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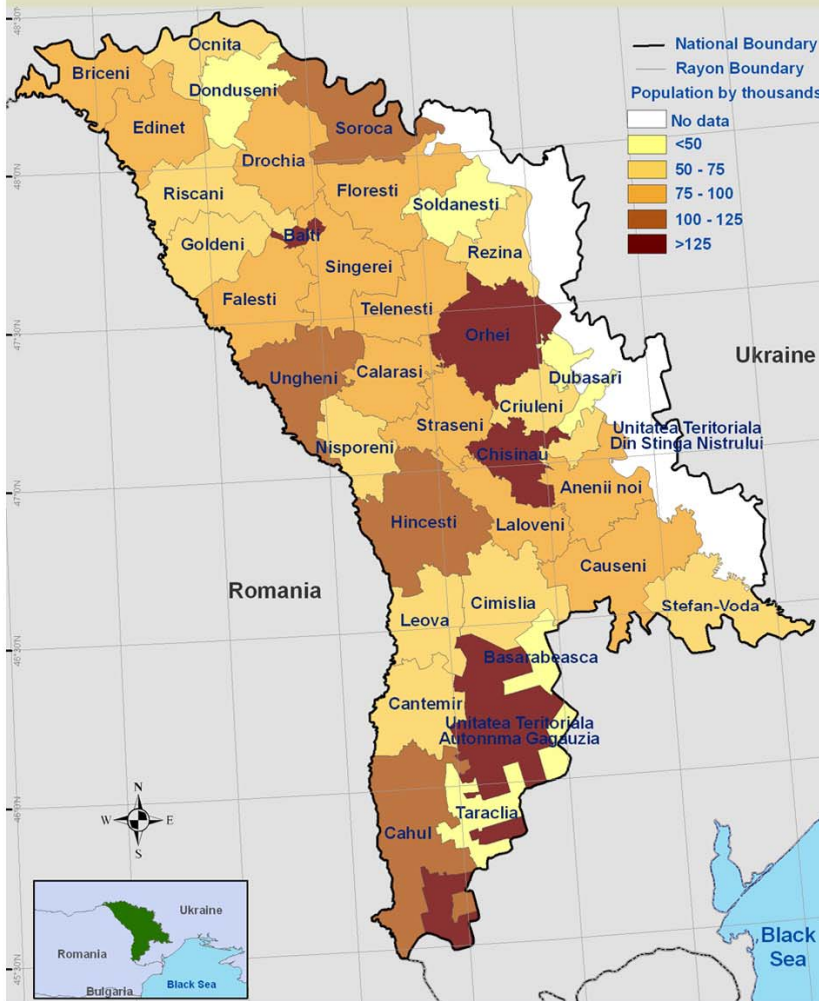
United Nations
Development Programme



Household Food Security



MOLDOVA



February 2008

WFP - ODC - VAM unit
European Commission
UNDP Moldova

Moldova

**Household Food Security Survey
of
Rural Moldova**

**United Nations Development Programme
World Food Programme**

February 2008

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LIST OF ABBREVIATIONS

CFSAM	Crop and Food Security Assessment Mission
DHS	Demographic and Health Survey
FAO	Food and Agriculture Organization
FCS	Food Consumption Score
Ha	Hectares
HHFS	Household Food Security
IOM	International Organization for Migration
NBS	National Bureau of Statistics, Government of Moldova
ODC	Regional bureau for Middle East, Central Asia & Eastern Europe in Cairo
SD	Standard Deviation
UN	United Nations
UNDP	United Nations Development Programme
USD	United States Dollar
WB	World Bank
WFP	World Food Programme

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Part A

EXECUTIVE SUMMARY

Moldova is a small agricultural country with a sizable portion of its workforce engaged in employment abroad. Rural areas are poor and rely for subsistence on services, social benefits and agriculture. There is a high proportion of elderly often living alone or with disability. Parents often go abroad in search of incomes leaving young children with grandparents. Farm sizes are small and families rely on kitchen gardens to provide most of the dietary diversity. These gardens serve as important safety nets in drought conditions.

The drought of 2007 was unprecedented in the last 60 years. Almost every farmer recorded losses, some even their entire crop. Lack of fodder forced extensive selling and culling of livestock. As a coping strategy, farmers had to cultivate less land, send family members abroad and borrow. Farmers had to sell productive assets including land and milk producing cows exacerbating their vulnerability and lowering recovery prospects.

Markets are well connected and provide food stocks for those who may afford them. The real limitation to food security is the economic power to purchase a balanced and nutritious diet. Household incomes, normally used to increase agricultural production and heating over the harsh winter, were diverted to the purchase of food. In such circumstances, social support programmes, such as school feeding, provided vital support to the food security of vulnerable households.

In August a joint FAO/WFP Crop and Food Security Assessment recommended a series of short, medium and long term interventions. To better understand the food security situation at the household level, a survey was conducted by UNDP/WFP in November 2007. Findings of this survey support recommendations of the CFSAM: vulnerable group feeding, fodder support, credit, crop insurance and monitoring. The survey also provides a baseline for future surveys to compare results. With this baseline, impact of interventions may be measured and decisions for future interventions may be based on empirical evidence.

Reclassification of vulnerable groups is an important task the government has undertaken. Support of this task is a key recommendation. Similarly, updating of the baseline through periodic household surveys would ensure a good understanding of the basic factors contributing to household food security in rural Moldova.

The HHFS is the first of its kind for Moldova. Capturing the dynamics of food security in rural Moldova is an important endeavor and maintenance of this information a task for future planners.

HOUSEHOLD FOOD SECURITY SURVEY

Moldova is a small agricultural country in Eastern Europe bordered by two large cereal producers – Ukraine and Romania. Based on extremely low precipitation levels and unusually high temperatures, the drought of 2007 is being compared with the devastating drought of 1946 which resulted in massive losses. With two thirds of its population in rural areas and chiefly dependent on agriculture, drought caused a serious impact on food security of its inhabitants.

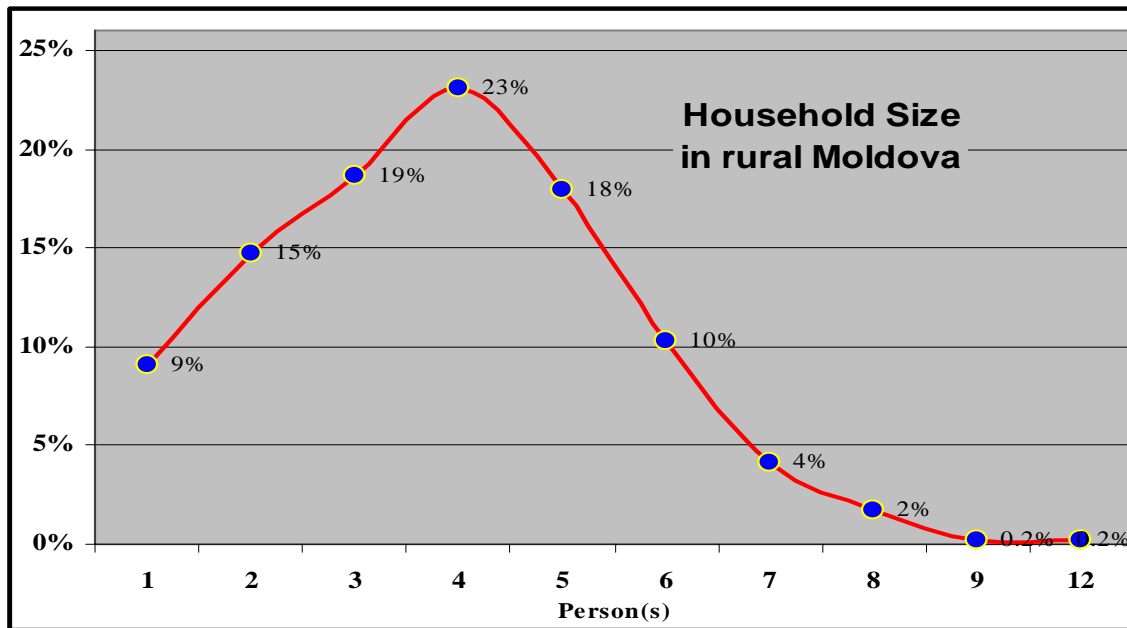
Moldova is a small sized country with rather uniform topography (Map 1: Elevation), with the North having slightly higher hills and receiving more precipitation. The country is divided into 32 Rayons grouped into three Regions: North, Centre and South. Land cover and land use change gradually from North to South. North receives slightly higher precipitation resulting in more orchards compared to more vineyards in the South. Soil quality throughout the country is good for agriculture. With only small rivers traversing the country and limited irrigation infrastructure, the bulk of agriculture is rainfed. Grasslands are scattered across the country providing vital feed for livestock. All regions produce wheat and maize. Four Rayons in the North received summer rains and were not affected by the drought. Impact of drought in South and Centre Regions was relatively more pronounced. Within a Region, local conditions, such as ownership of own water well, bear more on kitchen garden produce than the geographic location.

In August 2007 a FAO/WFP team conducted a Crop and Food Security Assessment Mission (CFSAM). This was followed by a UNDP/WFP lead Household Food Security (HHFS) Survey of rural Moldova in November 2007. The HHFS is the first of its kind and establishes a baseline for future studies. The next sections present findings of the survey followed by conclusions and recommendations. Complementing the HHFS results is a series of maps illustrating spatial distribution of agriculture and livestock.

Demographics

About 60% of rural households consist of 3 to 5 members while a little less than a quarter households are composed of either single or double members. About 9% of households have a single member. Large households with more than 5 persons are only 16% (Figure 1). There are a significant number of elderly people in rural areas with about 10% of households consisting only of elderly people.

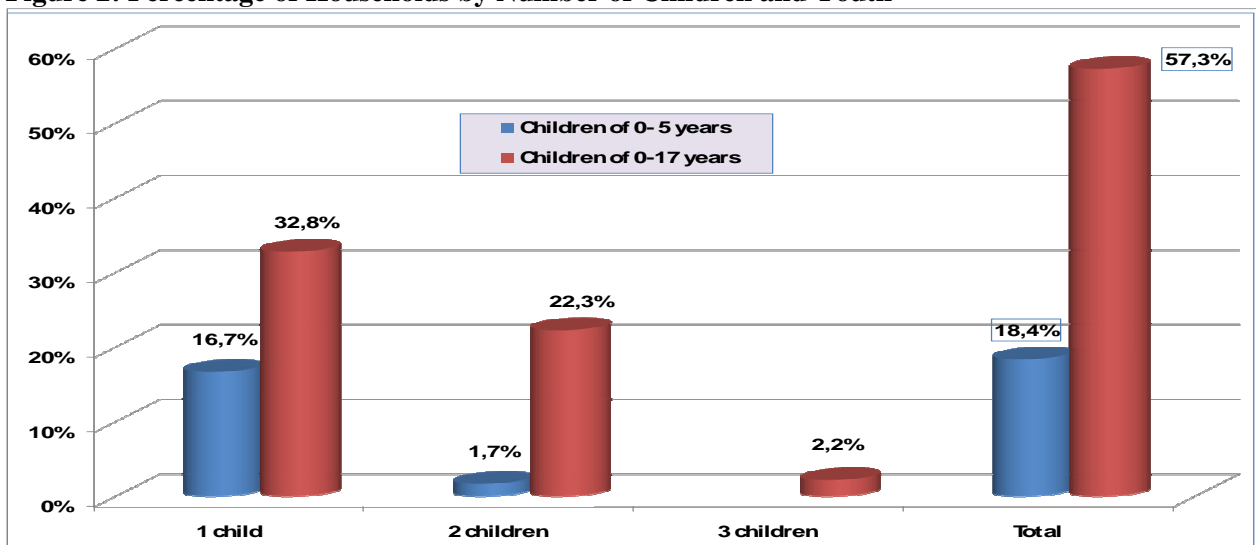
Figure 1: Household Size



Source: HHFS Survey 2007

About 57% of households have young people below the age of 18 but only 18% have children up to 5 years old (Figure 2). Every fifth household has a disability. Alarmingly, the ratio of disability amongst households exclusively composed of elderly people is 21%. This suggests an increased vulnerability amongst elderly disabled households due to absence of support family.

Figure 2: Percentage of Households by Number of Children and Youth



Source: HHFS Survey 2007

Landholdings

Post Soviet land distributions resulted in a majority of the farms being small landholdings i.e. less than 2 hectares (Table 1). Almost all farming is mechanized, raising the need for collective farming through associations.

Table 1: Farm Categories

Farm Category	Number
Small Farms	400,000 (average less than 2 ha)
LLCs	1,200 (average 500-600 ha)
Cooperatives	150 (joint stock)

Source: National Farmers Federation

Over 85% of households own agricultural land though the average landholding is only 1.8 hectares. The main source of income for the remaining 15% landless people is *services* (see section on incomes). Plot sizes vary from a minimum of 0.1 ha to a maximum of 30 ha. Small farms are predominant. Over half (55%) of the households own less than 2 ha and a quarter owns less than 1 ha. However, it is common, especially amongst elderly families, to lease out their lands and live off the proceeds. The sizes of leased lands vary from 0.12 ha to a maximum of 120 ha. Kitchen gardens provide vital support to household food security. All rural households (99.6%) maintain a kitchen garden, the average size being 0.21 ha (21 *are*). The kitchen garden sizes increase with family sizes. Average kitchen garden size of a family of two is 0.2 ha (20 *are*), that for 3-5 persons is 0.21 (21 *are*) and for larger families of over five persons is 0.22 ha (22 *are*), indicating increments of 100 square meters (1 *are*). Kitchen gardens in dwellings with a private well fare better in drought circumstances. About 41% of households have private wells. Considering the installation costs, presence of a recently dug private well was identified as a proxy indicator of relative wealth. Similarly, a gas connection is indicative of relative cash surplus. Over 30% households have gas connections of which 29% had installed them recently (2006 or 2007). In localities where gas is available, only 54% of households have been able to afford a connection. This suggests low purchasing power. Vegetables are a significant portion of rural cuisine and greenhouses provide vital incomes for some families. About 6% of households maintain a functioning greenhouse and 4% cite it as their chief income source.

Income and Expenditures

About 60% of the population lives in rural areas (NBS 2007). Agriculture is the dominant sector of employment (Table 2). The drought had far more damaging effect on rural populations that relied on own production for a major portion of their cereal and vegetable requirements.

Table 2: Employment Categories

Employment Categories	Thousand persons (2005)
Agriculture	537
Industry	159
Retail	183
Public Administration	244
Other	196

Source: NBS 2007

Poverty is widespread (Table 3) with 2006 pre-drought national poverty rate at 27% and that in rural areas exceeding 42% (WB 2006). Whereas urban residents saw their incomes rise and their poverty rates decline, poverty actually increased among farmers and rural pensioners (WB 2006). A major proportion of a poor man's expense is dedicated to food. The lowest quintile spent about 77% of its consumption expenditure on food and non-alcoholic beverages (Statistical Yearbook 2006).

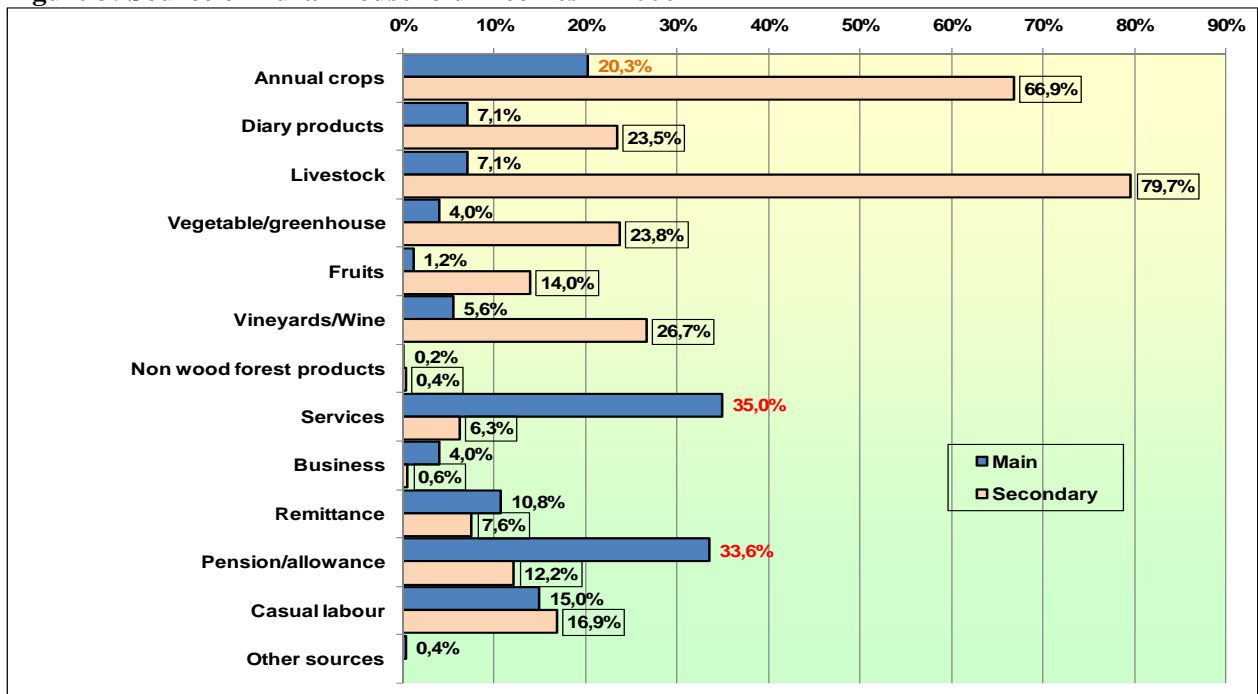
Table 3: Poverty Rates in Percentage Points

Economic Activity	2005
Farmer	48
Farm Labour	51
Non Farm Labour	31
Self employed	17
Pensioner	35

Source: Poverty Update, 2006, World Bank

The main income sources in rural Moldova are services and pension/social allowances (35% and 34% households respectively). This is followed by annual crops at 20% of which corn (41%), wheat (34%) and potatoes (16%) are significant. Casual labour is a major income source for 16% of households followed by remittances (11%), livestock and dairy products (7%), vineyards (6%) and greenhouses (3%). Livestock serves as a significant secondary source of income for 80% of households. Other secondary income sources include annual crops (70%), vineyards (27%) and vegetables/greenhouse products at 27% (Figure 3).

Figure 3: Source of Rural Household Incomes in 2006



Source: HHFS Survey 2007

About one third of households were in debt at the time of the HHFS Survey of November 2007. The main reason for debt was food needs (48%) followed by agricultural expenses (45%) and expenses on health/education (45%). About 10% of households had borrowed to pay for utilities (primarily heating).

To capture expenses, the households were asked to breakdown their expense of October 2007. For 48% of households over half of their monthly expense was incurred on food. On average, household expenses were spread over food (46%), health/education (20%), utilities (16%) and agriculture (14%). About 43% of households did not record agriculture expenses during October which may reflect on the large number of farmers who decided to abandon land preparation for the winter crops due to drought conditions.

Remittances

Remittances play a major role in the national economy. Approximately one quarter of the economically active population of Moldova is located abroad (IOM 2007). The number of migrants grew from 100 thousand in 1999 to over 400 thousand in 2004 (Labour Force Survey, National Bureau of Statistics). A 2006 study by Kiel Institute (IOM/SICA) found a linear growth in number of migrants since 1999. However, the study also found

- mean remittances per household were greater than median i.e. there are many households with modest remittances and a much smaller number with relatively high remittances

- mean was relatively high due to some very high remittances reported by a few households in Chisinau
- Remittance levels strongly depend on the country the migrant is working in. They are highest for migrants in Europe and lowest for migrants in Russia or Ukraine
- Of the migrants to Russia and Ukraine, 77% (in construction sector) and 64% (non-construction) come from rural areas.

This suggests migrants from rural households remit least amounts of money. This is in line with poverty rates (42% rural). Studies of 2004 indicate only 3% of remittances reached the poorest quintile (WB 2006). The same study concluded that ‘neither public transfers nor private remittances are reaching relatively poor groups in amounts sufficient to offset the loss of income from other sources, in particular agriculture’. It is therefore important to note, in spite of high national level figures on remittances, interpreting these as a strong safety net for poor rural households could be misleading.

Markets

The entire country is well connected with every village accessible through all weather asphalt roads. The remotest farm is within a few kilometers of a paved road. With 14 border crossings along its short east and west borders, the country is well connected to neighboring countries for import and export of commodities. Markets within each Rayon are accessible throughout the year. Food security of vulnerable people rests in their economic accessibility to food in the markets.

Vulnerable Groups

The communist era defined specific groups as vulnerable. These included pensioners, invalid (challenged), unemployed, large families and children with one parent. Poverty was not a criteria. This approach is currently under review at the Ministry of Social Protection which plans to introduce a vulnerability classification taking poverty into account. The government provides allowances to its vulnerable people. As is evident from Table 4, these allowances are small while loss of crop, kitchen gardens and livestock is substantial.

Table 4: Vulnerable Groups as Defined by Ministry of Social Protection

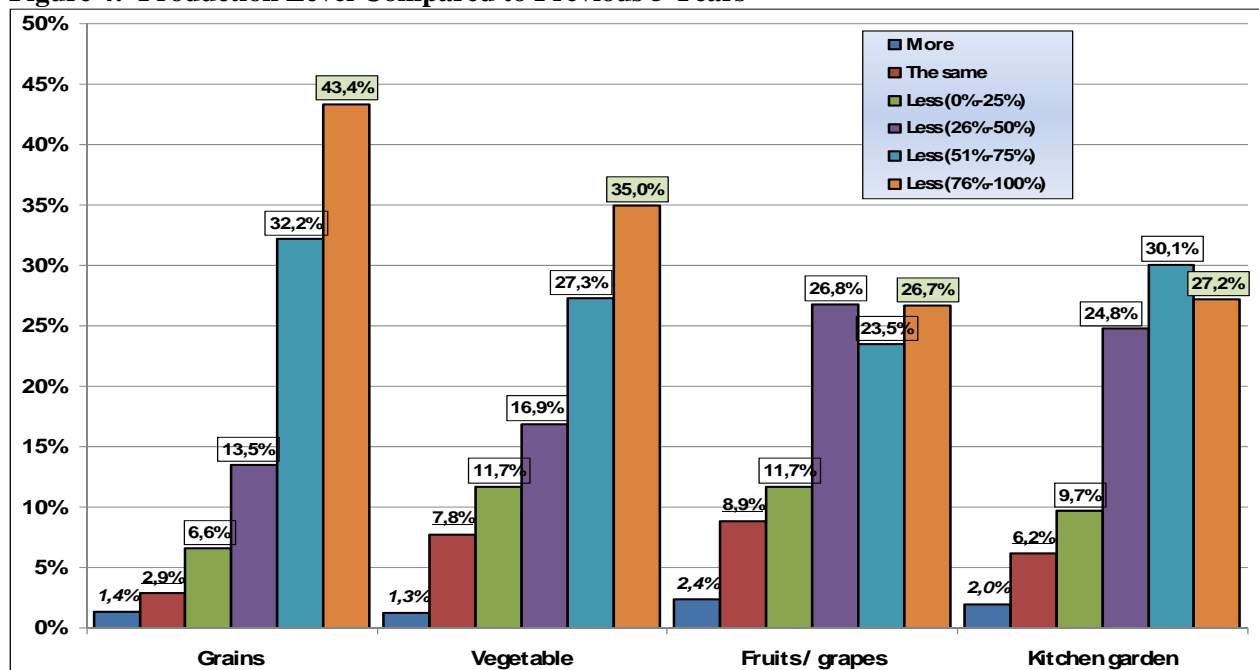
Vulnerable Groups	Number of People	Government Allowance (13 Lei = 1 USD)
Pensioners	614,000	550 lei/month
Invalids	169,000	300 lei/month
Unemployed	72,000	400 lei/month; up to 6 months
Large families/one parent families	59,000	Allowance plus subsidy on utilities

Source: Ministry of Social Protection

Impact of Drought

The major impact of drought¹ was felt by the agriculture community. Drought resulted in extremely low agriculture produce². Corn crop all but failed. Initial wheat yields were estimated at 50% to 25% of normal. Similarly, production of vegetables from kitchen gardens, particularly where own wells are not available, dropped considerably. The HHFS Survey asked households to compare production this season with that over the previous five years. About 96% of households reported production losses in 2007. Losses were reported across the agriculture sector. Most significant losses were reported in annual crops where 43% of households reported over 75% of losses (Figure 4). A third of households lost between 50-75%. Only 1% of households reported higher production in annual crops than previous years. Vegetables were the second most affected. Thirtyfive percent of households lost more than three quarters while one third of households lost between 50-75% as compared to previous years. Again, only 1% reported improvement over previous years. Horticultural losses ranged above half for 20-30 percentage of households. Production of kitchen gardens was similarly low, with production losses over 50% for 25-30% of households. Though insignificant, about 2% of households reported gains in production of horticulture and kitchen gardens as compared to previous years.

Figure 4: Production Level Compared to Previous 5 Years



Source: HHFS Survey 2007

Fodder was scarce, forcing farmers to sell or cull livestock. Some Rayons reported over 50% loss of livestock. This included loss of milk producing cows. Small farmers rely on subsistence farming for cereals and on their kitchen gardens for vegetables. Both sources

¹ In addition to drought, some Rayons have experienced sudden hailstorms in July and August destroying wheat crops before they could be harvested

² See FAO/WFP Crop and Food Security Assessment Mission Report at www.un.md for details.

were severely affected. Lack of feed resulted in loss of livestock. Consequently the winter of 2007 stretched coping mechanisms to their limits. Although most small farmers maintained some cereal reserves, purchases from the market increased over winter. They also had to purchase vegetables which normally would be home produced. These additional expenses drew on scarce money that would otherwise provide heating during the harsh winter³.

Drought also affected a group of people who normally relied on casual farm labour as an income source. With failing crops, these employment opportunities diminished. Lack of incomes severely restricted investment in construction and other activities involving skilled labour. Consequently there was a group of able bodied potential workers who do not qualify for government allowances to vulnerable people. Income generating opportunities would be required to support these families. Collapse of the kitchen garden production was evident from price rises in vegetables in local markets. Prices of vegetables registered a marked increase (Table 5).

Table 5: Vegetable Prices: Sunday Market in Criuleni (Central Region)

Commodity	Last Year (Lei/kg)	This Year (Lei/kg)
Tomato	3	8
Potato	2.5	9
Onion	3	8
Carrots	0.9	9
Cabbage	1	7

Source: Spot Market Survey 19 Aug 07.

For villages where gas services were available, a proxy wealth indicator of households would be the ability to afford the expense for a gas connection. Similarly, kitchen garden produce was better in houses with private wells. Therefore, presence of a private well may be considered as a potential contributor to food security. However, a well could have been dug years ago and its presence does not necessarily indicate current household incomes being high.

Drought created its own vulnerability. Rural areas, with agriculture base livelihoods and high levels of subsistence farming, were more vulnerable than urban areas. The small farmer in rural areas was particularly vulnerable to the impact of drought. There is considerable overlap between small farmers and these traditionally classified vulnerable groups (Table 4). A small farmer may well be a pensioner. Similarly, small land holders would often rent their land to associations who collectively farm these lands and pay the owner from produce and sales. In the event of drought, these products failed and many farmers received neither product nor cash as compensation. Crop insurance is almost unheard of in Moldova farming communities. Support to the credit and insurance system would be essential medium and long term goals and should be part of an overall agriculture sector support strategy. Failed crops reduced both on farm and off farm labour requirements. Families relying on casual labour have lost a major source of their

³ An average family requires 10 cubic meters of wood (@ 450 Lei per cubic meter) for winter heating.

livelihood. Such labour normally came from able bodied persons who do not qualify as pensioners, elderly or other vulnerable groups. They were too young to qualify for Social Canteen and too old for School Feeding. This group required work opportunities to make up for loss of employment, especially during the winter season when heating costs were extensive and incentive to cut forests for wood was maximum.

The drought caused loss of revenue of local governments. This threatened, and in many cases ceased, the school feeding programmes in villages. The daily meal for these children was a major source of nourishment and supported learning capacities. With loss of incomes and crops, families were unable to maintain the quality and quantity of food intake thus increasing the role of school feeding.

Food Consumption and Nutrition

Rural diets consist of staple (wheat), vegetables, occasional meat and seasonal fruits. Tea with bread, cheese and honey are consumed at breakfast. Meals consist of soup, bread and Mamalika (corn and cheese mixed with either fish or meat). On occasion, beverages may include wine, especially from own vineyards. Nationally, about 8% of children under 5 are moderately⁴ stunted and 4% are suffering from acute malnutrition i.e. are wasted⁵ (DHS 2005). About 4 percent children are underweight. According to the Demographic and Health Survey of 2005, 40% of households consume inadequate (<15 ppm) of iodized salt. The situation is worst in rural areas (51%). One percent of women suffer from night blindness (vitamin A deficiency) and 28% of women in Moldova have some level of anemia (Table 6). Women living in rural areas and those with four or more children are more likely to have mild anemia than other women. Women with these background characteristics would benefit the most from an iron supplementation program.

Table 6: Percentage of Children and Women with Anemia

Group	Mild Anemia (10.0 – 11.9 g/dl)	Moderate Anemia (7.0 – 9.9 g/dl)
Children (6-59 months)	22	10
Women	23	4

Source: DHS 2005

The food consumption score is a method developed by WFP to capture consumption patterns and dietary diversity. The system requires recording of food groups over a 7 day period. Weights are assigned to each food group and the score is a combination of number of days a food was consumed and the food group weight. It allows periodic comparisons for use in food security monitoring systems. Drops in food consumption scores over time alert monitors to the possibility of malnutrition in the near future thus serving as an early warning indicator (for details on methodology see wfp.org).

⁴ A child between -2 and -3 SD is considered moderately stunted.

⁵ A child below -2 SD from the reference median for weight-for-height is considered wasted.

A FCS of above 35 is considered adequate, 35-21 as borderline and a score of less than 21 suggests poor food consumption. About 11% of households tallied a fcs of less than 21 suggesting poor consumption, 26% were borderline and a large number (62%) scored above 35 suggesting adequate consumption. Comparing by land holding sizes, the score improves with land size (Table 7). Households with no land score least and those with more than 5 hectares score most. However, households having between one to two hectares score less than households with even smaller land holdings. This may suggest alternative income sources are more supportive for families with small (less than 2 ha) lands. Further investigation would be required to assess the underlying causes and effects.

Table 7: Food Consumption Score

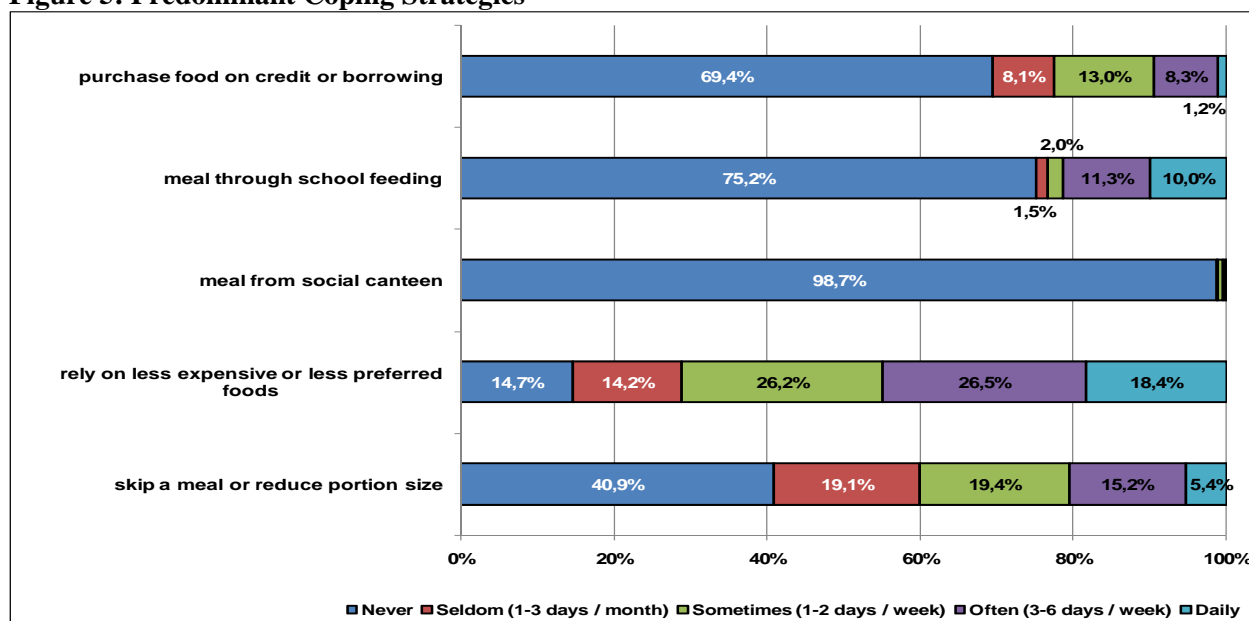
Land size	Percentage of households			Average FCS
	Poor Consumption FCS < 21	Borderline Consumption FCS 21 - 35	Adequate Consumption FCS > 35	
No land	16.7	26.7	56.6	41.7
< 1 ha	10.3	25.9	63.8	44.7
1-2 ha	13.8	29.4	59.8	39.7
>2-5 ha	9.0	26.0	65.0	42.6
> 5 ha	4.3	26.1	69.6	48.4

Source: HHFS Survey 2007

Coping Strategies

Households were asked about strategies adopted in October 2007. The main coping strategy adopted by 85% of households was consumption of less expensive or less preferred foods (Figure 5). For 18% of households this strategy was applied daily while a quarter of households applied it often (more than 2 days a week). Skipping meals or reducing portion size was practiced by 60% of households One-fifth of the households adopted this method often (more than 2 days a week).

Figure 5: Predominant Coping Strategies



Source: HHFS Survey 2007

A larger timeframe was selected for a series of questions on coping mechanisms. Participants were asked to answer these questions keeping in mind the period March to November 2007 (Table 8). This allowed the responses to include initial drought effects. Since March, 18% of households were forced to cultivate lesser land than what was available. This points to diversion of resources to food and other needs. It was practiced by households with larger lands (3 or more hectares). Twenty eight percent of households sent a family member for additional earnings. The practice was higher in larger families. Sending of family members for additional earnings was practiced more often by families with children less than 5 years old. These children were left in care of the remaining parent or grandparents. Reliance on savings was predominant in households with larger land sizes (over 2 hectares).

Table 8: Strategies to meet household needs

Land size	Percentage of Households		
	Cultivate less land	Send abroad	Use savings
No land	-	30.0	55.0
< 1 ha	14.7	21.6	50.0
1-2 ha	14.7	35.7	26.0
>2-5 ha	20.0	26.0	61.0
> 5 ha	21.7	26.1	60.9

Source: HHFS Survey 2007

Loss of productive assets is a serious indicator of stress (Table 9). Participants were asked of they had sold productive assets since March 2007 in order to meet food needs. Only 2% of households were forced to sell their land. These households owned less than 1 ha of land. 29% sold their milk producing cow and 16% sold draft animals. Only 1% sold their farm machinery/tools.

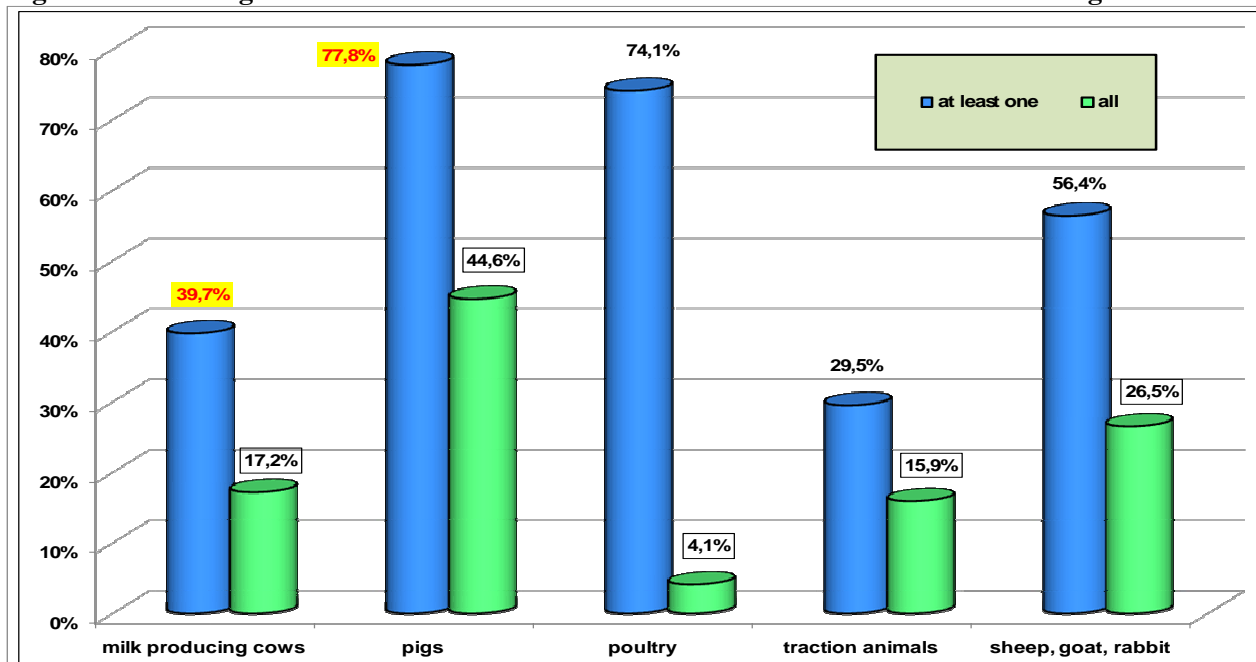
Table 9: Sale of Productive Assets to meet food needs

Land size	Percentage of Households			
	Land	Milk producing cow	Traction animal	Farm machinery/tools
No land	-	6.7	1.7	0
< 1 ha	3.4	8.6	0	0
1-2 ha	0	16.5	3.7	0
>2-5 ha	0	14.0	5.0	1
> 5 ha	0	26.1	8.7	0

Source: HHFS Survey 2007

Dry conditions resulted in less livestock feed. Respondents were asked if they sold or culled livestock in response to lack of fodder/feed (Figure 6). Three quarters of households owning livestock faced fodder shortages. About one third were force to meet fodder needs either through credit or by borrowing in kind. Of households citing livestock as their main income source, 3% have no remaining livestock. The strategy of restructuring livestock was used by threequarters of households. Loss of milk producing cows is another indicator of stress severity. Over 40% households with milk producing cows had to sell this asset. Between March and October, twenty percent of households sold the only milk producing cow they owned. This translates in immediate loss of food and income for the families and long term loss of potential calves. For households owning pigs, 78% sold/culled at least one due to feed shortages and 47% lost all pigs they owned. About 4% of poultry owners lost all their stock.

Figure 6: Percentage of households that have sold/culled livestock due to fodder shortages



Source: HHFS Survey 2007

Drought Support

Participants were asked about drought support from government, non-government agencies and private sector (Table 10). Only 4% of households received assistance, mainly from government (3%) in non food interventions. The private sector provided support only to households with more than 5 ha of land. Aid from non-government agencies was targeted to households with less than two hectares of land.

Table 10: Drought Support Sources

Land size	Percentage of households that received drought support		
	Source: Government	Non government agencies	Private
No land	1.7	0.0	0.0
< 1 ha	0.9	0.9	0.0
1-2 ha	4.6	0.9	0.0
>2-5 ha	3.0	0.0	0.0
> 5 ha	13.0	0.0	4.3

Source: HHFS Survey 2007

Spatial Distribution

The map section illustrates spatial distribution of agriculture (2006) and livestock (2007). Main population centers are in Chisinau, Balti and UTA Gagauzia (Map 1). Elevation is low with only a few points exceeding 400 meters (Map2). Yields of cereals and legumes are higher in the North and South (Map 3) . Six Rayons recorded maize yields over 25 Centners/Ha (Map 4). Goldeni, Falesti and Ungheni Rayons produce highest yields of sunflower (Map5). Grape yields are higher in the South Rayons of Cahul, Cantemir, Leova; central Rayons of Chisinau and Strseni and Falesti in the North (Map 6). Tobacco production per hectare is highest in selected Rayons of each Region (Map 7). Northern Rayons record a higher ratio of cows (Map 8) while sheep and goats are highest in Cantemir, Cahul and UTA Gagauzia of South; Hincesti of Centre and Falesti of North (Map 9).

METHODOLOGY

Objective: Establish baseline on household food security in rural Moldova.

The survey was designed to provide a) information on current food security status and b) provide a baseline for comparison with future surveys, particularly, impact assessment of drought response interventions.

Sampling

The survey adopted a systematic random sampling methodology administering a questionnaire to a representative sample of households. The geographic area covered was rural Moldova. Transnistria was not included⁶.

Sample characteristics: systematic random sampling. A virtual list of rural population was generated. Interval was calculated. Initial household was selected using random table and subsequent households were selected by applying the interval to the virtual list. Codes in virtual list allowed rayon and village identification. A total of 422 respondents from 410 localities were selected. Selected households were contacted using lists maintained at the Mayor's office. In instances where an adult member in the selected household was unavailable, the survey was not carried out in that household, and no supplementary household was selected.

Data collection period: November 2-13, 2007.

Survey instrument: a standard written questionnaire with codified questions and answers was administered. Enumerators were provided training and the instrument was modified based on results from pre-testing. The questionnaires were completed on site at residences of respondents. The work languages were Romanian and Russian.

Sample representation: the sample was representative for the target group subject to the survey.

Calculation for establishing Number of sample households:

RAPID SURVEY

$$N = DEFF \times [(Z^2 \cdot P \cdot (1-P)) / d^2]$$

Where

⁶ A household food security survey for Transnistria was conducted in December of 2007.

N = Number of sample households
 DEFF = 1, Design Effect (systematic random sample)
 Z = 1.96, Confidence level (95%)
 P = Estimated prevalence 50%
 d = Desired precision (0.05) for ±5%

Sample Size: $1.96^2 \times 0.50 (1-0.50)/0.05 = 384$

No response errors = 10%

Total sample size + 384 + 38 = 422

Actual number of households surveyed: 408

BASELINE FOR COMPARISON WITH FUTURE IMPACT SURVEY

p_1 The estimated proportion with disease or intervention at baseline survey
 p_2 The estimated proportion with disease or intervention at follow-up survey
 DEFF The estimated design effect - here it is assumed the DEFF will be the same for both surveys
 α Level of significance (“alpha”), usually .05 or 5% (corresponds with 95% confidence interval)
 1- β Power, usually .8 (80%) or .9 (90%)

The formula:

$$n = DEFF \times \frac{\left[Z_{\alpha/2} \sqrt{2\bar{p}\bar{q}} - Z_{1-\beta} \sqrt{p_1q_1 + p_2q_2} \right]^2}{(p_1 - p_2)^2}$$

where

$$\bar{p} = \frac{p_1 + p_2}{2} \text{ and } \bar{q} = 1 - \bar{p} \text{ when sample sizes are to be equal}$$

$$q_1 = 1 - p_1$$

$$q_2 = 1 - p_2$$

$Z_{\alpha/2}$ is the Z-value for the level of significance

$Z_{1-\beta}$ is the Z-value for the Power

As result of drought estimated baseline prevalence of small farmers in need of food stock is 50%. The fodder programme intervention is estimated to lower the prevalence in this group to 40%.

Example:

$$p_1 = .50, q_1 = .50$$

$$p_2 = .40, q_2 = .60$$

$$\alpha = .05, \text{ therefore } Z_{\alpha/2} = 1.96$$

$$\beta = .20, \text{ therefore } Z_{1-\beta} = -.842$$

$$DEFF = 1 \text{ (systematic random sampling)}$$

Need to calculate \bar{p} . For equal sample sizes:

$$\bar{p} = \frac{.50 + .40}{2} = .45, \bar{q} = 1 - .45 = .55$$

$$n = 1 \times \frac{\left[1.96\sqrt{2(.45)(.55)} - (-.842)\sqrt{(.50)(.50) + (.40)(.60)} \right]^2}{(.50 - .40)^2} = 1 \times \frac{3.876}{.01} \approx 388$$

The sample size would be 388 households in for each cross-sectional survey, i.e., 388 for the baseline survey and 388 in the follow-up survey.

Table 11: Number of Households by Rayon

Rayon	Number of Households	% of total	Rayon	Number of Households	% of total
1. Hincesti	22	5,4%	19. Soldanesti	7	1,7%
2. Leova	7	1,7%	20. Rezina	7	1,7%
3. Cahul	17	4,2%	21. Donduseni	7	1,7%
4. Cantemir	12	2,9%	22. Falesti	16	3,9%
5. UTAG	21	5,1%	23. Ungheni	14	3,4%
6. Anenii Noi	13	3,2%	24. Causani	14	3,4%
7. Straseni	14	3,4%	25. Stefan Voda	12	2,9%
8. Criuleni	13	3,2%	26. Telenesti	13	3,2%
9. Dubasari	7	1,7%	27. Ialoveni	16	3,9%
10. Basarabasca	4	1,0%	28. mun. Balti	1	0,2%
11. Cimislia	10	2,5%	29. Floresti	14	3,4%
12. Orhei	19	4,7%	30. Singerei	13	3,2%
13. Nisporeni	10	2,5%	31. Glodeni	10	2,5%
14. Riscani	12	2,9%	32. Drochia	14	3,4%
15. Edinet	11	2,7%	33. Soroca	12	2,9%
16. Ocnita	7	1,7%	34. Briceni	9	2,2%
17. Taraclia	5	1,2%	35. mun. Chisinau	13	3,2%
18. Calarasi	12	2,9%	TOTAL	408	100%

Source: HHFS Survey 2007

Food Consumption Score

Table 12: Food Group and Weights

Food Group	Food Items	Weight
Cereals and Tubers	wheat, maize, sorghum, pasta	2.0
Pulses	Beans, peas, groundnuts, cashews	3.0
Vegetables	vegetables and leaves	1.0
Fruits	Fruits and fruit products	1.0
Meat and Fish	beef, goat, sheep, poultry, eggs, fish	4.0
Milk	Milk, yoghurt, cheese and other dairy products	4.0
Sugar	sugar and sugar products	0.5
Oil:	oil, fats, butter	0.5

Source: EFSA Handbook, WFP

$$FCS = a_{\text{cereal}}x_{\text{cereal}} + a_{\text{pulse}}x_{\text{pulse}} + a_{\text{veg}}x_{\text{veg}} + a_{\text{fruit}}x_{\text{fruit}} + a_{\text{animal}}x_{\text{animal}} + a_{\text{milk}}x_{\text{milk}} + a_{\text{sugar}}x_{\text{sugar}} + a_{\text{oil}}x_{\text{oil}}$$

Where

FSC + Food consumption score

a_i + weight of food group

Field Work Constraints

The major constraint for the actual field work was time limitation. The assessors' team was attempting to maximize the efficiency of time usage, by sending the faxes to rayon administration stressing the importance of the subject. Nevertheless, because of poor connectivity the message with instructions on household identification never reached the administrations of some communities, and as a consequence the surveyors' team had to spend some additional time on identification process.

Another issue that the surveyors' team was facing during the data collection exercise was wrong interpretation of the instructions on targeted household identification, and in these cases, as well, the interviewer had to dedicate some additional time on identification.

Despite the issues mentioned above interviewers' team was able to complete the task within the acceptable sample size; 408 questionnaires were completed and submitted for the data analysis.

Limitations

1. The survey was conducted while the country was under drought conditions. Subsequent comparisons with data collected in this survey must take into account this factor.
2. The survey concentrated on rural Moldova. Urban areas and the Transnistria area were not included.
3. The sample size does not support regional or rayon based analysis.

CONCLUSIONS

- About 10% of rural households are exclusively elderly and one fifth of this group suffers from disability.
- Small farmers with one or two hectares of land are predominant.
- All rural households maintain a kitchen garden. Presence of a private well contributes to the garden and improves household food security during droughts.
- Recently dug private wells and gas connections may serve as proxy indicators for relative purchasing power.
- School feeding is an important safety net for household food security
- Poor households spend over half of their money on food.
- Main income sources in rural Moldova are services and pensions/social allowances.
- About one third of households were in debt mostly incurred to meet food needs.
- Some farmers abandoned land preparation for winter crops due to drought conditions.
- Remittances play a major role in national economy but interpreting these as a strong safety net for poor rural households could be misleading.
- Vulnerable group classification is under review to include poverty as an indicator.
- Markets are well connected and accessible ensuring availability of food. Food security of vulnerable people rests primarily in their economic accessibility.
- About 96% of households reported production losses as compared to previous years.
- Lack of feed resulted in loss of livestock and one fifth of households lost all their milk producing cows.
- There is a considerable overlap between small farmers and vulnerable groups.
- Families relying on casual labour have lost a major income source.

- In some instances, loss of revenue by local governments has affected school feeding in villages.
- Skipping meals and reducing portion sizes was practised by 60% of households.
- Sending of family member for additional earnings is common in families with small children.
- Only 4% of households reported receiving assistance, mainly from the government.
- Access to credit and crop insurance is lacking.

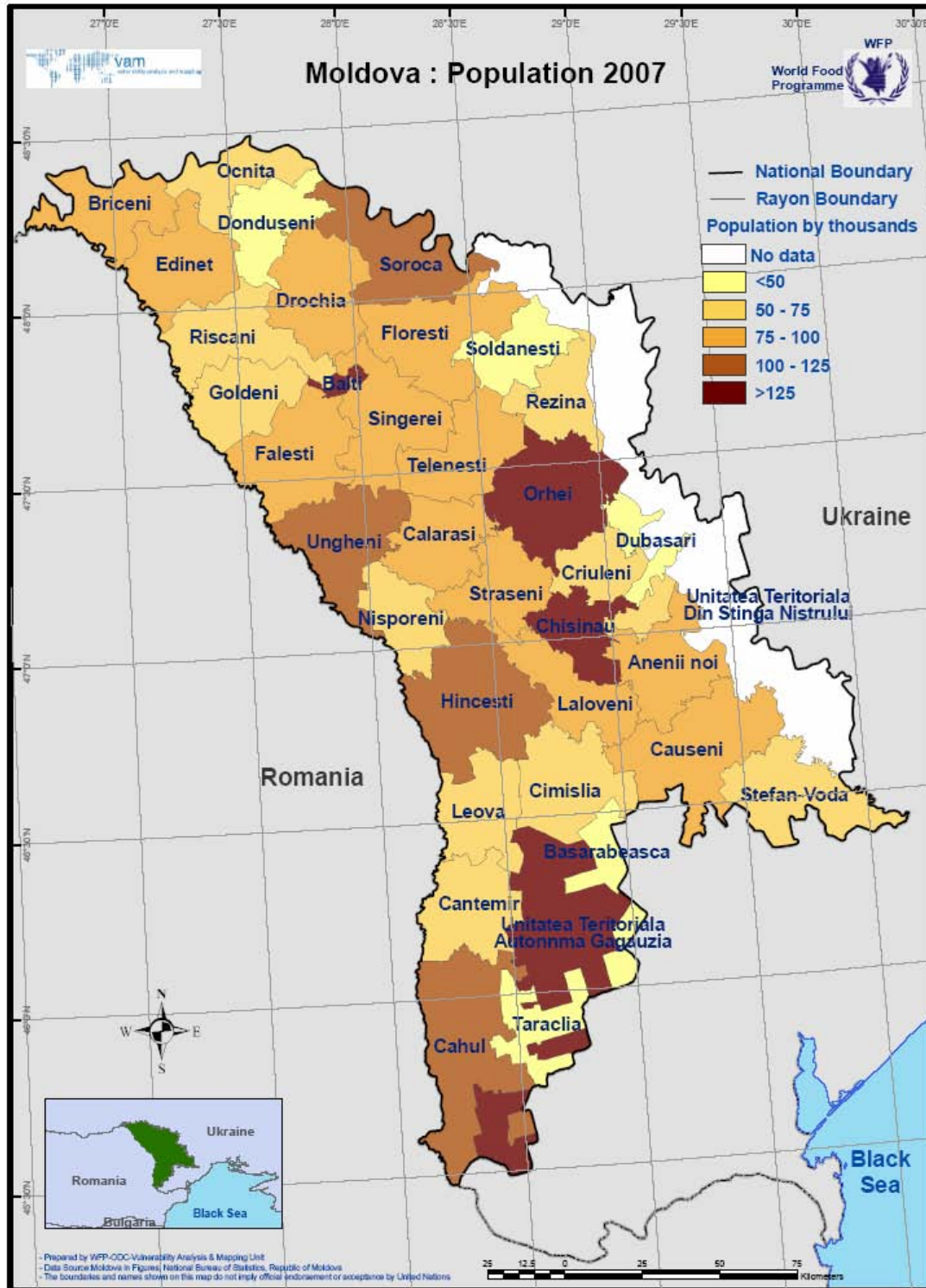
RECOMMENDATIONS

- Government efforts to reclassify vulnerable groups taking into account poverty should be supported.
- During drought, income generating opportunities are required for families relying exclusively on casual labour.
- Medium and long term recommendations made by the FAO/WFP CFSAM, particularly on credit and insurance, should be implemented.
- A follow-up HHFS survey should be conducted in a year's time to allow comparison and detect changes in household food security situation.

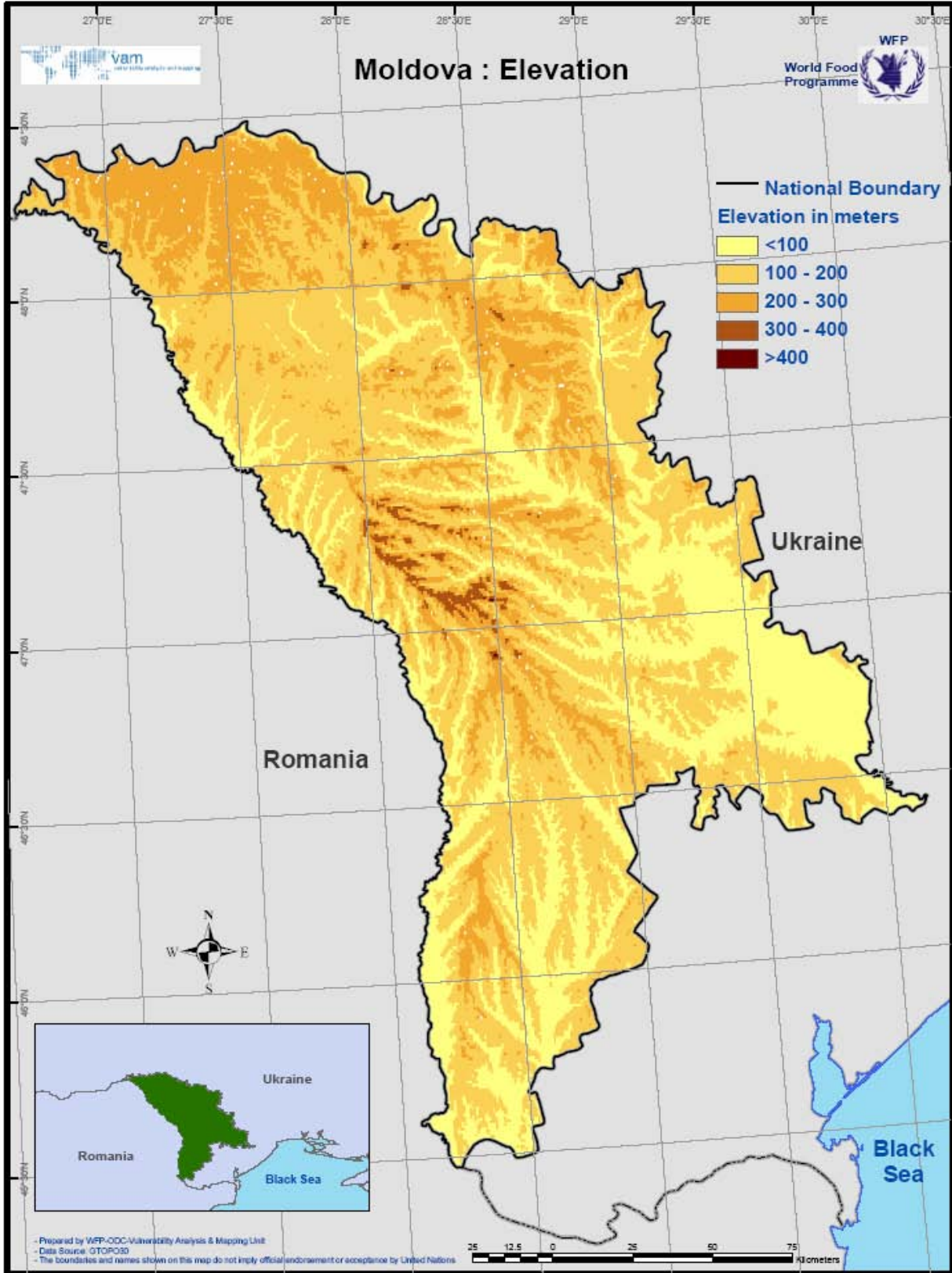
ANNEXES

Annex 1 – Maps

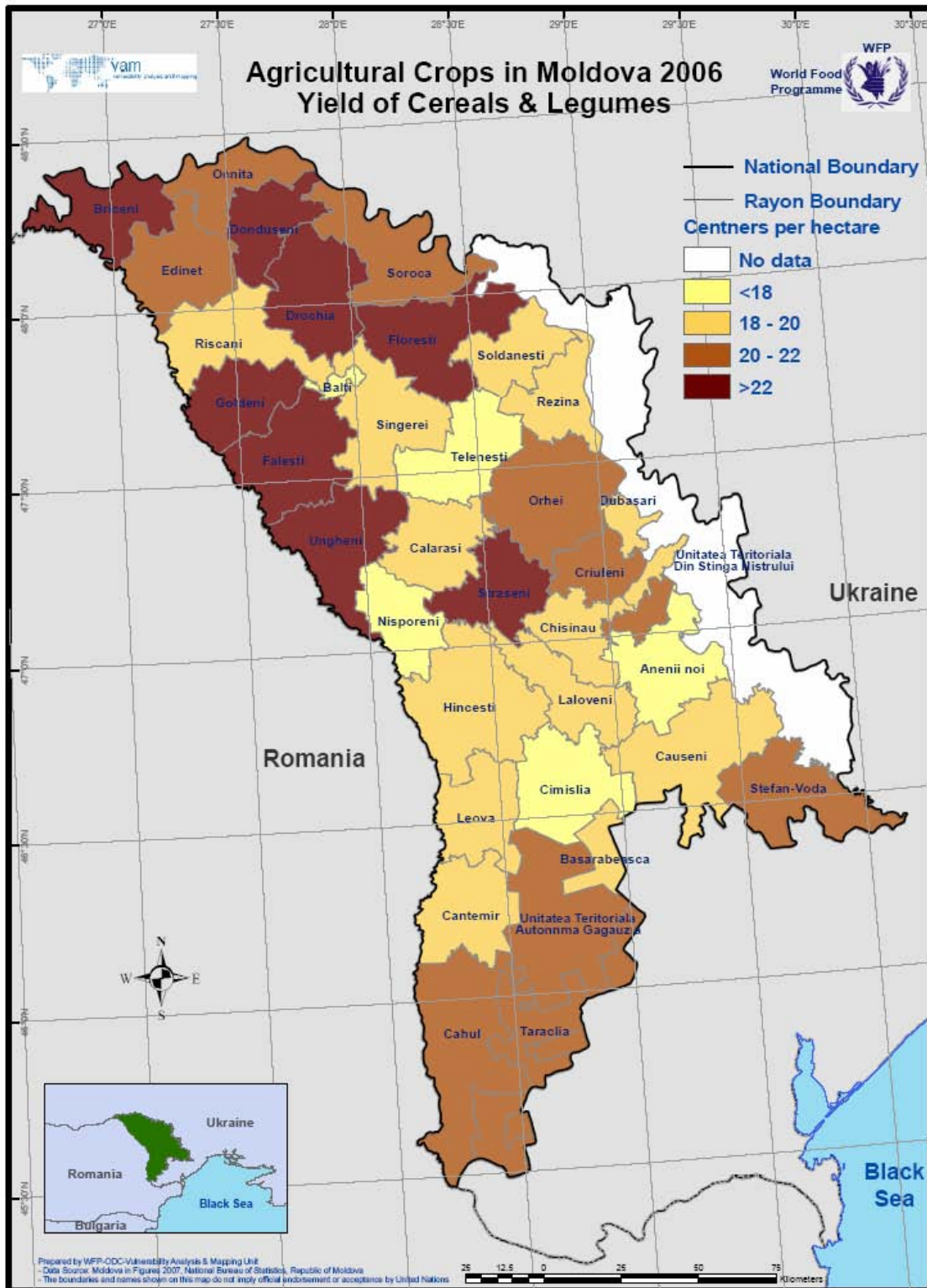
Map 1 – Moldova Population 2007



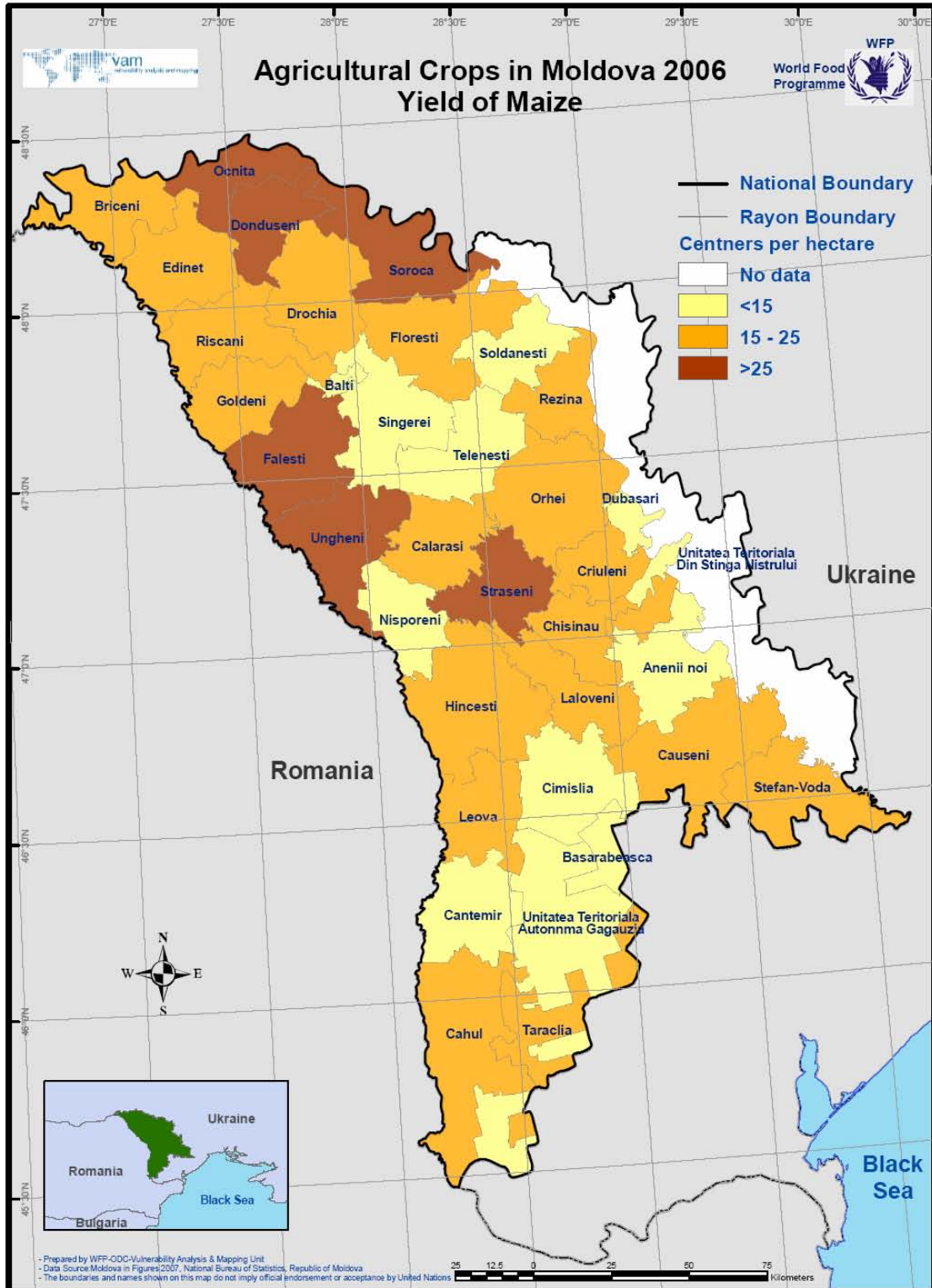
Map 2 – Moldova Elevation



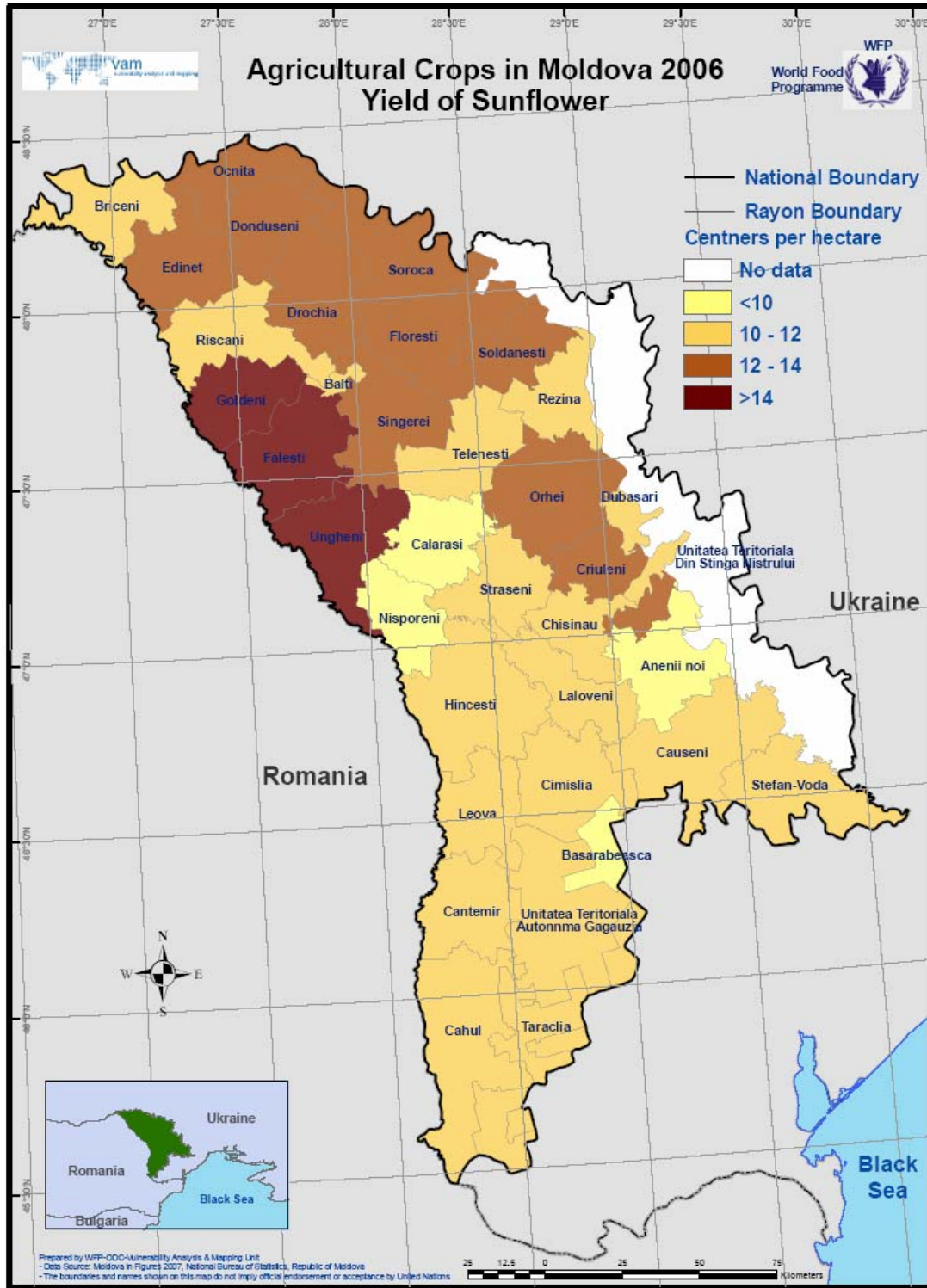
Map 3 – Agricultural Crops 2006 – Yield of Cereals & Legumes



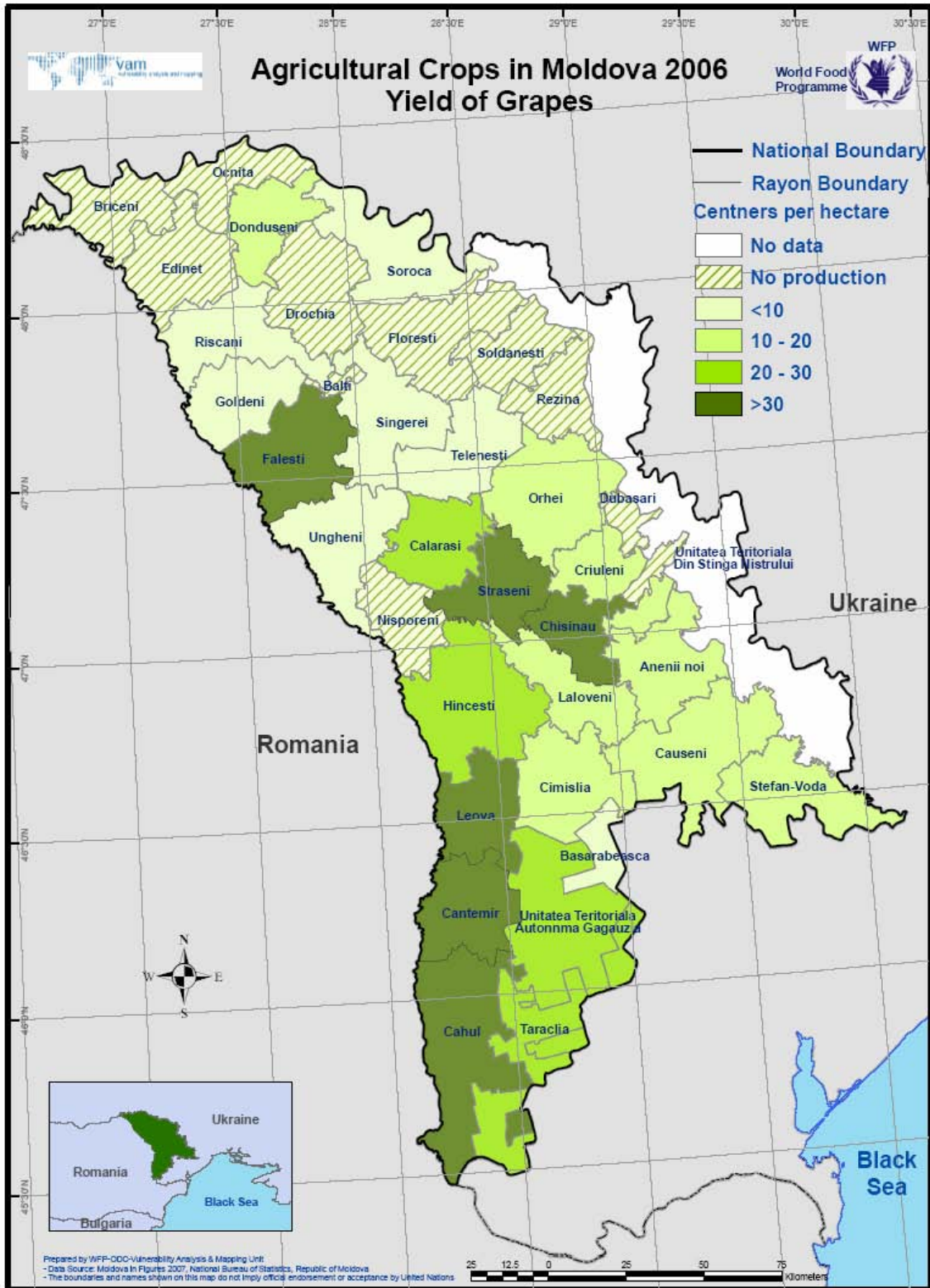
Map 4 – Agricultural Crops 2006 – Yield of Maize



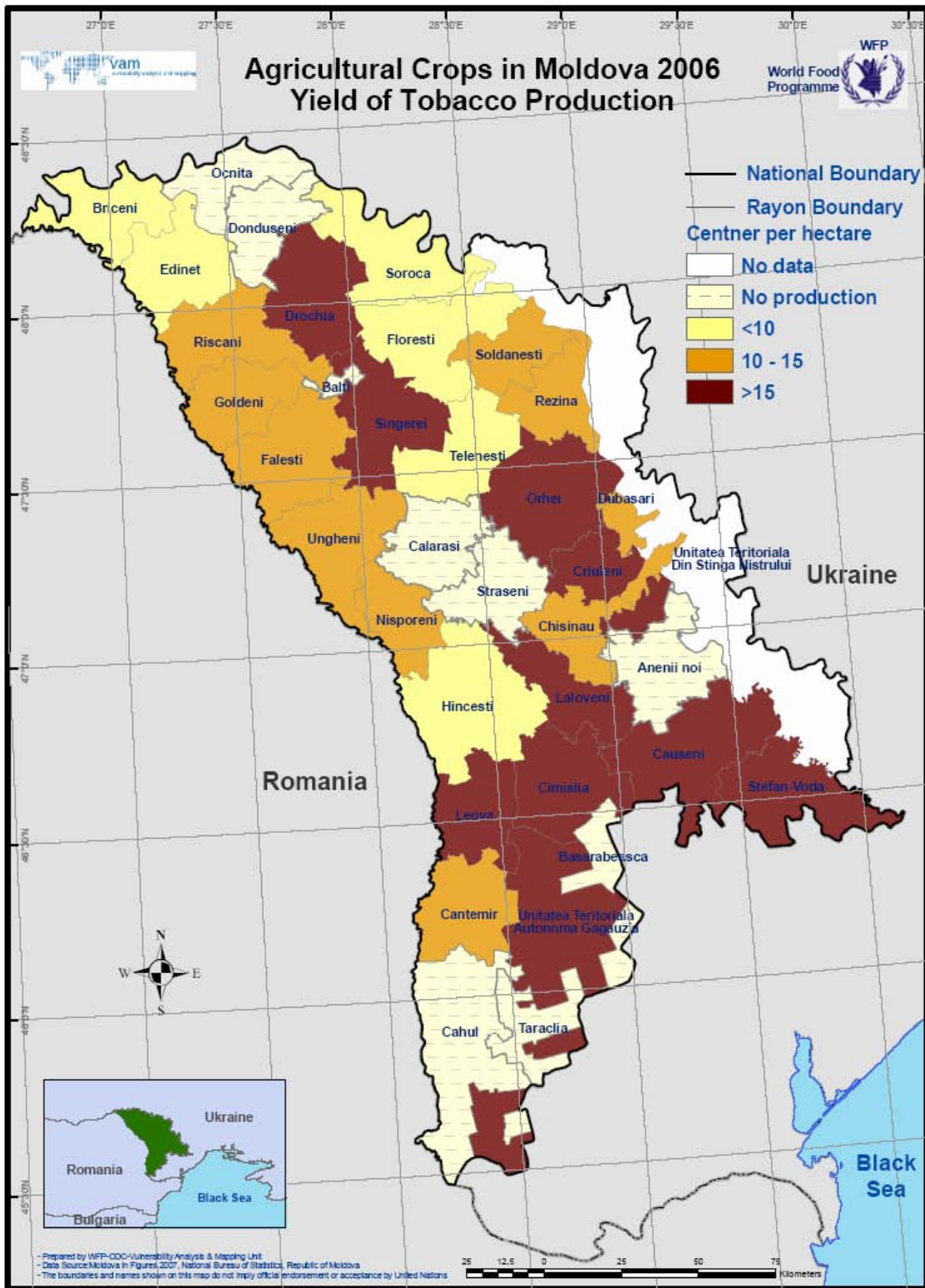
Map 5 – Agricultural Crops 2006 – Yield of Sunflower



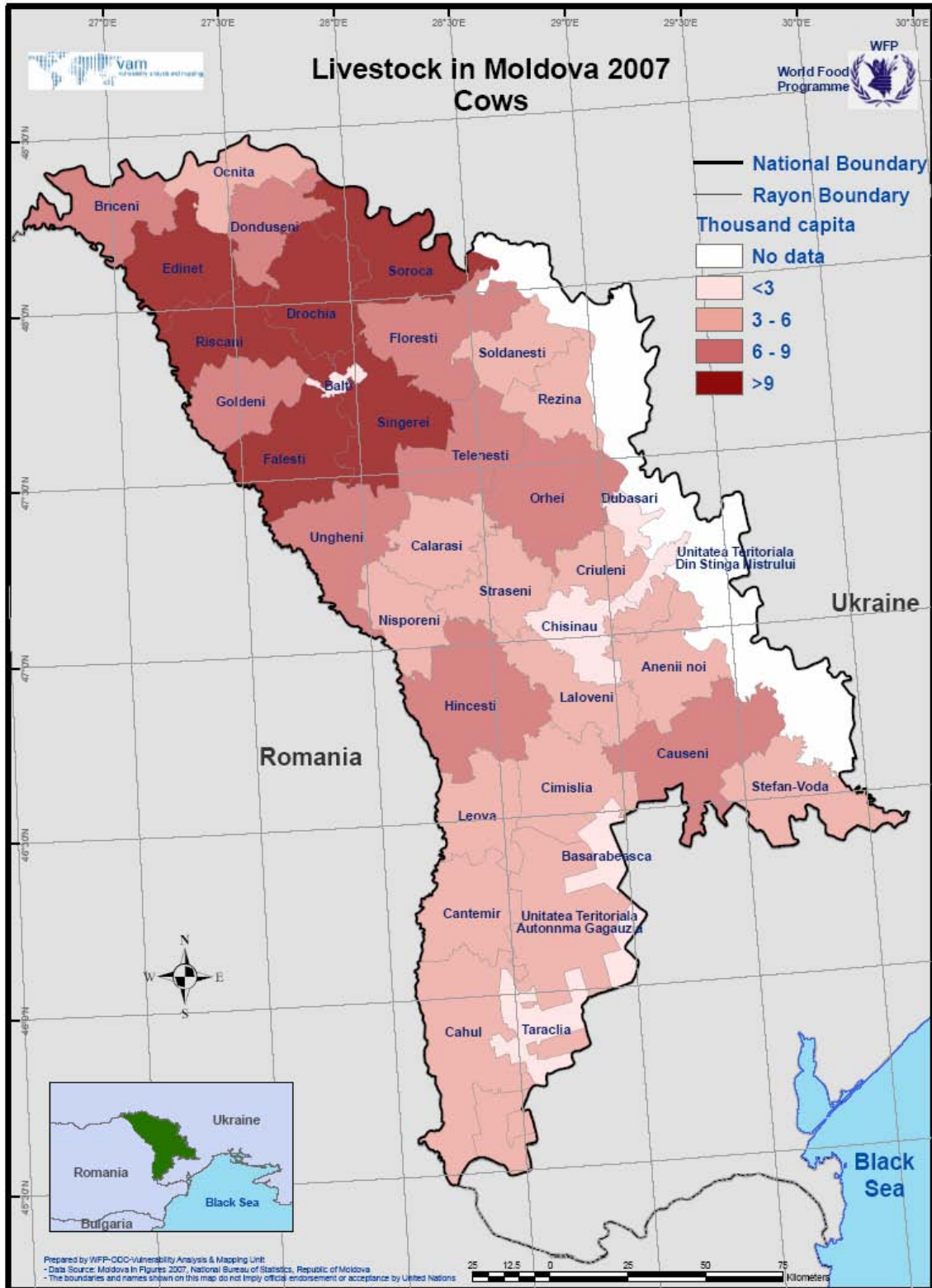
Map 6 - Agricultural Crops 2006 – Yield of Grapes



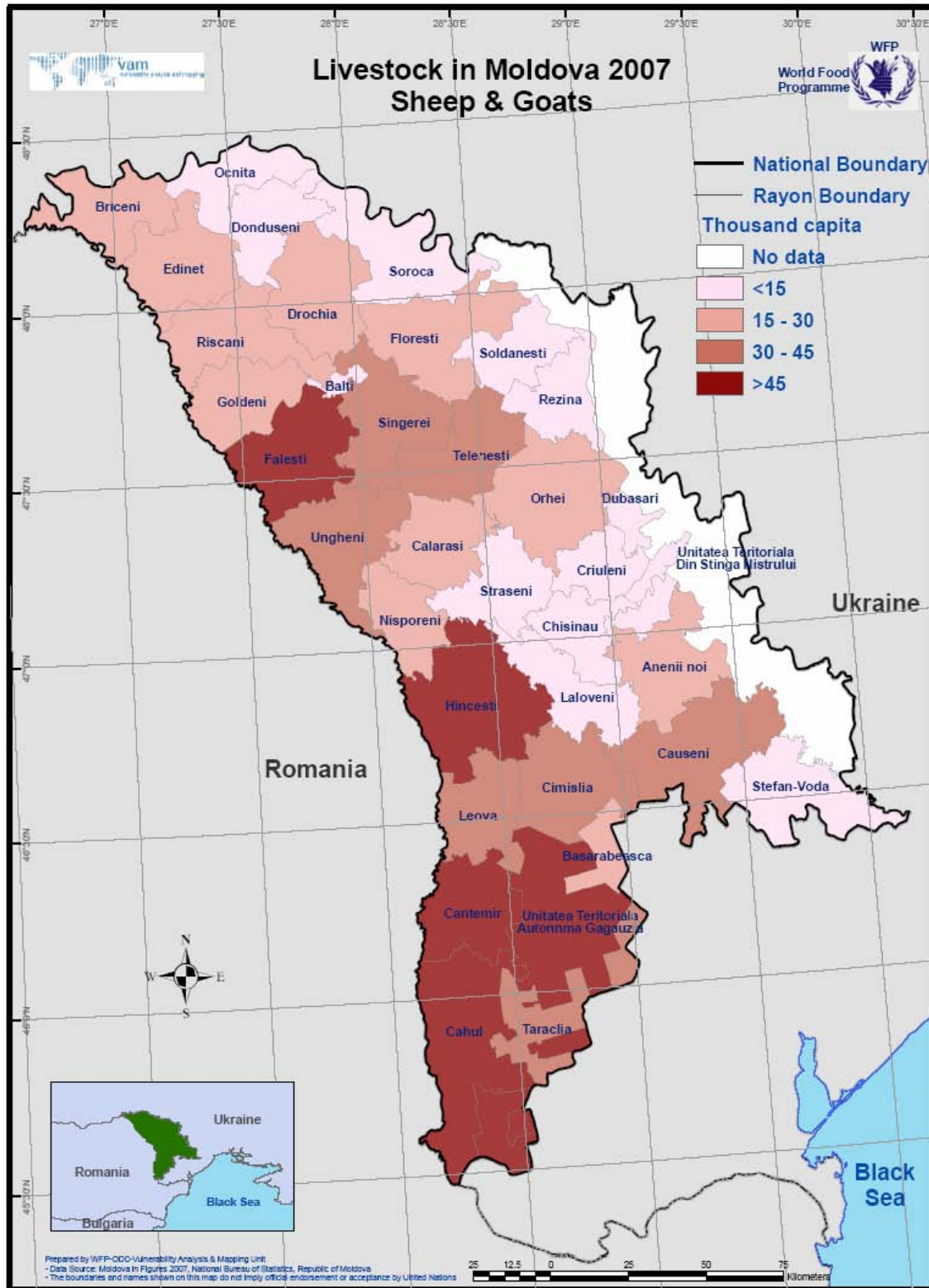
Map 7 - Agricultural Crops 2006 – Yield of Tobacco



Map 8 – Livestock 2007 – Cows



Map 9 – Livestock 2007 – Sheep & Goats



Annex 2 – Tables

Table: a1 - Population as of January 1, 2007 in thousands

Rayon name	Urban population	Rural population	Total population
Anenii noi	8.6	74.6	83.2
Balti	142.2	4.9	147.1
Basarabasca	12.7	16.9	29.6
Briceni	15.6	61.4	77.0
Cahul	39.2	84.9	124.1
Calarasi	16.4	63.9	80.3
Cantemir	6.0	57.6	63.6
Causeni	25.1	68.5	93.6
Chisinau	712.1	68.2	780.3
Cimisia	14.9	48.9	63.8
Criuleni	8.6	64.3	72.9
Donduseni	10.8	36.1	46.9
Drochia	20.7	71.7	92.4
Dubasari	0.0	35.4	35.4
Edinet	26.0	58.4	84.4
Falesti	18.1	76.3	94.4
Floresti	19.2	72.8	92.0
Goldeni	12.1	51.5	63.6
Hincesti	17.2	107.1	124.3
Laloveni	14.7	82.8	97.5
Leova	16.1	38.4	54.5
Nisporeni	15.2	52.6	67.8
Ocnita	19.5	37.7	57.2
Orhei	33.7	92.9	126.6
Rezina	13.5	39.9	53.4
Riscani	16.3	55.7	72.0
Singerei	18.8	76.0	94.8
Soldanesti	7.6	37.0	44.6
Soroca	37.3	64.0	101.3
Stefan-Voda	8.9	64.5	73.4
Straseni	21.5	70.0	91.5
Taraclia	15.1	29.8	44.9
Telenesti	8.4	67.2	75.6
Ungheni	40.6	76.7	117.3
Unitatea Teritoriala Autonoma Gagauzia	65.3	94.5	159.8
Unitatea Teritoriala Din Stinga Nistrului	No data	No data	No data

Source: Moldova in figure 2007
National Bureau of Statistics,
Republic of Moldova

Table: a2 - Household Demography - Gender

Age category	% Male	% Female	% Total
Under 5 years	3%	3%	6%
5-17 years	10%	12%	22%
18-59 years	31%	30%	61%
60 years and more	5%	6%	11%

Source:
Household Food Security Survey 2007
UNDP / WFP / EC

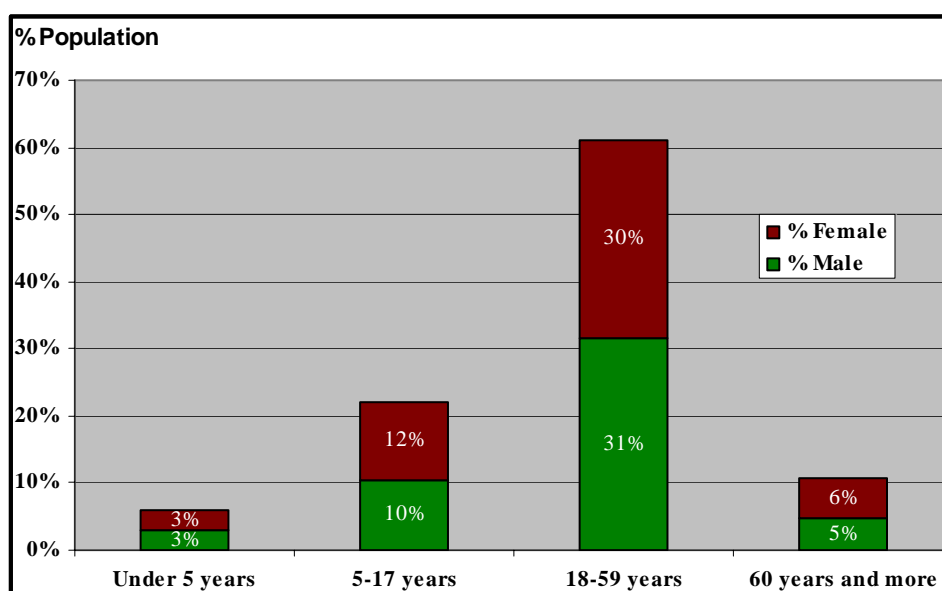


Table: a3 - Household Disability

	Percentage
Any member of HH with disability	22%

Source:
Household Food Security Survey 2007
UNDP / WFP / EC

Table: a4 - Number of people living in the household

HH Size	Percent
1	9%
2	15%
3	19%
4	23%
5	18%
6	10%
7	4%
8	2%
9	0.2%
12	0.2%

Source:

Household Food Security Survey 2007
UNDP / WFP / EC

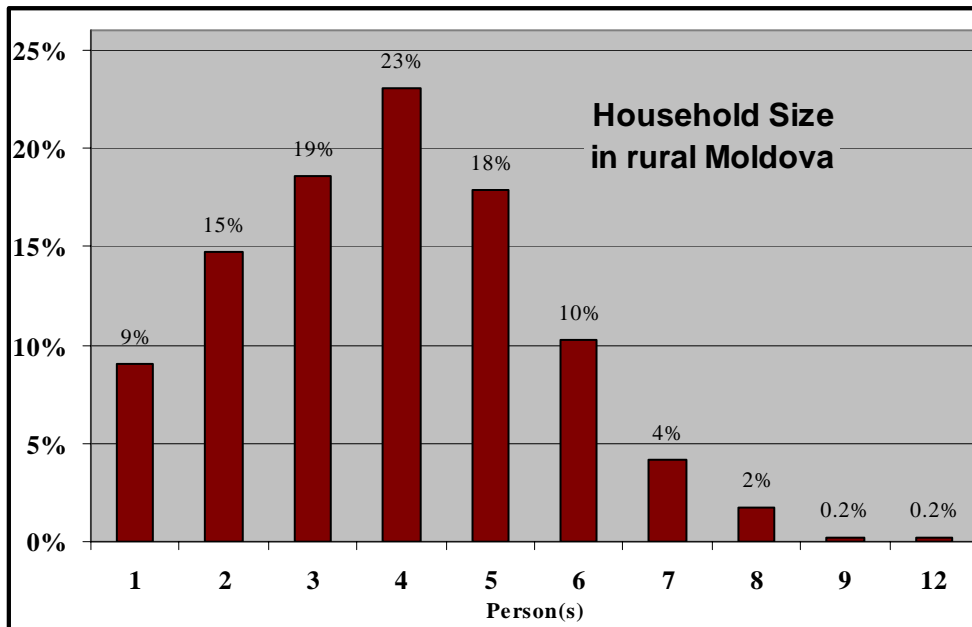


Table: a5 - Yield of Agricultural crops in 2006 - Centners / Hectare

Rayon name	Cereal	Grain Maize	Tobacco	Sunflower	Sugar beet	Vegetables	Grapes	Fruits
Anenii noi	17.0	13.9	0.0	9.7	334.9	68.8	11.1	23.9
Balti	12.5	14.3	0.0	10.8	163.5	104.0	0.0	11.6
Basarabeasca	19.1	10.7	0.0	9.3	0.0	216.2	9.1	14.3
Briceni	23.0	16.5	5.2	10.4	280.1	109.9	0.0	34.4
Cahul	20.8	17.2	0.0	10.2	0.0	26.7	31.5	21.8
Calarasi	19.3	21.9	0.0	9.6	0.0	122.0	23.2	44.8
Cantemir	19.8	14.1	13.1	12.3	194.4	143.8	60.1	41.2
Causeni	19.2	20.1	15.3	11.5	326.0	97.7	19.6	77.4
Chisinau	18.2	21.0	12.9	10.5	0.0	67.2	31.1	30.9
Cimislia	16.0	8.0	22.6	10.5	152.8	61.8	16.3	29.5
Criuleni	20.9	19.9	16.4	14.4	0.0	68.1	12.4	66.2
Donduseni	25.0	25.5	0.0	13.1	329.5	52.1	11.7	21.1
Drochia	22.4	15.8	17.9	14.4	246.5	90.6	0.0	26.3
Dubasari	18.7	14.8	13.6	11.7	324.6	83.4	0.0	26.3
Edinet	20.5	16.8	5.0	13.7	217.8	46.5	0.0	19.5
Falesti	23.7	30.2	14.2	16.6	375.8	81.4	33.7	38.8
Floresti	23.0	19.5	8.3	14.2	264.3	59.5	0.0	37.7
Goldeni	24.5	24.7	10.3	15.8	198.7	49.5	6.9	19.8
Hincesti	19.4	20.6	0.8	12.6	223.4	60.8	21.5	35.8
Laloveni	19.0	17.3	16.1	11.2	327.0	57.0	18.5	39.7
Leova	19.6	19.7	17.5	12.6	0.0	25.5	31.3	22.8
Nisporeni	12.5	11.3	13.7	8.6	244.2	45.5	0.0	27.8
Ocnita	21.8	40.5	0.0	13.3	317.0	97.1	0.0	38.8
Orhei	21.1	15.4	15.8	14.2	233.7	104.0	10.9	47.3
Rezina	19.1	18.3	10.7	11.8	161.1	24.6	0.0	30.9
Riscani	19.8	20.5	12.6	12.4	259.6	83.6	7.4	25.7
Singerei	19.4	13.0	16.7	14.8	270.5	98.7	6.8	36.5
Soldanesti	18.9	12.7	10.9	13.9	281.0	32.1	0.0	14.8
Soroca	21.2	26.0	7.9	14.3	238.5	53.7	1.2	58.4
Stefan-Voda	21.4	21.4	18.4	11.5	283.7	116.8	10.7	36.2
Straseni	24.8	26.3	0.0	12.4	0.0	103.2	39.3	60.3
Taraclia	21.1	16.0	0.0	10.8	0.0	42.5	29.7	10.5
Telenesti	15.5	13.8	7.3	12.3	162.1	33.9	7.5	36.4
Ungheni	26.4	35.2	12.1	15.1	372.8	89.3	9.0	35.2
Unitatea Teritoriala Autonoma Gaga	20.3	13.2	16.0	11.4	0.0	70.5	23.2	16.5
Unitatea Teritoriala Din Stinga Ni	No data	No data	No data	No data	No data	No data	No data	No data

Source: Moldova in figure 2007
National Bureau of Statistics,
Republic of Moldova

Table: a6 - Season's production level of Annual crops compare to last 5 years

Production level	Grains	Vegetables	Fruits/Grapes	Kitchen Garden
More	1.2%	0.2%	1.5%	2.0%
The same	2.5%	1.5%	5.4%	6.1%
less 0%-25%	5.6%	2.2%	7.1%	9.6%
less 26%-50%	11.5%	3.2%	16.2%	24.5%
less 51%-75%	27.5%	5.1%	14.2%	29.9%
less 76%-100%	37.0%	6.6%	16.2%	27.0%
Don't have anual grains	14.7%	81.1%	39.5%	1.0%

Source:

Household Food Security Survey 2007

UNDP / WFP / EC

Table: a7 - Agricultural land information

Land information	
Average size (ha) of agriculture land HH owns	1.8
Average size (ha) of agriculture land leased from others	0.4
Average size (ha) of kitchen garden	0.2
% of HHs have functional green house	6%
% of HHs have private well	41%
% of houses with gas connection	30%

Source:

Household Food Security Survey 2007

UNDP / WFP / EC

Table: a8 - Livestock as of January 2007 - in thousand capita

Rayon name	Cow	Sheep & Goats	Cattle	Pigs
Anenii noi	6.1	15.9	9.1	17.6
Balti	2.3	7.3	3.2	10.4
Basarabasca	1.0	19.9	1.8	2.2
Briceni	8.6	15.4	10.9	17.3
Cahul	3.8	78.3	6.7	16.8
Calarasi	3.6	16.1	5.7	14.2
Cantemir	4.0	50.0	6.0	11.7
Causeni	8.5	38.0	12.3	25.9
Chisinau	2.9	6.9	4.7	11.5
Cimislia	4.9	34.7	7.2	11.9
Criuleni	5.7	7.8	8.1	12.4
Donduseni	6.8	11.0	8.5	10.8
Drochia	10.3	16.7	13.3	12.9
Dubasari	2.2	2.1	3.1	6.7
Edinet	12.4	25.1	16.8	11.9
Falesti	9.5	46.4	13.7	19.6
Floresti	7.0	24.4	10.1	25.9
Goldeni	7.5	29.8	12.0	12.8
Hincesti	7.4	51.2	11.0	25.2
Laloveni	4.9	10.0	7.2	14.1
Leova	4.4	36.0	6.0	15.4
Nisporeni	3.9	24.3	5.9	16.2
Ocnita	5.3	5.9	6.6	9.2
Orhei	8.2	22.6	11.5	19.8
Rezina	3.5	9.9	5.6	10.8
Riscani	9.8	28.3	14.8	20.3
Singerei	9.4	39.9	13.6	20.4
Soldanesti	4.2	9.1	5.7	7.8
Soroca	9.2	15.0	13.2	19.6
Stefan-Voda	5.0	13.0	7.1	21.9
Straseni	3.5	9.4	5.1	18.0
Taraclia	1.9	42.6	3.1	10.1
Telenesti	7.1	31.1	10.8	18.2
Ungheni	6.4	35.9	9.2	16.4
Unitatea Teritoriala Autonoma Gaga	5.5	117.0	9.5	15.9
Unitatea Teritoriala Din Stinga Ni	No data	No data	No data	No data

Source: Moldova in figure 2007
 National Bureau of Statistics,
 Republic of Moldova

Table: a9 - Major Source of Income

First source of income	Percent
Services	27%
Annual crops	20%
Pension / Allowance	16%
Remittance	9%
Casual labour	8%
Diary products	6%
Livestock	6%
Vineyards / Wine	3%
Business	2%
Vegetable/greenhouse	2%
Fruits	1%
Non wood forest products	0.2%
Work abroad	0.2%
Assistance from relatives	0.2%

Source:

Household Food Security Survey 2007
UNDP / WFP / EC

Second source of income	Percent
Pension / Allowance	40%
Services	18%
Casual labour	17%
Vineyards / Wine	6%
Remittance	5%
Vegetable / Greenhouse	4%
Business	3%
Diary products	3%
Livestock	3%
Fruits	1%

Table: a10 - Minor Source of Income

1st. source of income	Percent
Annual crops	69%
Livestock	18%
Diary products	10%
Vegetable / Greenhouse	1%
Fruits	1%
Vineyards / Wine	1%
Pension / Allowance	1%

2nd. source of income	Percent
Livestock	59%
Diary products	16%
Vegetable / Greenhouse	9%
Vineyards / Wine	5%
Fruits	4%
Casual labour	3%
Services	1%
Pension / Allowance	1%
Remittance	1%
Non wood forest products	0.3%
Business	0.3%

3rd.source of income	Percent
Vegetable / Greenhouse	22%
Vineyards / Wine	22%
Livestock	20%
Casual labour	11%
Fruits	10%
Pension / Allowance	6%
Remittance	6%
Services	3%
Diary products	1%

4th. source of income	Percent
Vineyards / Wine	26%
Casual labour	20%
Fruits	16%
Pension / Allowance	15%
Vegetable / Greenhouse	8%
Remittance	8%
Services	6%
Business	1%

5th. source of income	Percent
Casual labour	28%
Pension / Allowance	23%
Vineyards / Wine	18%
Services	18%
Remittance	10%
Non wood forest products	3%
Business	3%

6th. source of income	Percent
Pension / Allowance	100%

Source:
Household Food Security Survey 2007
UNDP / WFP / EC

Table: a11 - Main annual crops

Annual crop	Percentage
Maize	8%
Wheat	7%
Potato	3%
Sunflower	1%
Barley	1%
Annual crop is not major source of income	80%

Source:
Household Food Security Survey 2007
UNDP / WFP / EC

Table: a12 - Main reason for debt

Reason	Percentage
Agriculture inputs	14%
Food needs	8%
Health / Education	4%
Renovation and construction	2%
Utility / Heating	1%
Private business	1%
Credits	0.5%
State taxes	0.2%
Leisure	0.2%
Gas connection	0.2%
Funeral	0.2%
Don't have debts	69%

Source:
Household Food Security Survey 2007
UNDP / WFP / EC

Table: a13 - Expenditure per month

Expenditure	Percentage
Food	46%
Health / Education	20%
Agriculture	14%
Communal services	16%
Other	4%

Source:
Household Food Security Survey 2007
UNDP / WFP / EC

Table: a14 - Food Consumption

Food Group	Number of days per week consuming food group							
	% no Consumption	% 1 Day Consumption	% 2 Days Consumption	% 3 Days Consumption	% 4 Days Consumption	% 5 Days Consumption	% 6 Days Consumption	% 7 Days Consumption
Cereals & Tubers	0.0%	0.0%	1%	3%	3%	3%	3%	87%
Pulses	39%	24%	19%	9%	4%	1%	0%	2%
Vegetables	12%	6%	14%	16%	12%	6%	5%	28%
Fruits	26%	13%	17%	11%	6%	3%	3%	21%
Meat & Fish	26%	13%	17%	11%	6%	3%	3%	21%
Diary	31%	9%	11%	13%	6%	6%	4%	20%
Sugar	6%	4%	5%	5%	3%	4%	5%	68%
Oil	2%	2%	3%	3%	1%	3%	2%	83%

Source:

Household Food Security Survey 2007

UNDP / WFP / EC

Table: a15 - Coping Strategies

Strategies	Frequent to using the strategy last month				
	Never	Seldom (1- 3 days / month)	Sometimes (1 - 2 days / week)	% 6 Days Consumption	% 7 Days Consumption
Skip a meal or reduce portion size	41%	19%	19%	15%	5%
Rely on less expensive or less preferred foods	15%	14%	26%	26%	18%
Meal from social canteen	99%	0.2%	0.7%	0.2%	0.2%
Meal through school feeding	75%	1%	2%	11%	10%
Purchase food on credit or borrowing	69%	8%	13%	8%	1%

Source:

Household Food Security Survey 2007

UNDP / WFP / EC

Table: a16 – Other Coping Strategies

Other strategies	Percentage
Cultivate less land	15%
Send a family member for additional earnings	28%
Utilize savings	56%

Source:

Household Food Security Survey 2007

UNDP / WFP / EC

Table: a17 - Coping Strategies – Sold Assets

Sold assets	Percentage
Land	1%
Milk producing cow	29%
Traction animals (bull - horse - donkey)	16%
Farm machinery / tools	1%

Source:

Household Food Security Survey 2007

UNDP / WFP / EC

Table: a18 - Coping Strategies – Sold or Cull Livestock

Own / Sold or cull livestock	% Currently own	% Cull or sell
Milk producing cow	31%	15%
Traction animals (bull - horse - donkey)	9%	3%
Pig	25%	36%
Sheep / goat /rabbit	21%	16%
Poultry	81%	63%

Source:

Household Food Security Survey 2007
UNDP / WFP / EC

Table: a19 - Coping Strategies - Adoption

Adoption to meet fodder needs	Percentage
Didn't experience lack in fodder	26%
Restructuring of the livestock	14%
Purchase fodder on credit or borrowing	30%

Source:

Household Food Security Survey 2007
UNDP / WFP / EC

Table: a20 - Drought Support

Aid Source	% Received food	% Received Non food	% Received Food & non food
Government	0.7%	2.0%	0.5%
Non government	0.0%	0.5%	0.0%
Private	0.0%	0.3%	0.0%

Source:

Household Food Security Survey 2007
UNDP / WFP / EC

Annex 3 – References

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Part 2 - Report on Rapid Household Food Security Assessment in Transnistria

BACKGROUND

Transnistria is a breakaway region of the Republic of Moldova located on the east bank of Dnistr River bordering with Ukraine. Due to low precipitation, and highest temperatures over the last 100 years, the drought in summer of 2007 is being compared to the drought of 1946 which resulted in massive losses and famine in the post second world war Soviet Moldova.

A Joint FAO/WFP Crop and Food Security Assessment Mission in response to a request from the Government of Moldova carried out from 12-22 August 2007 did not cover the left bank of Dnistr. This report presents the analysis and findings of a rapid assessment conducted in Transnistria by WFP over the period of 13-21 December 2007. Meetings were held in the Ministries of Economy, Health, Social Defense Statistics, two research companies (Centre of the Strategic Research and Reform and New Age - Novi Vek - in Teaspoon and Chishev, and with districts officials. Two focus group discussions were conducted in the villages: large scale farmers (men) and women employed by the local village administration. Field trips covered Tersapol, Slobodia, Ribninsk and Grigoriopol districts. The Statistic Yearbook 2006 issued by the Ministry of Economy of Transnistria, report of the Centre of the Strategic Research and Reform (CISR) and different other data provided by the officials during interviews were used as reference material for this report.

Due to limited time, weather conditions⁷ and political sensitivity, the team was not able to obtain all relevant data. Hesitation to organize face to face interviews with most vulnerable households was also observed. Despite these shortcomings the recommendations in this report are based on a literature review, field observations, interviews and triangulation of the available data.

Following to August 2007 Rapid Food Security Assessment in Moldova proper, a Household Food Security Baseline Survey was conducted in November 2007. It is highly recommended that a similar survey is carried out in Transnistria to establish a baseline for future monitoring.

⁷ heavy snow and frost on the roads

SOCIO-ECONOMIC BACKGROUND

Transnistria is located on 12 percent of the former territory of the Soviet Republic of Moldova. Fifteen percent of the population of the Republic lived on this territory during Soviet times. However 40 percent of the domestic product was localized and produced in this part of the Soviet Republic. Due to better road access to the rest of the Soviet Union, its close location to one of the biggest ports of Odessa on the Black Sea, low seismic risk and ample water resources, a big metallurgic factory and the largest electric station in the Balkans were constructed here. In addition, there were about another 100 plants, among them, large scale food processing units. These processed most of the agricultural produce of the region.

Transnistria stretches 4,160 sq. kms along the left bank of Dnistr with relatively uniform topography. The North having slightly higher hills and receiving more precipitation. The soil and climatic conditions of the region are considered to be very good for agriculture.

There are seven administrative territorial units in the region with three big industrial cities (Teraspol, Bendery, Ribnitsa) and 5 rayons⁸ (districts) with 156 villages. 32 percent of the population are Moldovs, 30% are Russian, 29% Ukrainian and 90 percent Orthodox Christians. Total population of Transnistria is 540,600⁹. Around 46 percent of the population lives in rural or semi rural settlements. 49 percent of the total labor force (337,300) is registered as economically active out of which only 7 percent are formally employed by the agriculture sector¹⁰, 28 percent work in the public sector, 27 percent - in industry and 38 percent - in services. Average starting monthly salary in agriculture sector is 82 USD, in industry - 199 USD and in public sector 104 – 162 USD.

The per capita GDP rate in 2001¹¹ was 394.9 USD and in 2006 it reached 967.5 USD. The main reason for this significant growth is the privatization process followed by big cash inflows. This injection to the budget made it possible to increase salaries of state employees three times, increase pensions and cover some past arrears in pension and salary payments. The currency in circulation is called Transnistria Moldova Republic Ruble (Ruble). The exchange rate at the time of this assessment was 1 USD = 8,4 Ruble. Table 1 shows inflation rate fluctuations over 2001-2006. Some stability was achieved in 2006. However, according to the Office of the Statistics of Transnistria, inflation rate for the period of January-November 2007 is 27%. This indicator for the same period of last year was 7.75%.

⁸ Ribnitsa at the same time is administrative centre for the Ribnitski Rayon

⁹ Statistics Yearbook of Transnistria, 2006

¹⁰ These are remaining workers of the collective and soviet farms (Colkhozes and Sovkhozes), plus the workers of the newly emerging agro enterprises described in the section Agriculture in Transnistria

¹¹ 2001 is taken as a reference year as last official household poverty analysis was made in 2001

Table 1: Main macro economic indicators of Transnistria 2001 - 2007

	2001	2002	2003	2004	2005	2006	Jan-Nov 2006	Jan-Nov 2007
GDP per capita rate in USD	394.9	392.2	490.8	675.5	844.1	967.5		n/a
Inflation rate (%)	48.9	14.07	21.7	30.2	13.4	10.7	7.75	27
Agriculture output in Rubles	176.8	181.3	173.2	224.7	217.1			n/a

Source: CISR and Office of the Statistics of Transnistria

Transnistria was part of a 1997 World Bank funded household survey on Incomes and Expenditures in Moldova. Collected data was analyzed in Chisinau, however this cooperation ceased in 2003. Monthly collection of the same data from 120 households from different rayons of Transnistria is still ongoing but the data are not analyzed. According to the survey, in 2001, about 87 percent of the surveyed populations lived below the subsistence level.

The consumer budget line (average monthly expenditure) for one adult is 1,116.37 Transnistrian Ruble (133 USD) for November 2007 and the minimum subsistence level expenditure for an adult is 607.86 ruble (72.36 USD). Table 2 presents poverty indicators for 2001.

Table 2: Poverty indicators

	Transnistria Ruble		USD		% of people living below	
	2001	Nov. 2007	2001	Nov. 2007	2001	Nov. 2007
Minimum subsistence level	181.84	607.86	31.79	72.36	86.6	n/a
Minimum consumption budget level	358.09	1,116.37	62.60	132.90	13.4	n/a

Source: Office of the Statistics of Transnistria

There are 133,500 pensioners in Transnistria. Pension and other social allowances are provided according to: a) age (55 years for women and 60 years for men), b) disability, c) years worked, d) loss of the breadwinner, e) social status and f) veterans of the war. The average pension rate is 500 Ruble (59 USD) there are very few war veteran pensioners receiving up to 150 USD.

Table 3: Allowances to the pensioners of different categories

Category of the pensioner	Amount of allowance in USD for 2006
age	56
disability	55
loss of breadwinner	36
years worked	50
social status	22

Source: Statistics Yearbook of Transnistria, 2006

The consumer budget line for an adult is 1,116.37 Transnistrian Rubles (133 USD) for November 2007 and the minimum subsistence level line for man adult is 607.86 Rubles (72.36 USD) for the same period. According to the assessment of the situation by some of the officials around 50 percent of the population live below minimum subsistence level. During interviews, respondents considered the situation in 2001 as being better than 2007.

There are eleven categories qualifying for social assistance. The status is granted through application and provision of proof that the overall family income is below 75% of the minimum subsistence level. Most of these criteria are interlinked with the families having children and minimum allowance amounts to 125 Ruble (around 15 USD) per child and increases with the number of children. It is planned to increase this amount up to 259 Ruble (31 USD) from January 2008. 6,750 families having 12,411 children are getting social allowance according to the criteria listed in Table 4. During field visits it was observed that some deserving families were unable to provide necessary documentation and could not benefit from the allowance.

Category	No. of Families	No. of Children
Single mother	2,603	3,360
Multi children families	1,758	5,654
Families with one disabled parent	1,119	1,558
Special group	662	880
Families with disabled children	279	286
Families where one parent is under the investigation	37	50
Parent of the military servant	0	0
People working on Chernobyl rehabilitation	10	16
Single breadwinner of the multi children family	134	412
Families with one or both parents being students	96	103
Single unemployed parent with child <3 y.o.	52	83
Total	6,750	12,402

Source: Ministry of Health and Social Defense of Transnistria

There are 11 residential institutions catering for around 2,696 children of different categories financed either by the Ministries of Health and Social Defense (MoHSD) or Education (MoE). The Swiss Development Cooperation and a British NGO are working with the MoHSD to support of the return of children to their families or their placement in non residential institutions.

Table 5: beneficiaries of the residential children institutions in Transnistria

Institution type	Number of children	Category	Financing Body
Children House	100	orphans 0-7 yo	MoHSD
Rehabilitation Centre	50	Disabled	MoHSD
Rehabilitation Centre	50	Disabled	MoHSD
Boarding schools: 8	2,496	orphans, children from families experiencing economic difficulties, children from dysfunctional families	MoE
11 institutions	2,696		

All public schools have a school feeding programme. However it was observed that free one time meals were provided only to very few children from extremely poor families. All children have access to preschool education funded by the authorities and parents pay only supplementary fees for this service.

Different charity agencies used to operate free soup kitchens for needy people. However the Assessment Team could not obtain any information on such currently functioning kitchens. In the MoHSD it was verified that this support was very important for some layers of the poorest people and confirmed the need for such support.

AGRICULTURE IN TRANSNISTRIA

Land reform in Transnistria is still ongoing. The land is not privatized in the region. The former member of the collective farm (kolkhoz) still has legal rights to land and other property of the kolkhoz where he used to work. This right is guaranteed by a certificate which could be sold, gifted or handed over to any private or legal entity. However due to the huge indebtedness of the former kolkhozes, the property is already being taken or likely to be taken away by their creditors unless these unprofitable agro-farming organizations are officially declared bankrupt by the authorities. Moreover, uncultivated land of these farms is already taken away by the authority and relocated in the state land reserve fund to be leased to private farmers or other commercial entities for a maximum of 99 years period. There is a flat tax on land amounting to 12 USD ha/year. Information on total agriculture land resources of Transnistria is depicted in Table 5. Through the analysis of the official data it can be concluded that only 53 percent of the land (arable and perennials) was cultivated in 2006.

All households living in rural and semi-urban, including many urban ones, own some plot of land since Soviet times. This land is adjacent to their houses and farming is a common practice. According to the official data around 14.5 % of the agriculture land resources of Transnistria are owned by the private household farms. Approximately 50 to 74 percent of the livestock is also under the private possession. By the end of 2006 the largest proportion of the agriculture product in value terms was produced on privately owned farms. Distribution of the land among different farming entities and ownership of the livestock is depicted in Tables 7 and 8 respectively.

Table 6: Agriculture land resources of Transnistria

	Area in Ha
Total arable	229,700
Total perennials	23,100
<i>among them: Orchards</i>	16,200
<i>Grapes</i>	5,700
Pastures and mow land	22,800

Source: Statistics Yearbook of Transnistria, 2006

Table 7: Allocation of the agriculture land to different farming entities and production levels in 2006

		Agriculture land (ha) under cultivation in 2006	Distribution of agriculture land under cultivation in 2006	Distribution of production volume in monetary terms in 2006
1	Private household farms	19,335 ¹²	14.50%	38.50%
2	Agro farming organizations	63,600	47.60%	34.10%
3	Large household farms and leasers	38,715	29.00%	5.10%
4	Agriculture organizations of limited liability	30,972	23.20%	16.90%
5	Supporting farms	267	0.20%	5.40%
	Totals	133,554	100%	100%

Source: Statistics Yearbook of Transnistria

Agriculture production on private farms largely depends on the size of the land plot which does not exceed 0.3 ha per household. However according to the new Land Code it is planned to increase it to 0.7 ha/hh. All households are engaged in small scale farming. Those who used to be members of the collective farm (equity holders) are entitled to some part of produce from the farm. However, the Assessment Team concludes that during the last few years and particularly after this summer drought, nothing was given to shareholders. Very few percent of these type of household have organized themselves by withdrawing their land share (2.7 to 3.3 per former collective farm member) from the collective farms and in small groups started independent management of their farms. The others have leased some small plots from the state land reserve funds. However it was difficult to conclude whether access to additional land for lease or withdrawal of their land shares from the farm is appreciated by the authorities and popular among rural households.

Agro farming organizations are the former collective and Soviet farms. These farms were sustained by the Transnistria authorities till the new Land Code was issued in 2002. Very few of them were abolished or declared bankrupt. Out of 116 retained farms, 80 were non-profitable by the end of 2006¹³. Some of these farms have changed their legal status and are now called cooperative farms. However, this change does not imply serious structural transformation. All rural and semi-urban population was employed during Soviet times in collective or Soviet farms. Unlike to the former kolkhoz members, workers of the soviet farms do not have the right on any property. The same applied to former teacher, doctors or people of other professions living in the rural or semi urban districts.

Large household farms are large farms run by one household. These are the households who hold the right to use land (up to 200 ha) up to 99 years, including the privilege to sell or heritage this right to others. There are only a few dozen such households in the entire region. They live in the village and represent the richest wealth group in the rural setting.

¹² Area under cultivation by the private household farms in this table is actually the land size owned by the 75,992 households

¹³ Statistics Yearbook of Transnistria, 2006

There is a subgroup of leasers in the fourth row of the Table 7. The leaser can be individual or group of people (small and large scale) and corporate. The latter are commercial enterprises which lease land for producing raw material. If the authorities assess the allocated land is not used as outlined in the agreement, they retains the right to confiscate the property.

Table 8: Livestock ownership trend in Transnistria 2005 – Jan. 2007

	2005		2006		by Jan. 2007	
	#	%	#	%	#	%
Total cattle	30,880		29,323		27,818	
<i>among it private HH farms</i>	19,166	62%	17,752	61%	15,853	57%
Total cows	18,901		16,997		15,351	
<i>among it private HH farms</i>	14,461	77%	12,920	76%	11,483	75%
Total pigs	27,502		32,298		36,456	
<i>among it private HH farms</i>	943	3%	879	3%	1,156	3%
Total sheep and goat	18,170		16,660		15,489	
<i>among it private HH farms</i>	12,907	71%	11,291	68%	10,727	69%
Total poultry	452,641		539,005		486,262	
<i>among it private HH farms</i>	338,856	75%	343,913	64%	323,465	67%

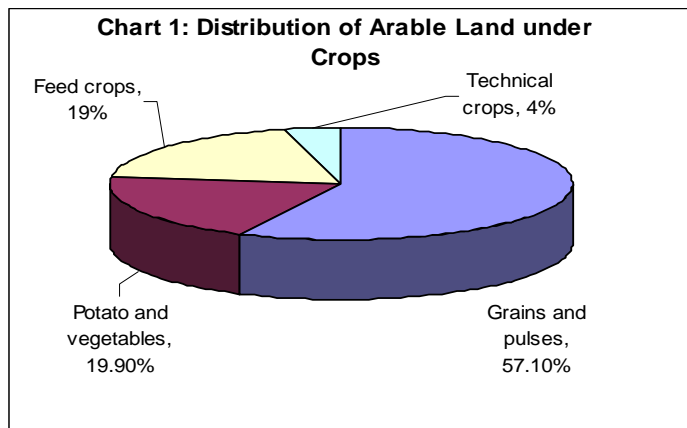
Source: Statistics Yearbook of Transnistria 2006

Organization of limited liability is a newly emerging form of entity in line with market economies, however land cannot be purchased

Supporting farm lands are provided to institutes whose primary activity is not agriculture. These are schools, orphanages and etc. Since Soviet times these institutions produce some food and provide some agriculture training to their students.

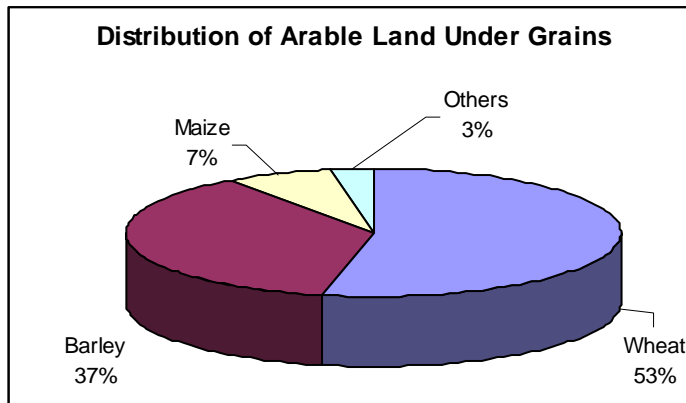
There is a growing tendency of land resources becoming concentrated under the organizations of limited liability and leasers. This leaves very little opportunity for poor households in the countryside to access their own equity or other land if they wish so. They are limited to small private household farms and seasonal work on large farms.

76% of arable land cultivated in 2006 was sown under the extensive mechanized crops. Distribution of the types of crops is shown in Chart 1. Opportunities for seasonal work is greater in the regions where mainly vegetable, potato and fruits are grown. Popular professions, but very few opportunities in the rural area, are mechanics, drivers and milkers. Their average monthly salary is around 300 USD.



IMPACT OF THE DROUGHT

The overall loss of wheat and barley due to the drought of 2007 in the region was estimated at around 35-40 percent, however loss of maize, sunflower and vegetable crops were estimated in some cases up to 90-100 percent. Fruit and grape losses were assessed to be more than over 50%. According to officials this autumn larger area was planted under the winter crops than last year. This is explained by anticipated lack of spring seeds for maize and sunflower planting in 2008.



estimated at around 35-40 percent, however loss of maize, sunflower and vegetable crops were estimated in some cases up to 90-100 percent. Fruit and grape losses were assessed to be more than over 50%. According to officials this autumn larger area was planted under the winter crops than last year. This is explained by anticipated lack of spring seeds for maize and sunflower planting in 2008.

Distribution of land cultivated by all types of agriculture organizations and entities under the different grain crops except private households in 2006 is depicted in Chart 2.

Small scale households mainly produce maize, vegetables, few fruits and grapes on their land plots. Some of the corn is used for poultry and pig fodder and residue is used for cattle feed during winter. Surplus of grapes, fruits, cabbage and tomatoes are used as a source of cash by the households, though most produce is self consumed. Families largely depend on home grown vegetables.

In most of the villages there are public as well as private wells and most of the households have special water reservoirs which they use for watering plants. Though in the villages there are neighborhoods where water wells were dry this summer.

For many households ownership of one so called survival cow is the last resort. In the districts like Grigoriopol and Slobodzia around 11-17 percent of rural households own cows. However in other rayons this proportion is significantly lower. Cash from selling of milk is a significant proportion of their income. Drought resulted in drying of communal pastures during summer and people started to sell their cows. The Assessment Team could not obtain statistics however raw information available from the district officials confirm this tendency.

MARKETS

The entire Region is well connected with every village accessible through all weather asphalt roads. The remotest farm is within a few kilometers of a paved road. There are few¹⁴ bridges connecting right and left banks of the Dnistr. There are four types of checkpoints: a) organized by Russian Peace Keepers, b) Office of Migration (Transnistria authorities) c) Customs Offices of Moldova and d) Customs offices of Transnistria sides. All vehicles are stopped at each checkpoint except for Russian Peace Keeper Points. Passengers and cargo movement are checked and registered. Movement of the commercial goods, and food for sale are subject to inspection, various fees and document clearance from the both sides. The checkpoints at Benderi city are most busy and control is rigorous. Nevertheless no serious problem of lack of any types of goods was found by the Assessment Team.

There are daily markets in all district centers and cities. Almost all villages have shops for basic food and household commodities. It was not possible to obtain disaggregated data on imports of cereals and other basic commodities. However during the meeting at the Ministry of Economy it was mentioned that this type of analysis has been undertaken by the ministry and according to preliminary results around 25 percent of the demand in cereals of the region is satisfied through local production. The rest is imported and after lifting some crossborder restrictions with Ukraine this year, no deficit of food items was observed in the local markets. Food security of vulnerable people rests in their economic accessibility to food in the markets.

INCOME AND EXPENDITURES

According to the information collected by the WFP team it could be concluded that poverty is more widespread in rural areas. Around 15 percent here live in extreme poverty, another 10-15 percent of the population receive salaries through work in public sector and/or have jobs in the enterprises or agriculture organization and thus are considered to be better off. Around one percent of population is considered to be rich. These are large scale household farmers. The rest of the population lives on “edge”.

The core source of income of rural households is their private farm and livestock. Supplementary sources are - seasonal work on large vegetable and fruit farms, and remittances. Short term travel To Russia for temporary jobs is common practice. On average these migrants earn 500 USD per month and come back after 3 months to update migration papers and consequently travel back after some. In one of the villages visited by the team it was estimated that around 40 percent of households cope with their difficulties through this activity. However it was noted that generally this is a very unstable and unreliable source of income.

¹⁴ exact number could not be obtained by the team, through there are 6 big bridges

According to the statistics yearbook of 2006, around 44 percent of the income of average household comes from on salaries and social transfers and about 22% from remittances.. It is assumed that the remaining income comes from farming. This proportion would be much higher for families where there are no employed members or do not receive pension or social allowance.

In order to provide additional social protection, authorities have introduced price control over certain commodities and services (Table 9)

Table 9: List of the Commodities and Services under the Price Regulation in Transnistria

Commodities	Services
Bread and pastry	Gas
Pasta	Electricity
Milk and baby food	Utilities
Cereals and pulses	Public transport exact taxi
Manufactured canned baby food	Postal service, telephone service
All kind of animal and vegetable fats	Services related to TV broadcasting
Eggs	Services for lift
Some essential medicines	Service of street cleaning from snow
Soap	Technical service for installation of electro gas, hot water and portable water
School books and stationary	

Prices on all staple commodities sold on the markets have increased during this year. The Chart below shows price changes of the main commodities. Price for cattle feed have doubled this year and resulted in slaughtering and selling of cattle and pigs or restructuring of the livestock composition. Bread price is not included in this chart as it is controlled. However, first price increase by 25% occurred in October 2007. There are two more increases planned for 2008.

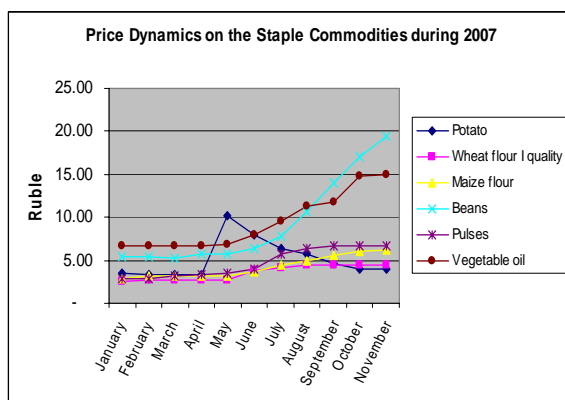


Table 10: Average prices on staple commodities

	2006 Kg/Ruble	2007 KG/Ruble
Potato	3.50	5.16
Wheat flour I quality	1.85	3.90
Maize flour	2.68	4.70
Beans	5.35	11.25
Pulses	2.71	5.44
Vegetable oil	6.50	10.79

NUTRITION

Rural diets consist of staple (wheat), vegetables, occasional meat and seasonal fruits. Sweet tea with bread and butter, rarely with cheese is consumed at breakfast. Meals consist of vegetable soup, bread, Mamalika (corn porridge) and buckwheat. On occasion, beverages may include wine, especially from own vineyards. There is no data on malnutrition rate in the region.

RECOMMENDATION

- Due to the lack of information on poverty or food security it is highly recommended to conduct a Household Food Security Baseline Survey. There are limited agencies with proper capacity to conduct a survey. However the Assessment Team met the representatives of the Research Company New Age (Novi Vek) which has a network of enumerators in Rayons and has recently conducted several surveys.
- The likelihood of very serious depletion of the important livelihood (milk producing cows) and consequent deterioration of the food security of the households is obvious. The situation is more dramatic in the districts where there are limited job opportunities among enterprises or commercial agriculture farms growing labor intensive crops like fruits, vegetable, potato. Rural households living in the districts of Grigoriopol, Dubasari and Kamenki are found to be more vulnerable to the risk to lose their cows due to non availability and high cost of fodder. Annex A provides the breakdown of the estimated beneficiary numbers and criteria for this intervention.
- Food aid is highly recommended for most vulnerable groups. This support will become more crucial after the upcoming bread price increment by the beginning of next year. Proposed strategy for intervention would be support of schools with food commodities to ensure free one time meal for all students. Relief winter ration should be provided for the rest. Opening of the social canteens especially in the district centers is a feasible strategy. The criteria for vulnerable groups are described in the annex A.
- Support with maize seeds for small scale farmers will ensure production of feed for the livestock and will ensure recovery of their food insecurity for next year. Support is required in order to maintain their agriculture activity on the leased land. It is very likely that without external support small lease households will not cultivate allocated land plots and authorities will withdraw this land further imitating incomes of these food insecure households.

- Cash for work is proposed for achieving long term sustainable food security of small scale farmers in Transnistria.

ANNEXES

Annex A - Beneficiary Targeting Criteria for fodder distribution and food aid intervention:

The beneficiaries should be selected from the households primarily one or all of the following criteria:

- a) Households owning one cow (his criteria is used only for selecting beneficiaries for fodder distribution intervention)
- b) households falling under the criteria of the Ministry of Health and Social Defense, receiving or not - allowance under the Programme for the Support of the Families with Low Income
- c) households with one and more disabled (due to disease or age)
- d) households with 2 (two) and more children

The households falling in the above criteria but with additional features described below should be excluding from the beneficiary lists with the indicated (from one to seven) descending order:

1. households running large scale household farms (krestiansko fermerskoe xoziiastvo) and producing cereals, vegetable, fruits, grape, livestock
2. owning functional green house and fish ponds
3. leasing more than 1 ha of the land where potatoes, vegetables, fruits and grapes are grown
4. having the formal job with any farm as agronomist, mechanist, driver, milker and other highly paid jobs
5. owning operational vehicle (tractor, combiner, car and etc.)
6. family member employed in public sector primarily on managerial position
7. family member has job in the enterprise or banking sector
8. one member is war veteran

Annex B - Population

Population of the Districts of Transnistria and Estimated Beneficiary Numbers for Fodder Distribution					
Name of the District	Population	Households	Number of Cows in the Rayon	Estimated proportion of the HHs with Cow	Proposed number of beneficiary HHs
г.Тирасполь	170,000	48,409			
<i>Urban population</i>	<i>170,000</i>	<i>48,409</i>			
<i>Semi urban Population (data N/A)</i>					
<i>Rural Population</i>					
Total	170,000	48,409	60		-
г.Бендеры *** 86770	126,200	38,300			
<i>Urban population</i>	<i>126,200</i>	<i>38,300</i>			
<i>Semi urban Population</i>	-	-			
<i>Rural Population</i>	-	-			
Total	126,200	38,300	164		-
Каменка	12,182	5,250			
<i>Urban population</i>	-	-			
<i>Semi urban Population</i>	<i>12,182</i>	<i>5,250</i>			
<i>Rural Population</i>	<i>17,551</i>	<i>8,732</i>			
Total	29,733	13,982	1,480	11%	1,150
Рыбница** 36928	56,758	22,600			
<i>Urban population</i>	<i>56,758</i>	<i>22,600</i>			
<i>Semi urban Population</i>	-	-			
<i>Rural Population</i>	<i>26,788</i>	<i>15,126</i>			
Total	83,546	37,726	2,783	18%	-
Дубоссары	28,190	10,667			
<i>Urban population</i>	<i>28,190</i>	<i>10,667</i>			
<i>Semi urban Population</i>	-	-			
<i>Rural Population</i>	<i>13,196</i>	<i>4,737</i>			
Total	41,386	15,404	1,095	23%	800
Григориополь	12,210	4,405			
<i>Urban population</i>	-	-			
<i>Semi urban Population</i>	<i>12,210</i>	<i>4,405</i>			
<i>Rural Population</i>	<i>36,255</i>	<i>14,522</i>			
Total	48,465	18,927	3,166	17%	2,100
Слобдзья	18,533	6,668			
<i>Urban population</i>	-	-			
<i>Semi urban Population</i>	<i>18,533</i>	<i>6,668</i>			
<i>Rural Population</i>	<i>88,851</i>	<i>35,139</i>			
Total	107,384	41,807	3,166	8%	-
Urban population	381,148	119,976			
Semi urban Population	42,925	16,323			
Rural Population	182,641	78,256			
Total	606,714	214,555			4,050