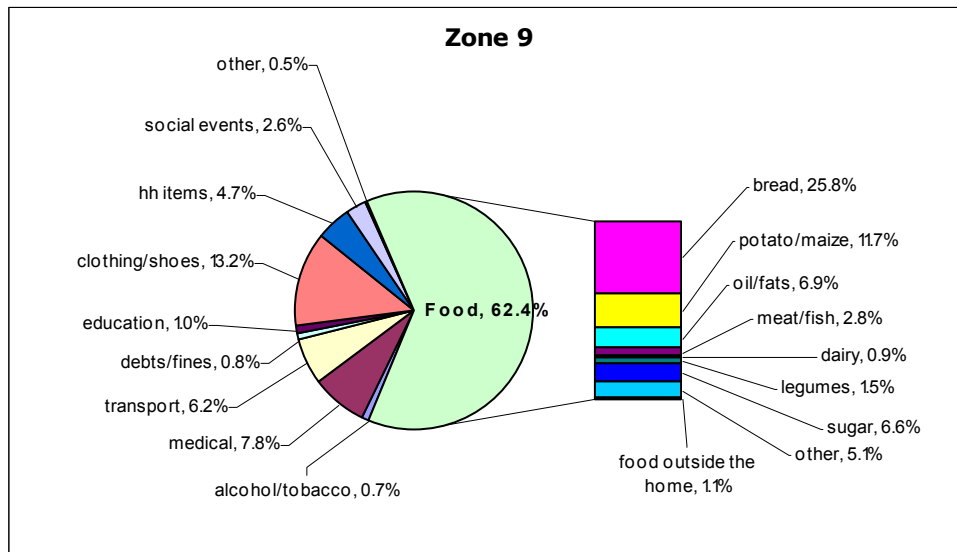
households owned transportation assets such as a bicycle (14%) or motor bike (4%). Assets related to communication included radio (55% - high), television (82% - very high) and VCR/DVD (8%). On average, of the total number of assets owned by a household, 20% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have average asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

- **Household income:** For the Zone 9 sample, the most often named sources of income were non-agricultural wage labour (41%), agricultural wage labour (25%), salary/Government job (23%), remittances (21%) and pension (18%). As indicated in the chart on the right, non-agricultural wage labour contributed to 19.5% of the total income for these households while income from 'other sources' gave 16.8%, remittances 11.7% and agricultural wage labour gave 11.5% to the household income. Pension contributed to only 3.9% of total income.



- **Land access and garden plots:** Ninety percent of the households had access to land, with 80% having a garden plot (lowest) with an average size of 0.08 hectares. Over half of the households owned some of their land outright while another 22% had been given some garden plot land by the State and 38% had inherited garden plot land. The main crops cultivated in garden plots were vegetables (51%), fruit/nut trees (45%), potatoes (42%) maize (25%) and wheat (14%). The main sources of water for these garden plots are from irrigation (53%) and rainfall (32%).
- **Presidential land:** Nearly 30% of the households had access to Presidential land most which was given by the State. The main sources of water are from irrigation (51%) and rainfall (38%). Households grow mostly wheat (60%), maize (24%), vegetables (17%), potatoes (16%) and rice (15%).
- **Individual dekhan land:** Only 6% of the households have access to individual dekhan land. More than half of those households rely on irrigation as water for these farms with the rest using rainfall or springs. Most households are growing wheat (59%), potatoes (46%) or cotton (23%).
- **Collective dekhan land:** More than 20% of these households had access to collective dekhan farms. The average size of the farm is 10 hectares, with water mostly from rivers/canals or rainfall. Of these farmers, most are producing wheat (69%) or cotton (15%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are tractor and human (41% each) with 18% of the households relying on animal traction for cultivating fields. Almost all of the households get their seeds for field crops and garden plots are from purchase or own stock.

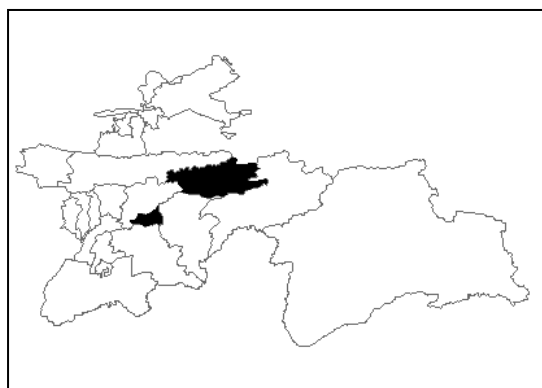
- **Fertilizer use and sources:** Only 10% of the households were using fertilizer for field crops, while 39% were using fertilizer in their garden plots but only 10% (low) used it on both types of systems. Most of the households relied on purchase for fertilizer for any kind of agriculture system.
- **Use of pesticides/herbicides:** The percentage of households using these chemicals was 6% for field crops, 20% (high) for their garden plots and 3% (lowest) used them for both types of cultivation. For the few farmers who used them, most acquired these chemicals through purchase with a few households acquiring them on credit.
- **Expenditures:** As indicated in the chart below, 62.4% of total monthly expenditure for the households in the Zone 9 sample was for food – one of the lowest of all zones. Within food expenditure, 25.8% (lowest) goes for bread/wheat flour, followed by 11.7% for potatoes/maize, 6.9% for oil/fats and 6.6% for sugar. The highest non-food expenditure category is for clothing/shoes (13.2%), followed by medical (7.8% - highest), transport (6.2%) and household items (4.7%).



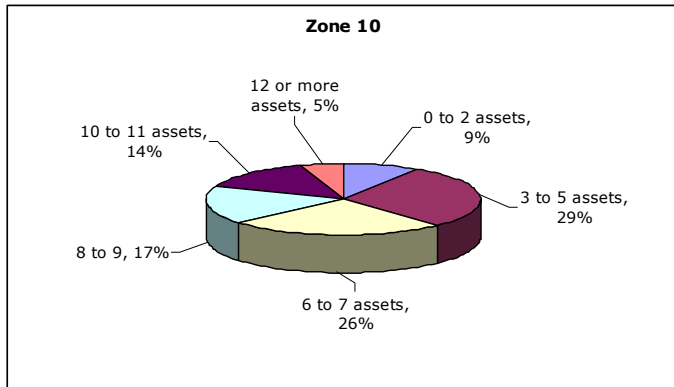
- **Covariate shocks:** More than half of the households in this zone had experienced at least one covariate shock or event. For these households, the most often reported shock was sudden price fluctuations (44%), followed by unusually high levels of human disease (32% - high), unusually high levels of crop pests and disease (25%), unusually high levels of livestock diseases (22%) and high winds/storms (20%).

Zone 10 – Mixed elevation cultivated, with wetlands

- Districts: Fayzobod, Gharm, and Tojikobod
- Sample size: 33 communities and 415 households.
- Households: 100% Tajik
- Household headship: 13% female headed households with an average age of 54 years. Ninety percent of female heads are widowed. Average age of male headed households was 47 years. Twenty-four percent of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.7 persons with 45% of sample households having 8 or more members. On average 46% of household members were dependents (< 15 years or > 59 years). Twenty-one percent of the households had a male pensioner, 24% had a female pensioner and 12% had both.
- Literacy: Ninety-seven percent of heads of household were literate with an average of 9.7 years of schooling. For the spouse, 93% were literate, with an average of 9.0 years of schooling – the lowest of all zones.
- Disabled members: In the sample, 18% of the households had a member who was disabled and 8% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 59% had at least one boy and 55% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, none of boys (lowest) and 15% of girls (low) had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-seven percent of the households owned their dwelling and 88% were living in a single-family house. Only 8% (lowest) of the households paid cash to live in their homes while the rest paid nothing. However, 21% of the households were very crowded with 4 or more persons per room – one of the highest of all zones.
- Housing conditions & construction materials: One-third of the houses were considered to be in 'good' condition while only 15% were classified as 'temporary' or 'incomplete' shelters but 21% were in 'poor' condition. Nearly all of the houses had walls made of unfired bricks while 80% had a roof of asbestos sheeting. Three-quarters have a floor made of earth or mud while the rest were made of wood. Half of the floors were covered with moquette and 40% had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: All the houses had a connection to electricity and 89% (high) were reliant on electricity as the main source of lighting – the rest used a kerosene lamp. For cooking, 49% used firewood while 33% used animal manure and 13% used electricity. Over 70% used stoves for heating while most of the rest used firewood.
- Drinking water and bathing facility: More than 60% of the sample households used drinking water from an improved source – one of the highest of all zones. The main sources of drinking water for these households are public tap (40%), pond, river or stream (36%) and piped. The source of drinking water was located on the housing premises for 35% of the households (highest) while another 53% could reach their water source in less than one-half hour. Nearly 80% (highest) of the households had access to a private bathing facility.
- Access to and use of credit: About half of the households had no access to credit while 49% could access credit from friends or relatives. Nearly 60% ever purchase food on credit and of those households about two-thirds purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: Eighty percent of the households owned cattle (high) with an average of 2 animals per owning household. About one-third of the households owned oxen or yaks (1 animal on average), 10% owned horses (high) and 42% owned donkeys. More than 60% of the households owned goats (high), with an average of 3 animals per owning household while 50% (high) owned sheep (4 on average) and 76% (highest) of the households owned poultry (6 birds on average).

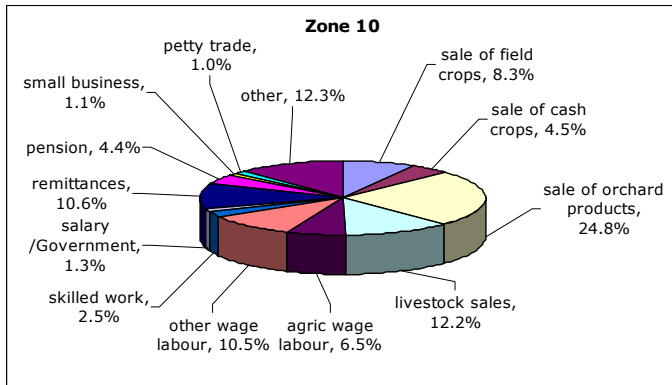


- Household asset ownership:** Nearly 90% of the households owned a quilt with 42% (high) owning a bed. Around 25% owned a table and/or chairs. Carpets/kilims were owned by 42% (low) of the households while 62% owned a lantern and 57% owned a stove. For productive assets, 32% owned farming equipment, 63% with basic carpentry tools, 41% with a sewing machine and 6% with a trailer or cart. Fewer households owned transportation assets such as a bicycle (5% - low) or motor bike (3%). Assets related to communication included radio (41%), television (55% - low) and



VCR/DVD (8%). On average, of the total number of assets owned by a household, 22% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have average asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

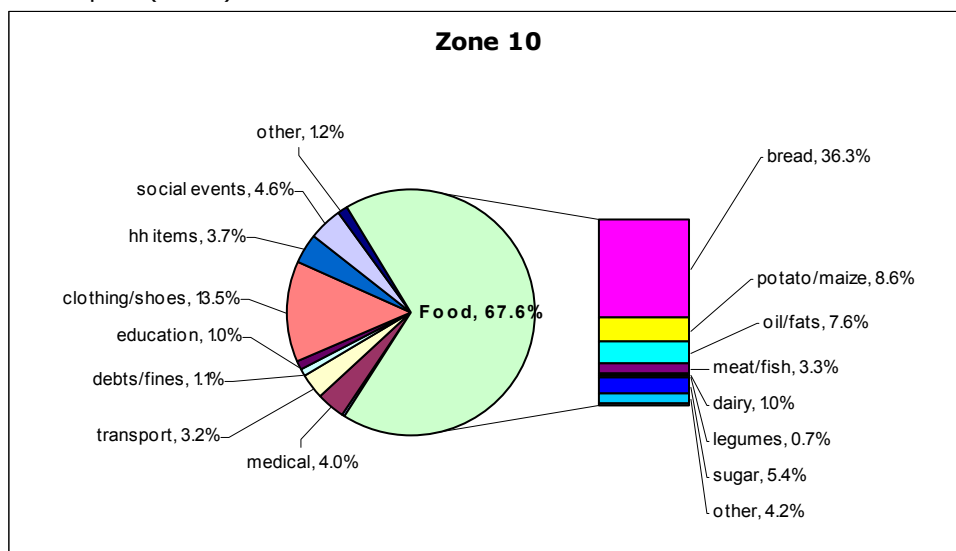
- Household income:** For the Zone 10 sample, the most often named sources of income were sales of orchard products (58%), livestock sales (35%), other wage labour (30%), sales of field crops (24%) remittances (24%) and pension (18%). As indicated in the chart on the right, sales of orchard products contributed to 24.8% of the total income for these households while significant amounts of total income came from 'other sources' (12.3%), livestock sales (12.2%), remittances (10.6%), and other wage labour (10.5%). Pension contributed to only 4.4% of total household income.



- Land access and garden plots:** Ninety-three percent of the households had access to land, with 91% having a garden plot with an average size of 0.1 hectares. Over 60% of the households had been given some garden plot land by the State and 45% owned some garden plot land. The main crops cultivated in garden plots were vegetables (83%), potatoes (82%), fruit/nut trees (69%) and wheat (16%). The main sources of water for these garden plots are from irrigation (62%), rainfall (20%) and springs (16%).
- Presidential land:** Thirty percent of the households had access to Presidential land most which was given by the State. The main sources of water are from rainfall (67%) and irrigation (20%). Households grow mostly wheat (82%), potatoes (24%), vegetables (20%), and barley (15%).
- Individual dekhan land:** Over 10% of the households have access to individual dekhan land. More than 40% of those households rely on rainfall as water for these farms with the rest using irrigation or springs. Most households are growing wheat (83%), potatoes (28%) or vegetables (19%).
- Collective dekhan land:** More than 20% of these households had access to collective dekhan farms. The average size of the farm is 20 hectares, with water mostly from rainfall. Of these farmers, most are producing wheat (75%) or potatoes (21%) on collective lands.
- Main sources of traction and seeds:** The main sources of traction among these farming households are human (37%), tractor (33%) and animal (30%) for cultivating fields. Almost all of the households get their seeds for field crops and garden plots are from purchase or own stock with less than 10% relying on credit.

Part IV – Household survey results by homogeneous district clusters

- Fertilizer use and sources: Only 7% of the households were using fertilizer for field crops, while 32% were using fertilizer in their garden plots and 31% used it on both types of systems. Most of the households relied on purchase for fertilizer for any kind of agriculture system but with some relying on credit.
- Use of pesticides/herbicides: Only 5% of households were using these chemicals for field crops, 8% for their garden plots but 27% (highest) used them for both types of cultivation. For the few farmers who used them, most acquired these chemicals through purchase.
- Expenditures: As indicated in the chart below, 67.6% of total monthly expenditure for the households in the Zone 10 sample was for food. Within food expenditure, 36.3% goes for bread/wheat flour, followed by 8.6% for potatoes/maize, 7.6% for oil/fats and 5.4% for sugar. The highest non-food expenditure category is for clothing/shoes (13.5%), followed by social events (4.6%), medical (4.0%), household items (3.7%) and transport (3.2%).



- Covariate shocks: More than 80% of the households in this zone had experienced at least one covariate shock or event – the highest of all zones. For these households, the most often reported shock was unusually high level of crop pests and diseases (71% - highest), followed by unusually high levels of livestock disease (51% - highest), drought/irregular rains (48% - high), sudden price fluctuations (37%) and high winds/storms (22%).

Zone 11 – Mixed elevation cultivated and herbaceous, with wetlands

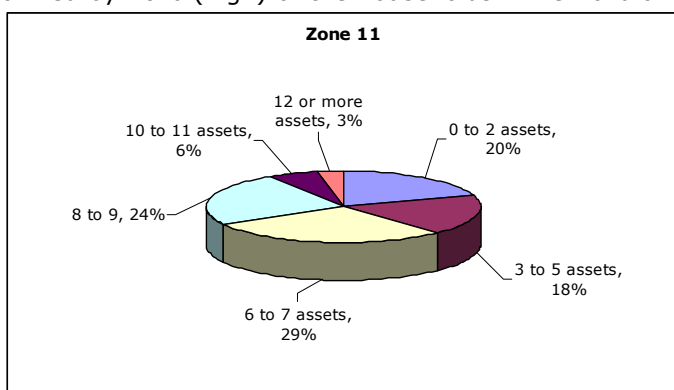
- Districts: *Hissor and Tursunzoda*
- Sample size: 33 communities and 405 households.
- Households: 54% Tajik and 44% Uzbek
- Household headship: 13% female headed households with an average age of 53 years. Ninety percent of female heads are widowed. Average age of male headed households was 48 years. Twenty-six percent of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.5 persons with 42% of sample households having 8 or more members. On average 44% of household members were dependents (< 15 years or > 59 years) – the lowest of all zones. Twenty-five percent (highest) of the households had a male pensioner, 27% had a female pensioner and 17% had both (highest).
- Literacy: Ninety-six percent of heads of household were literate with an average of 10.1 years of schooling. For the spouse, 94% were literate, with an average of 9.1 years of schooling.
- Disabled members: In the sample, 22% of the households had a member who was disabled and 11% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 56% had at least one boy and 47% had at least one girl aged 6-14 years enrolled in school – the lowest of all zones. For those enrolled children, 17% of boys and 13% of girls (low) had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-six percent of the households owned their dwelling and 92% were living in a single-family house. Only 13% (low) of the households paid cash to live in their homes while the rest paid nothing. However, only 4% of the households were very crowded with 4 or more persons per room – one of the lowest of all zones.
- Housing conditions & construction materials: One-quarter of the houses were considered to be in 'good' condition while 20% were classified as 'temporary' or 'incomplete' shelters but 32% were in 'poor' condition – the highest of all zones. Nearly all of the houses had walls made of unfired bricks while 89% had a roof of asbestos sheeting – the highest of all zones. More than 90% have a floor made of earth or mud while the rest were made of wood. Three-quarters of the floors were covered with moquette and the rest had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: All the houses had a connection to electricity but 43% (low) were reliant on electricity as the main source of lighting and 48% used a kerosene lamp. For cooking, 55% used firewood while 28% used animal manure and 15% used brushwood. Sixty-six percent used stoves for heating while the rest used firewood.
- Drinking water and bathing facility: Forty-five percent of the sample households used drinking water from an improved source. The main sources of drinking water for these households are pond, river or stream (49%), piped (16%), public tap (11%) and well with a pump (10%). The source of drinking water was located on the housing premises for 27% of the households while another 42% could reach their water source in less than one-half hour. Nearly 60% of the households had access to a private bathing facility.
- Access to and use of credit: More than 60% of the households had no access to credit (high) while 36% could access credit from friends or relatives. Only 20% (lowest) ever purchase food on credit and of those households most purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: More than 70% of the households owned cattle with an average of 2 animals per owning household. Nearly half (high) of the households owned oxen or yaks (2 animals on average), 5% owned horses and 35% owned donkeys. Only 23% of the households owned goats, with an average of 3 animals per owning household



Part IV – Household survey results by homogeneous district clusters

while 14% (lowest) owned sheep (2 on average) and 55% of the households owned poultry (5 birds on average).

- **Household asset ownership:** Eighty-five percent of the households owned a quilt with 30% owning a bed. Around 20% owned a table and/or chairs. Carpets/kilims were owned by 70% (high) of the households while 46% owned a lantern and 54% owned a stove.

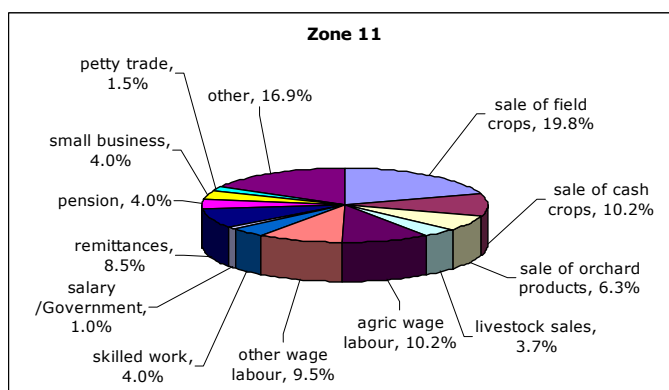


For productive assets, 46% (high) owned farming equipment, 63% with basic carpentry tools, 37% with a sewing machine and 13% (high) with a trailer or cart. Fewer households owned transportation assets such as a bicycle (14%) or motor bike (3%). Assets related to communication included radio (49%), television (58%) and

VCR/DVD (4%). On average, of the total number of assets owned by a household, 21% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have low asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

- **Household income:** For the Zone 11 sample, the most often named sources of income

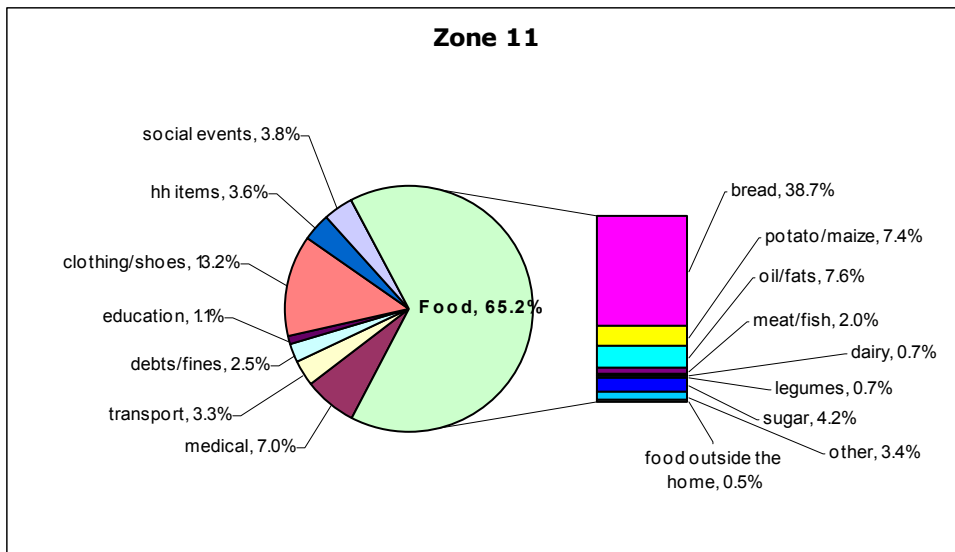
were sales of field crops (32%), cash crop sales (24%), agricultural wage labour (23%), other wage labour (19%), pension (17%) and remittance (11%). As indicated in the chart on the right, sales of field crops contributed to 24.8% of the total income for these households while significant amounts of total income came from 'other sources' (16.9%), agricultural wage labour (10.2%), sales of cash crops (10.2%), and other wage labour (10.5%). Remittances and pension contributed to only 8.5% and 4.0% of total household income.



- **Land access and garden plots:** Only 86% of the households had access to land, - the lowest of all zones. Of the sample, 80% have a garden plot with an average size of 0.08 hectares. Only 17% of the households had been given some garden plot land by the State while 75% owned some garden plot land and 13% rent. The main crops cultivated in garden plots were vegetables (54%), potatoes (49%), fruit/nut trees (41%) and wheat (22%). The main sources of water for these garden plots are from irrigation (62%) and rainfall (30%).
- **Presidential land:** Nearly half of the households had access to Presidential land most which was given by the State. The main sources of water are from irrigation (57%) and rainfall (42%). Households grow mostly wheat (63%), rice (32%) and potatoes (13%).
- **Individual dekhan land:** Only 9% of the households have access to individual dekhan land. Around 70% of those households rely on rainfall as water for these farms with the rest using irrigation or springs. Most households are growing wheat (71%), potatoes (13%) or vegetables (10%).
- **Collective dekhan land:** Nearly 20% of these households had access to collective dekhan farms. The average size of the farm is 10 hectares, with water mostly from rivers or canals or rainfall. Of these farmers, most are producing cotton (46%) or wheat (31%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are human (62%), tractor (29%) and animal (9%) for cultivating fields.

Almost all of the households get their seeds for field crops and garden plots are from purchase or own stock with 8% getting field crop seeds from the Government.

- **Fertilizer use and sources:** Eleven percent of the households were using fertilizer for field crops, while 26% were using fertilizer in their garden plots and only 12% used it on both types of systems. Most of the households relied on purchase for fertilizer for any kind of agriculture system but with some receiving from the Government.
- **Use of pesticides/herbicides:** Over 10% of households were using these chemicals for field crops, 8% for their garden plots and 11% used them for both types of cultivation. For the farmers who used them, most acquired these chemicals through purchase with a few benefiting from Government programs.
- **Expenditures:** As indicated in the chart below, 65.2% of total monthly expenditure for the households in the Zone 11 sample was for food. Within food expenditure, 38.7% goes for bread/wheat flour, followed by 7.6% for oil/fats, 7.4% for potatoes/maize and 4.2% for sugar. The highest non-food expenditure category is for clothing/shoes (13.2%), followed by medical (7.0% - high), social events (3.8%), household items (3.6%) and transport (3.3%).



- **Covariate shocks:** Only 46% of the households in this zone had experienced at least one covariate shock or event – one of the lowest of all zones. For these households, the most often reported shock was sudden price fluctuations (40%), followed by damaging frosts (31% - high), landslides/erosion (29% - high), unusually high levels of crops pests and diseases (28%) and high winds/storms (25%).

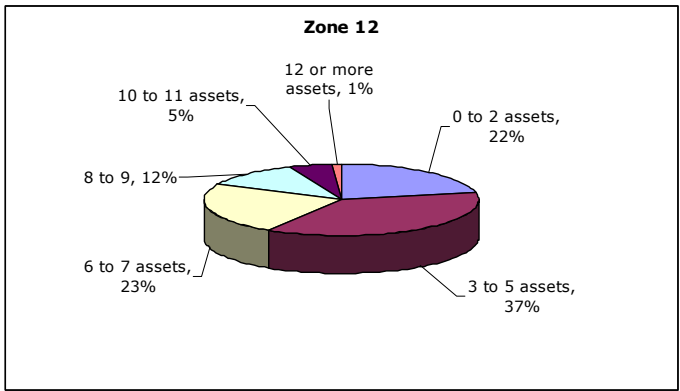
Zone 12 – Bare areas, sparse herbaceous highlands

- Districts: *Ayni and Kuhistoni Mastchoh*
- Sample size: 27 communities and 310 households.
- Households: 100% Tajik
- Household headship: 15% female headed households with an average age of 55 years. Eighty-one percent of female heads are widowed. Average age of male headed households was 47 years. Twenty-six percent of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 8.0 persons with 49% of sample households having 8 or more members – the highest of all sample zones. On average 45% of household members were dependents (< 15 years or > 59 years). Nineteen percent (lowest) of the households had a male pensioner, 24% had a female pensioner and 10% had both (lowest).
- Literacy: Ninety-six percent of heads of household were literate with an average of 10.1 years of schooling. For the spouse, 91% were literate, with an average of 9.0 years of schooling – the lowest of the sample zones.
- Disabled members: In the sample, 17% of the households had a member who was disabled and 11% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 55% had at least one boy and 56% had at least one girl aged 6-14 years enrolled in school – the lowest of all zones. For those enrolled children, 8% of boys (low) and 17% of girls had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Almost all (highest) of the households owned their dwelling and 98% (highest) were living in a single-family house. Nearly 90% (highest) of the households paid cash to live in their homes while the rest paid nothing. However, 12% of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: Only 19% (low) of the houses were considered to be in 'good' condition while 20% were classified as 'temporary' or 'incomplete' shelters but 53% were described as being 'partially damaged' – the highest of all zones. Three-quarters of the houses had walls made of unfired bricks while 21% had walls made of fired brick – the highest of all zones. About half the houses had a roof made of wooden beams and mud – the highest of all zones – while 16% had a thatch roof. More than 90% (highest) have a floor made of earth or mud while the rest were made of wood. About half of the floors were covered with moquette and the rest had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: Ninety-five percent of the houses had a connection to electricity and 75% were reliant on electricity as the main source of lighting and 12% used a kerosene lamp. For cooking, 91% used firewood, the highest of all sampled zones. Fifty-two percent used firewood for heating, 32% relied on charcoal (highest) and the rest used stoves.
- Drinking water and bathing facility: Thirty-two percent of the sample households used drinking water from an improved source. The main sources of drinking water for these households are pond, river or stream (63% - high), public tap (22%), piped (8%) and well with a pump (2%). The source of drinking water was located on the housing premises for only 5% (lowest) of the households while another 73% could reach their water source in less than one-half hour. Over 20% of the households had access to a private bathing facility.
- Access to and use of credit: Forty-five percent of the households had no access to credit while 53% could access credit from friends or relatives. Over 40% ever purchase food on credit and, of those households, most purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: Nearly 90% (highest) of the households owned cattle with an average of 3 animals per owning household. Over 70% (highest) of the households owned oxen or yaks (1 animal on average), 4% owned horses and 58% (highest)



owned donkeys. More than half of the households owned goats, with an average of 3 animals per owning household while 47% owned sheep (3 on average) but only 20% (lowest) of the households owned poultry (4 birds on average).

- **Household asset ownership:** More than 90% of the households owned a quilt but with only 20% owning a bed. Around 20% owned a table and/or chairs. Carpets/kilims were owned by 48% (low) of the households while 66% owned a lantern and 30% owned a stove (lowest).

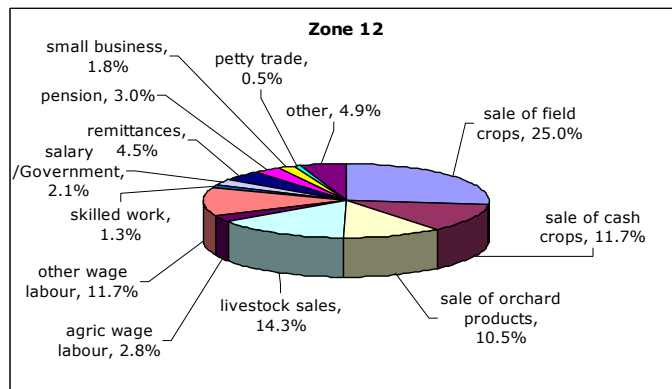


For productive assets, 12% (low) owned farming equipment, 71% with basic carpentry tools, 21% with a sewing machine (lowest) and 3% (lowest) with a trailer or cart. Fewer households owned transportation assets such as a bicycle (4% - lowest) or motor bike (1% - lowest). Assets related to communication included

radio (26% - lowest), television (42% - lowest) and VCR/DVD (7%). On average, of the total number of assets owned by a household, 18% (lowest) were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have the lowest level of asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

- **Household income:** For the Zone 12 sample, the most often named sources of income were sales of field crops (51%), livestock sales (47%), non-agricultural wage labour

(41%), cash crop sales (41%) and sales of orchard products (34%). Only 15% were reliant on remittances and 10% on pension as main income sources. As indicated in the chart on the right, sales of field crops contributed to 25.0% of the total income for these households while significant amounts of total income came from livestock sales (14.3%), other wage labour (11.7%), sales of cash crops (11.7%), and sales of orchard products (10.5%). Remittances and pension contributed to only 4.5% and 3.0% of total household income.



- **Land access and garden plots:** Ninety-five percent of the households had access to land. Of the sample, 90% have a garden plot with an average size of 0.06 hectares. Only 2% of the households had been given some garden plot land by the State while 82% owned some garden plot land and 16% rent. The main crops cultivated in garden plots were potatoes (77%), vegetables (57%), fruit/nut trees (38%) and wheat (23%). The main sources of water for these garden plots are from irrigation (74%) and springs (17%).

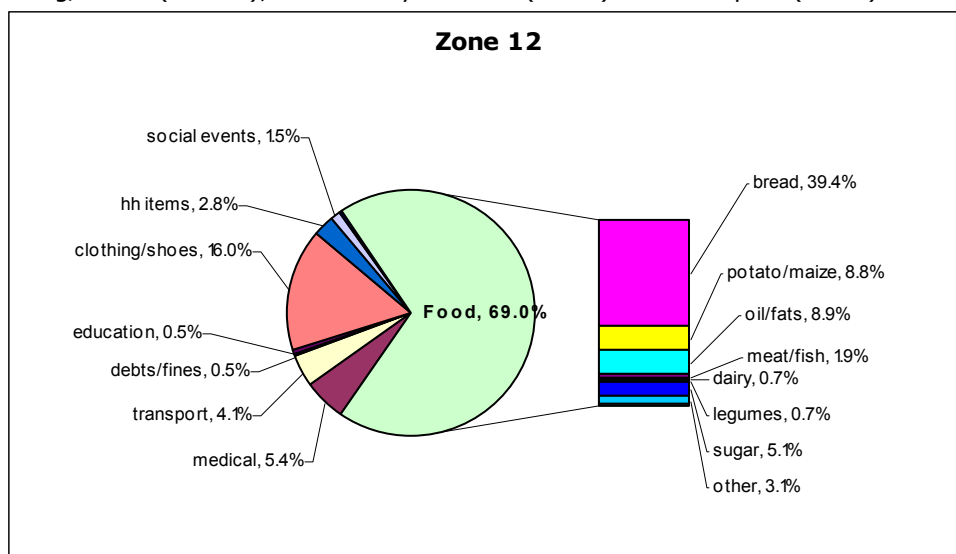
- **Presidential land:** Nearly half of the households had access to Presidential land where 81% received from the State but 18% are renting. The main sources of water are from irrigation (92%). Households grow mostly potatoes (75%) and wheat (64%).

- **Individual dekhan land:** Only 8% of the households have access to individual dekhan land. Around 70% of those households rely on irrigation as water for these farms with the rest using rainfall or springs. Most households are growing potatoes (43%) and wheat (38%).

- **Collective dekhan land:** More than half of these households had access to collective dekhan farms. The average size of the farm is 20 hectares, with water mostly from rivers or canals. Of these farmers, most are producing potatoes (74%) or wheat (71%) on collective lands.

Part IV – Household survey results by homogeneous district clusters

- **Main sources of traction and seeds:** The main sources of traction among these farming households are tractor (48%), human (29%) and animal (23%) for cultivating fields. Almost all of the households get their seeds for field crops and garden plots are from purchase or own stock.
- **Fertilizer use and sources:** Ten percent of the households were using fertilizer for field crops, while 28% were using fertilizer in their garden plots and 49% (highest) used it on both types of systems. Almost all of the households relied on purchase for fertilizer for any kind of agriculture system.
- **Use of pesticides/herbicides:** Ten percent of households were using these chemicals for field crops, 12% for their garden plots and 13% used them for both types of cultivation. For the farmers who used them, almost all acquired these chemicals through purchase.
- **Expenditures:** As indicated in the chart below, 69.0% of total monthly expenditure for the households in the Zone 12 sample was for food. Within food expenditure, 39.4% (highest) goes for bread/wheat flour, followed by 8.9% for oil/fats, 8.8% for potatoes/maize and 5.1% for sugar. The highest non-food expenditure category is for clothing/shoes (16.0%), followed by medical (5.4%) and transport (4.1%).



- **Covariate shocks:** Three-quarters of the households in this zone had experienced at least one covariate shock or event – one of the highest of all zones. For these households, the most often reported shock was sudden price fluctuations (53% - high), followed by floods (40% - highest), restricted access to markets (37% - highest), damaging frosts (35% - high) and unusually high levels of crop pests and diseases (32%). It is important to note also that 5% of these affected households reported being affected by insecurity or violence – the highest in the sample.

Zone 13 – Mixed elevation and cropping, with wetlands

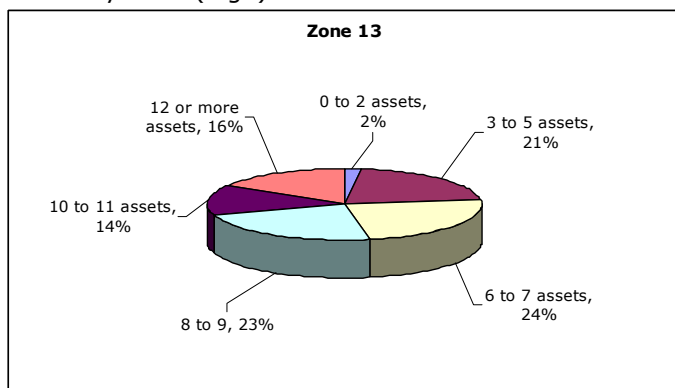
- Districts: *Shahrinav* and *Varzob*
- Sample size: 27 communities and 316 households.
- Households: 76% Tajik and 24% Uzbek
- Household headship: 16% female headed households with an average age of 53 years. Eighty-nine percent of female heads are widowed. Average age of male headed households was 46 years. Twenty-five percent of sample households are headed by elderly (60+ years).



- Household size & composition: Average household size is 8.0 persons with 48% of sample households having 8 or more members – the highest of all sample zones. On average 48% (high) of household members were dependents (< 15 years or > 59 years). Twenty-four percent of the households had a male pensioner, 30% (highest) had a female pensioner and 16% (high) had both.
- Literacy: Ninety-seven percent of heads of household were literate with an average of 10.1 years of schooling. For the spouse, 92% were literate, with an average of 9.1 years of schooling.
- Disabled members: In the sample, 22% of the households had a member who was disabled and 11% had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 68% (highest) had at least one boy and 57% (highest) had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 43% of boys and 35% of girls had been absent for one week or more in the past month – the highest of all zones. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-five percent of the households owned their dwelling and 95% were living in a single-family house. Nearly 40% of the households paid cash to live in their homes while the rest paid nothing. Only 5% (low) of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: More than 40% of the houses were considered to be in 'good' condition while only 17% were classified as 'temporary' or 'incomplete' shelters. Nearly 90% of the houses had walls made of unfired bricks while 9% had walls made of fired brick. More than 70% the houses had a roof made of asbestos sheeting. More than 70% have a floor made of earth or mud while the rest were made of wood. Three-quarters of the floors were covered with moquette and the rest had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: Ninety-six percent of the houses had a connection to electricity and 84% were reliant on electricity as the main source of lighting and 14% used a kerosene lamp. For cooking, 57% used firewood and 32% used animal manure (high). Seventy-six percent used stoves for heating and the rest used firewood.
- Drinking water and bathing facility: Thirty-four percent of the sample households used drinking water from an improved source. The main sources of drinking water for these households are pond, river or stream (64% - high), piped (19%) and public tap (11%). The source of drinking water was located on the housing premises for 23% of the households while another 50% could reach their water source in less than one-half hour. Over 70% (high) of the households had access to a private bathing facility.
- Access to and use of credit: Nearly 70% (highest) of the households had no access to credit while only 30% (lowest) could access credit from friends or relatives. Nearly 40% ever purchase food on credit and, of those households, most purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: Over 70% of the households owned cattle with an average of 2 animals per owning household. Forty percent of the households owned oxen or yaks (1 animal on average), 5% owned horses and 49% owned donkeys. More than 40% of the households owned goats, with an average of 5 animals per owning household while 21% owned sheep (4 on average) and 52% of the households owned poultry (6 birds on average).

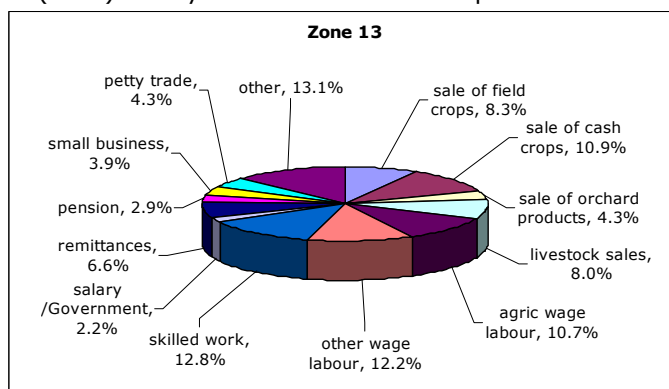
Part IV – Household survey results by homogeneous district clusters

- **Household asset ownership:** More than 85% of the households owned a quilt with 33% also owning a bed. Around 35% owned a table and/or chairs. Carpets/kilims were owned by 73% (high) of the households while 47% owned a lantern and 74% owned a stove (highest). For productive assets, 24% owned farming equipment, 86% with basic carpentry tools, 52% with a sewing machine (high) and 11% with a trailer or cart. Fewer households owned transportation assets such as a bicycle (12%) or motor bike (1% - lowest). Assets related to communication included



radio (52%), television (80% - high) and VCR/DVD (13%). On average, of the total number of assets owned by a household, 22% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have one of the highest levels of asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

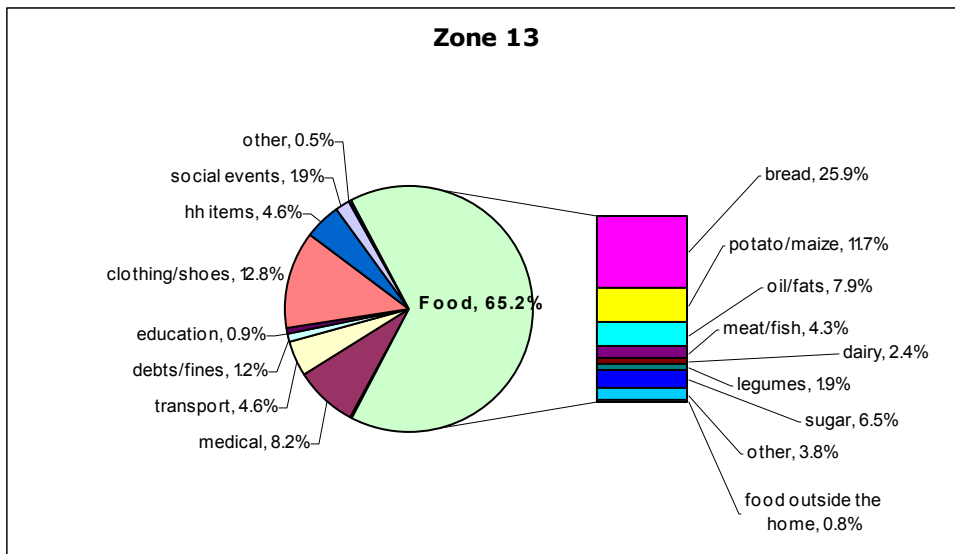
- **Household income:** For the Zone 13 sample, the most often named sources of income were skilled labour (27%), agricultural wage labour (22%), non-agricultural wage labour (22%) and livestock sales (21%). Only 15% were reliant on pension and 14% on remittances as main income sources. As indicated in the chart on the right, 'other' income activities contributed to 13.1% of the total income for these households while significant amounts of total income came from skilled work (12.8%), other wage labour (12.2%), sales of cash crops (10.9%), and agricultural wage labour (10.7%). Remittances and pension contributed to only 6.6% and 2.9% of total household income.



- **Land access and garden plots:** Eighty-eight percent of the households had access to land. Of the sample, 82% (low) have a garden plot with an average size of 0.08 hectares. More than 20% of the households had been given some garden plot land by the State while 75% owned some garden plot land and 18% inherited it. The main crops cultivated in garden plots were fruit/nut trees (71%), vegetables (65%) and potatoes (54%). The main sources of water for these garden plots are from irrigation (64%), springs (17%) and rainfall (15%).
- **Presidential land:** Thirty-five percent of the households had access to Presidential land where 91% received from the State and 7% are renting. The main sources of water are from irrigation (64%) and rainfall (35%). Households grow mostly wheat (46%), vegetables (31%), potatoes (21%) and rice (20%).
- **Individual dekhan land:** Only 3% (lowest) of the households have access to individual dekhan land. Eighty percent of those households rely on irrigation as water for these farms with the rest using rainfall. Most households are growing wheat (63%), cotton (38%) and vegetables (25%).
- **Collective dekhan land:** Only 11% of these households had access to collective dekhan farms. The average size of the farm is 10 hectares, with water mostly from rivers or canals and rainfall. Of these farmers, most are producing cotton (51%) or wheat (40%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are human (44%), tractor (29%) and animal (27%) for cultivating fields.

Almost all of the households get their seeds for field crops and garden plots are from purchase or own stock with a few receiving field crop seeds from the Government.

- **Fertilizer use and sources:** Eight percent of the households were using fertilizer for field crops, while 40% (high) were using fertilizer in their garden plots and 10% used it on both types of systems. Almost all of the households relied on purchase for fertilizer for any kind of agriculture system, with a few receiving field crop fertilizers from the Government.
- **Use of pesticides/herbicides:** Nine percent of households were using these chemicals for field crops, 16% for their garden plots and 7% used them for both types of cultivation. For the farmers who used them, almost all acquired these chemicals through purchase, with a few receiving field crop pesticides from the Government.
- **Expenditures:** As indicated in the chart below, 65.2% of total monthly expenditure for the households in the Zone 13 sample was for food. Within food expenditure, 25.9% (lowest) goes for bread/wheat flour, followed by 11.7% for potatoes/maize, 7.9% for oils/fats, 6.4% for sugar and 4.3% for meat/fish (high). The highest non-food expenditure category is for clothing/shoes (12.8%), followed by medical (8.2% - high), household items (4.6%) and transport (4.6%).



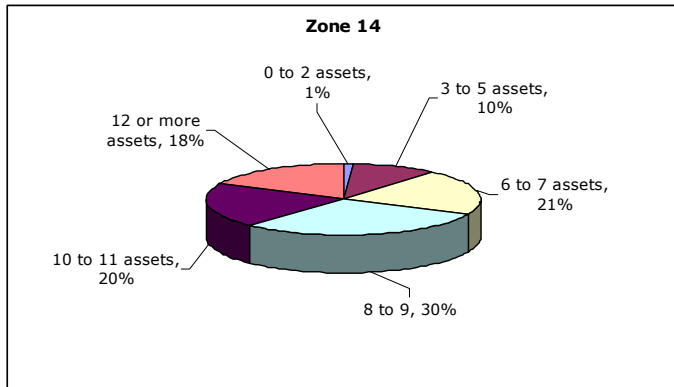
- **Covariate shocks:** Sixty-five percent of the households in this zone had experienced at least one covariate shock or event. For these households, the most often reported shock was high winds/storms (42% - high), followed by sudden price fluctuations (34%), and restricted access to markets (27%), drought/irregular rains (26%), damaging frosts (25%) and unusually high levels of human diseases (25%).

Zone 14 – Mainly wetlands

- District: Zafarobod
- Sample size: 12 communities and 147 households.
- Households: 59% Tajik and 41% Uzbek
- Household headship: 12% female headed households (lowest) with an average age of 49 years. Eighty-one percent of female heads are widowed. Average age of male headed households was 45 years (youngest). Twenty-five percent of sample households are headed by elderly (60+ years).
- Household size & composition: Average household size is 7.0 persons (smallest) with 32% of sample households having 8 or more members – the lowest of all sample zones. On average 44% (lowest) of household members were dependents (< 15 years or > 59 years). Seventeen percent (lowest) of the households had a male pensioner, 23% had a female pensioner and 16% (high) had both.
- Literacy: Ninety-eight percent of heads of household were literate with an average of 10.4 years (highest) of schooling. For the spouse, 93% were literate, with an average of 9.6 years (highest) of schooling.
- Disabled members: In the sample, 13% (lowest) of the households had a member who was disabled and 7% (lowest) had a disabled head of the household.
- Primary school children enrolment and absenteeism: For the sample households, 65% had at least one boy and 55% had at least one girl aged 6-14 years enrolled in school. For those enrolled children, 32% of boys and 22% of girls had been absent for one week or more in the past month. Most of the absenteeism was due to illness, lack of money or lack of school supplies.
- Housing type and ownership: Ninety-four percent of the households owned their dwelling and 86% were living in a single-family house. Thirty percent of the households paid cash to live in their homes while the rest paid nothing. Only 5% (low) of the households were very crowded with 4 or more persons per room.
- Housing conditions & construction materials: More than 80% (highest) of the houses were considered to be in 'good' condition while only 17% were classified as 'temporary' or 'incomplete' shelters. Nearly half of the houses had walls made of unfired bricks while 36% had concrete walls and 9% had walls made of fired brick. Almost all the houses had a roof made of asbestos sheeting. Eighty percent have a floor made of wood while the rest were made of earth/mud. Nearly 80% of the floors were covered with moquette and the rest had a cover of woollen felt.
- Electricity, lighting, cooking fuel & heating: All of the houses had a connection to electricity and 98% were reliant on electricity as the main source of lighting. For cooking, 31% used brushwood, 24% used firewood and 22% used animal manure. Thirty-eight percent used firewood for heating while 32% used stoves, 16% gas heaters and the rest used charcoal.
- Drinking water and bathing facility: Nearly 70% (highest) of the sample households used drinking water from an improved source. The main sources of drinking water for these households are wells with a pump (49% - highest), pond, river or stream (14%) and public tap (10%). The source of drinking water was located on the housing premises for 15% of the households while another 64% could reach their water source in less than one-half hour. Nearly 80% (highest) of the households had access to a private bathing facility.
- Access to and use of credit: Half of the sample households had no access to credit while 44% could access credit from friends or relatives and 4% from a local lender. Only 30% ever purchase food on credit and, of those households, almost all purchase food on credit only 'sometimes' or 'rarely'.
- Animal ownership: Nearly 80% of the households owned cattle with an average of 2 animals per owning household. Only 14% (lowest) of the households owned oxen or yaks (1 animal on average), 3% owned horses and 33% owned donkeys. Only 9% (lowest) of the households owned goats, with an average of only 2 animals per owning household while 18% owned sheep (2-3 on average) and 54% of the households owned poultry (5 birds on average).

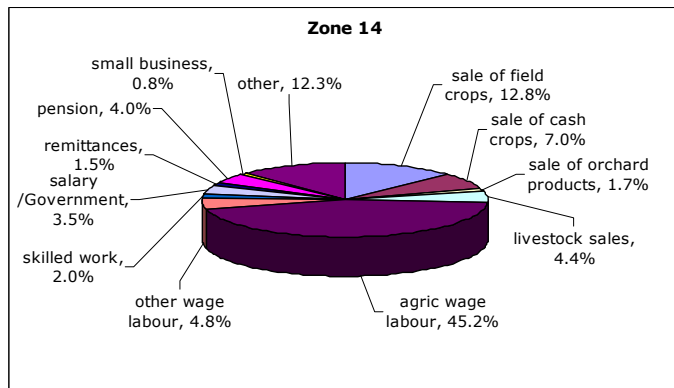


- **Household asset ownership:** Almost all (highest) of the households owned a quilt with 33% also owning a bed. Around 30% owned a table and/or chairs. Carpets/kilims were owned by 74% (high) of the households while 91% (highest) owned a lantern and 60% owned a stove. For productive assets, 59% (highest) owned farming equipment, 89% with basic carpentry tools, 48% with a sewing machine and 4% with a trailer or cart. Some households also owned transportation assets such as a bicycle (24% - highest) or motor bike (4%). Assets related to communication included radio (51%), television



(91% - highest) and VCR/DVD (16% - high). On average, of the total number of assets owned by a household, 25% were 'productive assets' – could be used to generate income or produce food. The chart above shows the distribution of sample households by asset ownership category. These households have the highest levels of asset ownership in terms of number and diversity of assets when compared to the other sampled zones.

- **Household income:** For the Zone 14 sample, the most often named sources of income were agricultural wage labour (70%), sales of field crops (26%) and salary/Government job (25%). Only 10% were reliant on pension and 4% on remittances as main income sources. As indicated in the chart on the right, agricultural wage labour contributed to 45.2% of the total income for these households while significant amounts of total income came from sales of field crops (12.8%), 'other income activities' (12.3%) and sales of cash crops (7%). Remittances and pension contributed to only 1.5% and 4.0% of total household income.

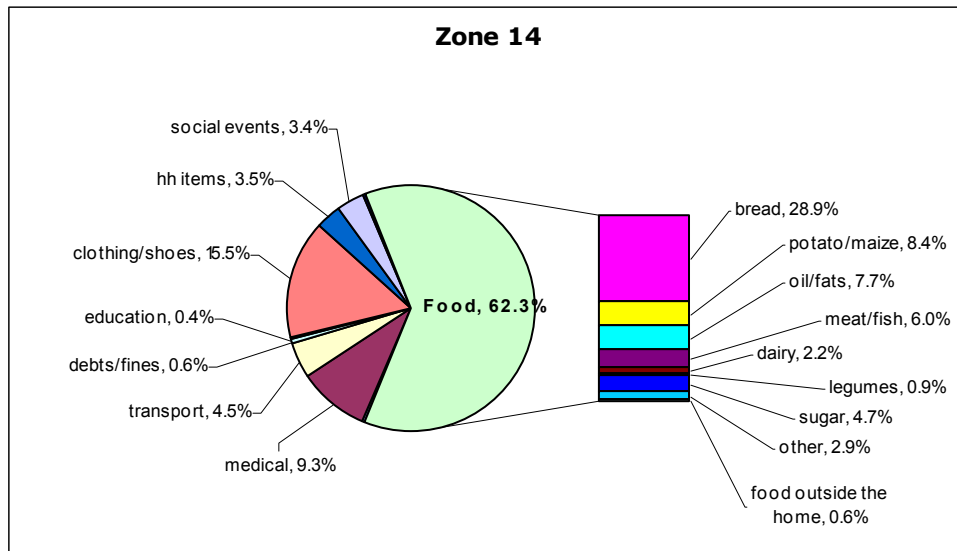


- **Land access and garden plots:** Nearly all of the households had access to land. Of the sample, 95% (highest) have a garden plot with an average size of 0.08 hectares. Only 6% of the households had been given some garden plot land by the State while 87% owned some garden plot land and 4% inherited it. The main crops cultivated in garden plots were vegetables (69%), fruit/nut trees (53%) potatoes (37%) and grapes (15%). The main sources of water for these garden plots are from irrigation (84%) with the rest from springs and rainfall.
- **Presidential land:** Three-quarters of the households had access to Presidential land where they all received from the State. The main sources of water are from irrigation (96%). Households grow mostly wheat (63%) and maize (42%).
- **Individual dekhan land:** One-quarter (high) of the households have access to individual dekhan land. All of those households rely on irrigation as water for these farms. Most households are growing cotton (97%) and wheat (18%).
- **Collective dekhan land:** Less than 20% of these households had access to collective dekhan farms. The average size of the farm is only 3 hectares, with water mostly from rivers or canals (86%) and rainfall (11%). Of these farmers, most are producing cotton (70%) or wheat (37%) on collective lands.
- **Main sources of traction and seeds:** The main sources of traction among these farming households are tractor (93%).for cultivating fields. Almost all of the households get their seeds for field crops and garden plots are from purchase or own stock.
- **Fertilizer use and sources:** Over 35% (highest) of the households were using fertilizer for field crops, while 24% were using fertilizer in their garden plots and 26% used it on

Part IV – Household survey results by homogeneous district clusters

both types of systems. Almost all of the households relied on purchase for fertilizer for any kind of agriculture system.

- **Use of pesticides/herbicides:** Fifteen percent of households were using these chemicals for field crops, 5% for their garden plots and 6% used them for both types of cultivation. For the farmers who used them, all acquired these chemicals through purchase.
- **Expenditures:** As indicated in the chart below, 62.3% of total monthly expenditure for the households in the Zone 13 sample was for food – the lowest of all sample zones. Within food expenditure, 28.9% goes for bread/wheat flour, followed by 8.4% for potatoes/maize, 7.7% for oils/fats, 6.0% for meat (highest) and 4.7% for sugar. The highest non-food expenditure category is for clothing/shoes (15.5%), followed by medical (9.3% - highest), transport (4.5%) and household items (3.5%).



- **Covariate shocks:** More than half of the households in this zone had experienced at least one covariate shock or event. For these households, the most often reported shock was high winds/storms (49% - highest), followed by drought/irregular rains (46%), landslides/erosion (44% - highest), drought/irregular rains (26%), unusually high levels of crop pests and disease (44%) and unusually high levels of livestock diseases (44%).

Part V - Women and child nutrition & health

Introduction

During the implementation of the food security and vulnerability survey, the fifth National Nutrition Survey was being conducted. Therefore there was decided not to collect anthropometric data for women and children for the WFP survey. A brief overview of the nutrition situation is presented in this section using secondary information followed by the findings of the health section of the WFP survey questionnaire.

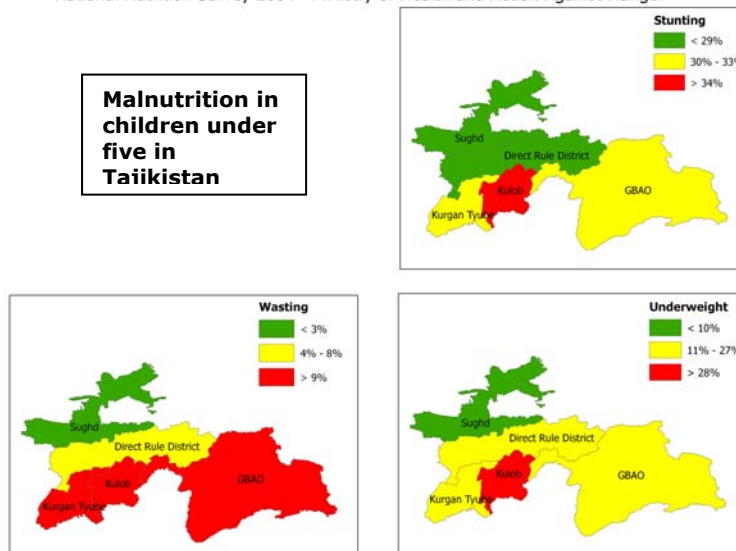
Malnutrition can occur even when access to food and healthcare is sufficient and the environment is reasonably healthy. The social context and care environment within the household and the community also directly influence nutrition. Factors influencing nutrition status are:

- breastfeeding practices - exclusive breastfeeding up to 6 months of age
- weaning practices – timely introduction of nutritious weaning foods
- maternal hygiene behaviours – hand-washing, bathing, etc.
- relationships between morbidity and water and sanitation
- pregnancies and antenatal care – birth spacing, tetanus toxoid injections, vitamin A supplementation
- HIV and AIDS

The problem of malnutrition in Tajikistan is among the highest in the region with 31.4% of children 6-59 months of age chronically malnourished (stunted) and 6.7% are suffering from acute malnutrition¹. Approximately 15% of children are born malnourished, with a birth weight of less than 2,500 grams², which is also an indicator of poor maternal nutrition. According to a recent UNICEF survey, Tajikistan has the highest rate of infant mortality among the Central Asian states, with 78 deaths per 1000 live births, caused mostly by nutrition-related issues and prenatal diseases contracted during delivery. Their survey identified acute respiratory infections as one of the main causes of death for infants with diarrhoeal disease contributing to the high rate of under-five mortality. In addition, lack of exclusive breastfeeding (4-6 months) and poor access to health care in several

regions were also contributing to infant mortality.

National Nutrition Survey 2004 - Ministry of Health and Action Against Hunger



The results of the 2004 National Nutrition Survey show that the *Khatlon* region, especially *Kulob*, has the highest prevalence of all forms of malnutrition in young children. *GBAO* has high levels of wasting but is not the worst off in terms of stunting or underweight. The region with the lowest levels of malnutrition is *Sughd*.

Iodine deficiency is the single most common cause of preventable mental retardation and brain damage in the world.

Maternal iodine deficiency causes miscarriages, other pregnancy complications, and infertility. During pregnancy, if the foetus or newborn is not exposed to enough thyroid hormone, it may have permanent mental retardation, even if it survives. Low birth weights and decreased child survival also result from iodine deficiency. The most visible

¹ 2004 AAH/MC - NNWSS

² Multiple Indicator Zone Survey, UNICEF, 2000

Part V – Women and child nutrition and health

consequence of iodine deficiency is goitre, which means "an enlarged thyroid." The 2003 UNICEF/ADB 'Sentinel Study' showed that 89% of children (2-15 years) had low urinary iodine levels ($< 100 \mu\text{g/L}$) while 58% suffered from folic acid deficiency. Total goitre rate was 5.8% among school aged children. The UNICEF/ADB survey also found that only 28% of households were consuming adequately iodized salt. UNICEF estimates that 10-15% of the population in Tajikistan suffer from goitre.

Vitamin A deficiency (VAD) is the leading cause of preventable blindness in children and raises the risk of disease and death from common childhood infections such as diarrhoeal disease and measles. For pregnant women in high-risk areas, vitamin A deficiency occurs especially during the last trimester when demand by both the unborn child and the mother is highest. The mother's deficiency is demonstrated by the high prevalence of night blindness during this period and may also increase the risk of maternal mortality. A recent UNICEF survey estimated that 52% of children 6-59 months were at risk of vitamin A deficiency. There is no national data on vitamin A supplementation in the country but a recent WFP survey of more than 5,000 rural households, only 31% of the women of reproductive age (15-49) had received a vitamin A capsule supplement after their most recent delivery. The 2000 MICS found that measles immunization was high, with 89% of the children immunized. However, more than 20% of children under five were suffering from diarrhoea at the time of the survey. The 2000 MICS also found that less than half of rural households were: using drinking water from safe sources and/or had access to safe sanitation.

Iron deficiency is the most common nutritional disorder in the world. As many as 4-5 billion people or 66-80% of the world's population, may be iron deficient; 2 billion people – over 30% of the world's population – are anaemic, mainly due to iron deficiency, and in developing countries, frequently exacerbated by malaria and worm infections.

- Iron deficiency is the main cause of anaemia; both affect all age groups.
- Nine out of ten anaemia sufferers live in developing countries; on average, every second pregnant woman and four out of ten preschool children are anaemic.
- In many developing countries, iron deficiency anaemia is aggravated by worm infections, which cause blood loss to some 2 billion people worldwide; and malaria, which affects 300-500 million people.
- For children, health consequences include premature birth, low birth weight, infections and elevated risk of death. Physical and cognitive developments are impaired, resulting in lowered school performance. For pregnant women, anaemia contributes to 20% of all maternal deaths.

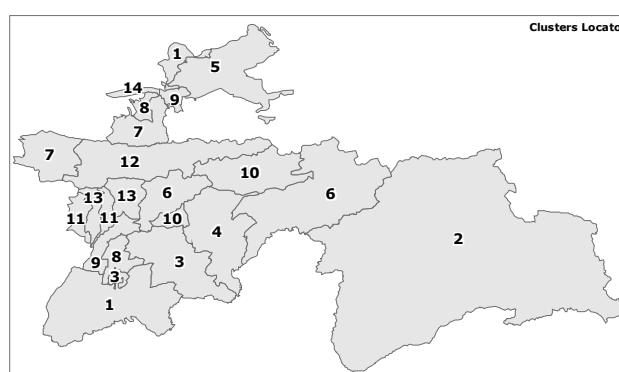
A UNICEF study found 37% of pre-school children in Tajikistan to be anaemic and 75% having low iron stores, which is a pre-condition for iron deficiency. Over 40% of non-pregnant women are anaemic while anaemia in pregnant women was 48 percent.

Section 5.1 – Women's health

The main findings of the household survey for health of women of reproductive age are presented in the following section. Data tables with the complete results of the analysis are found in Annex II of the report. The Zone indicator map is provided below for quick reference to the Zones (district Zones) as they are described in the following sections.

5.1.1 – Methodology and sampling

During the six weeks of data collection, the survey teams visited 429 rural communities and collected information on more than 4200 women of reproductive age (15-49 years). During the design, it was decided that eligible households must have at least one woman of reproductive age present at the time of the survey. Detailed information on pregnancy and breastfeeding status, antenatal care, pregnancy



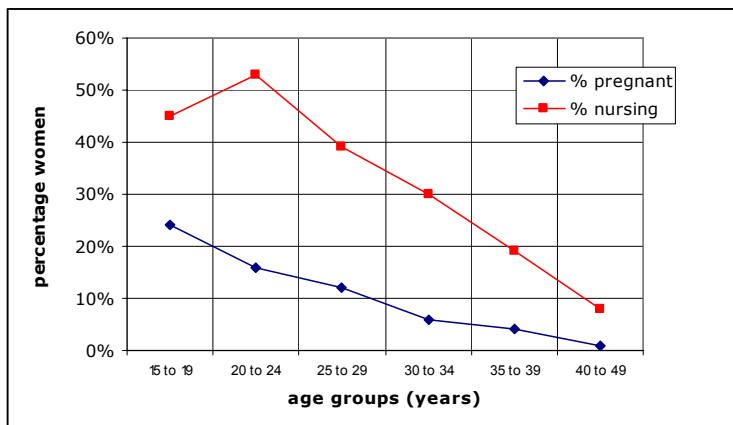
history and recent illness were collected.

Much of the data are analysed by age group in order to capture trends among the cohort of women. Women of reproductive age can be grouped into 6 age categories – these age categories and the percentage of total sample are: 15-19 years (0.8%), 20-24 years (10.8%), 25-29 years (17.4%), 30-34 years (18.5%), 35-39 years (21.3%) and 40-49 years (31.2%) – indicating that more than half the women in the sample were 35 years and older.

5.1.2 – Current pregnancy and breastfeeding

At the time of the survey (November 2004), 6.3% of the women interviewed were pregnant with about 24% in their first trimester, one-third in the second trimester and the rest in the third. More than 11% of the women in the Zone 6 and 12 samples were pregnant while less than 3% of the women in Zone 7 and 14 samples were pregnant at the time of the survey. Nearly 25% of the women aged 15-19 were pregnant at the time of the survey, although there were only 33 women of that age in the sample. The likelihood of being pregnant decreased with age as seen in the graph below.

For the pregnant women, 27% reported they had received iron/folate supplements – 67% in Zone 14 and 57% in the Zone 5 and more than 40% each in Zones 11 and 13. The lowest was from the pregnant women in Zone 4, where only 1 of the 20 reported receipt of iron supplements. Of the 70 pregnant women who reported receiving iron/folate



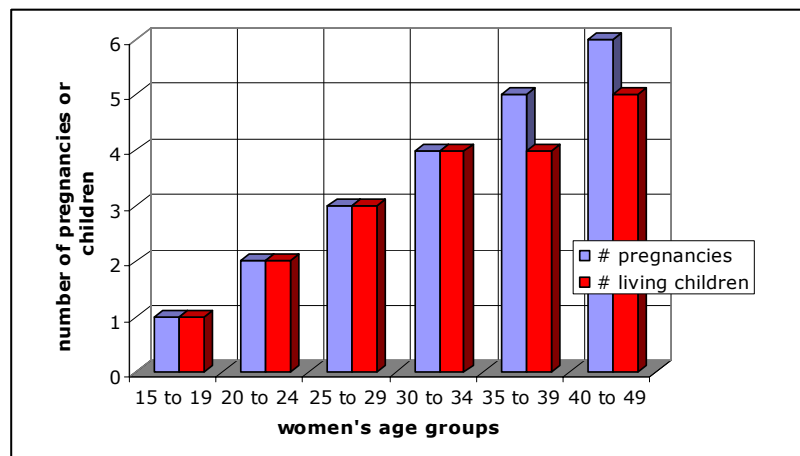
supplements, only 19% had taken 7 in the past week. Compliance was highest in Zone 9 where all three of the women receiving tablets had taken 7 in the past week. In Zones 1-7, none of the women receiving iron/folate tablets were compliant.

A total of 25% of the women in the sample were breastfeeding at the time of the survey – 39% in Zone 7, 34% in Zone 4,

and 30% in Zone 6. More than 50% of the women aged 20-24 years were breastfeeding at the time of the survey as indicated in the above chart. This percentage decreased with age as well.

5.1.3 – Pregnancy history and number of children

The average age of the women in the sample was 35 years. In total, the women reported a median number of 4 pregnancies and 4 living children. The chart below shows that, for the younger women, the median number of pregnancies and living children are the same. However, from the 35-39 year age group onward, there is one more pregnancy than living child for these women. In this sample, by the time women reach 40 years, they are likely to have experienced 6 pregnancies but to have only five children. By Zone, the women in Zone 10 sample had the greatest number of living children – five on average while women in Zones 2, 5 and 12 had an



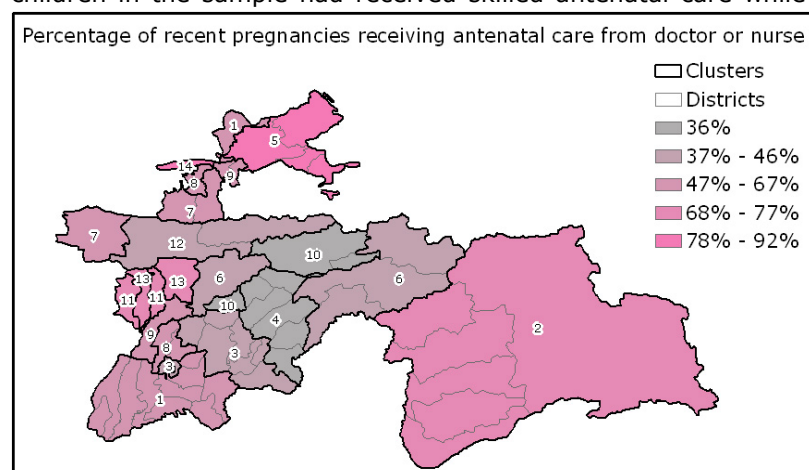
Part V – Women and child nutrition and health

average of three living children.

The women were asked to remember how old they were when they had their first child. The average age was 20 years for the sample with a high of 21 in *Zone 12* sample and a low of 19 years in *Zone 10*.

5.1.4 – Antenatal care

For each child less than five years of age, the mothers were asked to provide information on their use of antenatal care prior to delivery. For the analysis, 'skilled' antenatal care was defined as at least one visit to a doctor or nurse. Midwives, friends or relatives were not classified as 'skilled' professionals with regards to antenatal care. Nearly 60% of the children in the sample had received skilled antenatal care while in the womb. However,



there were some large variations between Zones as indicated in the map – over 90% of the recent pregnancies in *Zone 14* had received skilled antenatal care, followed by 85% in *Zone 5*, 77% in *Zone 2* and 73% in *Zone 11*. Only 36% of the women in the *Zones 4 and 10* samples had received skilled ANC.

In the sample of children under 5 years of age, the mothers received at least one tetanus toxoid injection in 27% of the pregnancies. The survey did not collect information whether the mother received the complete series of tetanus toxoid injections. In all, half of the mothers in *Zone 5* had received at least one tetanus toxoid injection in their recent pregnancies, followed by more than 40% in *Zone 2, 7 and 11* and only 8% of women in the *Zone 12* sample.

5.1.5 – Birth size & low birth weight

According to the ACC/SCN, Intrauterine Growth Retardation (IUGR) refers to foetal growth that has been constrained by inadequate nutritional environment *in utero* and is a characteristic of a newborn that has not attained its growth potential. There are two main types of IUGR: Group 1 are those born after at least 37 weeks of gestation and weigh less than 2,500 grams; Group 2 are those born prematurely and weigh less than the 10th percentile at birth (2,500 grams).

In most developing countries, it is difficult to determine gestational age so low birth weight (< 2500 grams) is used as a proxy for IUGR. Research shows that in 2000, 11% of newborns in developing countries had low birth weight at term. The main causes of IUGR are nutritional: inadequate maternal nutritional status before conception, short maternal stature, and poor maternal nutrition during pregnancy (low gestational weight gain primarily due to inadequate dietary intake). Diarrhoeal diseases, intestinal parasites, respiratory infections and malaria also have an impact on foetal growth. The underlying and more basic causes relate to the care of women, access to and quality of health services, environmental hygiene and sanitation, household food security, educational status, cultural taboos, and poverty.

In order to estimate incidence of low birth weight among children in the survey sample, the questionnaire included a question taken from the MICS survey where the mother is asked about the size of the child at birth. The child's birth size is described as being: very large, larger than normal, normal, smaller than normal, or very small. Overall, 8% were very large or larger than normal, 78% were normal, 14% were smaller than normal and 2% were very small.

The map on the right shows the prevalence of low birth weight derived from reported birth size, by Zone. The highest percentage of children described as being 'very small' or 'smaller than normal' at birth was found in Zone 2 (25%), followed by Zones 1, 3 & 9, with about 18% each.

With the sample data, several analyses were conducted to see the relationships between

potential causes of low birth weight (maternal health, use of skilled antenatal care) and some of the negative effects of being born malnourished. Results of the causal analysis show that:

- Mothers of low birth weight babies were significantly ($p < 0.001$) less likely to have received skilled antenatal care during their pregnancies.
- Mothers of low birth weight babies were significantly ($p < 0.01$) less likely to have received a tetanus toxoid injection during their pregnancies.
- Low birth weight babies were significantly ($p < 0.05$) more likely to come from households not using properly iodized salt.

Some of the negative health effects of being born 'very small' or 'smaller than normal' show that these children are significantly more likely to have suffered from cough ($p < 0.001$), acute respiratory infection ($p < 0.001$), fever ($p < 0.01$) and diarrhoea ($p < 0.001$) in the 2 weeks prior to the survey than those born with 'normal' weight.

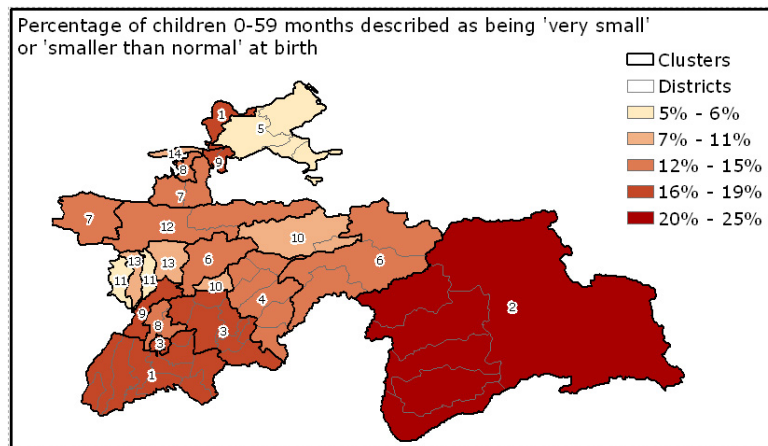
5.1.6 – Current health and hygiene of women

The women in the sample were asked if they had experienced an episode of diarrhoea or fever in the two weeks prior to the survey. Overall, 6% of the women had at least one episode of diarrhoea, ranging from highs of 14% in Zone 7 and 9% in Zones 1, 4, 8 and 11 to a low of 2% in Zones 5 and 14. By age group, the 2-week period prevalence of diarrhoea was highest in the women in the 30-34 year age group, at 8 percent. Recent fever (non-specific) was reported by only 5% of the women in the sample with the highest being 9% in Zone 11 and lowest in the women from Zones 5 and 10 samples. The 2-week period prevalence of fever by age group was highest in the women aged 25-59 years (6%).

The prevalence of both illnesses in sampled women was also highest in Zone 11 (5.2%), Zone 1 (2.3%) but zero in Zones 5 and 14. By age group there was no particular trend in the percentage of women reporting both illnesses. Overall, the two week prevalence of reported illness was quite low in the sample. There is a possibility that the period of data collection was during a season when these illnesses are less common among rural women in Tajikistan.

General appropriate hygiene practices were assessed by asking the mother what she normally used to wash her hands after defecation. Overall, 69% used water only to clean their hands after defecation while 26% used local soap and water, and 4% used washing soap and water. There was quite a range in hand-washing practices between Zones – 93% of the women in Zone 10 used water only (poor hygiene) to wash their hands after defecation, followed by more than 80% in Zones 1, 3 and 4. However, 20% of the women in the Zone 2 sample used washing soap and water to wash their hands after using the toilet, followed by 14% in Zone 9. The rest of the Zones only had 1-4% of the women using good hand washing practices.

Section 5.2 – Micronutrient malnutrition



Part V – Women and child nutrition and health

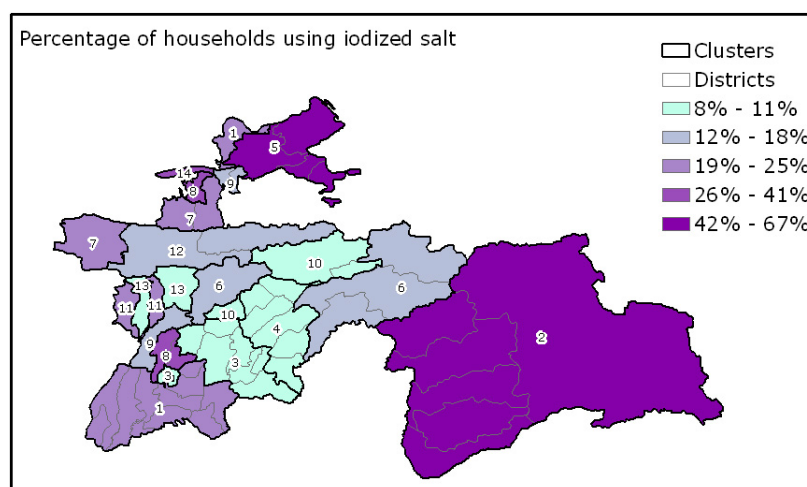
The survey was designed to look into how micronutrient malnutrition may be addressed in rural areas – namely coverage of national vitamin A supplementation programmes as well as the use of adequately iodized salt by rural households around the country. No information was collected to determine the extent of deficiency diseases of iodine, vitamin A or iron.

For **vitamin A supplementation**, the women were asked if they had received a high dose capsule of vitamin A after their most recent delivery. These capsules are not only given to boost levels of vitamin A in the mother but also to ensure that she passes on the benefits of vitamin A to her newborn child through her breast milk while the child's immune system is developing. More than 30% of the women in the sample had received this vitamin A supplementation with the highest found in *Zones 2, 7 and 3* and the lowest in *Zones 6, 12 and 10*.

In the survey, household members were asked to provide a teaspoon of salt to be tested for **iodine** content. The packaging of the salt was also noted. Around 22% of the households provided salt that was packaged properly, ranging from highs of 74% in *Zone 5*, 69% in *Zone 2* and 68% in *Zone 14*, to a low of 4% in *Zone 3* and 5% in *Zone 11*.

One-quarter of the households in the survey had been using adequately iodized salt (15 ppm), as confirmed by salt testing during the survey. Another one-quarter were using salt with iodine content of less than 15 ppm while about half were using salt that had not been iodized.

Use of adequately iodized salt was highest in households from *Zones 1 & 5* while lowest usage was found among households in *Zones 3 & 13* as indicated in the map.



Section 5.3 – Child nutrition and health

Main findings of the household survey for child nutrition and health are presented in the following section. Data tables with the complete results of the analysis are found in Annex II of the report.

5.3.1 – Methodology and sampling

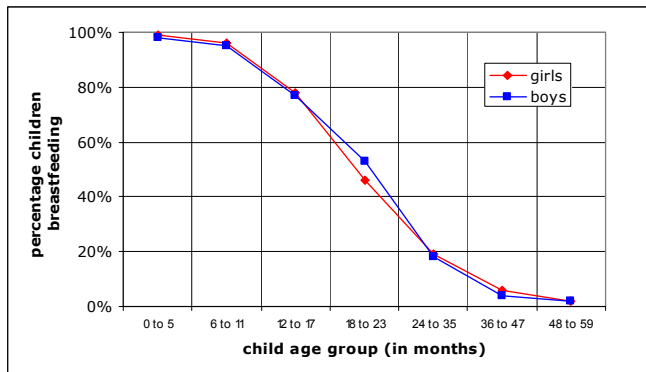
Children under five that belonged to the woman interviewed in the women's health and nutrition section were included in the sample. Overall, health information was collected on over 3,700 pre-school children. Anthropometric measures were not taken because a nutrition survey was being conducted around the same time.

The age of children was determined simply by asking the mother for the date of birth. In most cases the teams felt they had accurate responses as the level of education of the women in the sample was quite high. However, there are likely some misreported ages in the final sample.

5.3.2 – Breastfeeding practices

For each child in the survey, information was collected on breastfeeding initiation and duration. Nearly all of the children in the survey had been fed breast milk, ranging from 95% in *Zone 5* to 100% in *Zone 2*. There is little information on the use of breast milk substitutes among this population of women. Information was also collected on initiation of breastfeeding but it was not complete and thus is not included in the analysis.

The chart on the right shows the percentage of boys and girls who were still breastfeeding by the time of the survey, by age group. Nearly all children 0-5 months are breastfeeding. This percentage decreases gradually by age group with the steepest decrease coming between 12 and 24 months of age – the most common time for weaning. Virtually no children over the age of 3 years were being breastfed. There are few differences by gender, except that slightly more boys than girls in the 18-23 months age group were being breastfed.



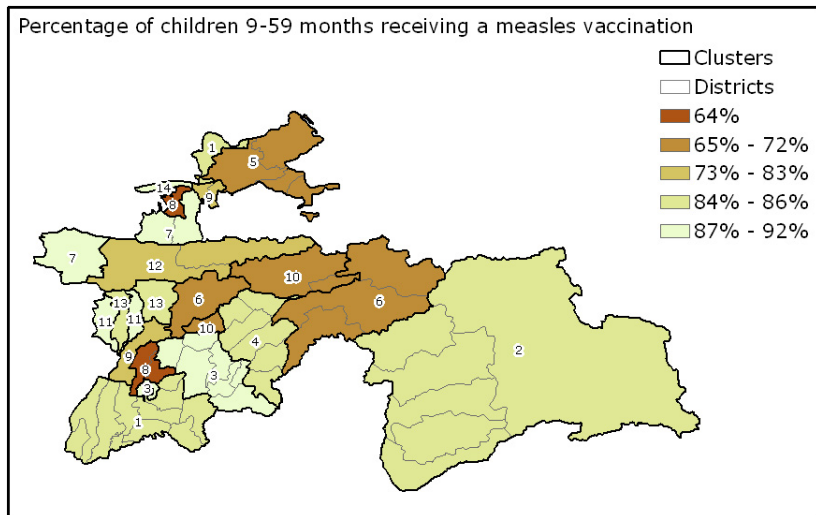
5.3.3 – Immunization

During the survey, the mothers of children under five were asked if the child had an immunization card. Overall, the enumerators actually saw the immunization cards for 42% of the children, while 35% had cards but were not available to be seen. Nearly one-quarter of the children did not have an immunization card. Eighty percent of the children in Zone 14 (Zafarobod) had immunization cards that were seen by the enumerators. Other district Zones with more than 60% of the children had immunization cards that were seen include Zones 2, 3, 5 and 7. The Zones with the highest percentages of children with no immunization cards were Zone 9 (42%), Zone 6 (40%), and Zone 13 (30%). The table on the right could indicate two things:

Immunization card	Vitamin A (0-59 months)	Measles (9-59 months)
Yes – seen	72%	89%
Yes – not seen	51%	78%
No	32%	67%

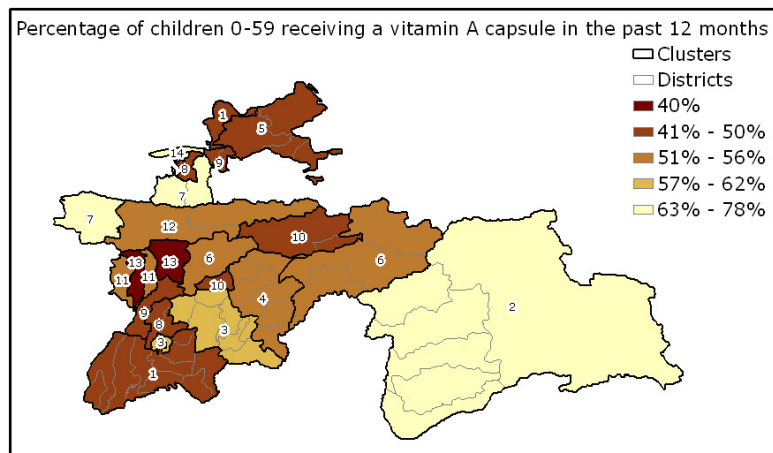
- Children with immunization cards are more likely to be immunized and supplemented and/or;
- Having a child’s immunization card readily available could be an indicator of good child caring practices at the household level.

Measles immunization for children 9-59 months was verified both from the card and from mother’s recall. Overall, 80% of the children (9-59 months) in the sample had received a measles immunization. Rates of over 90% measles immunization were found in Zones 11 and 14 while the lowest was found in Zone 8, followed by Zones 5, 6 and 10. Interestingly, more than 80% of the children in Zone 8 reportedly had an immunization card. Data on other immunizations were not collected as the measles immunization rate is usually a good indicator of overall immunization.



Immunization by age group shows that there may be some recall or recording problems in that about half the children less than five months reportedly had been immunized against measles while more than 60% of the children 6-11 months had received the immunization. More than three-quarters of the children aged 12-17 months and over 80% of the older children had been immunized against measles by the time of the survey.

The mothers were also asked if the children (0-59 months) had received a high dose supplement of vitamin A in the past 12 months. More than half had received a

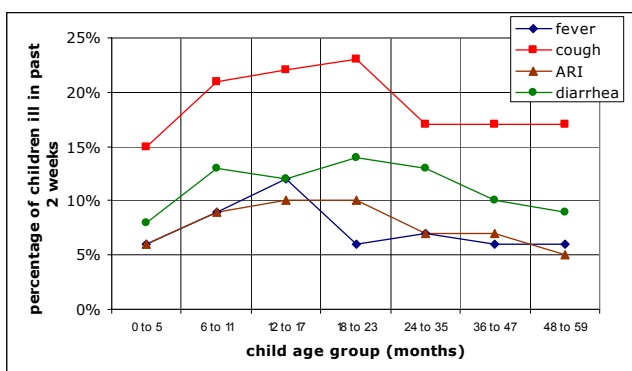


supplement, ranging from highs of 79% in Zone 14, 77% in Zone 2 and 76% in Zone 7, as indicated on the map to the left. The lowest level of supplementation was found in Zone 13 (40%), with levels also found in Zones 1, 5, 8, and 10. As indicated in the table mentioned earlier, levels of supplementation were much higher in children with an immunization

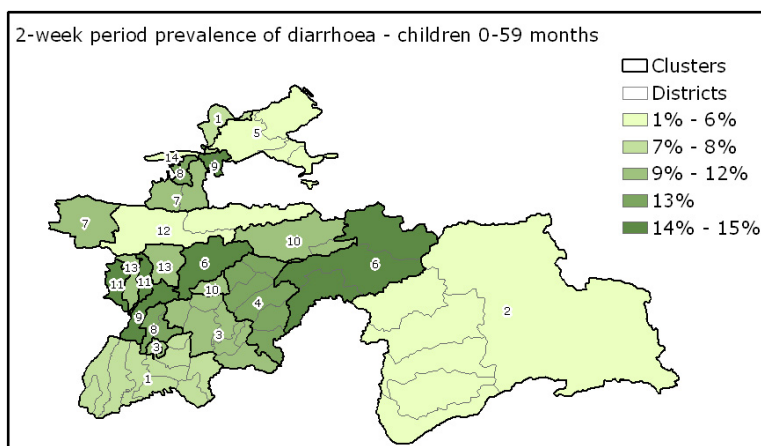
card readily available. Only about one-third of the children with no immunization card had reportedly received a vitamin A supplement.

5.3.4 – Recent child morbidity

In the survey, the mothers were asked if their children had experienced an episode of diarrhoea, coughing (if yes, with fast breathing), or fever in the past two weeks. Overall, 11% of the children had experienced an episode of diarrhoea, 18% had been coughing and 7% had a non-specific fever in the past two weeks. Coughing with fast breathing is a sign of acute respiratory infection (ARI), which is one of the major childhood illnesses in the developing world. In the sample there was a 7% period prevalence of ARI in children less than five years of age. Overall reported morbidity was lower than expected, as with the women.



The prevalence of diarrhoea was highest in the 18-23 months age group although it remains around 12-14 percent from age 6 months to 3 years before reducing amongst older children. The prevalence of fever was highest in children 12-17 months of age while was relatively low in the other age groups. The prevalence of cough was also highest in the 6-23 months age groups, while prevalence of acute respiratory infection followed a similar pattern by child age group. In all instances, the prevalence of recent illness was lowest in the youngest and oldest age groups.



When investigating the prevalence of diarrhoea by district Zone, the map on the left shows that the children in Zone 11, Zone 6 and Zone 9 were more likely to have experienced a recent episode of diarrhoea. The lowest prevalence was found in the children in Zone 14, Zone 2 and Zone 12.

The table on the right shows the prevalence of recent illness by immunization card ownership, in an attempt to investigate the relationship between having a card and quality of caring practices. The table shows that there were no significant differences in reported prevalence of recent fever in children having a card or not. However, the prevalence of reported cough was significantly lower in children with an immunization card readily available. Children with an immunization card that was seen were also significantly less likely to

Immunization card	Fever	Cough	ARI	Diarrhoea
Yes – seen	7%	17%*	8%*	9%*
Yes – not seen	9%	24%*	9%	14%
No	10%	21%	12%*	15%*
<i>Significance</i>	<i>n.s.</i>	<i>p < 0.05</i>	<i>p < 0.05</i>	<i>p < 0.05</i>

have experienced recent acute respiratory infection and diarrhoea. These findings indicate some relationship between card ownership (and availability) and improved child health.

5.3.5 – Morbidity by gender

The data were analysed to better understand the relationships between morbidity and gender. The findings are presented in the tables below. For most of the illnesses there were differences and most were statistically significant.

	Fever	Diarrhoea	Cough	ARI
Girls	6%	12%	16%	6%
Boys	8%	11%	20%	8%
<i>Significance</i>	<i>< 0.05</i>	<i>n.s.</i>	<i>< 0.05</i>	<i>< 0.05</i>

The table shows that the boys are significantly more likely to have suffered from fever, cough, and acute respiratory infection in the two weeks prior to the survey than girls. The

differences for all are statistically significant. However, there were no differences in the prevalence of diarrhoea between boys and girls.

Section 5.4 – Knowledge of HIV and AIDS

Acquired immune deficiency syndrome (AIDS) was first recognized internationally in 1981. As of 2000, an estimated 36 million adults and children around the world were living with the human immunodeficiency virus (HIV) and AIDS (UNAIDS, 2000). AIDS is caused by HIV, and when infected with HIV, a large proportion of people die within 5-10 years (WHO, 1992). The HIV/AIDS pandemic is one of the most serious health concerns in the world today because of the high case-fatality rate and poor access to anti-retroviral treatment. Epidemiological studies have identified unprotected sexual intercourse, intravenous injections, blood transfusions, and foetal transmissions from infected mothers as the main modes of transmission of AIDS. Studies have also indicated that HIV cannot be transmitted through food, water, insect vectors, or casual contact.

The Republic of Tajikistan is currently viewed as a country with low prevalence of HIV infection. As of March 2004, 170 cases of HIV infection have been registered in the republic, or 0.28 cases per 100,000 of the population (UNAIDS, 2005). Of the total number of cases, 81% are men and 19% are women, but since 2000 there has been a growing trend of infection among women. In most cases, transmission was through injecting drug use with a few from sexual contacts or blood transfusion.

The official data do not reflect the real situation in the country as the country could not afford to offer full testing until 2003 where improved diagnostics for HIV began with support from the Global Fund. In just two months in 2004, 51 new cases were registered (UNAIDS, 2005). UNAIDS experts estimate that, taking into account factors such as an increasing number of injecting drug users, sex work, unemployment, poverty and migration, that the real number of HIV infected people in the country is 10-20 times higher than the official data.

However, Tajikistan has already mobilized an effective multi-sectoral response to HIV and AIDS beginning with a Presidential decree in 1997 which approved the 1st National Program on HIV/AIDS prevention. The National Program provides the overarching framework for the prevention and control of HIV spread in Tajikistan and outlines the key policy directions, strategies and priority interventions for HIV/AIDS and STIs. In 2000, the Government approved a second national programme for the period up to 2007. In 2002,

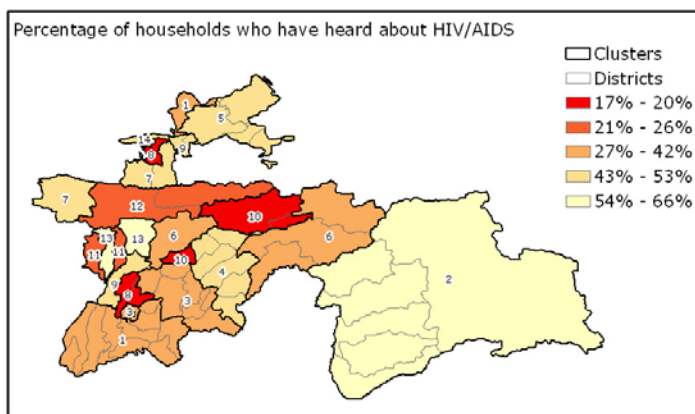
Part V – Women and child nutrition and health

the National Strategic Plan (NDP) for the response to the HIV/AIDS epidemic in the country for the period 2002-2005 was adopted by the government. The plan places great emphasis on preventive activities among injecting drug users, sex workers and youth, as well as on donor blood safety (UNAIDS, 2005).

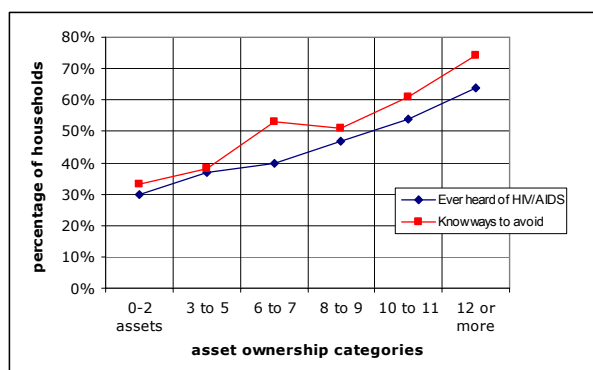
The WFP Food Security and Vulnerability survey included a series of questions on the knowledge of and attitudes toward AIDS. Women of reproductive age were first asked if they had ever heard of AIDS. Those who had heard of AIDS were questioned on their knowledge of its transmission and prevention.

5.4.1 – Knowledge of HIV/AIDS

Data on knowledge are presented in tables found in Annex II of this report, by district Zones and also in the thematic map to the right. Lowest levels of every hearing of HIV/AIDS were found in district Zones 8 and 10 - *Istaravshan, Ghozimalik, Gharm, Khojamaston, Fayzobod, and Tojikobod* districts which don't appear to be particularly isolated. Those with the highest percentage of households having ever heard of HIV and AIDS are in Zones 2 (GBAO) and 13 (*Varzob and Shahrinav*). By ethnicity, it appears that Tajik and Uzbek households generally have better awareness of HIV and AIDS than Turkmen and Kyrgyz families. However, there were no differences of knowledge in terms of literacy of head or spouse or age of household head.



When investigating knowledge of HIV and AIDS by relative wealth as determined by asset ownership, there is a clear trend showing that wealthier households are more likely to have ever heard of HIV/AIDS and also to know how to avoid becoming infected. These relationships are presented in the graph on the left. Knowledge of HIV and AIDS and prevention is much lower among households with few assets as compared to those owning more assets maybe indicating that wealthier households have better access to this information as there were no relationships between knowledge and



education levels.

5.4.2 – Knowledge of HIV/AIDS prevention

To get an idea of the extent of knowledge about HIV/AIDS, respondents who had heard of AIDS were further asked whether there is anything a person can do to avoid AIDS. Only half of the households who had ever heard of AIDS knew that the disease can be avoided. This was highest among households in Zone 14 (81%) and Zone 2 (70%) and lowest among households in Zone 5 (20%).

Three programmatically important ways to avoid the transmission of HIV/AIDS through sexual contact are abstaining from sex, using condoms and limiting the number of sexual partners. Of those households that knew HIV/AIDS could be avoided, 42% mentioned abstaining from sex, 50% mentioned using condoms, and 57% mentioned having only one sexual partner. Details by district Zone are found in Annex II. In total, 18% did not correctly name any of these programmatically important ways to avoid the transmission of HIV/AIDS while 36% could name one, 27% could name two and 19% could name all three. Of the district Zones, about one-third of the households in Zones 11, 9, and 8 could not name any important ways to avoid transmission while more than half the households

in *Zones 2, 3, 4, 5, and 12* could name two or three programmatically important ways to avoid infection while more than 60% of the households in *Zone 6* could do the same.

More than 60% of the respondents who had heard of HIV/AIDS knew that it could be transmitted from mother to child or through breast milk – more than 80% of those households in *Zone 2* (GBO) and less than half in *Zones 10 and 12*.

However, nearly 10% of the sample thought that HIV/AIDS could be transmitted through witchcraft while about one-third felt that one could be infected from mosquito bites. Another third of these households felt that it could be transmitted by sharing a meal with infected persons. The results by district Zone are found in Annex II of this report. Although correct knowledge of prevention is rather high, many households also have erroneous perceptions of other ways to be infected.

5.4.3 – Other knowledge and perceptions

Respondents who had heard of HIV/AIDS were further asked if a healthy looking person could have AIDS. One-third of those households stated correctly that a healthy looking person can have the AIDS virus, ranging from more than 60% in *Zone 2* (GBO) to only 12% in *Zone 1*.

To better understand perceptions, the respondents were asked if a teacher with AIDS should still teach. Seventeen percent of the households agreed with that statement, ranging from 31% in *Zone 2* to 9% in *Zone 8*. Just over 10% of the households indicated they would buy food from an infected shopkeeper, again ranging from 23% in *Zones 2 and 3* to 2% in *Zone 12*.

Overall, households in *Zone 2* appear to be better informed about HIV and AIDS while those in *Zone 8* and *Zone 12*.

Part VI - Household food consumption typologies

Using data on the dietary diversity, defined as the number of different foods consumed during the week prior to the survey, and the frequency by which these foods were consumed, a sample of 5157 households from 14 district clusters were analyzed in order to identify groups of households that had similar food consumption patterns and similar access to the food they consumed.

Section 6.1 – Creation of household food consumption groups

In the field of nutrition different food stuff are divided into a number of “food groups”, of which a combination should be consumed on a daily basis to ensure a healthy diet. These key food groups are: cereals, legumes and oilseeds, tubers and roots, vegetables and fruit, animal products, oil and fats.

In order to classify the sampled households on the basis of their actual weekly food consumption and dietary diversity, the analysis used the information on the frequency of consumption (0 to 7 days) for eight food items or food groups:

- | | |
|---|---|
| 1. bread/wheat flour; | 5. vegetable oil, fats and butter; |
| 2. other cereals (maize, rice and barley) and pasta; | 6. dairy products (milk, yoghurt and cheese) and eggs; |
| 3. potatoes; | 7. vegetables and fruit; |
| 4. meat (poultry, beef and mutton) and beans; | 8. sugar and sweets. |

The sources of the foods consumed (purchase, own production, gifts, borrowing, food aid) were investigated in the attempt to understand the way a household’s access food could be an element of food security/insecurity. Almost all households in the survey accessed their food mainly through a combination of own production or purchase. Production accounted for 62% of the total responses weighted for consumption frequency, while own production was reported in 37% of responses. Even though 13% of the households received some food as a gift, this source accounted as a source for only 2% of the total food consumed by the sampled households.

In the analysis, the shares of food consumed that were from own production, purchase, borrowing, trading for goods or services or received as gift were added to the food frequency information table in order to incorporate into the analysis, the relative importance of these sources to overall household food access.

For a single household, each item was coded by the source and the number of days each item was consumed was summed and the proportion of ‘item-days’ from production was calculated.

For example, a household was consuming wheat from own production for 7 days, potatoes (own production) 3 days and vegetables (own production) 5 days. They also ate oil from purchase for 7 days, meat (purchase) for 3 days and beans (purchase) for 4 days. To calculate % of consumption from production, we do the following:

- $(7 \text{ wheat} + 3 \text{ potatoes} + 5 \text{ vegetables}) = 15$
- Divide by the sum of all item frequency:
- $(7 \text{ wheat} + 3 \text{ potatoes} + 5 \text{ vegetables} + 7 \text{ oil} + 3 \text{ meat} + 4 \text{ beans}) = 29$
- $(15/29) * 100 = 52\% \text{ from production}$
- Access to consumed food through purchase would be $(7 \text{ oil} + 3 \text{ meat} + 4 \text{ beans}) / (29) = 48\% \text{ from purchase}$.

Using the data on (1) the number of food items and their frequency of consumption, and; (2) the share of consumed food from different food sources, multivariate statistical techniques (principal component analysis followed by non-hierarchical clustering analysis¹) were to create clusters of households characterized by distinct food consumption patterns and similar ways of access food.

¹ PCA and Cluster Analysis were conducted using **ADDATI 5.3c** software which is available for free at http://cidoc.iuav.it/~silvio/addati_en.html

Part VI – Household food consumption typologies

From the analysis, seven consumption typologies were identified, falling into four broader categories:

- 1. Very poor food consumption**
 - Chronically food insecure
 - Very vulnerable to food insecurity households
- 2. Poor food consumption**
 - Borderline households – reliance on production
 - Borderline households – reliance on purchase
- 3. Adequate food consumption**
- 4. Good food consumption**
 - Better-off households – reliance on production
 - Better-off households – reliance on purchase

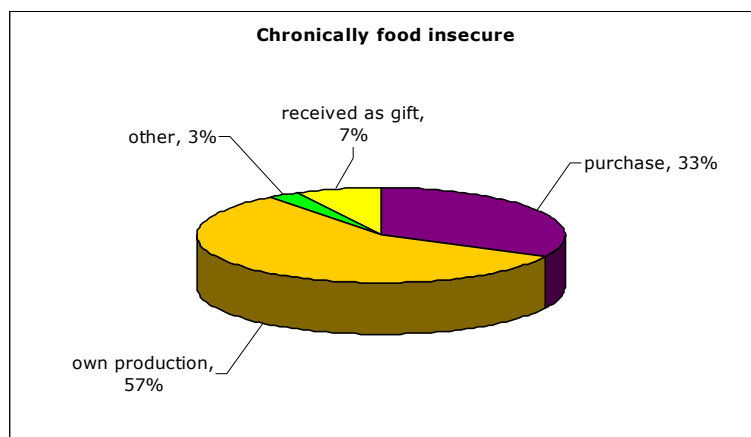
Section 6.2 – Household food consumption groups

Detailed descriptions of the households in the 7 seven food consumption typologies are presented in the following sub-sections.

6.2.1 – Very poor food consumption - Chronically food insecure - 10%

Households clustered in this group have very poor dietary consumption, relying on daily consumption of bread/wheat as their staple food. Potatoes, vegetables or fruit are consumed often, while sources of dietary fat and protein are only consumed 2-3 days per week. The dietary diversity of these households is the lowest in the sample: where they consume mostly carbohydrates but do not have a balanced diet in terms of nutritional quantity and quality.

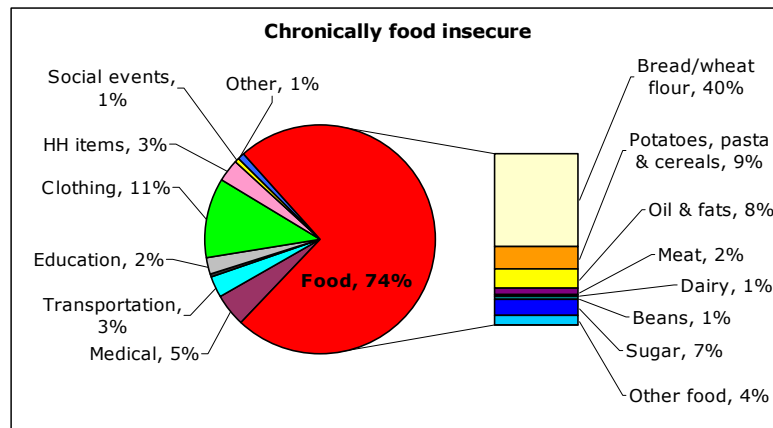
10%	never/rarely (0-1 day)	sometimes (2-3 days)	often (4-5 days)	daily (6-7 days)
Bread				
Cereals/pasta				
Potatoes				
MEAT + beans				
• poultry				
• beef				
• mutton				
• beans				
Oil, butter & fats				
DAIRY + eggs				
• eggs				
• milk				
• yoghurt/cheese				
Vegetables & fruits				
Sugar/sweets				



Food access analysis shows that these households rely largely on own production as source of their food: 57% of consumed food comes from own production. In particular, potatoes, vegetables and fruit are often produced by the household, helping them to diversify/integrate their diet. One third of the consumed food is purchased, while a large 7% is received as gift.

This percentage is the highest across the different household groups.

Even though the diet pattern is very poor, share of total expenditure spent on food takes a very large share of the household total expenditure, accounting for 74%. This group has the highest share of total expenditure for food. Bread/wheat takes the greatest share among food items (40% of the total expenditure). This means that these



households allocate the greatest share of their monthly expenditure for their staple food. The largest non-food expenditure category is for clothing and shoes.

Sale of field crops is the most important contributor to the household income - 17% out of the total income. Sales of orchard products and cash crops are other relevant income activities. The relatively high importance of selling agricultural products might indicate that households must sell their crops in order to gain cash for other food or non-food needs. Households might deplete their crop stock, reducing the quantity of food from own production available for the household consumption.

Household demographics:

- Lowest percentage of households with male or female pensioners
- Lowest percentage of dependents in households
- High percentage of large households (46%)
- High percentage of disabled members
- Highest crowding (4+ persons to room)

Agriculture:

- 96% of households in this group have access to agricultural land; 89% have a garden plot; just 47% with presidential land; and only 18% with individual dekhan. On presidential land, 75% are growing wheat.

Assets:

- Lowest average number of households assets owned; lowest percentage of productive household assets
- Fairly high livestock ownership
- Good access to drinking water from improved sources.

Health:

- Lowest vitamin A supplementation of mothers (21%); highest prevalence of maternal diarrhoea
- 15% iodized salt (≥ 15 ppm)
- For children, lowest VA supplementation (42%); measles immunization – 76%, highest prevalence of fever & acute respiratory infection;
- 19% of children described as 'very small' or 'smaller than normal' at birth.

Exposure to shocks:

- High exposure to **shocks**: mostly crop disease & drought.
- Highest % of HH (11%) experiencing "drought & price fluctuation" as covariate shocks
- Highest % of HH (10%) experiencing "price fluctuation & restricted access to market" as covariate shocks
- 10% of HH experiencing "crop & livestock diseases" as covariate shocks.
- Highest % of HH (12%) experiencing "loss of employment" & "reduced salary" of a household member.

Coping strategies:

- 334 HH reported the use coping mechanisms in response to a shock (69% of the group)
 - 61% of the HH which use coping mechanisms decrease expenditure in general
 - 50% reduce quality/quantity of diet
 - 34% skip a day without eating

Other:

- Lowest access to credit
- Highest percentage of sampled households receiving food aid (11%).

Part VI – Household food consumption typologies

6.2.2 - Very poor food consumption - very vulnerable to food insecurity – 17%

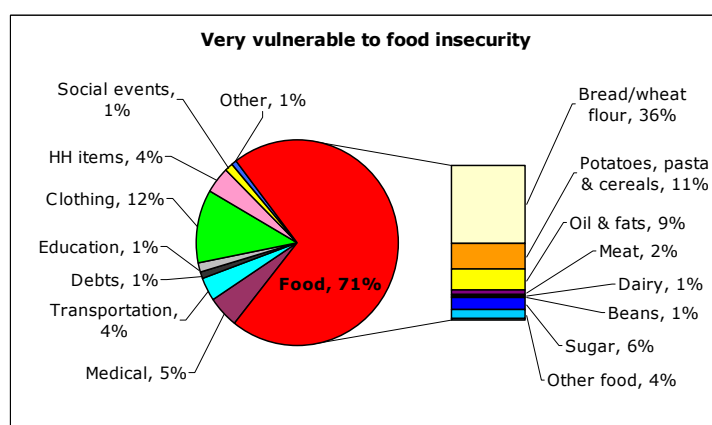
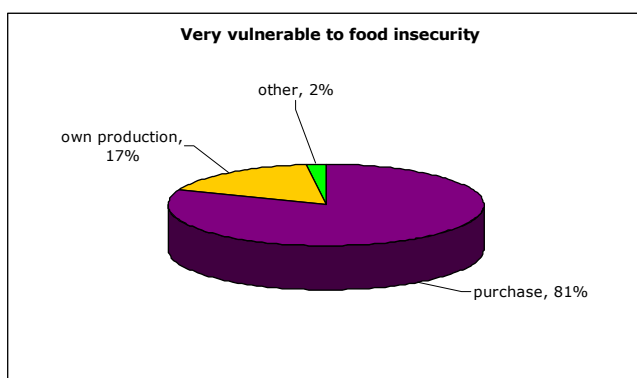
Households clustered into this group present a diet based on daily carbohydrate and fats consumption. Bread/wheat and oil are consumed daily, while other cereals/pasta and potatoes are eaten often, 4-5 days per week on average. About half of these households frequently consume sugar, while the rest eat it only 2-3 days per week. Vegetables and/or fruits are also sometimes consumed. Main sources of protein, such as animal products or pulses, are also consumed 2-3 days per week.

17%	never/rarely (0-1 day)	sometimes (2-3 days)	often (4-5 days)	daily (6-7 days)
Bread				
Cereals/pasta				
Potatoes				
MEAT + beans		47%		
• poultry				
• beef				
• mutton				
• beans				
Oil, butter & fats				53%
DAIRY + eggs		53%		
• eggs				
• milk				
• yoghurt/cheese				
Vegetables & fruits				
Sugar/sweets				

Bread/wheat and oil are consumed daily, while other cereals/pasta and potatoes are eaten often, 4-5 days per week on average. About half of these households frequently consume sugar, while the rest eat it only 2-3 days per week. Vegetables and/or fruits are also sometimes consumed. Main sources of protein, such as animal products or pulses, are also consumed 2-3 days per week.

Households do not rely on any one particular source for protein with most relying on a combination of meat, pulses, dairy product or eggs.

Households in this group access their food mainly through purchase with only 17% coming from own production. Those foods being produced are mostly potatoes and some of the cereals such as wheat and maize. For those households consuming eggs and milk, a lot is from own production. However, as the consumption table shows, these foods are consumed infrequently.



Share of expenditure on food is also high - 71% of the total monthly disbursement. The highest allocations are for bread or wheat flour, followed by other carbohydrates, oils and fats. Expenditure allocations for non-food items are consequently lower: specifically, these households spend proportionally the lowest amount of money on clothing across all the seven household groups. Allocation to education is quite low.

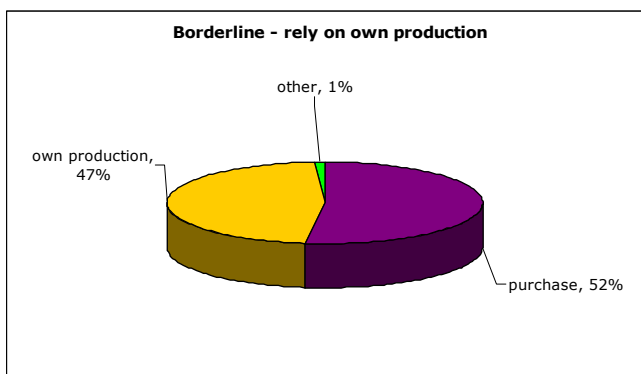
Income is largely based on wage labour, with 32% of the total income contribution coming from agricultural and other wage labour, meaning that they have heavy reliance on labour for their income. Income from agriculture, which depends both from human labour and agricultural assets, accounts just for 21% of the total income, being the lowest across the seven household groups.

- Household demographics:**
- Low percentage of female headed households
 - Low percentage of large households (41%)
 - Lower percentage of disabled members
- Agriculture:**
- Lowest percentage of households owning any land (86%); low ownership of garden plots; lowest access to presidential, individual dekhan and collective dekhan land;
- Assets:**
- Low average number of households assets owned;
 - Lowest percentage of households owning furniture and quilts; least likely to own a trailer/cart or VCR/DVD player
 - Lowest livestock ownership for every type of animal
 - Fairly good access to drinking water from improved sources.
- Health:**
- Low vitamin A supplementation of mothers (27%);
 - 24% iodized salt (≥ 15 ppm)
 - For children, low VA supplementation (49%); measles immunization – 79%, average prevalence of recent illness;
- Exposure to shocks:**
- Some exposure to **shocks** – human disease most often mentioned.
- Coping strategies:**
- 389 HH reported the use coping mechanisms in response to a shock - 46% of the group – the lowest among the seven groups;
 - 51% of the HH which use coping mechanisms decrease expenditure in general
 - 31% borrowing from family or friends
 - 37% reduce quality/quantity of diet – less likely to change the diet than the chronically food insecure.
- Other:**
- Only 4% receiving food aid with 29% from school feeding.
 - Lowest percentage of households having ever heard of HIV/AIDS

6.2.3 - Borderline consumption – rely on own production – 9%

Nine percent of surveyed households present a dietary pattern based on daily consumption of staple foods which include bread, oil or fats and vegetables and/or fruit. Cereals and pasta, dairy and eggs and sugar or sweets are consumed about 4-5 times per week while a combination of dairy products and eggs as a protein source are often consumed. Various types of meat and/or beans are consumed around 2-3 days per week in total.

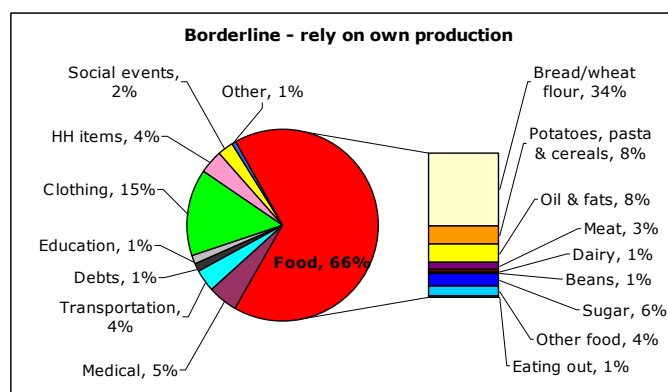
9%	never/rarely (0-1 day)	sometimes (2-3 days)	often (4-5 days)	daily (6-7 days)
Bread				
Cereals/pasta				
Potatoes				
MEAT + beans				
• poultry				
• beef				
• mutton				
• beans				
Oil, butter & fats				
DAIRY + eggs				
• eggs				
• milk				
• yoghurt/cheese				
Vegetables & fruits				
Sugar/sweets				



Households clustered in this group have been found to access half their food from own production and half from purchase. This food access pattern differentiates these households from those clustered in the following group which rely much more largely on purchases. These households largely produce their potatoes, vegetables and fruit. Most of these households produce wheat as well.

Part VI – Household food consumption typologies

Producing some of the food they consume, these households spend proportionally less than the previous groups on food – two third of their total outflow. Main food expenditure items are bread or wheat flour, followed by potatoes/pasta/cereals and oils and fats. Meat expenditure is slightly higher than the previous groups. Non-food expenditure is mainly for clothing with smaller shares for medical and transportation expenses.



Average income contribution analysis shows that these households rely largely on agricultural activities – cash crop (13%) and orchard products (12%) sales of field crops (11%) - for a total of 36% of all income. This result shows that agriculture activities are important for both access food (through own consumption) and access to cash (income).

Household demographics:

- Highest percentage of female headed households (17%)
- Highest percentage of elderly headed households (27%)
- Highest percentage of dependents (47%)
- Highest percentage of male pensioners (25%)
- High percentage of disabled members

Agriculture:

- Highest percentage of households accessing any land (98%); high ownership of garden plots; lower access to presidential, individual dekhana and collective dekhana land;

Assets:

- Lower average number of households assets owned;
- Lowest percentage of households owning lanterns;
- Average percentage owning livestock
- Average access to drinking water from improved sources.

Health:

- Average vitamin A supplementation of mothers (30%); lowest prevalence of tetanus toxoid immunizations for mothers.
- 22% iodized salt (≥ 15 ppm)
- For children, average VA supplementation (59%); highest measles immunization – 86%, highest prevalence of recent cough and diarrhoea;
- Higher percentage of children described as 'small' or 'very small' at birth

Exposure to shocks:

- Some exposure to **shocks** – highest percentage of HH experiencing 'price fluctuations' and 'restricted access to markets' as covariate shocks.
- Highest percentage of HH experiencing 'bankruptcy of family business' and 'serious illness or accident of working household member'

Coping strategies:

- 320 HH reported the use coping mechanisms in response to a shock - 69% of the group;
 - 53% of the HH which use coping mechanisms decrease expenditure
 - 30% reduce quality/quantity of diet.
 - 7% do additional wage labour

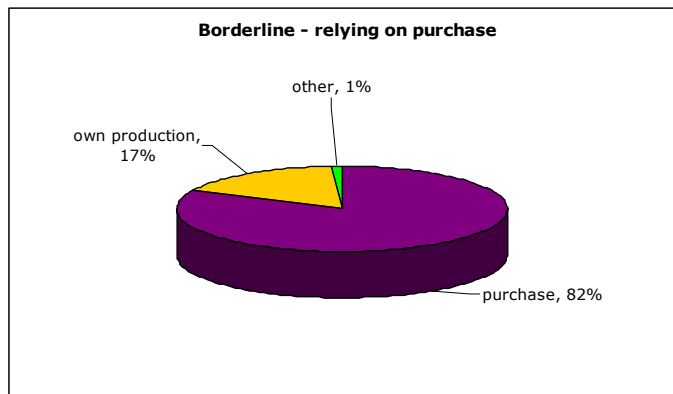
Other:

- 8% receiving food aid.
- Lower percentage of households having ever heard of HIV/AIDS

6.2.4 - Borderline consumption – rely on purchase - 18%

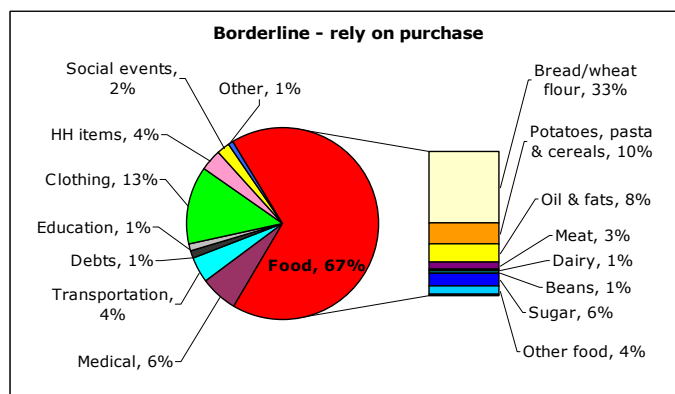
This group of households presents a dietary pattern similar to the previous group. The diet is always based on daily consumption of bread, potatoes, oil or fats, and sugars/sweets. Cereals/pasta and fruits/vegetables are consumed 4-7 days per weeks. Few households (less than one third of the group) often consume dairy products and these are usually just consuming milk. In general, dairy products are consumed 2-3 days per week. Meat is rarely consumed.

18%	never/rarely (0-1 day)	sometimes (2-3 days)	often (4-5 days)	daily (6-7 days)
Bread				
Cereals/pasta				
Potatoes				
MEAT + beans				
• poultry				
• beef				
• mutton				
• beans		29%		
Oil, butter & fats				
DAIRY + eggs			29%	
• eggs				
• milk			29%	
• yoghurt/cheese				
Vegetables & fruits				
Sugar/sweets				



The main difference from the previous group is determined by the way of accessing food. Households in this group rely on purchase for more than 80% of the food they consume. Seventeen percent of the food comes from household's own production.

For these households, about two-thirds of monthly expenditure is for food with highest allocations for bread/wheat flour, potatoes and cereals, oils and fats. Main non-food expenditures are for clothing, medical, transportation and household items.



Households belonging to this group rely on wage labour (both agriculture and non-agriculture) as main contribution to their income (26% of the total income). Small trade and petty trade account together for 8%, the highest contribution in percentage across the seven households groups.

Part VI – Household food consumption typologies

Household demographics:

- Highest percentage of dependents (47%)
- Average for all other demographic characteristics

Agriculture:

- Low access to any land (87%); lowest ownership of garden plots; lower access to presidential, individual dekhana and collective dekhana land;

Assets:

- Lower average number of households assets owned;
- Lower ownership of productive assets
- Average levels of ownership of all assets
- Lower ownership of most animals but not lowest
- Above average access to drinking water from improved sources.

Health:

- Average vitamin A supplementation of mothers (33%); higher prevalence of tetanus toxoid immunizations for mothers.
- Higher prevalence of recent illness for mothers
- 27% iodized salt (≥ 15 ppm)
- For children, average VA supplementation (57%); higher measles immunization – 85%, average prevalence of recent illness;

Exposure to shocks:

- Some exposure to **shocks** – 10% of HH experiencing 'price fluctuations' and 'human disease' as covariate shocks.
- Drought is the most reported shock – 32% of all households

Coping strategies:

- 555 HH reported the use coping mechanisms in response to a shock - 61% of the group;
 - 53% of the HH which use coping mechanisms decrease expenditure
 - 43% reduce quality/quantity of diet.
 - 30% are borrowing from family or friends.

Other:

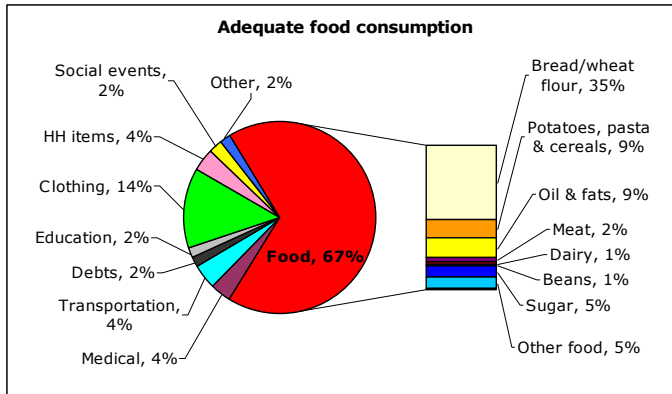
- Best access to credit.
- Average percentage of households having ever heard of HIV/AIDS

6.2.5 – Households with adequate consumption – 18%

Households belonging to this profile could be considered as having an average dietary consumption, neither too bad nor too good. They eat bread/wheat, oil and fats and dairy products or eggs on a daily basis. Potatoes are consumed 4-5 days a week, when not eaten every day. Protein intake is present but it is likely to be limited: just one-third of the group consumed meat or pulses 2-3 days per week. Milk is often consumed, while eggs much more rarely: only 33% of the group eats them on a regular basis. The large majority of the group consumes vegetables or fruit and sugar or sweets not frequently but about 2-3 days per week.

18%	never/rarely (0-1 day)	sometimes (2-3 days)	often (4-5 days)	daily (6-7 days)
Bread				
Cereals/pasta		67%		
Potatoes				67%
MEAT + beans		33%		
• poultry				
• beef				
• mutton				
• beans				
Oil, butter & fats				
DAIRY + eggs				
• eggs			33%	
• milk			33%	67%
• yoghurt/cheese				
Vegetables & fruits				33%
Sugar/sweets			33%	

Generally, households access their food equally through own production and purchase. Home garden products are the food items typically produced and hence consumed within the household. These items include vegetables, fruit, potatoes and some cereals. Milk is usually produced as well as eggs for households which consume them. Conversely, oil, sugar and the large part of the consumed cereals are usually purchased.



Food is taking two third of the household's expenditure, meaning that accessing food is an effort that requires cash availability from the households. In particular, money is needed to access staple foods such as bread and cereals (carbohydrates), oils, and sugar. Expenditure for clothing and shoes accounts for 14% of the total household's disbursement – the highest non-food expenditure category.

Other non-food expenditures are for transportation, medical and household items.

The analysis of the relative contribution of different sources to the household's income shows sales of field crops as the source that provides the highest share (14%). When this activity is considered together with the other agricultural related income sources, they account for 28% of the total household income. Pensions provide a relatively high contribution (12%), followed by remittances (7%). The contribution from remittances among these households is the highest among all the groups.

Household demographics:

- Highest percentage of large households (46%)
- Average for all other demographic characteristics

Agriculture:

- High access to any land (96%); high ownership of garden plots; average access to presidential land, highest access to individual dekhan; and average ownership of collective dekhan land;

Assets:

- Higher average number of households assets owned;
- Highest ownership of productive assets
- Highest ownership of carpentry tools – saw/hammer; average levels of ownership of all assets
- Highest ownership of cattle and goats but lowest ownership of horses.
- Lowest access to drinking water from improved sources.

Health:

- Highest vitamin A supplementation of mothers (42%); highest prevalence of tetanus toxoid immunizations for mothers.
- Higher prevalence of recent illness for mothers
- 32% iodized salt (≥ 15 ppm)
- For children, average VA supplementation (58%); higher measles immunization – 84%, average prevalence of recent illness;

Exposure to shocks:

- Some exposure to **shocks** – drought and frost most reported.

Coping strategies:

- 581 HH reported the use coping mechanisms in response to a shock - 64% of the group;
 - 41% of the HH which use coping mechanisms decrease expenditure
 - 54% reduce quality/quantity of diet.
 - 21% sell reproductive livestock – the highest of the groups.

Other:

- 20% of households receive food aid, mostly through school feeding.
- High percentage of households with no access to credit (58%)
- Average percentage of households having ever heard of HIV/AIDS

Part VI – Household food consumption typologies

6.2.6 – Good food consumption - Better off households reliance on own production - 22%

Households clustered into this group demonstrate good food consumption patterns on a regular basis. Carbohydrates are consumed in the form of cereals, tubers and sugar,

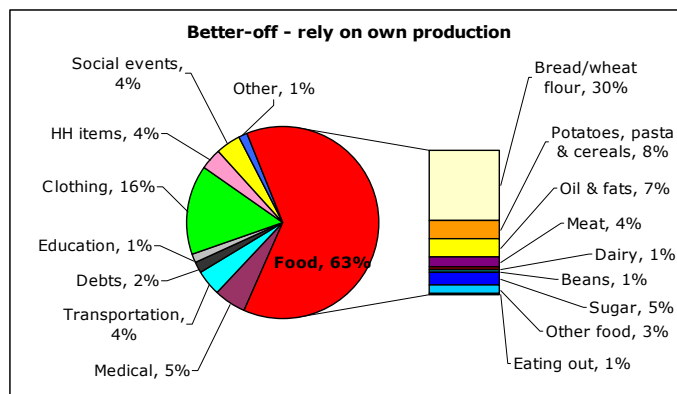
22%	never/rarely (0-1 day)	sometimes (2-3 days)	often (4-5 days)	daily (6-7 days)
Bread				
Cereals/pasta				
Potatoes				
MEAT + beans				68%
• poultry				
• beef				
• mutton				13%
• beans				32%
Oil, butter & fats				
DAIRY + eggs				
• eggs				
• milk				66%
• yoghurt/cheese				34%
Vegetables & fruits				
Sugar/sweets				

protein intake comes from a combination of meat, beans, dairy products and eggs. The daily consumption of vegetables or fruit is an excellent source of vitamins, iron and calcium.

Half of the food consumed (considered upon their frequency of consumption) comes from household's own production. Specifically, milk, yoghurt/cheese, eggs, vegetable and fruit are

generally produced or grown within the household's garden. Potatoes are accessed from own production in 65% of the cases. Household's access to protein varies: beef is almost entirely purchased (86% of the consumed beef meat), poultry meat comes generally from own production (76%). Fifty-three percent of the consumed beans and mutton comes from household's own production. Sixty percent of the consumed wheat is purchased.

This group has the lowest percentage of total expenditure spent on food (63%). Even if most of the wheat is bought, disbursement share for this item is below the average on the entire sample, accounting for 30% of the total household outflow.



Expenses on meat are 4% - just one point above the sample average value. Nevertheless, the difference between expenditure share on meat from this group and compared to the other six is statistically significant ($p < 0.001$). Among non-food items, clothing and shoes take 16% of the total expenditure. These households spend 4% of their outflow on social events or celebrations - the highest among the 7 household groups.

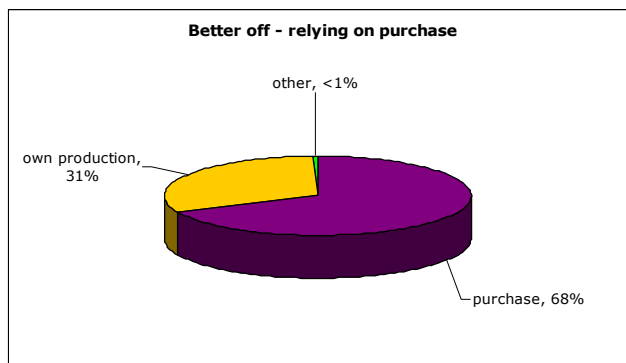
Income from sales of field crops, cash crop and orchard products are the largest contribution to total income for households in this group (31% in total). Contribution from remittances is higher than any other group, accounting for 15% of the total.

- Household demographics:**
- Average for all demographic characteristics
- Agriculture:**
- High access to any land (96%); highest ownership of garden plots; average access to other types of land.
- Assets:**
- Highest average number of households assets owned;
 - Highest ownership of nearly all assets
 - Highest ownership of nearly all forms of livestock
 - Average access to drinking water from improved sources.
- Health:**
- Low vitamin A supplementation of mothers (23%); low prevalence of tetanus toxoid immunizations for mothers.
 - Low prevalence of recent illness for mothers
 - 22% iodized salt (≥ 15 ppm)
 - For children, average VA supplementation (55%); lowest measles immunization – 74%, low prevalence of recent illness;
- Exposure to shocks:**
- Highest percentage of households experiencing crop and livestock diseases as covariate shocks
 - Drought is most reported shock (39% of affected households), followed by crop diseases (29%).
- Coping strategies:**
- 720 HH reported the use coping mechanisms in response to a shock - 67% of the group;
 - 40% receive loans from friends or relatives
 - 29% spend savings or disinvest
 - 7% purchase food on credit (the highest in the group)
- Other:**
- 9% of households receive food aid, mostly through school feeding.
 - Lower percentage of households with no access to credit (44%)
 - Lower percentage of households having ever heard of HIV/AIDS

6.2.7 - Good food consumption - Better off households – reliance on purchase – 6%

Households in this group consume items from all the key food groups - cereals, tubers, animal products, oil and fats, vegetables and fruit – the same as households in the previous group. The main difference is that these households consume beef every day. The fact that this meat is practically always purchased indicates a relatively high cash availability and good purchasing power.

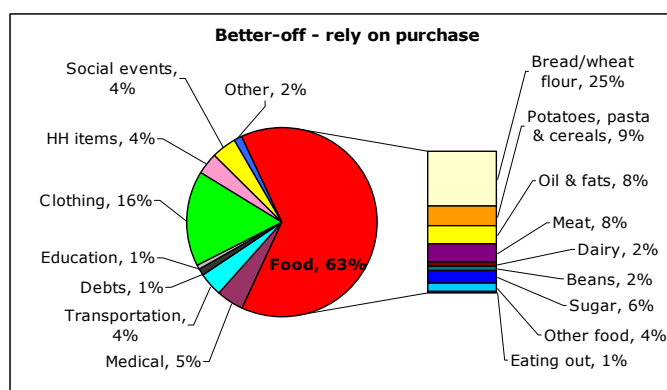
6%	never/rarely (0-1 day)	sometimes (2-3 days)	often (4-5 days)	daily (6-7 days)
Bread				
Cereals/pasta				
Potatoes				
MEAT + beans				
• poultry				
• beef				
• mutton				
• beans				
Oil, butter & fats				
DAIRY + eggs				
• eggs				
• milk				
• yoghurt/cheese				
Vegetables & fruits				
Sugar/sweets				



Another difference from the other better-off group is related to the way of accessing food: 68% of the consumed food is purchased while just 31% comes from household’s own production. In particular, while eggs (67%) and milk (73%) are still purchased in the large majority of the cases, vegetables and fruit are equally purchased and produced. More than 50% of potatoes and 60% of bread/wheat flour are even more accessed through purchase.

Part VI – Household food consumption typologies

Food accounts for 63% of the total monthly expenditure and, as for the previous group, are the lowest values across the food groups. The share of disbursement for bread/wheat flour is lower than for any other flour, while share for meat is the highest. As per the other better-off group, household's share of expenditure for clothes and shoes is the highest among household groups (16%).



More than one third of total income for these better-off households comes from crop sales (35%). Specifically, 18% comes from sale of field crop. These households rely also on petty trade or small business for 7% of their total income – the second highest percentage for these activities across the 7 household groups. Wage labour provides 20% of total income: it is worth noting that the largest share of income provided through labour activity come from agricultural wage labour and just 6% comes from other types of wage labour.

Household demographics:

- Lowest percentage of elderly headed households
- Lowest percentage of large households
- Lowest percentage of households with male pensioners
- Lowest percentage of crowding (7%)

Agriculture:

- High access to any land (98%); highest ownership of garden plots; highest access to Presidential lands and highest access to collective dekhan farms.

Assets:

- Highest average number of households assets owned;
- Highest ownership of most luxury assets
- Above average ownership of most forms of livestock
- Above average access to drinking water from improved sources.

Health:

- Higher vitamin A supplementation of mothers (36%); highest percent of women receiving trained antenatal care.
- Low prevalence of recent illness for mothers
- 36% iodized salt (≥ 15 ppm) – the highest in the group.
- For children, highest VA supplementation (73%); high measles immunization – 82%, lower prevalence of recent illness;
- Lowest percentage of children described as 'small' or 'very small' at birth

Exposure to shocks:

- Lowest percentage of households reporting shocks
- 10% reported being affected by sudden price fluctuations & restricted access to markets as covariate shocks.

Coping strategies:

- 178 HH reported the use coping mechanisms in response to a shock – 55% of the group – the lowest among the groups
 - Most decrease expenditure in general (49%)
 - 35% of HH spend savings or investments – the highest among the groups.
 - Sales of female reproductive livestock is common – 21% of the HHs.

Other:

- Only 2% of households receive food aid – the lowest in the group.
- Average access to credit
- Highest percentage of households having ever heard of HIV/AIDS (60%)

Section 6.3 - Analysis of expenditure

Both food and non-food expenditure have been investigated in absolute per capita terms to provide a measure of cash availability. The tables below show the distribution of the 7 household typologies in each expenditure quintile. For both tables, each quintile is comprised of 20% of total households with the lowest food/non-food per capita expenditure quintile being the first. The fifth contains the 20% of households with the highest per capita absolute expenditures.

Table 6.1	Quintiles of total food expenditure per capita				
	1	2	3	4	5
Chronically food insecure	33%	27%	15%	13%	12%
Very vulnerable to food insecurity	31%	24%	20%	14%	11%
Borderline - rely on own production	16%	20%	26%	23%	15%
Borderline - rely on purchase	13%	19%	24%	22%	22%
Adequate consumption	28%	23%	21%	17%	11%
Better off - rely on own production	9%	14%	14%	27%	36%
Better off - rely on purchase	10%	14%	21%	25%	30%

Table 6.1 shows the distribution of each household typology by total food expenditure per capita quintiles. As highlighted, 60% of *chronically food insecure* households are found into the 1st and the 2nd food expenditure quintiles. Among *very vulnerable* households, 55% are found in the lowest two per capita food expenditure quintiles. Conversely, most of the households in the two *better-off* groups are found in the 4th and 5th quintiles, indicating greater cash availability. In addition, higher percentages of households *relying on purchase* are found in the upper expenditure quintiles. However, for the *borderline* groups, 44% of those who *rely on purchase* are in the top two expenditure quintiles as compared to 38% who *rely on production*.

Table 6.2	Quintiles of non-food expenditure per capita				
	1	2	3	4	5
Chronically food insecure	36%	22%	17%	16%	9%
Very vulnerable to food insecurity	30%	23%	18%	15%	14%
Borderline - rely on own production	18%	22%	20%	21%	19%
Borderline - rely on purchase	14%	22%	21%	23%	20%
Adequate consumption	23%	22%	25%	16%	14%
Better off - rely on own production	12%	12%	18%	26%	32%
Better off - rely on purchase	9%	20%	22%	20%	29%

For absolute per capita expenditure on non-food items, the majority of the *chronically food insecure* and *very vulnerable* households are found in the bottom two expenditure quintiles. For the *borderline* groups, those that *rely on purchase* for food also spend more in absolute terms for non-food items than those that *rely on own production* for their food. This indicates greater cash availability and/or access to markets by these households. As expected, the *better-off* households also have higher expenditure for non-food items, but those that *rely on own production* for foods allocate even more resources for non-food expenditures.

In both cases, the households with *adequate consumption* are found to have modest expenditures for both food and non-food items, with tendencies to spend less than the *borderline* groups, indicating perhaps that their levels of production are suitable and that they prioritize quality food consumption over purchase of non-food items.

The analysis of absolute monthly per capita expenditure for food and non-food highlights the importance of own production across the different household groups. This is particularly evident looking at the food expenditure. As explained earlier, there is an improving trend in the diet of the different household groups moving from the *chronically*

Part VI – Household food consumption typologies

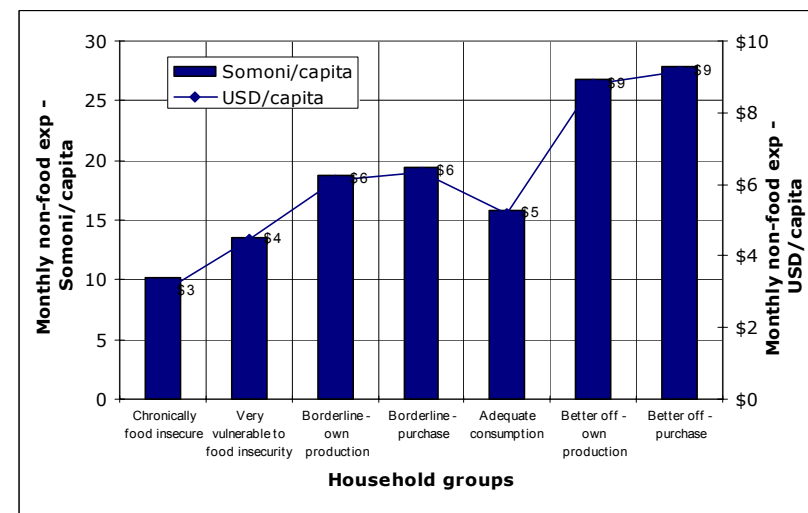
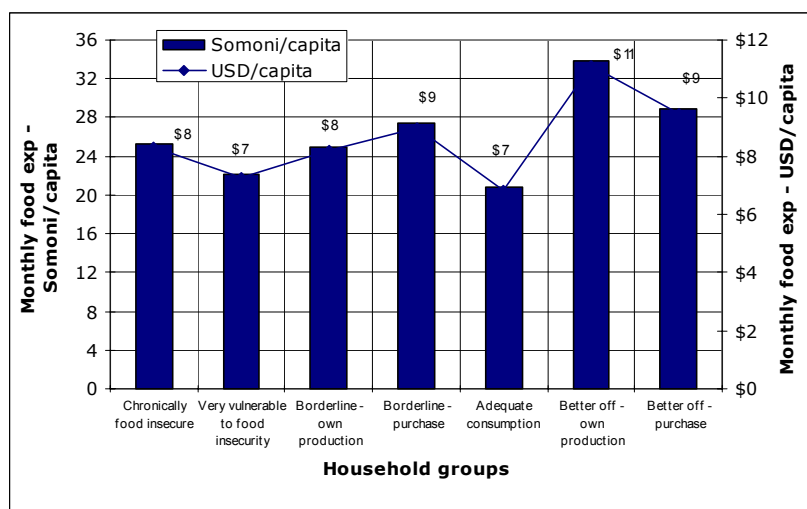
food insecure towards the better-off households. This trend is not automatically due to an increase of the food expenditure but rather because of the contribution of own production. Even if the differences in per capita monthly expenditure are not so great (the range is between 7 and 9 USD for the first five groups), they could be related to both the diet changes and the productivity capacity in term of food across the seven households groups.

Chronically food insecure households appear to spend more than very vulnerable households even if some of the food they consume comes from own production. This may occur because they have to sell part of their production (as

confirmed by the income source analysis) to gain cash for non-food necessities. The money these households are spending on food goes mostly for staple foods (cereals, oils and sugar).

Even if they have the same per capita expenditure amount, the diet difference between chronically food insecure and borderline – rely on production households seems to be explained mostly by the larger own production capacity of the latter ones. This capacity enables these households to sell part of their harvests without depleting too much their own food stock.

Conversely, diet differences between very vulnerable and borderline – rely on purchase households seem to be due principally to the greater cash availability for these households in the second group. The particular low food expenditure found among adequate consumption households might be due both to their reliance on a good own production of food and to a better productive assets situation.



The analysis of monthly non-food expenditure per capita shows a trend that corresponds more to the improvement of the diet across household food consumption groups. The only exception regards the low expenditure value of the adequate consumption households. This value appears to be slightly lower than the figures found among borderline

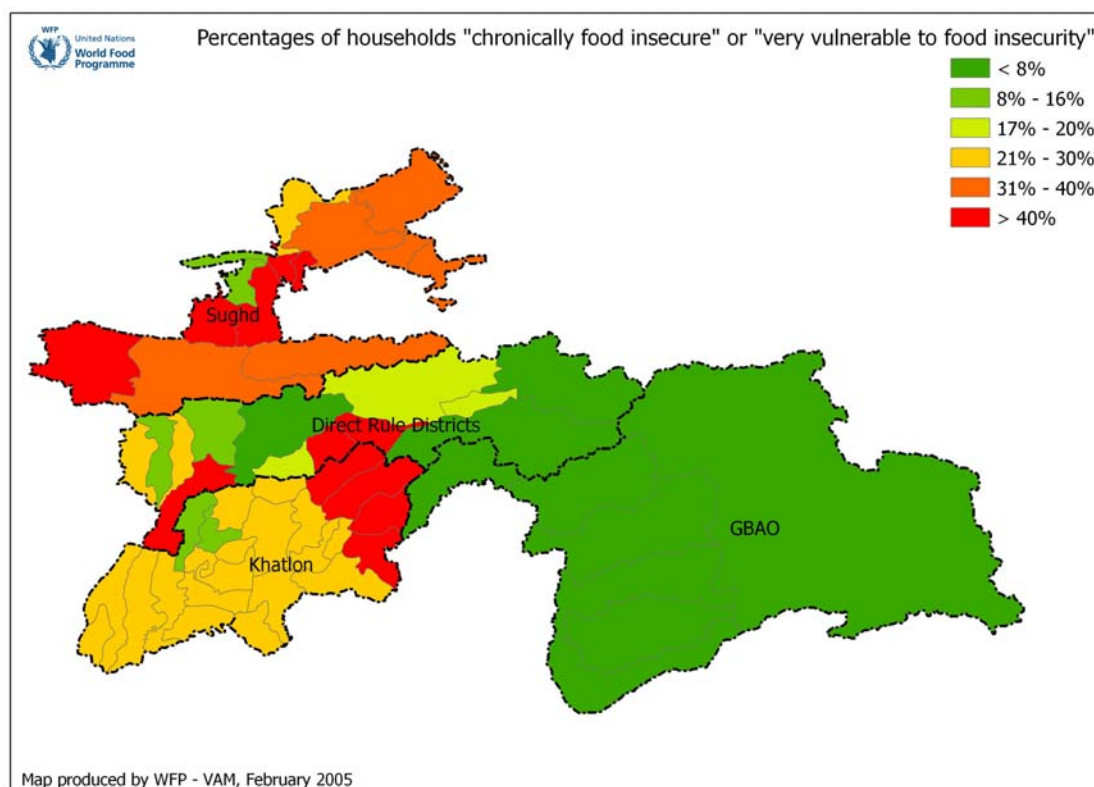
food consumption households (1 USD less). Nevertheless, per capita non-food expenditures are higher among these households than among the chronically food insecure and very vulnerable households.

Section 6.4 - Geographic distribution of household food consumption groups

In a final stage of analysis, it was important to investigate the geographic distribution of the various types of households across the country. Using the homogeneous district clusters for stratification, the following table was produced, showing the percentage of households in each food consumption group, by district cluster. The table shows that more than 40% of the sample households in Zones 4, 7, and 9 were classified as being *chronically food insecure* or *very vulnerable to food insecurity*. The highest percentages of households with good food consumption were found in Zones 6, 14, 10 and 13.

Zones (District cluster)	Very poor food consumption	Poor consumption		Adequate consumption	Good consumption	
	Chronic + very vulnerable	Borderline – own production	Borderline – purchase		Better off – own production	Better off – purchase
1	30%	8%	12%	25%	24%	1%
2	7%	8%	11%	58%	13%	3%
3	27%	8%	27%	19%	17%	2%
4	41%	12%	18%	8%	13%	8%
5	38%	4%	26%	10%	7%	15%
6	7%	5%	12%	17%	56%	4%
7	47%	8%	9%	22%	8%	6%
8	16%	8%	28%	18%	27%	3%
9	40%	4%	25%	9%	15%	8%
10	20%	13%	13%	13%	39%	2%
11	27%	23%	21%	14%	11%	4%
12	36%	5%	12%	17%	21%	9%
13	14%	13%	24%	9%	28%	12%
14	13%	5%	17%	7%	30%	29%

These findings were then mapped to geographically indicate the distribution of food insecure households across rural Tajikistan. It appears that the highest concentrations of food insecure households were found in the *Sughd* region, southern *DRD* and north-eastern *Khatlon* regions. The entire eastern part of the country – all of *GBAO* and eastern *DRD* appear to have the least percentages of households with very poor food consumption.



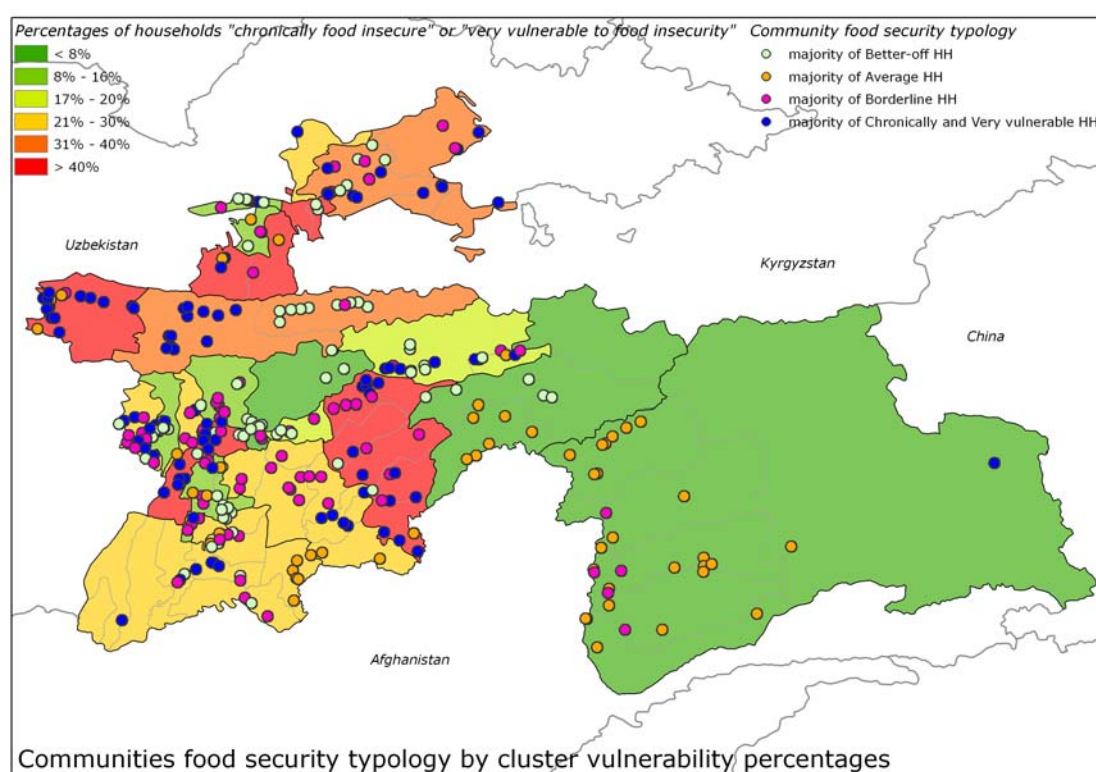
Part VI – Household food consumption typologies

Since the above map shows only the average percentages of households with very poor food consumption within each Zone (district cluster), additional analyses were conducted to identify pockets of food security/insecurity within Zones. During the survey, the enumerators collected the GPS coordinates for each village. These were used to indicate the approximate locations of the sampled villages within the Zones.

Approximately 12 households were sampled and interviewed in each of the 429 villages. In the PCA and Cluster analysis, each household was identified as belonging to one of the seven food consumption groups. Using this information, a matrix was made with the percentage of households in each village sample that belonged to each food consumption group. Again, using PCA and cluster analysis, the villages were then categorized into one of four village typologies:

- Majority of better-off households
- Majority of average households
- Majority of borderline households
- Majority of chronically and very vulnerable households

These village points were plotted over the map above to show where pockets of food insecurity may be located within a seemingly food secure area, and vice versa. This is illustrated in the map below.



By Zone the following observations can be made:

Zone 1: Herbaceous lowlands.

- Overall has a medium to high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- Pockets of **chronically** and **very vulnerable** households were found in *Shahrituz*, *Jilikul*, *Kolkhozobod*, and *Mastchoh*.
- *Better-off* villages were found in *Panj*, *Jilikul*, *Kolkhozobod*, and *Vakhsh*.

Zone 2: Highlands with bare areas and shrubs

- Overall, the GBAO region has a low percentage of **chronically food insecure** and **very vulnerable to food insecurity**.
- One village characterized as majority of **chronically** and **very vulnerable** households was found in *Murghob* district.

- Several **borderline** villages were found along the Afghanistan border, in *Rushon*, *Shughnon*, *Roshtqala* and *Ishokoshim*.

Zone 3: Lowlands, mainly cultivated or herbaceous

- Overall has a medium to high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- Pockets of **chronically** and **very vulnerable** villages were found in and around *Vose* and *Kulob* districts.
- Some **average** villages were found *Hamadoni* district.

Zone 4: Mixed elevation cultivated or herbaceous lowlands

- Overall is classified as having a very high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- Majority of villages in the group of districts are either **borderline** or **chronically** or **very vulnerable** villages.
- A few **better-off** villages were found in western parts of *Baljuvon* and *Muminobod* districts.

Zone 5: Shrub or herbaceous lowlands and some bare areas

- Overall is classified as having a high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- All of the sample villages in *Asht*, *Isfara* and *Konibodom* are either **borderline** or **chronically** or **very vulnerable** villages.
- Several villages in *Ghafurov* district were classified as **better-off** and were mixed in with **borderline** or **chronically** or **very vulnerable** villages.

Zone 6: Cultivated and herbaceous highlands, with wetlands and bare areas

- Overall, this region has a low percentage of **chronically food insecure** and **very vulnerable to food insecurity**.
- The majority of villages were **better-off** or **average**.
- A few **borderline** villages were found in southern *Vahdat* district.

Zone 7: Mixed elevation, herbaceous and cultivated

- Overall is classified as having a very high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- The majority of villages were **chronically** or **very vulnerable** with some **borderline**.
- A few **average** villages found in each district.

Zone 8: Herbaceous lowlands with cultivation

- Overall, this region has a fairly low percentage of **chronically food insecure** and **very vulnerable to food insecurity**.
- Some **borderline** and **chronically** and **very vulnerable** villages in *Khuroson* district
- Most villages in *A. Jami* were **better-off**.

Zone 9: Herbaceous and cultivated lowlands with wetlands

- Overall is classified as having a very high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- The majority of villages were **chronically** or **very vulnerable**.
- A few **better-off** villages found in northern *Rudaki* and *Jabbor Rasulov* districts.

Zone 10: Mixed elevation cultivated, with wetlands

- Overall, this region has a lower than average percentage of **chronically food insecure** and **very vulnerable to food insecurity**.
- Several **chronically** and **very vulnerable** households in southern *Gharm* and throughout *Tojikobod* districts.
- Households in *Fayzobod* district are a mix of **better-off** and **borderline**.

Zone 11: Mixed elevation, cultivated and herbaceous, with wetlands

- Overall has a medium to high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- Mostly **borderline** and **chronically** and **very vulnerable** villages in both districts.
- A few **better-off** villages in *Tursunzoda* district, along the Uzbekistan border.

Zone 12: Bare areas, sparse herbaceous highlands

- Overall is classified as having a high percentage of households who are **chronically food insecure** or **very vulnerable to food insecurity**.
- **All** villages in *Ayni* district have the of majority **chronically** and **very vulnerable** households.

Part VI – Household food consumption typologies

- **Almost all** villages in Kuhistoni Mastchoh district are the majority of **better-off** households.

Zone 13: Mixed elevation and cropping, with wetlands

- Overall, this region has a fairly low percentage of **chronically food insecure** and **very vulnerable to food insecurity**.
- In *Shahrinav* district, there is a mix of villages that are either majority **chronically** and **very vulnerable** or **better-off**.
- In *Varzob*, the majority of villages are **better-off** with a few **borderline** in the southern part of the district.

Zone 14: Mainly wetlands

- Overall, this region has a fairly low percentage of **chronically food insecure** and **very vulnerable to food insecurity**.
- In *Zafarobod* district, there are mostly **better-off** villages with a few **chronically** and **very vulnerable** plus one **borderline** village.

Part VII – Recommendations for programme interventions

Section 7.1 – Overview of WFP-supported programme options

This food security and vulnerability survey covered all parts of rural Tajikistan. In an attempt to provide sub-regional information, spatial and multivariate analyses were used to create 'homogeneous' clusters of districts (zones) from which separate samples were drawn. As indicated in Part VI of this report, some of these zones were not, in fact, very homogeneous in terms of household food access and consumption. With this in mind, these recommendations will still be made for the Zones (district clusters) with the knowledge that there is a lot of variation within Zones and that before any programmes are planned and implemented, additional research should be conducted at the district level in order to confirm the individual district characteristics within Zones. The particular zones for additional research include:

- **Zone 2** – High levels of outside assistance may have had an impact on household food security. The study shows that the most vulnerable areas appear to be along the border with Afghanistan, regardless of district boundary.
- **Zone 9** – The study shows a high level of food insecurity, especially in *Rudaki*. However these findings are contrary to local knowledge. However, the food consumption of many households (see map in Section VI) in *Rudaki* was very poor so maybe the socio-demographic characteristics are overshadowing a more subtle problem of food access.
- **Zone 10** – The *Gharm* district sample has a mixture of communities that are either better-off or chronically and very vulnerable. The sample in *Tojikobod* showed all types of villages while most of those sampled in *Fayzobod* were food secure.
- **Zone 12** – As mentioned already in the report, this cluster of two districts was not at all homogeneous in terms of household food security. However, there is no doubt that the sample households in *Ayni* district are extremely food insecure.

In addition, these options and recommendations do not take into account the following factors due to the nature of the survey:

- **Current WFP-supported activities** – In places where WFP and partners are implanting food-based interventions, recommendations should reflect the need to continue and, in some cases, expand food-based programming.
- **Capacity of partners to implement programmes** – The scope of this survey did not include an analysis of implementation capacity of NGOs or Government sectors to implement either food- or non-food based interventions. The objectives of the VAM study still intend to identify the hungry poor and where they are located, to understand why they are food insecure, and to determine if food aid has a role in addressing their food insecurity.

Therefore, these are only recommendations based on the results of the study. Final decisions on program activities and implementation are left to WFP Tajikistan and partners.

7.1.1 – Main causes of food insecurity

The causes of food insecurity in rural Tajikistan are mainly related to two factors. The first one is limited access to livelihood opportunities in both the agricultural sector and employment/labour market. Many households are dependent on remittances and pensions, both of which are not sustainable and can change over time. The second one is related to health and malnutrition. Nutrition surveys indicate a high prevalence of malnutrition and micronutrient deficiency diseases across the country, even in Zones with relatively good food consumption. This indicates that malnutrition is not only related to lack of protein and energy in the diet, but also to inadequate maternal and child-care practices and poor water and sanitation facilities.

7.1.2 – Role of food aid

As the causes of food insecurity are complex and related to income and social poverty, food aid alone is not the answer to address household food insecurity in rural Tajikistan. However, in the short-term, food based programmes can be a viable solution to improve the asset base of vulnerable rural households and improve their access to food. Non-food interventions from the Government or other agencies are essential.

Part VII – Recommendations for programme interventions

The findings suggest that nutrition and health problems, especially among children are matters of concern in the country. Here, fortified blended food aid, targeted to expectant and nursing mothers can play a significant role in improving health and nutrition status and to encourage better ante-natal care, decreasing the likelihood of a woman giving birth to a malnourished baby.

Although in many places enrolment and attendance is relatively high compared to developing countries in Africa and other parts of Asia, it is lower than it was during the Soviet era. Therefore continued and expanded implementation of school feeding programmes, especially in areas with a high prevalence of food insecure households, could have an impact not only on household food security, but also as an investment in the future of the country through improved learning.

7.1.3 – Programme Interventions

The problem of access to food can be addressed by poverty-reduction programmes or livelihood enhancement strategies. *Food-for-work* and *food-for-asset creation* programs could include activities to improve community infrastructure (health centres, schools, irrigation canals and tertiary roads), as indicated by many of the women's and men's community interviews. Improved access to safe drinking water and through food-for-work could be a suitable option to improve utilization of food for most communities as it was named a top priority in almost all regions.

Health sector programmes that provide fortified blended food and health and nutrition education programmes could contribute to improved food consumption, utilization and child care. The provision of fortified food to vulnerable groups (expecting and nursing mothers, pre-school children and adolescent girls) can address current micronutrient deficiencies, as indicated in recent studies. The education component should contain information on caring practices, hygiene, nutrition and sanitation and in particular the use of iodized salt and the consumption of iron-rich foods.

Although not specifically designed to directly address household food insecurity or to treat malnutrition, *education programmes, such as school feeding* are beneficial in providing an incentive for children to attend school every day. However, WFP can help by providing fortified food rations to children in combination with de-worming activities, can help to improve food utilization and improve consumption of essential micronutrients.

7.1.4 – Non food interventions

Non- food interventions could include *micro-credit schemes, agricultural extension* and *poverty reduction*. Improved availability of micro-credit facilities to the resident population would help them procure agricultural inputs and increase their production. Agricultural extension programmes that provide improved information on commodity markets and improved market access to them would also be useful. Households with good food consumption could benefit from improved access to safe drinking water. General poverty reduction and longer-term development activities could improve the rural road infrastructure, build or rehabilitate schools and medical facilities and provide regular power to rural communities, especially during the long winter months.

Section 7.2 – Recommendations – most food insecure districts

The following table presents the percentage of the households in each district cluster belonging to very poor and poor food consumption groups. ***It is worth remembering that with district clusters, the figures are AVERAGES for the entire cluster and not percentages for each district included in the cluster.*** This method is direct consequence of the necessity of dividing the country somehow beyond the 4 Regions, but not being able to be representative at district level (see Part II – Objectives and Methodology).

District Cluster	Very poor food consumption	Poor food consumption	
	Chronic + very vulnerable	Borderline – own production	Borderline – purchase
7 - Ghonchi, Panjakent, and Shahrison	47%	8%	9%
4 - Baljuvon, Khovaling, Muminobod, Shurobod, Nurobod, and Roghun	41%	12%	18%
9 - Rudaki, Spitamen, and Jabbor Rasulov	40%	4%	25%
5 - Asht, Ghafurov, Isfara, and Konibodom	38%	4%	26%
12 - Ayni and Kuhistoni Mastchoh	36%	5%	12%
1 - Farkhor, Jilikul, Kolkhozobod, Mastchoh, Nosir Khisrav, Panj, Qabodiyon, Qumsangir, Saraband, Shahrituz, and Vakhsh	30%	8%	12%
3 - Bokhtar, Danghara, Kulob, Hamadoni, Norak, Timurmalik, Vose, and Yovon	27%	8%	27%
11 - Hissor and Tursunzoda	27%	23%	21%
10 - Fayzobod, Gharm, and Tojikobod	20%	13%	13%
8 - Istaravshan, Khuroson, and A. Jomi	16%	8%	28%
13 - Shahrinav and Varzob	14%	13%	24%
14 - Zafarobod	13%	5%	17%
2 - Ishkoshim, Murghob, Roshtqala, Rushon, Shughnon, and Vanj	7%	8%	11%
6 - Darvoz, Jirgatol, Vahdat, and Tavildara	7%	5%	12%

7.2.1 – Highest vulnerability to food insecurity

In three Zones (district clusters) 40% or more of the households were classified as having very poor food consumption. These three clusters might be considered as geographical priorities, but programmers should consider that food aid could play a different role for people in these clusters.

Zone 7 - Ghonchi, Panjakent, and Shahrison districts

- Highest percentage of sample households with very poor food consumption.
- The majority of villages were *chronically* or *very vulnerable* to food insecurity with some *borderline*.
- Highest percentage of Uzbek households.
- Lowest percentage of households with children 6-14 enrolled in school. Low absenteeism for primary school children.
- Low ownership of draught animals and very low ownership of farming equipment. Overall low ownership of assets.
- High reliance on labour for income.
- Highest share of expenditure for clothing and shoes and lowest share of expenditure for education and transport.

Possible areas for intervention:

- Food: Education (school feeding), asset creation through food for work
- Non-food: Poverty reduction

Zone 4: Baljuvon, Nurobod, Khovaling, Muminobod, Roghun and Shurobod

- High percentage of households with very poor food consumption.
- Majority of villages in the group of districts are either *borderline*, *chronically* or *very vulnerable* villages.
- A few *better-off* villages were found in western parts of Baljuvon and Muminobod districts.
- Access to land and livestock ownership seems quite good.
- Lowest asset ownership; lowest ownership of productive assets.
- High exposure to covariate risks/shocks.
- One of the lowest access to credit (65% have no access to credit)
- 75% of households have children 6-14 years old in school – percentage of households with enrolled children being absent among the highest.
- The highest number of mothers which did not receive antenatal care (37%); less than ¼ of them received vitamin A capsule.
- 70% of households not using iodized salt.
- High reliance on income from sales of field and orchard crops and low reliance on labour.
- Highest share of expenditure for education and household items; high share of expenditure on food, especially oils/fats, sugar and legumes.

Part VII – Recommendations for programme interventions

Possible areas for intervention:

- Food: Education (school feeding), Health (MCH programmes)
- Non-food: Agriculture extension

Zone 9: *Spitamén, Jabbor Rasulov, Rudaki*¹

- High percentage of households with very poor food consumption.
- The majority of villages were *chronically* or *very vulnerable*.
- A few *better-off* villages found in northern *Rudaki* and *Jabbor Rasulov* districts.
- Highest percentage of dependents per household.
- Relatively lowest land access - just 80% of households have garden plot; 29% access to presidential land –
- Lowest cattle and sheep ownership.
- 75% of households have children 6-14 years old in school – percentage of households with enrolled children being absent among the highest.
- Only ¼ of the mothers received ANC and vitamin A capsule
- 18% of babies were born small or very small
- Reliance on non-agricultural wage labour for income.
- Lowest share of expenditure for food, especially bread and oil/fats. Highest expenditure for transport.

Possible areas for intervention:

- Food: Education (school feeding), Health (MCH programmes)
- Non-food: Agriculture extension – where capacity is available

7.2.2 – High vulnerability to food insecurity

Two zones have a high percentage of households with very poor food consumption but also with very different characteristics both within and between the clusters of districts.

Zone 5: *Asht, Ghafurov, Isfara and Konibodom*

- Relatively high percentage of households with very poor food consumption.
- All of the sample villages in *Asht, Isfara* and *Konibodom* are either *borderline* or *chronically or very vulnerable* villages.
- Several villages in *Ghafurov* district were classified as *better-off* and were mixed in with *borderline, chronically or very vulnerable* villages.
- More than 60% of households are ethnic Uzbeks.
- The highest share of total expenditure for food, with the highest share for bread.
- High share of income from pension.
- Some households have problems accessing land, both individually and collectively.

Possible areas for intervention

- Non-food: Poverty reduction, agriculture extension (where capacity exists)

Zone 12: *Ayni and Kuhistoni Mastchoh*²

- Relatively high percentage of households with very poor food consumption.
- **All** villages in **Ayni** district have the of majority *chronically or very vulnerable* households.
- **Almost all** villages in **Kuhistoni Mastchoh** district are the majority of *better-off* households.
- Large average household size (8 persons) and lowest percentage of pensioners.
- Generally good access to land but high exposure to covariate risks.
- Group with the highest percentage of income from sales of field crops and livestock.
- High expenditure for food; highest for bread.
- High reliance on firewood for heating and cooking.
- Low asset ownership, especially productive assets.
- High percentage of mother did not receive any ANC and 15% only received vitamin A capsule.

Possible areas for intervention

- Food: Education (school feeding) and Health (MCH - *Ayni* only)
- Non-food: Agriculture extension (where capacity exists)

Section 7.3 – Possible areas for intervention for all zones

This section outlines possible areas where both food and non-food interventions could improve the food security and reduce vulnerability in particular areas of Tajikistan. The

¹ Situation in *Rudaki* needs additional research as these findings contradict local perceptions.

² See map in Part VI, Section 6.4

final table provides suggested programmes, by district and also includes the findings from the community interviews for each district in terms of specific development needs. These are merely indicative as in some districts only one or two communities were interviewed and thus the findings are not statistically valid but may still serve as guidance for planning purposes.

The following sections explain the rationale for programme recommendations and also the codes used in the summary table.

Health sector (Maternal and child health programmes – MCH)

- Low percentage of mothers receiving antenatal care and vitamin A capsule; more than 15% of children from sampled households described as being 'very small' or 'smaller than average' at birth; 50-60% of households using non-iodized salt.

Education sector - School feeding programmes – SF

- Low percentage of households which have school-age children but do currently send them to school (88%)³.
- Normal to high enrolment but high absenteeism.
- High percentage of households not using salt that is adequately iodized. Take home rations of iodized salt may benefit the entire family.

Health sector - Improved access to safe drinking water - SW

- Less than 35% of sample households using drinking water from safe sources

Agriculture extension programmes - AG

- Less than 80% of sample households have access to garden plot land.

Micro-credit - MC

- Two-thirds of the households do not have access to credit, with at least one-third of the households having problems in accessing their food.

Poverty reduction – PR

- High percentage of households with poor food consumption and limited access to income opportunities.
- Unusually high share of expenditure for food or other expenditure item.

District	Zone	Programmes	Community Priorities
A. Jomi	8	SF, AF	Water, medical
Asht	5	PR, AG	Roads, school, water, community centre
Ayni	12	MCH, SF, SW, AG	Medical, roads
Baljuvon	4	MCH, SF, AG	Schools, water, public transport/buses
Bokhtar	3	MCH, SF	Medical, power, roads
Danghara	3	MCH, SF	Medical, water, schools
Darvoz	6	MCH, SF, SW	Schools, employment, medical, bridges
Farkhor	1	MCH, MC	Water, medical, housing, market
Fayzobod	10	MCH	Water, power, employment, food store
Ghafurov	5	PR, AG	Roads, medical, water
Gharm	10	MCH	Roads, schools, water
Ghonchi	7	SF, FFW, SW, PR	Water, roads
Hamadoni	3	MCH, SF	Schools, housing
Hissor	11	AG, MC	Water, schools, medical
Isfara	5	PR, AG	Water
Ishkoshim	2	MCH, SW	Fuel/gas, irrigation/canals, power
Istaravshan	8	SF, AF	Water, roads, schools
Jabbor Rasulov	9	MCH, SF, AG	Schools, medical, community centre
Jilikul	1	MCH, MC	Schools, water, employment
Jirgatal	6	MCH, SF, SW	Medical, food, roads
Khovaling	4	MCH, SF, AG	Roads, employment, water

³ Calculated as (% of HH with any children in school)/(% of HH with any school-age children) – 6-14 years

Part VII – Recommendations for programme interventions

Kulob	3	MCH, SF	Water, roads
Khuroson	8	SF, AF	Water, roads, medical
Kolkhozobod	1	MCH, MC	Water, phones
Konibodom	5	PR, AG	Fuel/natural gas, water, power, community centre
Kuhistoni Mastchoh	12	SW, AG	Water, schools, roads
Mastchoh	1	MCH, MC	Schools, water, food stores
Muminobod	4	MCH, SF, AG	Medical, schools, public transport/buses
Murghob	2	MCH, SW	Schools, food store, power
Norak	3	MCH, SF	Water, employment, phones
Nurobod	4	MCH, SF, AG	Roads, schools, medical, food, bridges
Panjakent	7	SF, FFW, SW, PR	Water, medical, roads
Panj	1	MCH, MC	Water, roads, medical
Qumsangir	1	MCH, MC	Water, schools
Roghun	4	MCH, SF, AG	Water, medical, food, veterinary services
Roshtqala	2	MCH, SW	Water, medical, power, food, phones
Rudaki	9	MCH, SF, AG	Water, medical, power, roads, schools
Rushon	2	MCH, SW	Power, irrigation/canals, food store
Shahrinav	13	SF	Water, schools, power
Shahriston	7	SF, FFW, SW, PR	Roads, irrigation/canals, medical
Shahrituz	1	MCH, MC	Employment, roads, medical, schools
Shughnon	2	MCH, SW	Power, water, electricity, stadium, community centre
Shurobod	4	MCH, SF, AG	Medical, roads, power, water
Spitamen	9	MCH, SF, AG	Medical, roads, bridges
Tavildara	6	MCH, SF, SW	Roads, schools, medical, employment
Timurmalik	3	MCH, SF	Water, medical
Tojikobod	10	MCH	Roads, schools, medical, land
Tursunzoda	11	AG, MC	Roads, water, schools
Vahdat	6	MCH, SF, SW	Medical, schools, roads, water, phones
Vakhsh	1	MCH, MC	Roads, phones, medical, schools
Vanj	2	MCH, SW	Roads, schools, employment
Varzob	13	SF	Roads, schools, medical
Vose	3	MCH, SF	Schools, housing, roads, water, medicine, power
Yovon	3	MCH, SF	Water, medical
Zafarobod	14	-	Water, medical

Annex I – Descriptive tables – Household questionnaire

Table 1.1 – Sample size and ethnicity of respondents

	N	Main ethnic group		
		Tajik	Uzbek	Other
1	400	52%	42%	6% (Turkmen)
2	396	98%	-	2% (Kyrgyz)
3	392	89%	11%	-
4	400	95%	5%	-
5	401	36%	61%	3% (Kyrgyz)
6	395	94%	4%	3% (Kyrgyz)
7	400	33%	65%	2%
8	388	77%	23%	-
9	390	72%	27%	1%
10	415	100%	-	-
11	405	54%	44%	2%
12	310	100%	-	-
13	316	76%	24%	-
14	147	59%	41%	-
Total	5155	74%	24%	1%

Table 1.2 – Head of household

	% FHH	Female headed		Male headed		% elderly headed
		% widowed	Age	% widowed	Age	
1	15%	88%	53 years	4%	49 years	30%
2	18%	89%	51 years	6%	46 years	26%
3	17%	74%	45 years	5%	46 years	21%
4	18%	81%	50 years	3%	48 years	25%
5	13%	90%	52 years	5%	48 years	24%
6	19%	77%	47 years	6%	48 years	22%
7	14%	89%	52 years	3%	48 years	27%
8	15%	79%	48 years	5%	48 years	26%
9	13%	86%	49 years	3%	46 years	24%
10	13%	90%	54 years	3%	47 years	24%
11	13%	90%	53 years	4%	48 years	26%
12	15%	81%	55 years	4%	47 years	26%
13	16%	89%	53 years	4%	46 years	25%
14	12%	81%	49 years	6%	45 years	25%
	15%	84%	52 years	4%	48 years	25%

Table 1.3 – Household size and composition

	HH total	% with 8 or more members	% dependents	% with pensioners		
				Male	Female	Both
1	7.6	44%	46%	25%	28%	16%
2	7.6	43%	46%	22%	26%	13%
3	7.6	45%	46%	20%	25%	11%
4	7.8	45%	47%	21%	26%	12%
5	7.5	42%	47%	23%	27%	13%
6	7.5	42%	45%	20%	19%	11%
7	7.6	42%	44%	23%	27%	14%
8	7.3	41%	45%	24%	27%	13%
9	7.7	42%	49%	21%	24%	13%
10	7.7	45%	46%	21%	24%	12%
11	7.5	42%	44%	25%	27%	17%
12	8.0	49%	45%	19%	24%	10%
13	8.0	48%	48%	24%	30%	16%
14	7.0	32%	44%	17%	23%	16%
	7.6	43%	46%	22%	26%	13%

Annex I – Descriptive tables – household questionnaire

Table 1.4 – Literacy and disabilities

	Household head		Spouse		Disabilities	
	Literate	Years school	Literate	Years school	Any member?	HH head?
1	99%	10.3	97%	9.2	15%	7%
2	97%	9.6	90%	9.1	19%	10%
3	98%	10.0	95%	9.2	23%	12%
4	97%	10.3	92%	9.4	23%	11%
5	98%	10.2	96%	9.0	16%	8%
6	97%	9.9	92%	9.2	15%	6%
7	95%	10.0	94%	9.3	23%	12%
8	97%	9.9	92%	9.2	24%	13%
9	97%	10.3	92%	9.1	20%	12%
10	97%	9.7	93%	9.0	18%	8%
11	96%	10.1	94%	9.1	22%	11%
12	96%	10.1	91%	9.0	17%	11%
13	97%	10.1	92%	9.1	22%	11%
14	98%	10.4	93%	9.6	13%	7%
	97%	10.1	93%	9.1	20%	10%

Table 1.5 – Primary school enrolment and absenteeism

	Have children 6-14 years enrolled in school		Enrolled children absent for 1 week or more	
	Boys	Girls	Boys	Girls
1	58%	53%	19%	20%
2	64%	52%	21%	17%
3	61%	57%	25%	22%
4	63%	52%	39%	28%
5	56%	52%	17%	16%
6	52%	55%	12%	28%
7	54%	52%	3%	10%
8	59%	49%	24%	23%
9	58%	55%	33%	32%
10	59%	55%	0	15%
11	56%	47%	17%	13%
12	55%	56%	8%	17%
13	68%	57%	43%	35%
14	65%	55%	32%	22%
	59%	53%	21%	21%

Table 1.6 - Main reasons for absence

	Boys	Girls
Illness	39%	30%
Not enough money	37%	40%
No school supplies	32%	28%
School too far/inaccessible	11%	15%
Have unpaid HH or farm work	10%	6%
Work for food	9%	3%

Table 1.7 – Housing type and ownership

	Current main type of dwelling			Ownership status		Pay to live there?	
	Single house	Part of a house	Shack / temporary	Owner	Relative of owner	In cash	No pay
1	90%	6%	3%	92%	4%	80%	20%
2	91%	7%	1%	97%	2%	31%	69%
3	78%	7%	14%	94%	2%	59%	41%
4	94%	3%	2%	99%	< 1	10%	90%
5	76%	16%	4%	95%	3%	58%	30%
6	94%	5%	1%	99%	1%	11%	89%
7	87%	12%	1%	96%	3%	25%	74%
8	87%	7%	4%	94%	2%	43%	56%
9	90%	3%	2%	95%	4%	56%	44%
10	88%	12%	-	97%	< 1	8%	92%
11	92%	7%	1%	96%	2%	13%	87%
12	98%	2%	-	99%	< 1	86%	14%
13	95%	4%	1%	95%	4%	37%	63%
14	86%	12%	-	94%	1%	30%	68%
	89%	7%	2%	96%	2%	38%	60%

Table 1.8 – Crowding and housing conditions

	% with 4+ people per room	General condition of housing structure					
		Good	Partially damaged	Temporary – good	Temporary – poor	Incomplete	Poor
1	11%	22%	36%	14%	13%	6%	9%
2	26%	53%	30%	2%	2%	4%	10%
3	16%	13%	22%	7%	28%	7%	22%
4	17%	25%	18%	20%	13%	6%	18%
5	7%	31%	38%	11%	8%	3%	9%
6	13%	60%	17%	2%	1%	10%	10%
7	8%	33%	25%	18%	13%	3%	9%
8	12%	23%	31%	16%	11%	5%	15%
9	12%	35%	32%	9%	12%	4%	7%
10	21%	33%	31%	6%	2%	7%	21%
11	4%	27%	20%	11%	6%	4%	32%
12	12%	19%	53%	8%	10%	2%	8%
13	5%	44%	36%	10%	5%	2%	5%
14	5%	82%	4%	8%	5%	0	1%
	13%	34%	29%	10%	9%	5%	14%

Table 1.9a – Housing construction materials

	Main wall material			Main roof material		
	Fired bricks	Unfired bricks	Stone	Thatch	Wooden beams & mud	Asbestos sheeting
1	7%	84%	1%	3%	8%	84%
2	< 1	9%	87%	< 1	57%	33%
3	4%	79%	1%	4%	17%	62%
4	4%	88%	6%	7%	13%	73%
5	6%	88%	1%	1%	37%	50%
6	4%	80%	15%	< 1	7%	85%
7	5%	82%	3%	1%	29%	65%
8	5%	87%	2%	9%	12%	73%
9	11%	82%	2%	4%	7%	81%
10	4%	94%	2%	< 1	8%	80%
11	2%	96%	< 1	1%	7%	89%
12	21%	77%	1%	16%	54%	26%
13	9%	89%	1%	2%	9%	71%
14	12%	49%	-	1%	2%	97%
	6%	79%	9%	4%	20%	69%

Annex I – Descriptive tables – household questionnaire

Table 1.9b – Housing construction materials

	Main material of floor		Main floor cover		
	Earth/mud	Wood	Carpet/kilim	Moquette	Woollen felt
1	54%	42%	2%	72%	21%
2	38%	51%	17%	44%	24%
3	85%	14%	< 1	57%	38%
4	93%	7%	1%	43%	53%
5	62%	38%	1%	63%	34%
6	77%	22%	6%	78%	14%
7	90%	8%	2%	51%	45%
8	82%	18%	4%	55%	40%
9	66%	32%	2%	77%	21%
10	76%	23%	2%	50%	40%
11	92%	8%	6%	74%	20%
12	93%	7%	6%	48%	44%
13	71%	28%	2%	75%	20%
14	19%	80%	3%	78%	19%
	73%	25%	4%	61%	32%

Table 1.10 – Electricity, lighting and cooking fuel

	Have connection to electricity	Main source of lighting		Main source of cooking fuel			
		Electricity	Kerosene lamp	Electricity	Firewood	Brushwood	Animal manure
1	97%	64%	24%	1%	56%	14%	25%
2	95%	23%	73%	5%	73%	10%	10%
3	98%	86%	9%	10%	59%	12%	19%
4	87%	80%	17%	8%	60%	15%	15%
5	100%	93%	2%	13%	57%	10%	3%
6	97%	78%	18%	5%	77%	6%	9%
7	99%	88%	4%	6%	67%	9%	16%
8	100%	55%	29%	8%	51%	25%	11%
9	99%	84%	13%	18%	32%	10%	36%
10	100%	89%	9%	13%	49%	2%	33%
11	100%	43%	48%	2%	55%	15%	28%
12	95%	75%	12%	3%	91%	2%	2%
13	96%	84%	14%	2%	57%	8%	32%
14	100%	98%	1%	1%	24%	31%	22%
	97%	73%	21%	7%	59%	11%	19%

Table 1.11 – Heating and drinking water

	Main source of heating			Main source of drinking water			
	Firewood	Stoves	Charcoal	Piped	Public tap	Well with pump	Pond/river / stream
1	16%	81%	< 1	3%	15%	24%	44%
2	58%	39%	1%	6%	5%	< 1	78%
3	19%	78%	1%	9%	27%	18%	31%
4	27%	71%	< 1	21%	22%	3%	48%
5	39%	31%	3%	5%	20%	41%	17%
6	42%	51%	4%	8%	18%	3%	50%
7	39%	55%	1%	5%	20%	5%	56%
8	5%	83%	1%	11%	32%	7%	38%
9	15%	72%	2%	27%	9%	12%	24%
10	22%	73%	3%	20%	40%	2%	36%
11	31%	66%	1%	16%	11%	10%	49%
12	52%	15%	32%	8%	22%	1%	63%
13	20%	76%	2%	19%	11%	2%	64%
14	38%	32%	9%	6%	10%	49%	14%
	30%	60%	4%	12%	19%	11%	45%

Table 1.12 – Access to safe drinking water and bathing facilities

	% HH using 'safe' water	Time to water source				Type of bathing facility		
		On premises	< ½ hour	½ to 2 hours	Half day	Private	Public	Other
1	46%	33%	49%	17%	1%	54%	11%	35%
2	15%	10%	73%	15%	2%	14%	17%	69%
3	55%	18%	47%	26%	10%	53%	21%	26%
4	47%	25%	48%	24%	2%	68%	15%	17%
5	69%	8%	74%	17%	1%	15%	34%	51%
6	29%	27%	60%	13%	-	69%	8%	23%
7	33%	3%	80%	16%	< 1	23%	37%	40%
8	54%	29%	33%	32%	6%	37%	24%	39%
9	56%	26%	45%	23%	6%	58%	21%	21%
10	62%	35%	53%	12%	< 1	77%	6%	17%
11	45%	27%	42%	25%	6%	59%	14%	27%
12	32%	5%	73%	21%	1%	22%	66%	12%
13	34%	23%	50%	20%	7%	73%	19%	8%
14	69%	15%	64%	19%	1%	78%	4%	17%
	45%	21%	56%	20%	3%	49%	21%	30%

1.13 – Access to and use of credit

	Household access to credit					Purchase food on credit			
	Friends/relatives	Charity/NGO	Local lender	Bank	No access	Ever?	Always	Sometimes	Rarely
1	35%	1%	1%	1%	64%	21%	41%	48%	11%
2	45%	27%	14%	12%	41%	60%	29%	52%	19%
3	44%	1%	1%	1%	54%	44%	9%	44%	47%
4	34%	2%	< 1%	-	65%	49%	19%	59%	22%
5	62%	1%	1%	< 1%	36%	21%	-	56%	44%
6	51%	22%	1%	-	33%	44%	24%	55%	21%
7	42%	1%	< 1%	3%	55%	37%	6%	72%	22%
8	59%	2%	-	< 1%	39%	49%	17%	46%	37%
9	44%	< 1%	< 1%	1%	55%	38%	12%	72%	16%
10	49%	3%	1%	< 1%	48%	58%	33%	55%	12%
11	36%	1%	1%	< 1%	64%	19%	13%	67%	20%
12	53%	1%	-	1%	45%	45%	5%	84%	11%
13	30%	< 1%	1%	1%	68%	38%	12%	77%	11%
14	44%	1%	4%	2%	50%	31%	6%	72%	22%
	45%	5%	2%	2%	51%	40%	18%	60%	22%

1.14a – Animal ownership

	Cattle		Oxen/yaks		Horses - % owning	Donkeys - % owning
	% owning	#	% owning	#		
1	68%	2	36%	1	5%	24%
2	84%	2	36%	1	2%	23%
3	63%	2	18%	1	5%	38%
4	78%	2	28%	1	14%	61%
5	63%	2	20%	1	2%	27%
6	68%	2	39%	2	8%	35%
7	68%	1	16%	1	2%	48%
8	60%	2	31%	1	5%	46%
9	60%	2	26%	1	6%	28%
10	80%	2	32%	1	10%	42%
11	71%	2	48%	2	5%	35%
12	87%	3	71%	1	4%	58%
13	74%	2	40%	1	5%	49%
14	78%	2	14%	1	3%	33%
	71%	2	33%	1	6%	39%

Annex I – Descriptive tables – household questionnaire

1.14b – Animal ownership

	Goats		Sheep		Poultry	
	% owning	#	% owning	#	% owning	#
1	19%	4	17%	3	54%	5
2	81%	4	64%	3	51%	5
3	28%	3	17%	2	63%	5
4	59%	3.5	38%	3	65%	6
5	23%	4	27%	3	50%	4.5
6	57%	5	34%	4	65%	6
7	39%	3	22%	3	67%	5
8	31%	3	30%	3	63%	5
9	29%	3	16%	2	41%	5
10	64%	3	50%	4	76%	6
11	23%	3	14%	2	55%	5
12	56%	3	47%	3	20%	4
13	42%	5	21%	4	52%	6
14	9%	2	18%	2.5	54%	5
	41%	4	30%	3	56%	5

1.15a – Household asset ownership

	Bed	Quilt	Table	Chair	Lantern	Cooking utensils	Stove	Bicycle	Trailer /cart
1	32%	97%	22%	23%	56%	92%	60%	23%	12%
2	60%	90%	75%	67%	50%	91%	4%	5%	4%
3	14%	89%	9%	10%	54%	84%	66%	7%	15%
4	13%	94%	11%	12%	43%	74%	43%	3%	3%
5	30%	76%	44%	36%	47%	86%	39%	33%	5%
6	37%	85%	35%	39%	76%	94%	65%	15%	13%
7	28%	88%	24%	16%	51%	71%	56%	5%	11%
8	20%	87%	13%	18%	42%	96%	55%	8%	14%
9	26%	83%	21%	22%	44%	83%	67%	14%	5%
10	42%	89%	24%	26%	62%	82%	57%	5%	6%
11	30%	85%	19%	19%	46%	84%	54%	14%	13%
12	20%	91%	16%	22%	66%	58%	30%	4%	3%
13	33%	86%	37%	36%	47%	92%	74%	12%	11%
14	33%	97%	31%	28%	91%	98%	60%	24%	4%
	30%	88%	27%	27%	54%	84%	57%	12%	9%

1.15b – Household asset ownership

	Motor-bike	Radio/tape player	Carpet/kilim	Generator	Television	VCR/DVD	Farm equip	Carpentry tools	Sewing machine
1	5%	30%	62%	1%	65%	5%	46%	85%	31%
2	4%	54%	69%	3%	60%	18%	25%	96%	54%
3	1%	28%	59%	1%	59%	4%	14%	62%	30%
4	< 1	38%	47%	-	56%	3%	13%	50%	29%
5	5%	40%	46%	1%	77%	5%	24%	88%	48%
6	2%	61%	75%	2%	72%	21%	45%	92%	61%
7	3%	57%	62%	4%	73%	5%	7%	71%	35%
8	3%	39%	62%	2%	60%	5%	36%	84%	20%
9	4%	55%	57%	1%	82%	8%	14%	82%	39%
10	3%	41%	42%	2%	55%	8%	32%	63%	41%
11	3%	49%	70%	1%	58%	4%	46%	63%	37%
12	1%	26%	48%	-	42%	7%	12%	71%	21%
13	1%	52%	73%	2%	80%	13%	24%	86%	52%
14	4%	51%	74%	-	91%	16%	59%	89%	48%
	3%	44%	60%	1%	66%	9%	27%	77%	39%

1.16 – Productive assets and asset ownership categories

	% productive assets	Asset ownership categories					
		0-2	3-5	6-7	8-9	10-11	12 or more
1	27%	2%	27%	32%	23%	10%	6%
2	22%	1%	12%	21%	25%	26%	16%
3	20%	6%	38%	34%	16%	4%	2%
4	17%	10%	49%	27%	8%	3%	2%
5	28%	6%	21%	29%	24%	14%	6%
6	26%	4%	10%	22%	21%	22%	21%
7	19%	7%	40%	21%	19%	11%	2%
8	26%	4%	38%	23%	22%	11%	4%
9	20%	3%	29%	29%	22%	10%	7%
10	22%	9%	29%	26%	17%	14%	5%
11	21%	20%	18%	28%	24%	6%	3%
12	18%	22%	37%	23%	12%	5%	1%
13	22%	2%	21%	24%	23%	14%	16%
14	25%	1%	10%	21%	30%	20%	18%
	22%	7%	28%	26%	20%	12%	7%

1.17 – Land access, size and acquisition

	Access any land?	Have garden plot?	Size garden plot (ha)	Acquire garden plot?			
				Rent	Own	Given by State	Inherited
1	90%	86%	0.1	2%	61%	43%	10%
2	94%	88%	0.07	1%	27%	71%	10%
3	94%	90%	0.1	5%*	78%	21%	11%
4	96%	88%	0.1	7%	37%	49%	15%
5	89%	86%	0.06	5%	42%	50%	21%
6	97%	92%	0.06	3%	62%	21%	20%
7	96%	92%	0.06	3%	51%	47%	20%
8	88%	80%	0.1	14%	74%	26%	36%
9	90%	80%	0.08	1%	55%	22%	38%
10	93%	91%	0.1	10%	45%	62%	13%
11	86%	80%	0.08	13%	75%	17%	3%
12	95%	90%	0.06	16%	82%	2%	14%
13	88%	82%	0.08	4%	75%	21%	18%
14	97%	95%	0.08	1%	87%	6%	4%
	92%	87%	0.08	6%	58%	35%	17%

*Sharecropping = 7%

1.18 – Garden plot production

	What produced in garden plot						Main source of water – garden plot			
	Potatoes	Fruit/nut trees	Other vegetables	Wheat	Maize	Grapes	Rain	Irrigated, river/canal	Pump	Spring
1	57%	20%	67%	38%	40%	8%	5%	89%	2%	1%
2	77%	41%	53%	26%	-	-	7%	46%	2%	44%
3	63%	20%	61%	23%	25%	-	30%	52%	8%	4%
4	47%	69%	61%	14%	-	5%	44%	39%	1%	15%
5	22%	62%	46%	21%	18%	21%	19%	58%	5%	10%
6	68%	61%	63%	12%	-	-	7%	49%	< 1	17%
7	67%	29%	68%	14%	20%	-	20%	59%	8%	12%
8	42%	38%	51%	38%	19%	-	30%	61%	5%	2%
9	42%	45%	51%	14%	25%	12%	32%	53%	3%	6%
10	82%	69%	83%	16%	-	5%	20%	62%	1%	16%
11*	49%	41%	54%	22%	9%	12%	30%	62%	3%	4%
12+	77%	38%	57%	23%	-	-	4%	74%	2%	17%
13	54%	71%	65%	8%	5%	-	15%	64%	1%	17%
14	37%	53%	69%	7%	13%	15%	7%	84%	8%	-
	58%	47%	61%	20%	13%	6%	20%	59%	3%	12%

*Rice = 6%, Cotton = 3%

+Barley = 6%

Annex I – Descriptive tables – household questionnaire

1.19a – Presidential land: ownership and water source

	Access to Presidential land	How acquire Presidential land			Main source of water			
		Rent	Own	Given by State	Rain	Irrigated, river/canal	Pump	Spring
1	51%	1%	4%	96%	33%	65%	2%	-
2	21%	-	21%	94%	27%	55%	1%	13%
3	45%	4%	-	97%	42%	45%	13%	-
4	43%	4%	-	95%	90%	8%	2%	-
5	41%	21%*	-	90%	14%	75%	4%	6%
6	28%	-	-	96%	26%	39%	-	7%
7	54%	9%	7%	90%	38%	49%	7%	5%
8	47%	24%	23%	97%	50%	47%	3%	-
9	29%	-	-	98%	38%	51%	5%	-
10	30%	9%	-	91%	67%	20%	4%	10%
11	47%	3%	-	98%	42%	57%	-	1%
12	49%	18%	-	81%	2%	92%	1%	3%
13	35%	7%	-	91%	35%	64%	-	1%
14	76%	-	-	100%	3%	96%	-	-
		8%	5%	94%				

*includes 5% sharecropping

1.19b: Presidential land: production

	Crops produced on Presidential land							
	Wheat	Maize	Barley	Other vegetables	Rice	Grapes	Potatoes	Fruit/nut trees
1	89%	44%	-	-	11%	-	-	-
2	68%	-	-	26%	-	6%	46%	-
3	85%	34%	-	13%	-	5%	12%	-
4	90%	6%	-	-	-	9%	-	-
5	59%	39%	-	17%	12%	12%	14%	12%
6	56%	14%	-	27%	7%	18%	27%	-
7	67%	21%	15%	18%	17%	-	14%	-
8	85%	19%	28%	12%	-	-	12%	-
9	60%	24%	-	17%	15%	-	16%	-
10	82%	-	15%	20%	-	-	24%	-
11	63%	10%	-	9%	32%	8%	13%	-
12	64%	-	-	1%	-	-	75%	-
13	46%	-	-	31%	2%	-	21%	-
14	63%	42%	-	-	-	-	-	-
	72%	21%	8%	14%	10%	6%	18%	6%

1.20 – Individual dekhan production

	Individual dekhan		Source of water			Main crops produced			
	% access	Size (ha)	Rain	River/canal	Spring	Wheat	Potatoes	Other vegetables	Cotton
1	4%	5	27%	67%	-	33%	20%	27%	27%
2	73%	17	4%	42%	49%	85%	68%	22%	< 1
3	10%	11	90%	5%	-	90%	5%	3%	5%
4	6%	15	67%	19%	14%	65%	22%	13%	9%
5	5%	2	21%	57%	14%	47%	33%	27%	13%
6	18%	5	19%	54%	12%	52%	46%	38%	2%
7	16%	8	15%	63%	18%	68%	27%	24%	2%
8	6%	9	47%	20%	13%	60%	40%	20%	5%
9	6%	18	26%	53%	16%	59%	46%	18%	23%
10	12%	20	42%	33%	22%	83%	28%	19%	-
11	9%	20	70%	27%	3%	71%	13%	10%	3%
12	8%	6	11%	68%	21%	38%	43%	-	-
13	3%	2.5	20%	80%	-	63%	13%	25%	38%
14	24%	12	-	100%	-	18%	-	6%	97%
	14%	13	22%	46%	28%	71%	44%	20%	8%

Table 1.21 – Collective dekhan production

	Collective dekhan		Source of water			Main crops produced			
	% access	Size (ha)	Rain	River/canal	Spring	Wheat	Potatoes	Other vegetables	Cotton
1	9%	30	7%	91%	2%	14%	-	-	86%
2	7%	10	27%	58%	8%	64%	27%	5%	5%
3	10%	15	23%	67%	2%	48%	25%	3%	38%
4	37%	10	92%	5%	1%	91%	8%	2%	1%
5	12%	4	8%	62%	-	25%	6%	8%	67%
6	17%	10	23%	52%	11%	61%	31%	11%	3%
7	36%	11	26%	63%	3%	62%	12%	18%	1%
8	15%	5	35%	30%	2%	50%	37%	15%	3%
9	21%	10	37%	11%	1%	69%	5%	5%	15%
10	23%	20	72%	19%	3%	75%	21%	2%	-
11	19%	10	25%	52%	3%	31%	15%	1%	46%
12	55%	20	3%	93%	3%	71%	74%	11%	1%
13	11%	10	41%	57%	-	40%	6%	3%	51%
14	18%	3	11%	86%	-	37%	-	4%	70%
	21%	10	35%	48%	3%	61%	24%	17%	17%

Table 1.22 – Sources of traction and seeds

	Main source of traction			Seed source – field crops				Seed source – garden plot		
	Animal	Tractor	Human	Purchase/own stock	Government	NGOs	Credit	Purchase/own stock	NGOs	Credit
1	5%	68%	27%	89%	2%	9%	< 1	99%	-	< 1
2	86%	4%	10%	76%	-	8%	16%	81%	6%	13%
3	18%	35%	48%	96%	3%	1%	< 1	100%	-	-
4	52%	22%	26%	99%	-	-	1%	99%	-	1%
5	9%	46%	46%	85%	14%	-	< 1	100%	-	-
6	30%	28%	42%	96%	1%	-	3%	97%	-	3%
7	10%	53%	37%	99%	-	-	1%	100%	-	-
8	18%	49%	34%	99%	-	-	1%	99%	-	1%
9	18%	41%	41%	98%	1%	-	1%	99%	-	1%
10	30%	33%	37%	91%	< 1	< 1	9%	93%	-	7%
11	9%	29%	62%	91%	8%	< 1	< 1	98%	< 1	< 1
12	23%	48%	29%	98%	2%	-	-	100%	-	-
13	27%	29%	44%	93%	7%	-	-	99%	< 1	-
14	3%	93%	4%	99%	1%	-	-	100%	-	-
	27%	38%	35%	93%	3%	2%	3%	97%	1%	2%

Table 1.23 – Fertilizer use and sources

	Use fertilizer			Source – field crops				Source – garden plots	
	Field crops	Garden plot	Both	Purchase/own stock	Government	NGOs	Credit	Purchase/own stock	Credit
1	5%	49%	17%	86%	1%	13%	1%	99%	1%
2	24%	18%	39%	68%	< 1	4%	28%	71%	27%
3	13%	26%	15%	93%	3%	4%	-	98%	1%
4	4%	19%	15%	96%	-	-	4%	97%	3%
5	7%	38%	15%	90%	9%	-	1%	99%	1%
6	11%	38%	20%	89%	1%	2%	7%	99%	1%
7	12%	33%	33%	97%	1%	< 1	1%	99%	< 1
8	22%	25%	9%	99%	-	-	1%	99%	1%
9	10%	39%	10%	97%	1%	1%	1%	99%	1%
10	7%	32%	31%	84%	-	-	16%	90%	10%
11	11%	26%	12%	88%	9%	1%	2%	96%	3%
12	10%	28%	49%	98%	2%	-	-	100%	-
13	8%	40%	10%	88%	11%	-	1%	99%	1%
14	36%	24%	26%	100%	-	-	-	99%	1%
	12%	31%	21%	89%	3%	2%	6%	95%	4%

Annex I – Descriptive tables – household questionnaire

Table 1.24 – Pesticide/herbicide uses and sources

	Use pesticides/herbicides			Source – field crops			Source – garden plot		
	Field crops	Garden plot	Both	Purchase/ own stock	NGOs/ Gov't	Credit	Purchase/ own stock	NGOs/ Gov't	Credit
1	3%	10%	2%	58%	42%	-	100%	-	-
2	12%	3%	16%	36%	29%	36%	40%	22%	38%
3	3%	4%	2%	97%	-	3%	97%	3%	-
4	2%	1%	6%	91%	9%	-	93%	3%	3%
5	3%	22%	4%	85%	14%	1%	98%	1%	1%
6	8%	10%	12%	88%	7%	5%	98%	-	2%
7	11%	21%	20%	99%	-	1%	99%	-	1%
8	23%	12%	7%	98%	1%	1%	99%	-	1%
9	6%	20%	3%	91%	3%	6%	100%	-	-
10	5%	8%	27%	98%	1%	1%	97%	-	3%
11	12%	8%	11%	90%	9%	1%	94%	3%	3%
12	10%	12%	13%	99%	1%	-	100%	-	-
13	9%	16%	7%	89%	11%	-	100%	-	-
14	15%	5%	6%	100%	-	-	100%	-	-
	8%	11%	11%	87%	5%	5%	94%	2%	4%

Table 1.25a – Covariate shocks – % households affected by....

	Any covariate shock	Drought/ irregular rains	Floods	High winds/storms	Damaging frosts	Landslides/ erosion
1	56%	46%	10%	14%	15%	23%
2	78%	10%	4%	17%	52%	14%
3	80%	47%	18%	11%	24%	11%
4	71%	27%	12%	18%	17%	15%
5	28%	24%	30%	23%	14%	17%
6	61%	18%	11%	19%	15%	16%
7	61%	60%	13%	16%	23%	18%
8	68%	57%	21%	17%	24%	6%
9	55%	17%	18%	20%	12%	13%
10	83%	48%	16%	22%	31%	29%
11	46%	15%	22%	25%	31%	29%
12	74%	22%	40%	26%	35%	14%
13	65%	26%	40%	26%	35%	14%
14	54%	46%	6%	49%	18%	44%
	63%	34%	16%	21%	24%	16%

Table 1.25b – Covariate shocks - % households affected by.....

	Unusually high levels of crop pests & diseases	Unusually high levels of livestock diseases	Unusually high levels of human diseases	Insecurity /violence	Sudden price fluctuations	Restricted access to markets
1	21%	12%	9%	1%	60%	15%
2	45%	26%	11%	0	19%	39%
3	22%	28%	33%	2%	68%	18%
4	35%	31%	10%	1%	45%	20%
5	24%	12%	9%	0	37%	8%
6	56%	37%	18%	0	31%	29%
7	30%	17%	22%	0	35%	8%
8	40%	28%	17%	2%	44%	19%
9	25%	22%	32%	2%	44%	19%
10	71%	51%	12%	1%	37%	10%
11	28%	24%	21%	1%	40%	16%
12	32%	14%	5%	5%	53%	37%
13	15%	19%	25%	15	34%	27%
14	44%	44%	38%	3%	41%	4%
	37%	27%	18%	2%	42%	21%

Annex II – Women and child health tables

Table 2.1 – Pregnancy and nursing status and history

	Number of women	Pregnant	Breast-feeding	Rec'd iron/folate tablets	# pregnancies	# living children	Age at 1 st delivery
1	327	5.8%	20%	32% (19)	5	4	20 years
2	326	3.4%	17%	36% (11)	4	3	20 years
3	336	8.4%	20%	15% (27)	5	4	20 years
4	331	6.0%	34%	5% (20)	5	4	20 years
5	294	5.1%	13%	57% (14)	4	3	20 years
6	332	11.8%	30%	18% (39)	5	4	20 years
7	327	2.8%	21%	38% (8)	4	4	20 years
8	315	6.4%	26%	22% (18)	4	4	20 years
9	311	5.5%	25%	18% (17)	5	4	20 years
10	354	5.7%	39%	39% (18)	5	5	19 years
11	333	6.6%	25%	43% (21)	4	4	20 years
12	253	11.1%	29%	17% (23)	4	3	21 years
13	282	7.8%	23%	42% (19)	4	4	20 years
14	129	2.3%	29%	67% (3)	4	4	20 years
	4250	6.4%	25%	27% (257)	4	4	20 years

Table 2.2 – Recent morbidity and hygiene practices

	Illness in past 2 weeks			Wash hands after defecation		
	Diarrhoea	Fever	Both	Water only	Local soap & water	Washing soap & water
1	9%	5%	2.3%	81%	18%	1%
2	5%	7%	1.5%	47%	33%	20%
3	7%	5%	0.8%	80%	18%	2%
4	9%	7%	2.0%	83%	15%	2%
5	2%	2%	0	72%	25%	4%
6	3%	3%	0.5%	65%	32%	3%
7	14%	3%	0.8%	68%	29%	3%
8	9%	7%	2.1%	79%	19%	< 1%
9	3%	5%	1.0%	54%	32%	14%
10	4%	2%	0.7%	93%	6%	1%
11	9%	9%	5.2%	60%	39%	1%
12	3%	4%	1.6%	58%	38%	4%
13	6%	6%	2.2%	56%	40%	4%
14	2%	3%	0	66%	34%	1%
	6.3%	5.0%	1.5%	69%	26%	4%

Table 2.3 – Recent illness and hygiene practices by age

	Illness in past 2 weeks			Wash hands after defecation		
	Diarrhoea	Fever	Both	Water only	Local soap & water	Washing soap & water
15 to 19	7%	4%	3%	72%	14%	14%
20 to 24	4%	4%	1%	66%	29%	5%
25 to 29	5%	6%	3%	70%	26%	4%
30 to 34	8%	5%	2%	68%	27%	4%
35 to 39	6%	5%	1%	73%	23%	4%
40 to 49	7%	5%	2%	69%	27%	4%

Annex II – Women and child health tables

Table 2.4 – Children and receipt of antenatal care

	# children	Average age (months)	% skilled ANC	% no ANC	% mom TTox	Mom rec'd vitamin A capsule
1	274	29.5	59%	21%	25%	29%
2	217	29.8	77%	8%	41%	54%
3	291	28.0	46%	10%	30%	43%
4	360	29.4	36%	37%	19%	23%
5	190	28.6	85%	9%	50%	35%
6	315	28.4	43%	29%	11%	14%
7	248	28.5	67%	15%	43%	47%
8	281	29.1	62%	10%	34%	30%
9	280	29.3	64%	26%	23%	25%
10	413	26.8	36%	35%	18%	17%
11	309	30.8	73%	13%	41%	37%
12	255	28.1	46%	29%	8%	15%
13	250	31.3	71%	20%	24%	24%
14	105	29.4	92%	5%	36%	35%
	3788	29.0	57%	21%	27%	31%

Table 2.5 – Immunization and mosquito nets

	Have immunization card?			Had vitamin A capsule	Measles immunization (9-59 months)	Sleep under mosquito net
	Yes – seen	Yes – not seen	No			
1	51%	30%	20%	47%	84%	19%
2	65%	19%	15%	77%	86%	25%
3	63%	19%	18%	62%	88%	18%
4	36%	39%	25%	56%	83%	15%
5	67%	17%	16%	49%	69%	6%
6	25%	35%	40%	52%	69%	14%
7	63%	23%	14%	76%	88%	13%
8	49%	32%	19%	48%	64%	14%
9	39%	18%	42%	50%	82%	18%
10	26%	49%	25%	48%	72%	11%
11	28%	61%	11%	53%	92%	5%
12	23%	57%	20%	56%	79%	13%
13	40%	30%	30%	40%	83%	9%
14	80%	16%	4%	79%	92%	9%
	42%	35%	23%	2%	80%	14%

Table 2.6a - Low birth weight and possible causes

	During pregnancy			Mother – number of pregnancies	% HH using iodized salt
	No antenatal care	Skilled antenatal care	At least one tetanus toxoid injection		
Normal	20%	59%	28%	4.4	22%
Low birth weight	25%	50%	23%	4.7	17%
Significance	< 0.05	< 0.001	< 0.01	< 0.05	< 0.05

Table 2.6b - Low birth weight and other outcomes

	Ill in past 2 weeks			
	Cough	ARI	Fever	Diarrhoea
Normal	17%	6%	7%	10%
Low birth weight	26%	13%	11%	21%
Significance	< 0.001	< 0.001	< 0.01	< 0.001

Table 2.7 – Child birth size and recent morbidity

	Estimated size at birth			Illness in past two weeks			
	Small or very small	Normal	Large or very large	Fever	Cough	ARI	Diarrhoea
1	19%	70%	11%	8%	17%	9%	8%
2	25%	68%	7%	5%	16%	6%	6%
3	18%	74%	8%	6%	15%	4%	12%
4	15%	80%	5%	9%	18%	9%	13%
5	7%	89%	4%	8%	11%	3%	6%
6	14%	78%	8%	6%	22%	5%	14%
7	13%	77%	11%	9%	19%	11%	11%
8	14%	68%	18%	8%	19%	9%	13%
9	18%	75%	7%	9%	18%	8%	14%
10	11%	80%	9%	6%	16%	8%	11%
11	5%	88%	7%	11%	22%	7%	15%
12	13%	86%	1%	7%	20%	6%	6%
13	9%	78%	13%	5%	21%	5%	11%
14	9%	91%	-	10%	12%	7%	1%
	14%	78%	8%	7%	18%	7%	11%

Table 2.8 – Water, sanitation and iodized salt

	Water from improved source	No toilet	Household salt			
			Packaged	Not iodized	Iodized (< 15 ppm)	Iodized (15 ppm)
1	46%	< 1	12%	61%	17%	21%
2	15%	10%	69%	22%	15%	63%
3	55%	1%	4%	70%	21%	8%
4	47%	0	9%	69%	19%	11%
5	69%	2%	74%	12%	17%	67%
6	29%	3%	11%	50%	35%	15%
7	33%	2%	22%	60%	15%	21%
8	54%	2%	10%	41%	29%	30%
9	56%	< 1	14%	44%	34%	18%
10	62%	< 1	7%	59%	29%	11%
11	45%	1%	5%	53%	20%	25%
12	32%	0	9%	34%	48%	17%
13	34%	1%	13%	73%	18%	8%
14	69%	2%	68%	25%	32%	41%
	45.4%	1.7%	21.7%	49%	24%	25%

2.9a – HIV and AIDS knowledge and attitudes

	Ever heard of HIV/AIDS	Can people avoid getting HIV?	Avoid – one partner only	Avoid – abstinence	Avoid – using condom correctly	Can healthy looking have AIDS?
1	39%	48%	66%	34%	40%	12%
2	68%	70%	63%	50%	66%	63%
3	46%	54%	72%	45%	39%	38%
4	54%	40%	63%	52%	47%	20%
5	47%	20%	46%	46%	68%	22%
6	44%	55%	58%	62%	54%	24%
7	53%	40%	52%	46%	58%	39%
8	20%	53%	39%	21%	42%	28%
9	50%	54%	49%	33%	39%	26%
10	21%	39%	52%	36%	62%	30%
11	23%	62%	36%	22%	47%	36%
12	30%	36%	65%	46%	74%	45%
13	65%	65%	51%	42%	38%	36%
14	46%	81%	70%	20%	46%	39%
	43%	51%	57%	42%	50%	33%

Annex II – Women and child health tables

2.9b – HIV and AIDS knowledge and attitudes

	Transmitted – witchcraft	Transmitted - mosquitoes	Transmitted – mother to child	Transmitted – breast milk	Transmitted – sharing meal	Teacher with AIDS can still teach	Would buy food from infected shopkeeper
1	5%	32%	64%	60%	29%	17%	7%
2	14%	43%	82%	76%	38%	31%	23%
3	5%	28%	57%	56%	32%	26%	23%
4	13%	27%	57%	61%	36%	18%	12%
5	0	26%	51%	40%	27%	9%	5%
6	4%	25%	59%	61%	43%	11%	12%
7	4%	19%	59%	61%	23%	15%	8%
8	10%	32%	59%	64%	43%	9%	5%
9	5%	29%	68%	73%	39%	10%	5%
10	16%	12%	47%	57%	30%	16%	9%
11	9%	36%	64%	65%	29%	25%	15%
12	4%	8%	48%	73%	33%	20%	2%
13	8%	43%	70%	69%	60%	15%	7%
14	2%	15%	77%	68%	53%	14%	4%
	8%	31%	63%	63%	37%	17%	11%

Annex III – Data tables – Food consumption typologies

Table 3.1 – Household demographics, credit and food aid

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
Female headed HH	14%	14%	17%	16%	15%	15%	14%	15%
Elderly headed HH	24%	24%	27%	26%	25%	26%	23%	25%
Large households (8+)	46%	41%	44%	43%	46%	44%	40%	44%
Percentage of dependents*	44.5%	46.0%	47.1%	47.1%	46.1%	45.7%	45.5%	46%
Any female pensioners?	23%	26%	25%	26%	26%	26%	24%	25%
Any male pensioners?	20%	21%	25%	21%	23%	22%	20%	22%
Any disabled member?	21%	18%	21%	20%	20%	20%	18%	20%
Crowded (4+/room)	17%	11%	13%	11%	16%	12%	7%	13%
Any boys (6-14) absent from school?	17%	23%	18%	22%	23%	16%	31%	21%
Any girls (6-14) absent from school?	15%	22%	23%	25%	24%	17%	23%	21%
No access to credit	59%	50%	51%	44%	58%	44%	52%	50%
Any member received food aid?	11%	4%	8%	4%	20%	9%	2%	9%
Of those, food aid from school feeding	56%	29%	69%	61%	89%	72%	78%	68%

*(members < 15 and > 59/total HH members)

Table 3.2 – Household asset ownership

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
Bed	29%	21%	28%	26%	31%	39%	32%	30%
Quilts	86%	77%	89%	93%	86%	92%	96%	88%
Table	22%	20%	22%	24%	35%	30%	39%	27%
Chair	20%	18%	25%	24%	34%	30%	37%	27%
Lantern	53%	48%	41%	46%	55%	69%	54%	54%
Cooking utensils	70%	77%	82%	86%	89%	90%	89%	84%
Stove	47%	53%	53%	60%	56%	65%	51%	57%
Bicycle	5%	15%	9%	9%	8%	16%	20%	12%
Trailer/cart	7%	6%	7%	8%	8%	12%	9%	9%
Motorcycle	2%	3%	1%	2%	3%	4%	3%	3%

Annex III – Data tables – Food consumption typologies

Radio/tape player	37%	40%	42%	45%	42%	51%	50%	44%
Carpet/kilim	41%	57%	56%	60%	63%	66%	66%	60%
Generator	1%	1%	1%	1%	2%	2%	1%	1%
Television	53%	62%	57%	70%	58%	74%	80%	65%
VCR/VCD/DVD	3%	3%	7%	7%	9%	14%	15%	8%
Farming equipment	21%	22%	24%	25%	29%	37%	26%	27%
Carpentry tools-saw/hammer	57%	72%	67%	76%	87%	81%	86%	77%
Average number of assets	5.4	5.9	6.3	6.8	7.1	7.9	7.9	6.8
Productive/total assets	18.7%	22.9%	21.9%	21.7%	24.0%	23.8%	23.5%	22.6%

Table 3.3 – Livestock ownership

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
cattle	76%	54%	73%	60%	82%	82%	78%	72%
oxen/yaks	26%	21%	32%	30%	35%	45%	40%	33%
horses	5%	4%	5%	5%	4%	9%	8%	6%
donkeys	48%	34%	35%	40%	38%	42%	40%	39%
goats	51%	26%	38%	36%	53%	48%	35%	42%
sheep	37%	18%	25%	22%	38%	40%	31%	30%
poultry	62%	44%	54%	46%	65%	68%	53%	57%

Table 3.4 – Cattle ownership

among people owning cattle	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
1 head	41%	48%	31%	35%	35%	28%	33%	35%
2 head	32%	28%	37%	30%	36%	38%	26%	33%
3-5 head	16%	13%	15%	21%	21%	22%	27%	20%
6-10 head	6%	6%	11%	10%	4%	6%	9%	7%
11 head or more	5%	6%	6%	5%	4%	7%	4%	5%

Table 3.5 – Land ownership

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase
Own any land?	96%	86%	98%	87%	96%	96%	98%

Garden plot	89%	85%	95%	83%	92%	96%	96%
Presidential land	47%	31%	46%	37%	42%	46%	51%
Individual dekhan	18%	6%	12%	12%	27%	14%	17%
Collective dekhan	28%	14%	23%	17%	25%	21%	33%

Table 3.6 – Share of total income by source

% income	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase
Field crop sales	17%	9%	13%	11%	14%	12%	18%
Cash crop sales	9%	6%	11%	5%	8%	8%	8%
Sale of orchard products	12%	6%	12%	5%	5%	11%	9%
Livestock sales	10%	6%	6%	5%	9%	11%	7%
Agricultural wage labour	11%	11%	9%	12%	11%	13%	14%
Other wage labour	12%	21%	10%	14%	9%	7%	6%
Skilled labour	2%	4%	5%	7%	4%	4%	3%
Salary/Government job	1%	3%	3%	2%	2%	2%	2%
Remittances	6%	7%	9%	11%	12%	15%	8%
Pension	4%	6%	5%	5%	7%	3%	4%
Small business	2%	3%	2%	4%	2%	2%	4%
Petty trade	2%	2%	2%	4%	3%	2%	3%
Other sources	12%	17%	13%	15%	12%	10%	14%
% from any agriculture activity	38%	21%	36%	21%	28%	31%	35%
Small business +petty trade	4%	5%	4%	8%	5%	4%	7%
Wage labour	23%	33%	19%	26%	20%	20%	20%

Table 3.7 – Percentage of total monthly expenditure

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
Medical	5%	5%	5%	6%	5%	6%	5%	5%
Transportation	3%	4%	4%	4%	4%	4%	4%	4%
Debts	0%	1%	1%	1%	2%	2%	1%	1%
Education	2%	1%	1%	1%	2%	1%	1%	1%
Clothing	11%	12%	15%	13%	14%	16%	16%	14%

Annex III – Data tables – Food consumption typologies

HH items	3%	4%	4%	4%	4%	4%	4%	4%
Social events	1%	1%	2%	2%	2%	4%	4%	3%
Other	1%	1%	1%	1%	2%	1%	2%	1%
Bread/wheat flour	40%	36%	34%	33%	34%	30%	25%	34%
Potatoes, pasta & cereals	9%	11%	8%	10%	9%	8%	9%	9%
Oil & fats	8%	9%	8%	8%	9%	7%	8%	8%
Meat	2%	2%	3%	3%	2%	4%	8%	3%
Dairy	1%	1%	1%	1%	1%	1%	2%	1%
Beans	1%	1%	1%	1%	1%	1%	2%	1%
Sugar	7%	6%	6%	6%	5%	5%	6%	6%
Other food	4%	4%	4%	4%	5%	3%	4%	4%
Eating out	0%	0%	1%	0%	0%	1%	1%	0%
TOT FOOD	74%	71%	66%	67%	67%	63%	63%	67%

Table 3.8 – Absolute expenditure estimates

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
food exp/cap (Somoni)	25.3	22.2	25.0	27.4	20.8	33.8	28.9	26.4
non-food exp/cap (Somoni)	10.2	13.6	18.7	19.4	15.8	26.8	27.9	19.0
total exp/cap (Somoni)	35.5	35.8	43.6	46.7	36.7	60.6	56.8	45.3
food exp/capita \$\$	8.3	7.3	8.2	9.0	6.8	11.1	9.5	8.7
non-food exp/cap \$\$	3.3	4.5	6.1	6.3	5.2	8.8	9.1	6.2
total exp/cap \$\$	11.6	11.7	14.3	15.3	12.0	19.9	18.6	14.9

Table 3.9 – Sources of foods consumed in the past 7 days

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
purchased	33%	81%	52%	82%	48%	50%	68%	60%
own produced	57%	17%	47%	17%	48%	49%	31%	37%
traded	1%	0%	0%	0%	0%	0%	0%	0%
borrowed	2%	0%	1%	0%	1%	0%	0%	1%
received as gift	7%	1%	1%	0%	2%	1%	0%	2%

Table 3.10 – Number of meals eaten in previous day

adults – number of meals	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
One	25%	14%	17%	7%	9%	9%	12%	12%
Two	39%	52%	50%	51%	35%	47%	59%	47%
Three	36%	34%	33%	42%	55%	43%	29%	41%
Children number of meals								
One	26%	9%	8%	4%	5%	5%	3%	7%
Two	25%	21%	28%	15%	17%	21%	28%	21%
Three	49%	70%	64%	80%	78%	74%	69%	72%

Table 3.11 – Health & nutrition

	Chronically food insecure	Very vulnerable	Borderline - own production	Borderline - purchase	Adequate consumption	Better off - own production	Better off - purchase	Total
Use safe drinking water	55%	52%	41%	50%	34%	42%	49%	45%
Iodized salt (15 ppm)	15%	24%	22%	27%	32%	22%	36%	25%
Heard of HIV & AIDS?	50%	38%	40%	44%	44%	39%	60%	43%
Women – diarrhoea	11%	6%	5%	7%	9%	4%	2%	6%
Women – fever	5%	6%	4%	7%	6%	3%	5%	5%
Women – vitamin A	21%	27%	30%	33%	42%	23%	36%	30%
Trained ANC	45%	55%	56%	62%	64%	51%	76%	58%
Mothers received at least 1 Ttox	23%	27%	19%	32%	36%	21%	30%	27%
Child – small or very small at birth	19%	13%	16%	12%	15%	13%	8%	14%
Child – vitamin A	42%	49%	59%	57%	58%	55%	73%	55%
Measles vaccination (9-59 months)	76%	79%	86%	85%	84%	74%	82%	80%
Child – fever	11%	9%	8%	7%	8%	4%	10%	7%
Child – cough	24%	16%	27%	17%	16%	16%	17%	18%
Child – ARI	12%	9%	7%	8%	6%	5%	6%	7%
Child – diarrhoea	12%	10%	15%	12%	10%	10%	9%	11%