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Food Security Assessment
Analysis of the Current Situation and Next Steps

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ACRONYMS AND ABBREVIATIONS

ACSA	National Agency for Rural Development
APIA	Agency for Interventions and Payments in Agriculture
ATP	Autonomous Trade Preferences
BMI	Body Mass Index
DCFTA	Deep and Comprehensive Free Trade Area
DHS	Demographic and Health Survey
EU	European Union
FAO	Food and Agriculture Organization
FED	Food Energy Deficiency
GAO	Gross Agricultural Output
HBS	Household Budget Survey
HFE	High Food Expenses
HFED	High Food Energy Deficiency
HSI	High Staple Intake
HVA	High-Value Agriculture
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
MAFI	Ministry of Agriculture and Food Industry
MDL	Moldovan Leu
MICS	Multiple Indicator Cluster Survey
MLSPF	Ministry of Labor, Social Protection and Family
MRA	Material Reserves Agency
NBS	National Bureau of Statistics
PDI	Poor Dietary Intake
PHC	Primary Health Care
SPS	Sanitary and Phytosanitary
WHO	World Health Organization
WTO	World Trade Organization

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EXECUTIVE SUMMARY

1. **Recent food price spikes and volatility on international markets have attracted considerable attention.** Whether caused by unusual weather patterns, adverse climatic events or by market distortions, the effects of sudden price rises can lead to serious consequences, chief among them being increased food insecurity. Food insecurity can manifest itself through four dimensions: (i) limited availability of food; (ii) disruptions in access to food; (iii) impaired food utilization; as well as (iv) instability of these three dimensions through time. Not surprisingly, the poorest segments of society are normally hurt the most, but the consequences are felt by a much wider share of the population.

2. **Due to its complexity, the threat of food insecurity requires an informed and comprehensive policy response.** Improving food security requires a deep understanding of national social and economic conditions and trends, as well as the implications of integrated international markets. Most importantly, the agriculture sector and domestic food production play a key role: if domestic agriculture and food production are well developed, competitive and able to sustain sudden shocks, food insecurity will likely manifest itself mildly. If not, unexpected events could cause severe difficulties and suffering. However, challenges to food security can only be successfully addressed through a policy mix encompassing, among others, economic and social policy, food safety, healthcare and infrastructure development.

3. **In the case of Moldova, little research has been so far undertaken to study the nature and geographical spread of food insecurity.** The standardized and representative Household Budget Survey (HBS) provides an opportunity to take a systematic approach to identifying the key characteristics of Moldova's food insecure population, in terms of their number, geographical location, social conditions and severity of food insecurity. Combined with other data collected by the National Bureau of Statistics (NBS), the HBS can inform policy response.

4. **This report outlines the key characteristics of food (in)security in Moldova.** Using the latest HBS and NBS data, the report provides the assessment of how many people in Moldova are affected by malnutrition, where these people are located, what is their social-economic status and when do they suffer food insecurity most. The report is built around all four dimensions of food security: availability, access and utilization of food, as well the stability of these through time. Its analysis can serve as a basis for future policy formulation and improved cross-sectoral coordination, bearing in mind, though, that the report was not able to cover Transnistria as well, due to non-availability of data.

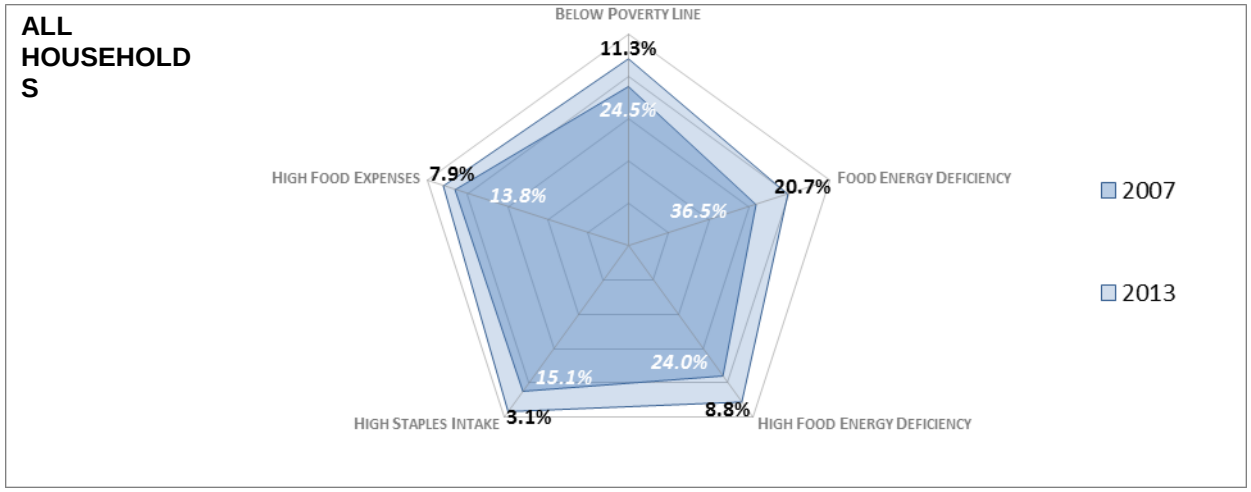
MARKED IMPROVEMENTS IN OVERALL FOOD SECURITY, YET CONCERNS REMAIN

5. **Moldova population's food energy requirements are largely met, yet the proportion of people consuming insufficient quantities of food remains a concern.** The average level of *per capita* daily food energy consumption in Moldova has consistently been above the World Health Organization's recommended values, and this trend continues: the average daily consumption of around 2,400 Kcal in 2013 compared favorably with the WHO recommended benchmark of 2,050 Kcal. However, more than one out of five (21%) households has been found to consume less than the recommended level of

calories. Almost one out of ten (9%) households has registered high food energy deficiency - a more serious deficit of at least 300 kilocalories *per capita* per day.

6. **Along with a significant reduction in poverty levels, there has been a clear downward trend in food energy deficiency rates amongst Moldova's households in recent years.** In fact, the rate of households registering *Food Energy Deficiency* has decreased by more than 15 percentage points (from 36.5% to 20.7%) between 2007 and 2013, and a similar decrease can be observed in the share of households with *High Food Energy Deficiency* (from 24% to 8.8%) during the same period.

Figure E. 1. Key food security indicators and poverty rate in Moldova (change 2007-2013, as % of all households)

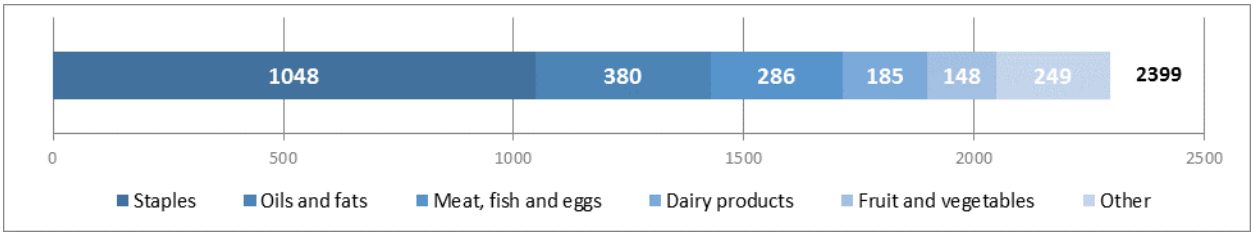


Source: HBS. *Note*: excluding Transnistria

Note: The radar graph illustrates changes in shares of Moldova's households living below the national poverty line and shares of households suffering from various forms of food insecurity, whereby the fuller the radar, the lower the poverty rate and food insecurity.

7. **The composition of an average diet comprises adequate proportions of carbohydrates and proteins, and somewhat excessive quantities of fats**. Between 2007 and 2013, households have gradually reduced their consumption of staple foods, maintained the level of consumption of meat and fish products, while gradually increasing the consumption of dairy products, fruit and vegetables and fats and oils. Especially impressive has been the reduction in the rate of households registering a *High Staple Intake* (more than 60% of all calories coming from staples): from 15.1% to just above 3%.

Figure E. 2. Moldova's average household's diet composition (2013)



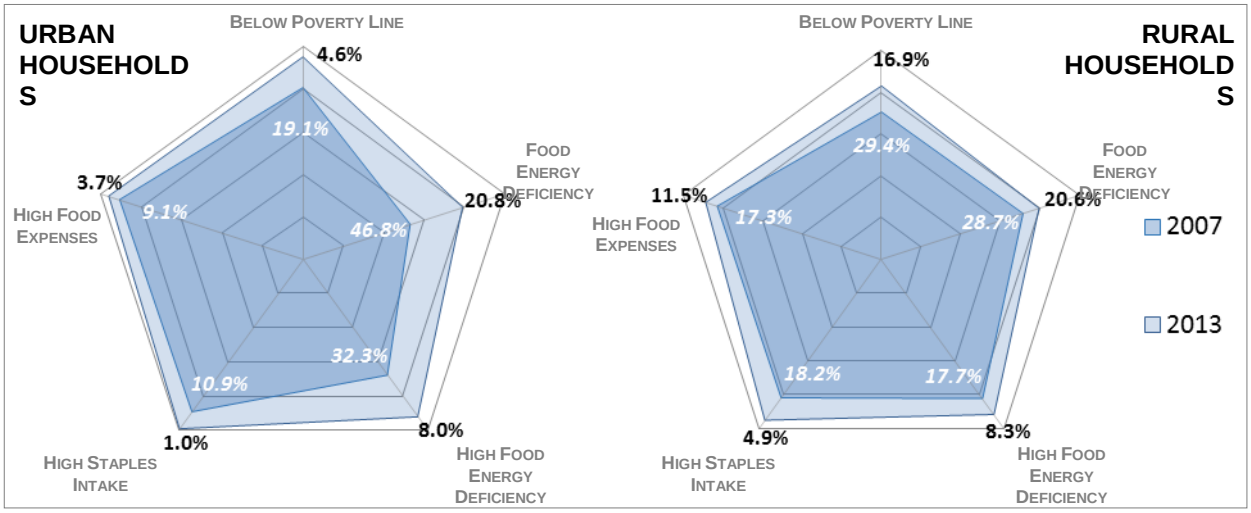
Source: HBS. *Note*: excluding Transnistria

8. **Similarly, Moldova has recently registered improvements across all categories of malnutrition and exhibits low overall malnutrition levels.** Between 2005 and 2012 the national rate of children under the age of five who were *stunted* dropped from 8.4% to 4.4%, the rate of children who were *underweight* dropped from 4.3% to 3.2%, and the rate of *wasted* children from 3.9% to 1.4%. Most importantly, the rates of children with growth deficiencies have dropped among all income level groups, yet the share of rural children affected by malnutrition remains higher than the rate among their urban counterparts.

THE GAP BETWEEN URBAN AND RURAL HOUSEHOLDS IS NARROWING

9. **Traditionally, rural households have been more food secure than urban ones due to high reliance on own production - this is not the case anymore.** In 2007 the difference was stark: the rate of urban households facing *Food Energy Deficiency* was 46.8%, while the rate among rural households was 28.7%. However, by 2013 the rates for both urban and rural households were around 21%. The trend is similar in the rates of *High Food Energy Deficiency*, whereby the improvements achieved between 2007 and 2013 among urban households have been greater (decrease from 32.3% to 8.0%) than among rural ones (from 17.7% to 8.3%). There are still some differences between the various geographical regions, but overall gap between urban and rural households is shrinking.

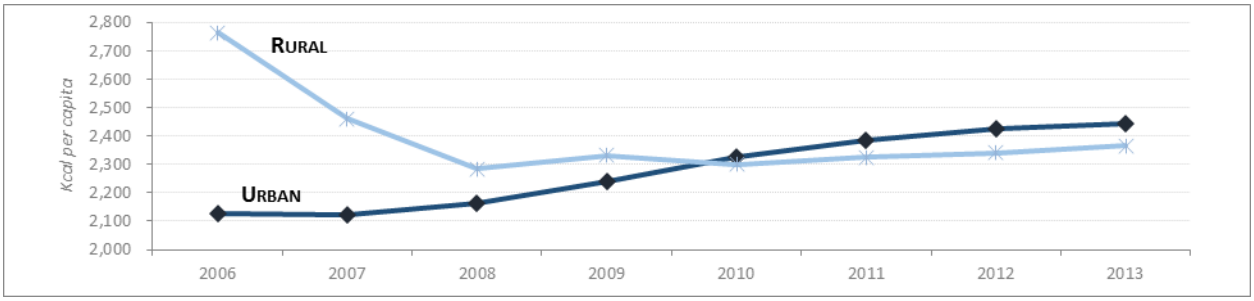
Figure E. 3. Key food security indicators and poverty rate for urban and rural households in Moldova (change 2007-2013, as % of all households)



Source: HBS. *Note*: excluding Transnistria

10. **A similar trend is also visible in actual food energy intake – the average daily caloric consumption among urban households surpassed the rural consumption for the first time in 2010 and has since remained above.** In 2006 the gap was significant: urban households were consuming 2,126 Kcal *per capita* daily, the rural households were consuming 2,764 Kcal. By 2013, urban households' caloric intake has increased to 2,444 Kcal, while the rural households' intake has dropped to 2,365 Kcal.

Figure E. 4. Daily caloric intake *per capita*: urban and rural residents (2006-2013)



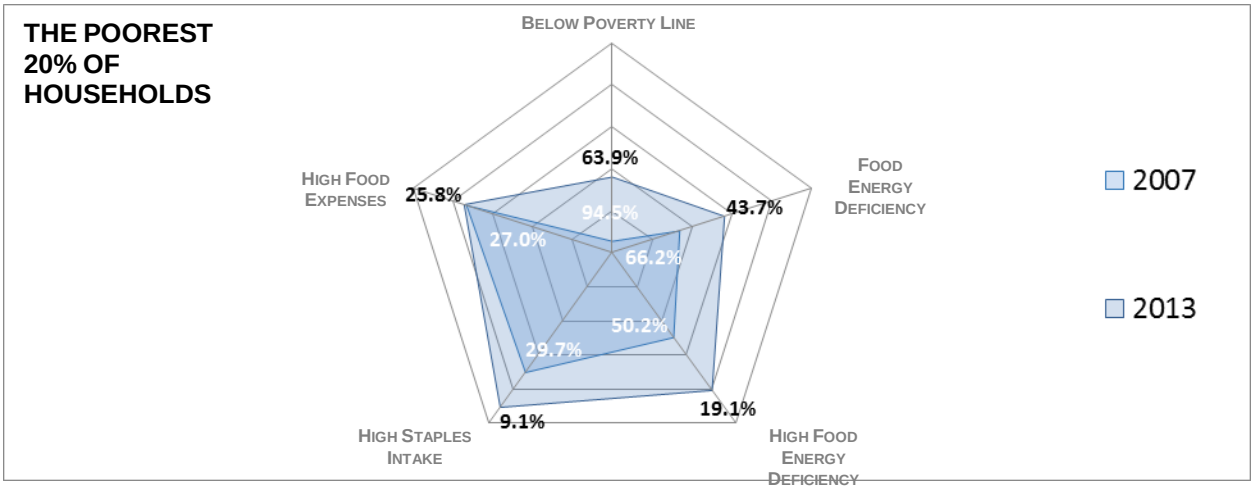
Source: HBS. *Note*: excluding Transnistria

11. **Not surprisingly, diverging economic trends are the main reason behind the narrowing gap between urban and rural households.** While Moldova's economy overall registered a cumulative growth of 58% between 2000 and 2012, agriculture only grew by 28% during the same period. A series of major adverse climatic events (droughts and floods) negatively affected rural incomes, and rural households were initially also worse hit by the economic crisis. This has driven emigration from rural areas to urban areas or abroad, resulting in agriculture's share in employment to drop from 51% in the year 2000 to 26% in 2012. Despite the overall reduction during the past decade, the rural poverty rate (18% in 2013) remains significantly higher than the urban poverty rate (5% in 2013).

FOOD SECURITY AMONG THE POOREST HOUSEHOLDS HAS IMPROVED, BUT ECONOMIC VULNERABILITY PERSISTS

12. **Along with improving economic conditions, the poorest households have also registered increased food security between 2007 and 2013.** Nearly 95% of all households in the lowest income quintile were living below the poverty line in 2007; by 2013 the share has dropped to less than 64%. In parallel, the share poorest households facing *Food Energy Deficiency* dropped from more than 66% to less than 44%, and those suffering from *High Food Energy Deficiency* from more than 50% to less than 20%.

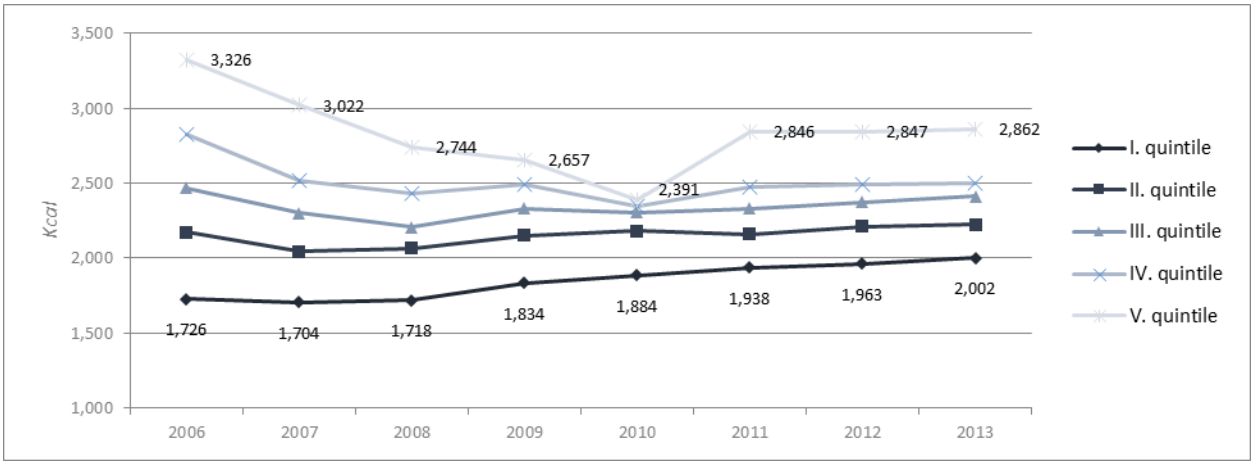
Figure E. 5. Key food security indicators and poverty rate among the poorest 20% of households (change 2007-2013, as % of all households)



Source: HBS. *Note*: excluding Transnistria

13. **The situation of the poorest households has improved considerably also in terms of daily caloric intake, and severe food insecurity is extremely rare.** While the gap between the average daily intake of the richest 20% of the population (V. quintile) and the poorest 20% (I. quintile) remains more than 800 Kcal, it has narrowed substantially between 2006 and 2013. The intake of the poorest households has increased from 1,726 to 2,002 Kcal, while the intake of the richest households dropped from 3,326 to 2,862 Kcal. A modest improvement has also been registered among the less poor households in the II. quintile. *Poor Dietary Intake*, measured through an indicator specifically developed for Moldova to simultaneously show both the quantitative and qualitative dimensions of food insecurity, has very low prevalence amongst Moldovan households: only 0.4% of them are affected.

Figure E. 6. Average daily *per capita* caloric intake by household quintiles (2006-2013)



Source: HBS. *Note*: excluding Transnistria

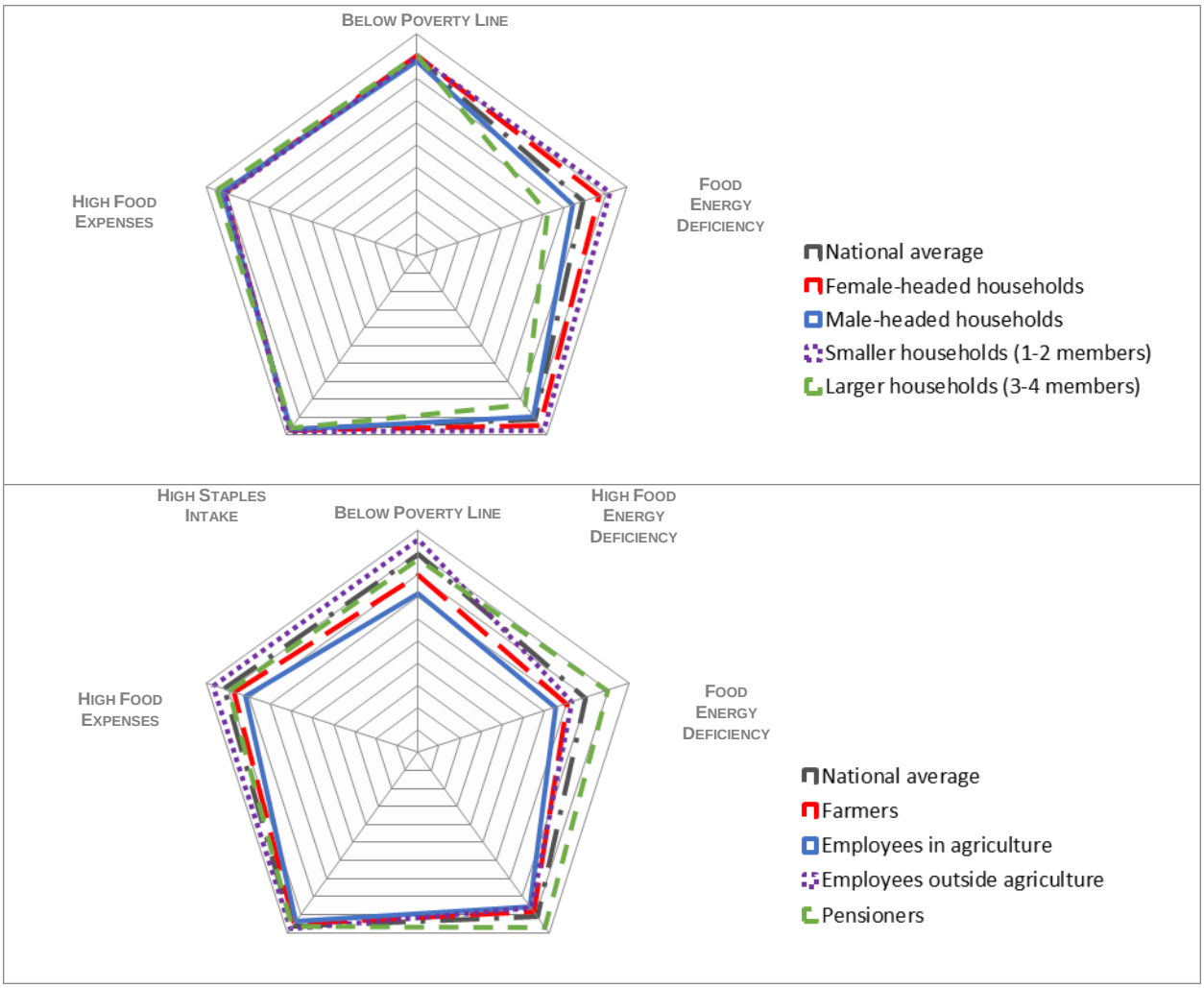
14. **However, economic vulnerability among the poorest households remains considerable.** Solid economic growth between 2007 and 2013 has translated into a much lower rate of poverty among households: almost a quarter of all Moldova's households were living below the poverty line in 2007, by 2013 their proportion has dropped to just above 11%. Similarly, the rate of households in Moldova facing *High Food Expenses* (i.e. spending more than 65% of their income on food) was just below 14% in 2007 and decreased to less than 8% by 2013. However, poor households continue facing challenges in meeting their food energy needs and the share of households in the lowest income quintile spending more than 65% of their income on food has changed little: it was 27% in 2007 and 25.8% in 2013. The situation is even worse among the households living below the poverty line, with their rate of *High Food Expenses* increasing from 26.3% in 2007 to 33.8% in 2013. Not surprisingly, the poorest households also face most difficulties in composing a healthy diet.

THE GENDER OF THE HOUSEHOLD HEAD, HOUSEHOLD SIZE AND SOURCE OF INCOME MATTER

15. **There are other household characteristics that are associated with diverging rates of food insecurity and nutritional outcomes: (i) gender of the household head; (ii) the size; and (iii) the main sources of income.** Female-headed households were half as likely to face *Food Energy Deficiency* (13.5%

vs. 25.9%) or *High Food Energy Deficiency* (5.4% vs. 10.4%) as male-headed household in 2013, while the rates have been decreasing faster over the recent years. Female-headed households registered also higher amounts of daily calories consumed: in 2013, the average female-headed household consumed 2,467 Kcal, as opposed to 2,365 Kcal consumed by the average household headed by a male. In terms of size, smaller households (1-2 members) were considerably less likely to face food deficiencies than larger households (3+ members). The *Food Energy Deficiency* rate among smaller households was 8.4% in 2013, among larger households more than 38%, while the average daily caloric intake of smaller household was around 500 Kcal per day per member higher than the intake of larger households. In terms of sources of income, farmers and agricultural workers registered the highest *Food Energy Deficiency* rates in 2013, almost 30% and 35% respectively, while households headed by pensioners were the most food secure with only 10% among them facing *Food Energy Deficiency*. Food security of those households generating income mainly from agriculture has also been improving at a much slower pace than that of other households.

Figure E. 7. Key food security indicators and poverty rate for selected types of households (2013, as % of all households)

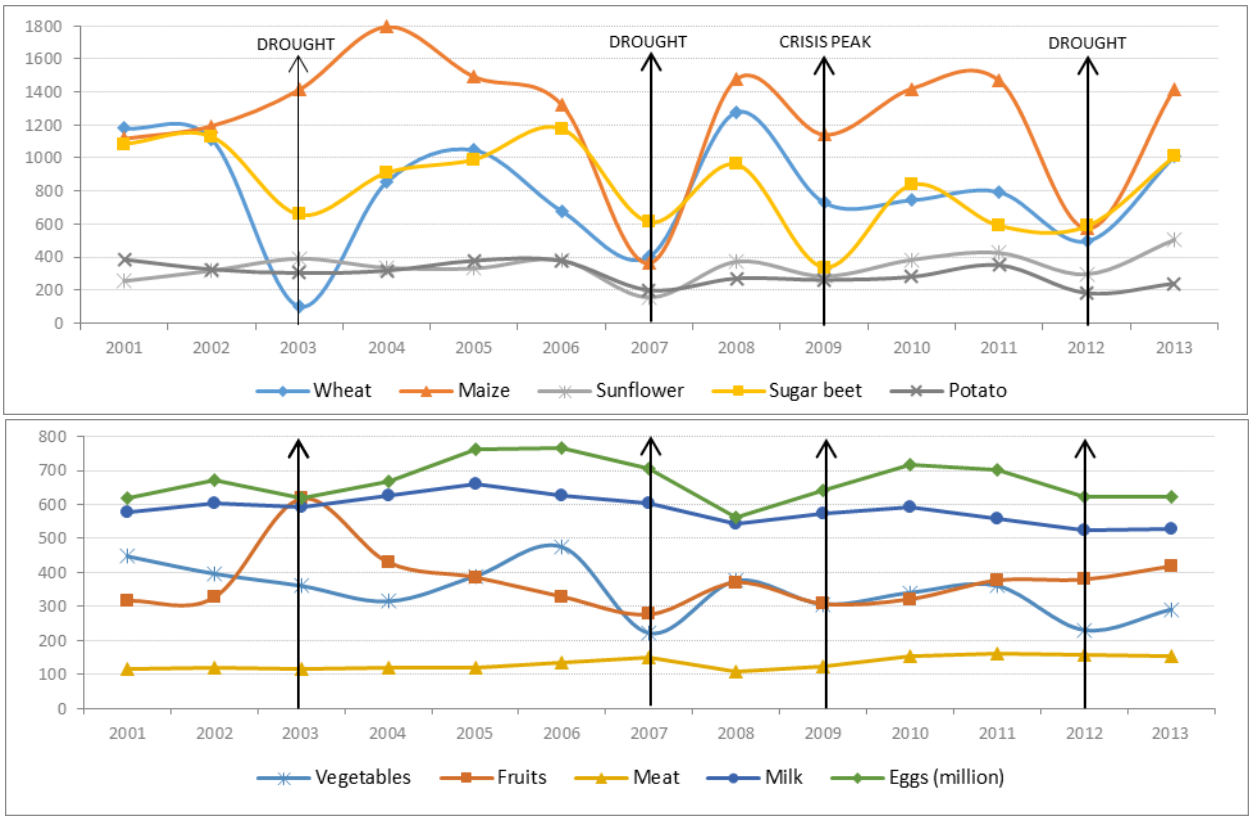


Source: HBS.

DOMESTIC AGRICULTURAL PRODUCTION AND SEASONAL FOOD PRICES REMAIN VOLATILE

16. **The availability of food in Moldova is overall not a major challenge, yet production volatility suggests caution.** Population's needs are being largely met by domestic production, with imports filling the gap. Moldova is a net exporter of cereals, fruits and wine, but is a net importer of meat and dairy products, as well as vegetables, mainly because domestic production is seasonal and cannot ensure year-round supply. However, production volumes have recently been stagnating, mostly due to severe droughts of 2003, 2007 and 2012 that not only devastated the crop sector, but also had a negative effect on the livestock sector. Yet, adverse climate events are only partly to blame. Moldova's agriculture sector also suffers from (i) limited access to irrigation, (ii) slow uptake of modern agronomic practices and technologies, (iii) lack of income stabilization tools, as well as (iv) loose food safety standards. Taking into account unfavorable developments in the immediate neighborhood – above all the armed conflict in Ukraine, but also Russia's economic stagnation – the conditions on the regional markets could change markedly. This should be a further motivating factor to improve productivity and thus stabilize domestic production.

Figure E. 8. Moldova's production of key agricultural commodities (2001-2013, in MT)

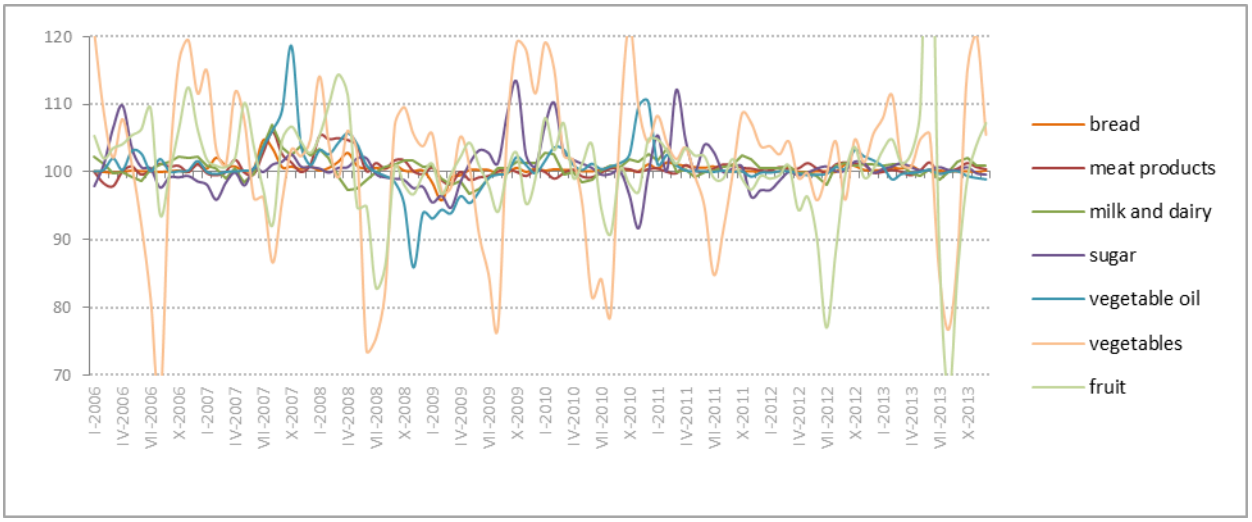


Source: NBS. *Note*: excluding Transnistria

17. **While year-to-year price growth in food prices has been moderate, significant seasonal price volatility poses challenges.** Food prices in Moldova have grown steadily over the last decade, but at a slower pace and with less volatility than the world food prices. The global food price shocks of 2008 and

2010 were felt less in Moldova than in the rest of the world, mostly thanks to the fact that the local supplies of agricultural and food products were strong – 2008 and 2010 have been particularly good agricultural years in Moldova. However, relative year-to-year price stability is undermined by high seasonal price volatility, especially for fruits and vegetables and less so for meat and dairy products. This is mirrored by the movement of food insecurity indicators on a quarterly basis: food insecurity problems intensify during off-season (1st and 2nd quarter) and then loosen up over the harvest season (3rd and 4th quarter).

Figure E. 9. Domestic price seasonality of key foods (monthly, previous month=100)



Source: NBS.

ACCESS TO FOOD MORE PROBLEMATIC FOR HOUSEHOLDS WITH AGRICULTURE-RELATED INCOME

18. **Access to food also does not represent a major impediment for achieving greater food security, however, rural households remain more vulnerable due to volatile incomes.** Food prices in Moldova have grown steadily over the last decade, but at a slower pace and with less volatility than world food prices. At the same time, nominal incomes of Moldovan households – urban and rural – have recently grown faster than food prices. Most importantly, the incomes of the poorest 20% of the population have doubled between 2006 and 2012, driven strongly by the increase in the rural areas due to growing agricultural prices and the strengthening of remittance flows. However, despite headline improvements, rural households that depend on agriculture-related jobs remain more vulnerable, mainly due to four factors: (i) seasonal food prices volatility; (ii) greater income volatility; (iii) greater dependency on own-production of food; and (iv) greater dependency on remittances (these represent between 20-25% of the total income of rural households, as opposed to 5-10% among urban households). Above all, sudden income shocks because of weather related adverse events can significantly impact both the quantity and quality of food consumed in households that depend on agriculture-related jobs.

POLICY RECOMMENDATIONS

19. **There are six broad policy areas that the Government should focus on, so as to improve food security in the future:**

(i) **AGRICULTURAL DEVELOPMENT:** The agriculture sector will continue to play an important role for food security, both as a provider of domestically produced commodities, as well as a source of income for large parts of the rural population. The sector is in need of modernization (e.g. new seed / breed varieties, new farming techniques and practices) that would boost productivity and output, while the population involved in agriculture-related would need greater income stability (e.g. through agriculture insurance schemes). In addition, the low level of adoption of capital intensive production technologies (such as greenhouse and other protected-field production) scarce availability of post-harvest infrastructure for fresh produce storage, handling and packaging, might benefit from a targeted policy intervention.

(ii) **PRICE AND MARKET REGULATION:** The policy of "cheap bread for everyone" remains in place, consisting of a below-market price wheat availability through the state grain reserve and price controls on bread. In addition, the Government maintains caps on profit margins for some key foods designated as "socially important": wheat flour, pastry, sugar, sunflower oil, meat and meat products, milk and dairy products. These policies distort the normal functioning of the market, hurt farmers and producers, preventing the emergence of healthy private firms. More importantly, they also fail to efficiently achieve the goal of helping the poor, since price caps are non-targeted measures and are available to everyone, rich or poor, alike. Price liberalization coupled with increased targeted social assistance for the poor would likely deliver better results.

(iii) **CLIMATE CHANGE MITIGATION:** Three major climate-driven problems affecting agriculture have been identified: droughts, floods and soil erosion. Climate change is expected to exacerbate the impact of these extreme weather events further: a previous dedicated World Bank study has shown that changes will lead to variations in temperature and rainfall patterns, and that over the next 40 years climate change will grow more severe in Moldova. The risk of ever greater yield volatility calls for a policy response. The Government could stimulate reforms at farm level (e.g. on-farm water efficiency, adoption of new or more climate-resilient seed varieties, diversification), while developing national adaptation and mitigation measures (including investment in the rehabilitation of secondary irrigation capacity).

(iv) **TRADE:** Moldova's agri-food imports and exports have increased considerably over the last decade. While exports represent an important source of income, especially for rural households, imports help stabilizing domestic food availability. Maintaining an open trade policy is thus key, along with the removal of existing bottlenecks that limit further increase in exports (e.g. food safety regulation and monitoring). In this respect, the recent signing of the Deep and Comprehensive Free Trade Area (DCFTA) agreement with the European Union (EU) is of particular importance as it provides Moldova's producers greater access to the EU market, but

at same time exposes them to greater competition and puts pressure on regulatory quality and clarity. Policymakers should also devote particular attention to the emergence of trade restrictions between the European Union and the Russian Federation - Moldova's largest trading partners, in terms of imports and exports - that will lead to adjustments in trade patterns and thus potentially in increased food insecurity in Moldova.

(v) **SOCIAL POLICY:** For large segments of the population, food security is strongly correlated to income stability – a drop in income will bring greater food insecurity and vice-versa. In addition to income boosting economic policies, the Government could build on the positive experience of the poverty-targeted program *Ajutor Social*. Public financial transfers that supplement the incomes of those most in need would thus further reduce the number of households suffering from food energy deficiencies, or at least mitigate the negative effects of sudden shocks. Similarly, the extension of food provision in schools, especially those in the most food insecure areas, would further lower rates of malnutrition.

(vi) **FOOD SAFETY:** Despite major advances, the present food safety regulatory and institutional framework does not yet ensure sufficient safety control of food sold domestically; equally, agriculture production, as well as exports, would benefit from greater confidence. This has a dual negative effect: it continues to represent a risk to public health; and it deters investment and demand. The recent setting up of a single food safety agency in 2013 addresses many of the previous concerns and shortcomings stemming out of a complex division of responsibilities and competences. However, the new system is still young, and further efforts are needed to strengthen its functions but also to bring the regulatory framework and sector compliance in closer alignment with European and international standards.

20. **Finally, due to the complex nature of food security, policy coordination is key.** At present, a large number of ministries and agencies is involved in the formulation and implementation of policy areas falling under the broad concept of food security framework. However, there is only limited interaction and coordination on food security issues among the various institutions, as there is little understanding of the cross-sectoral nature of food security. Aspects such as health care, food safety and/or sustainable farming practices are hardly seen as an integral part of the food security agenda. The Ministry of Agriculture and Food Industry should – as the institution with the leading role in the area of food security – come forward with a blueprint for better inter-institutional planning and coordination.

I. BACKGROUND

I.1 PURPOSE OF THE ANALYSIS

21. **This report provides an analysis of food security in Moldova.** It attempts to outline the specific characteristics of food insecurity found in Moldova and to identify its underlying causes. As such, this report provides a basis on which sound public policy can be built.

22. **The understanding of 'food security' as a concept has evolved in Moldova over time, but policy has remained focused on food availability as the primary attribute of food security.** Considering the food security outcomes, the policy agenda needs to become broader. This is where this report fits in: it aims to enhance the overall understanding of the complex and multidimensional issue of food security in Moldova, and set the basis for a wider food security policy agenda.

23. **The report looks at *how many* people are food insecure in Moldova, *where* these people live, *who* they are and *why* they face food security challenges.** The report adopts the international food security concept and analytical framework based on the four key dimensions: (i) the *availability* of food; (ii) *access* to food; (iii) *utilization* of food; and (iv) the *stability* of these three dimensions over time.

24. **The report is divided into three parts**. The remainder of *Part I* outlines the methodology used and provides a brief overview of Moldova's agriculture sector. In *Part II* the report focuses on overall food security outcomes by assessing *how many* people are food insecure in Moldova, *where* do they live, *who* they are and *when* is food security most affecting them. *Part III* provides a comprehensive analysis of the four dimensions of food security (availability, access, utilization and stability) and identifies bottlenecks. *Part IV* introduces the institutional actors and the policy framework. The report concludes with policy recommendations.

I.2 METHODOLOGY

25. **The concept of food security is complex and there is no single indicator that spells out who is food secure and who is not.** This is why this report adopts a list of indicators that allow us to assess the severity, duration and other specifics of food insecurity. These indicators measure the quantity and quality of households' diet, as well as their economic vulnerability over a longer period of time.[1]

26. **The report also provides an in-depth analysis of the food security outcomes in Moldova in order to understand the underlying causes of food insecurity.** As outlined above, the analysis builds on the international definition of food security and its four dimensions: (i) *availability* of food; (ii) *access* to food; (iii) *utilization* of food; and (iv) *stability* of these three dimensions over time (*Box 1*).

[1] *Box 3* in Part II provides more details on the indicators used.

27. **The primary source of data for the report were the micro and macro datasets from the National Bureau of Statistics of the Republic of Moldova (NBS), in particular the representative Household Budget Survey (HBS).** Resources of other public institutions were extensively used as well. Most importantly, a number of ministries shared sector- and policy-specific data and knowledge. The National Agency for Rural Development (ACSA)proviced survey-based yield data, and the National Federation of Agricultural Producers AGROinform shared the agricultural price database with the authors. Further secondary data were collected through coversations with government officials and various stakeholders (e.g. non-governmental organizations and private sector representatives). Relevant legal documentation and other available written reports and studies were consulted and are cited where appropriate.

BOX1.THE METHODOLOGY USED FOR THE ANALYSIS OF FOOD SECURITY OUTCOMES

The international definition of food security was adopted at the 1996 World Food Summit:

"Food security exists when all people, at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."

The definition introduces four main dimensions of food security:

(i) Physical availability of food: addresses the supply side of food security and is determined by the level of food production, stock levels and net trade. Since it has become increasingly obvious that an adequate supply of food at the national or international level does not in itself guarantee household level food security, food access has been recognized as a key determinant of food security.

(ii) Economic and physical access to food: is influenced by market factors and the price of food as well as individual's purchasing power, which is related to employment and livelihood opportunities. The access dimension thus brings food security close to the poverty reduction agenda.

(iii) Food utilization: is commonly understood as the way the body makes the most of various nutrients in the food. Sufficient energy and nutrient intake by individuals is the result of good care and feeding practices, food preparation, diversity of the diet and intra-household distribution of food. Combined with good biological utilization of food consumed, this determines the nutritional status of individuals.

(iv) Stability of the above three dimensions over time: emphasizes the importance of reducing the risks of adverse effects of various factors (of natural, social, economic and/or political nature) on the other three dimensions: food availability, food access and food utilization.

For food security objectives to be realized, all four dimensions must be fulfilled simultaneously.

Source: FAO (2008). *An Introduction to the Basic Concepts of Food Security*.

II. FOOD SECURITY OUTCOMES

28. **The following chapter presents findings on Moldova's food security situation and identifies the profiles of households most susceptible to food insecurity.** Food security outcomes are assessed using a set of indicators measuring the quantity and quality of household diets (*Box 2* provides more details), and are aimed at providing answers to the following key questions:

(i) How big a problem is food insecurity?
(ii) Whom does food insecurity mostly affect?
(iii) How severe are the forms of food insecurity?
(iv) Are there specific seasonal patterns of food insecurity linked to external events?

BOX 2. KEY FOOD SECURITY INDICATORS

1) DIET *QUANTITY* INDICATORS

- *Food Energy Deficit (FED)* rate identifies the households that consume less than the recommended amount of kilocalories per day accounting for the age and the sex composition of household members.
- *High Food Energy Deficit (HFED)* rate identifies households with a more serious food deficit of at least 300 kilocalories per capita per day.

2) DIET *QUALITY* INDICATORS

- *High Staple Intake (HSI)* rate flags households in which staple foods account for more than 60% of daily calorie intake. These households are vulnerable to protein and micronutrient deficiencies.

3) ECONOMIC VULNERABILITY INDICATOR

- *High Food Expenses (HFE)* rate flags households spending more than 65% of their expenses on food – these households are considered economically vulnerable to food insecurity.

4) SEVERE FOOD INSECURITY INDICATOR

- The severity of food insecurity is measured by the *Poor Dietary Intake (PDI)* indicator that is a combination of the quantity indicator HFED and the quality indicator HSI, and is used to identify households lacking both in terms of quantity and quality of food consumed. In these households the food security situation is categorized as severe.

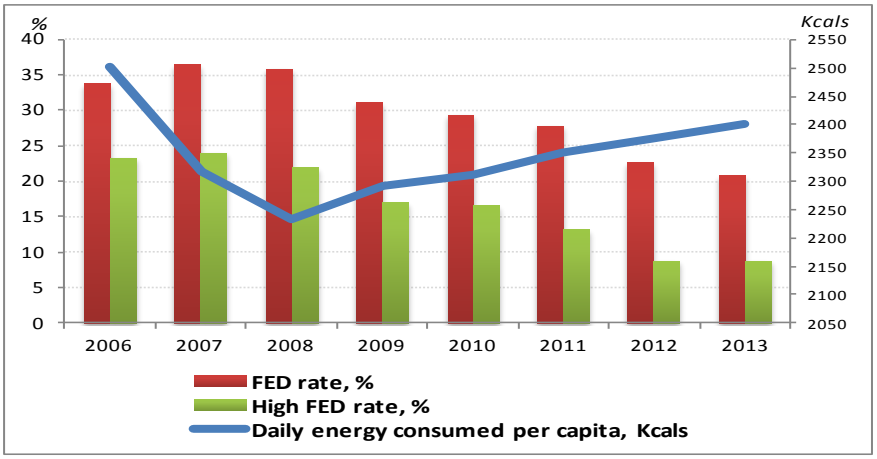
Note: The indicators are rooted in various methodological approaches and accepted concepts, while also considering the specifics of the Household Budget Survey and available data. The indicators for FED, HSI and HFE, are described in the IFPRI technical guide " *Measuring Food Security Using Household Expenditure Surveys*", while the HFED indicator is adapted from FAO's 'depth of hunger' indicator. The PDI indicator, which combines HFED (quantity) and HSI (quality) is a new indicator, used for this assessment alone. However, its construction follows the same logic as the WFP food consumption score indicator based on quantity and quality of foods consumed.

II.1 How many people are food insecure in Moldova?

29. **The proportion of people in Moldova consuming insufficient quantities of food energy every day is fairly large, despite the fact that the average level of per capita daily food energy consumption has consistently been above the norm for light physical activity**.[2] In 2013 as much as 21% of Moldova's population has been found to consume less food energy than the caloric need for light physical activity. Of these, approximately 9% of households have registered high food energy deficiency (*Figure 1*). These rates suggest that at present food deficits remain a significant problem in Moldova.

30. **However, as *Figure 1* shows, there has been a clear downward trend in food energy deficiency amongst Moldova's households in recent years.** From a peak of 36.5% in 2007, the FED rate has dropped to less than 21% in 2013. Similarly, the HFED rate has dropped from a peak of 24% in 2007 to less than 9%. Since 2008 the daily energy consumption has also started recovering, although it has not yet reached values from 2006 and earlier. There are two methodological caveats that need to be taken into account when reading the FED and HFED data. First, the energy deficiency indicators do not consider the *composition* of the types of food consumed, in other words, these indicators do not reveal the diet *quality*. Second, household surveys typically suffer from a recall bias, resulting in under-reporting of calorie consumption. This is most likely due to two factors: (i) calories from meals which are jointly consumed outside home and without payment are not captured; and (ii) the number of household members present at home for each meal is unknown.

Figure 1. Diet Quantity Deficiency Indicators (2006-2013)



Source: HBS. *Note*: While the agricultural output was rather similarly affected in the two drought years (2007 and 2012), there were important differences in the country's general economic context that likely contributed to the different food security outcomes illustrated in the Figure above: (i) the real GDP in Moldova increased significantly over this time span, (ii) the world food supply in 2012 was higher than in 2007 (when the global food crisis manifested and resulted in significant shortages), and (iii) Moldova's agri-food imports increased in 2012 relative to 2007. All these suggest that, in 2012, the country was much better positioned to cover its food needs via trade, despite its output being severely diminished, while an increase in the population incomes led to improved people's economic access to food.

[2] The report applies the recommended calorie intake requirements suggested by the expert consultation on human energy requirements convened by the United Nations University, the WHO and FAO. The recommended values can be found in the IFPRI technical guide *"Measuring Food Security Using Household Expenditure Surveys"*, pages 136-137.

31. **Compared to the World Health Organization (WHO) recommended nutrient intake levels, the diet composition of an average Moldovan comprises adequate proportions of carbohydrates and proteins, but somewhat excessive quantities of fats.** In 2013 the average nutrient intake in Moldova included 54% of carbohydrates, 35% of fats and 11% of proteins. This rates fall within the recommended WHO thresholds for carbohydrates and proteins, but exceed the recommended fat intake (*Table 1*).

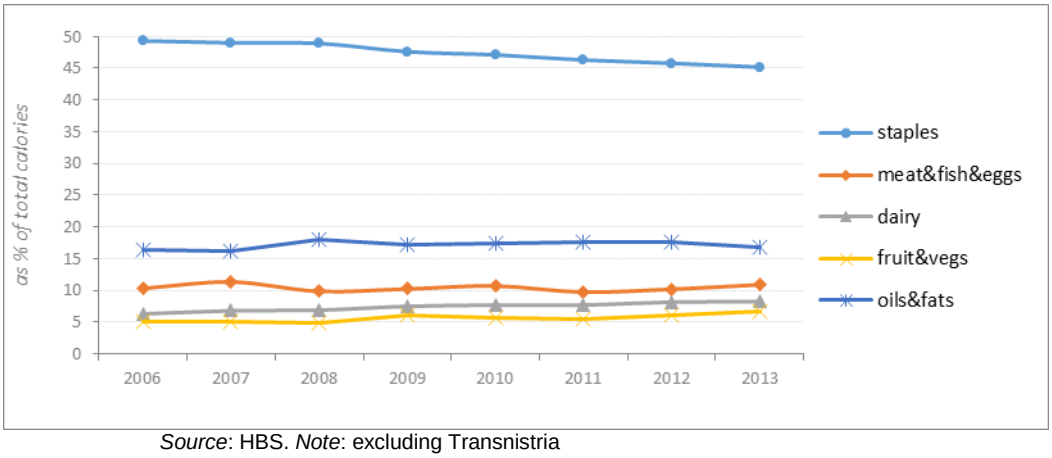
Table 1. Daily nutrient intake: Moldova vs. WHO recommended

	WHO recommended		Moldova (2013)	
	Nutrient intake goals, % of calories	*Recommended daily intake, calories*	*Actual nutrient intake, % of calories*	*Consumed daily calories*
Carbohydrates	55-75	1155-1575	54	1312.5
Fats	15-30	315-630	35	833.1
Proteins	10-15	210-315	11	266.4

Source: WHO, HBS.

32. **Overall, the average diet does not appear to have undergone significant changes since 2006.** In terms of diet composition, Moldova's households have gradually reduced their consumption of staple foods, maintained the level of consumption of meat and fish products, while gradually increasing the consumption of dairy products, fruit and vegetables and fats and oils (*Figure 2*).

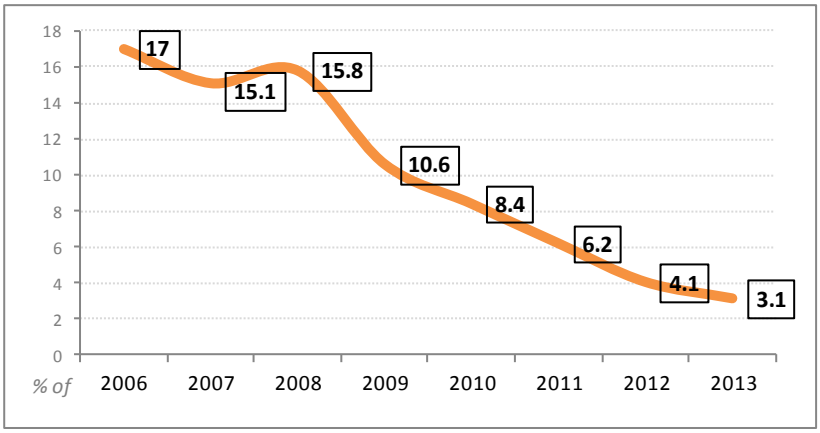
Figure 2. Average consumption of various food groups (2006-2013, % of calories)



Source: HBS. *Note*: excluding Transnistria

33. **The reduction in consumption of staple foods, bread in particular, has been most visible, yet still small in scope.** In 2013, around 45% of the calories consumed by an average Moldovan household came from staple foods, down from 49% in 2006. According to the Food and Agriculture Organization (FAO), the percentage of food energy derived from staples averages around 70% in low-income developing countries and 30% in industrialized developed countries. The proportion of households in Moldova registering a high staple intake, i.e. getting more than 60% of their calories from staples, has been rapidly declining over recent years, falling from 17% in 2006 to just above 3% in 2013 (*Figure 3*).

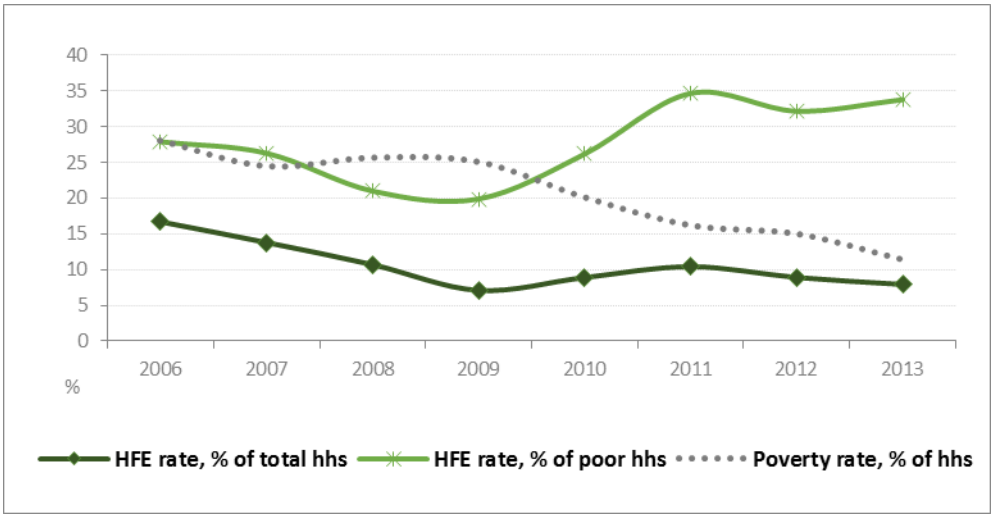
Figure 3. High Staple Intake indicator (2006-2013, % of households)



Source: HBS. *Note*: excluding Transnistria

34. **Economic vulnerability to food insecurity has decreased among the general population, but increased notably for those living below the poverty line**. In 2013, 8% of Moldovan households could be classified as having high food expenses (HFE), thus being vulnerable to food insecurity. This reflects a steady downward trend since 2006, when the HFE prevalence was 17%. However, for households living below the poverty line, the HFE indicator shows much higher values and more volatility. Between 2006 and 2013, the prevalence of HFE among poor households has ranged from 20% in 2009 (lowest rate) to 35% in 2011 (highest). With 34% it remains high in 2013 (*Figure 4*).

Figure 4. Economic vulnerability indicators (2006-2013)



Source: HBS. *Note*: excluding Transnistria

35. **One in every eight households in Moldova was experiencing at least one form of chronic food insecurity in 2013.** This means that 12.5% of households have experienced the same form of food insecurity *at least twice* within the past three years. The most common form of chronic food insecurity was *chronic high food expenses*, experienced by 6.3% of households and as much as 24.3% poor households. Two other forms of chronic food insecurity – *chronic high food energy deficiency* and *chronic high staples intake* – were also registered, but at lower levels, affecting 4.4% and 1.8% of

households respectively (*Table 2*). No households were found to experience more than one form of chronic food insecurity.

Table 2. Chronic Food Insecurity Indicators (2011-2013)

2011-2013	All households	Poor households*
Chronic High Food Energy Deficiency	4.4%	6.1%
Chronic High Staples Intake	1.8%	5.2%
Chronic High Food Expenses	6.3%	24.3%

Source: HBS.
Note: 'chronic' implies that food insecurity occurred twice over the last three years.
*poor means below poverty line in 2013

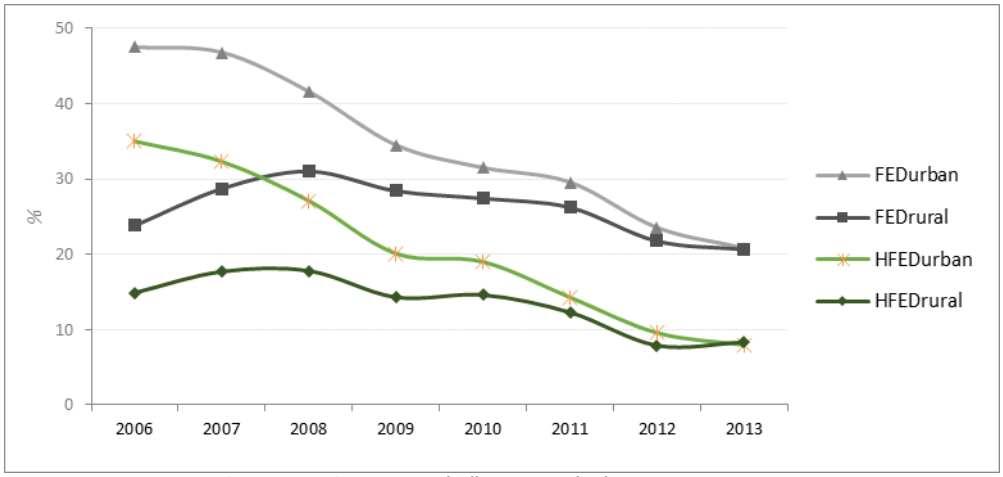
36. **Only 0.4% of households were experiencing serious dietary constraints both in terms of food *quantity* and *quality* dimensions in 2013, resulting in severe food insecurity.** The number of households registering a *poor dietary intake* has been steadily decreasing over the recent years from 4.5% in 2006 to below 1% in each year since 2011.

II.2 WHERE DO THE FOOD INSECURE LIVE?

37. **In recent years the prevalence of food energy deficient (FED) households has declined rapidly in urban areas, and, by 2013, prevalence among urban and rural households was on par**. Looking at both rural and urban populations, around 21% of households were FED in 2013, and 8% were experiencing high food energy deficiency (HFED).However, the overall data hides important differences among urban and rural households (*Figure 5*). In fact, among urban households, the change between 2006 and 2013 has been significant: the FED rate dropped from around 48% to less than 21%, and the HFED rate dropped from 35% to 8%. Rural households have registered much smaller improvements: the FED rate dropped from around 24% to around 21% during the same period, and the HFED rate from 15% to around 8%.

38. **Geographically, FED–related problems are more pronounced in urban areas in Central and Southern Moldova.** HFED rates there reached 14% and 11% in 2013, respectively. Relatively lower numbers of food energy deficient households have been registered in the Northern areas of Moldova: HFED rate of 5.1% in urban areas and 6.5% in rural areas.

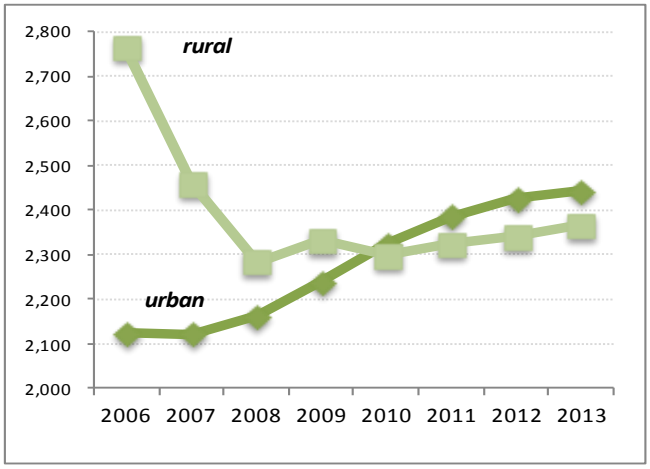
Figure 5. Food Energy Deficiency Indicators: urban and rural households (2006-2013)



Source: HBS. *Note*: excluding Transnistria

39. **The recent external shocks (drought, floods and rising food prices) have impacted the food security situation of urban and rural residents differently.** Somewhat surprisingly, urban residents have notably increased their food energy intake, while rural residents suffered initially a turn for the worse, but have by now largely recovered. In 2010 the average urban food energy intake surpassed the rural food intake for the first time. This marked an important shift, as rural residents previously always had higher consumption levels than urban residents, albeit the difference had been steadily diminishing (*Figure 6*).

Figure 6. Daily caloric intake per capita: urban and rural residents (2006-2013)



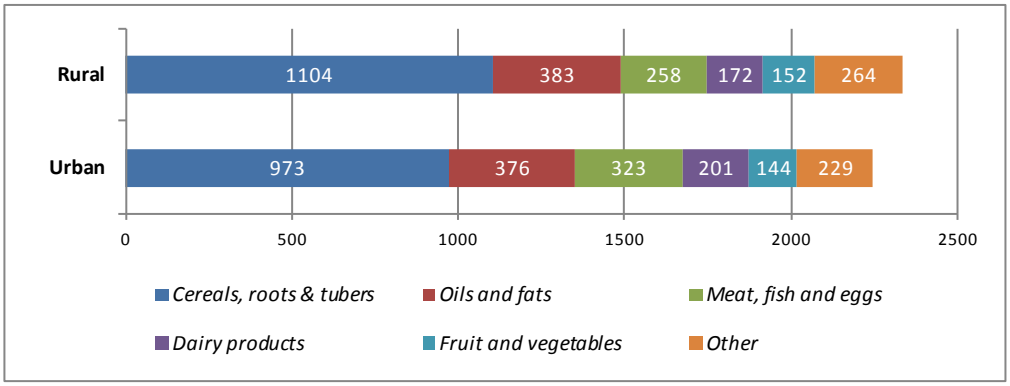
Source: HBS. *Note*: excluding Transnistria

40. **By 2013, the daily per capita intake of residents living in urban households was 2,445 calories compared to 2,365 calories in rural households.** A combination of factors can explain the shift. The rural households have been particularly affected by the catastrophic drought in 2007, followed by country-wide floods and rising food prices in 2008. Further, at the individual level naturally there is a drop in the aggregate consumption of calories for those involved in agriculture work.

41. **Urban residents have a better quality diet compared to rural residents**. The diet composition of urban households contains less staple foods, but more meat, fish and eggs, as well as more dairy

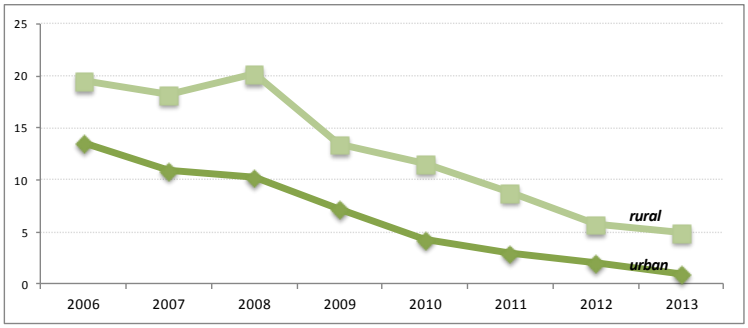
products (*Figure 7*).[3] Also, the share of urban residents consuming too much staples (i.e. more than 60% of their energy intake) is relatively small (1.0% in 2013), especially if compared with that of the rural residents (4.9% in 2013). Most importantly, the high staple intake rate has been falling steadily among both population groups since 2006 (*Figure 8*).

Figure 7. Urban and rural diet composition by main food groups (2013)



Source: HBS. *Note*: excluding Transnistria

Figure 8. High Staple Intake rate (2006-2013, as % of households)



Source: HBS. *Note*: excluding Transnistria

42. **Chronic food insecurity affects urban and rural households differently.** In urban areas there are more food *quantity* issues of chronic nature, while in rural areas chronic insecurity is mostly related to food *quality*. Chronic economic vulnerability is also higher in rural areas. Not surprisingly, the incidence of all forms of chronic food insecurity is generally considerably higher among poor households in both groups (*Table 3*).

Table 3. Chronic food insecurity: urban and rural households (2011-2013)

	All households		Poor households*	
2011-2013	***Urban***	***Rural***	***Urban***	***Rural***

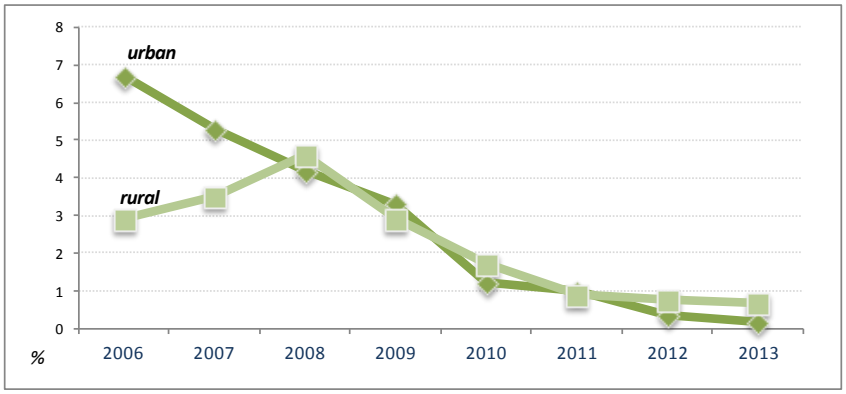
[3] The data do not include calories from meals consumed outside home.

Chronic High Food Energy Deficiency (HFED)	5.5%	3.6%	16.0%	3.3%
Chronic High Staples Intake (HSI)	0.7%	2.6%	0.0%	6.7%
Chronic High Food Expenses (HFE)	2.4%	9.2%	16.0%	26.7%

Source: HBS.
Note: (1) 'chronic' implies that food insecurity occurred twice over the last three years; (2) excluding Transnistria
*poor means below poverty line in 2013

43. **In recent years, the prevalence of severely food insecure households has fallen to very low levels, among both urban and rural populations (*Figure 9*).** For urban households, the prevalence of severely food insecure households had fallen steadily from 6.7% in 2006 to 0.2% in 2013. Over the same period, prevalence of severely insecure rural households had decreased from 2.9% to 0.7%.

Figure 9. Severe food insecurity: urban and rural households (2006-2013)

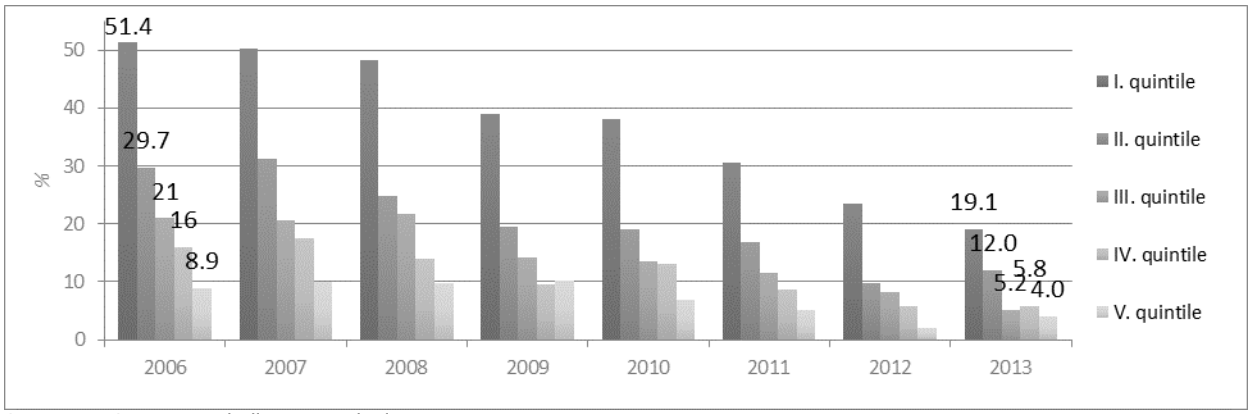


Source: HBS. *Note*: excluding Transnistria

II.3 WHO ARE THE FOOD INSECURE?

44. **Unsurprisingly, the poorest households are most likely to be most food insecure**. In 2013 as much as 44% of households in this group were suffering from food energy deficiency, i.e. consumed less energy than the minimum requirement, and 19% were suffering more serious food deficits, falling into the high food energy deficiency category (*Figure 10*). However, current FED and HFED rates still represent a considerable improvement from previous years. In fact, the situation for households in the lowest expenditure quintile has improved significantly since 2006: with the share of those registering HFED decreasing from 51% to 19%.

Figure 10. HFED rate by expenditure quintile (2006-2013, % of households)

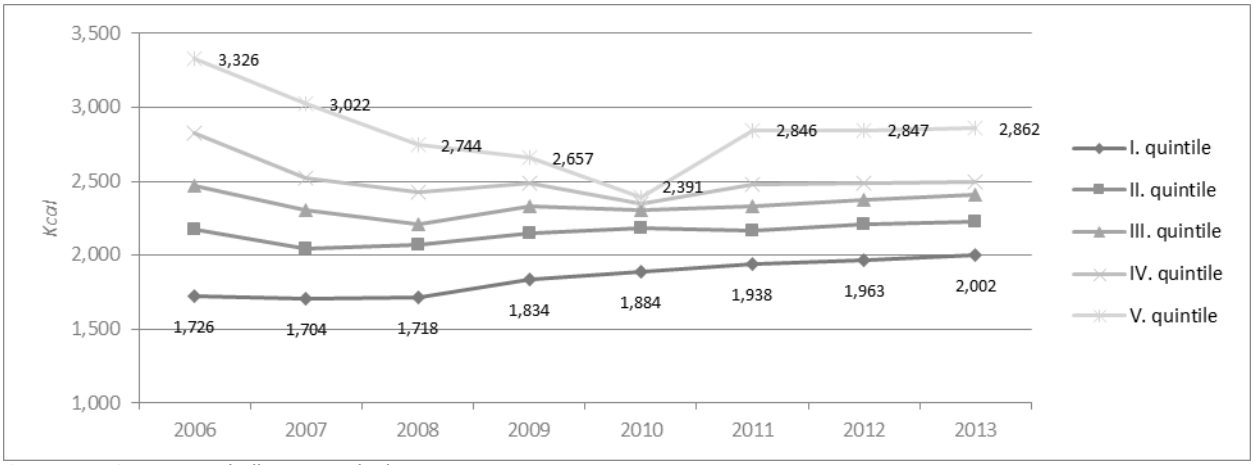


Source: HBS. *Note*: excluding Transnistria

45. **The poorest households also face the most difficulties composing a healthy diet.** A relatively large proportion (9%) of households in the lowest quintile registered a high staple intake (HSI) in 2013, especially as opposed to all households on average (3%). However, the current HSI rate is considerably lower than the rate registered in 2006 (33%). Indeed, all indicators for poorest population quintile show marked improvements between 2006 and 2013.

46. **Since 2006 the situation of the poorest households has improved considerably in terms of daily caloric intake.** While the difference between the average daily intake of the richest 20% of the population (V. quintile) and the poorest 20% (I. quintile) remains significant (more than 800 Kcal), the intake of the poorest households has improved over the recent years, increasing from 1,726 Kcal in 2006 to 2,002 Kcal in 2013 (*Figure 11*). A modest improvement has been registered also among the less poor households in the II. quintile, while the middle (III.) quintile's consumption remains largely the same as it was in 2006. On the other hand, the daily caloric intake of the top 40% (IV. and V. quintile) has dropped considerably during the observed period, in the case of the richest 20% by almost 500 Kcal.

Figure 11. Caloric intake by expenditure quintile (2006-2013)

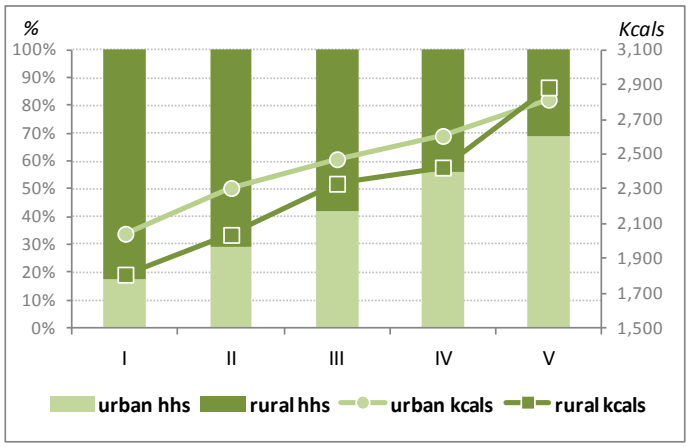


Source: HBS. *Note*: excluding Transnistria

47. **As *Figure 12* shows, a disproportionate proportion of Moldova's poor households is located in rural areas.** This is reflected by the caloric intake patterns: intake among rural households was on

average 200 calories lower than in urban households in all expenditure quintiles in 2013, with the only reverse relationship registered in the highest (V.) quintile.

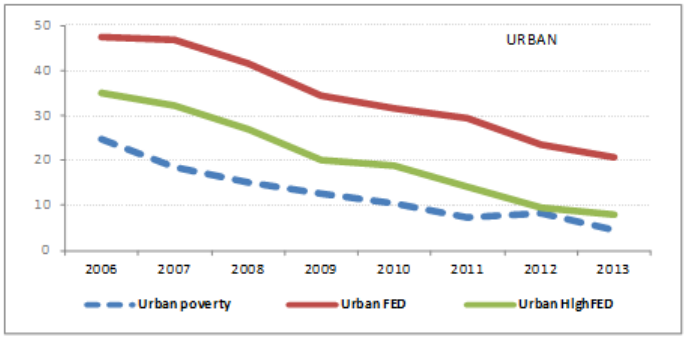
Figure 12. Caloric intake by population expenditure quintiles, urban and rural households (2013)



Source: HBS. *Note*: excluding Transnistria

48. **Despite a relatively low poverty rate among urban households in recent years, the food energy deficiency rates were normally disproportionately large.** As *Figure 13* shows, this relationship has most recently changed. The prevalence of HFED among urban households had dropped to levels registered by rural households (around 21% for both in 2013). During the same period the FED rate and the poverty rate have converged, both registering values lower than 10% in 2013.

Figure 13. Poverty rate and Food Energy Deficiency rates in *urban* areas (2006-2013)

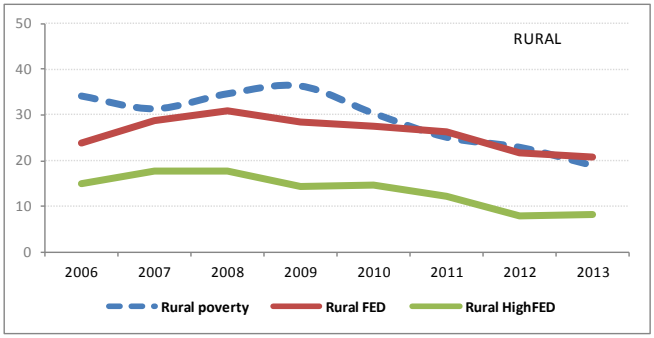


Source: HBS. *Note*: excluding Transnistria

49. **While improvements in energy intake levels in urban areas have been visible and steady, the rural picture is less positive.** The correlation between poverty rates and food deficiency rates in urban areas appears strong, i.e. diminishing urban poverty is accompanied by lower FED values. In fact, urban poverty rate had fallen from 25% to 5% between 2006 and 2013 and the FED rate from 48% to 21%. In rural areas, on the other hand, poverty rate and FED prevalence do not move as closely in the same

direction: while poverty rate among the rural population had fallen from 34% to 18% between 2006 and 2013, the rural FED rate had only diminished from 24% to only 21%.[4]

Figure 14. Poverty rate and Food Energy Deficiency rates in *rural* areas (2006-2013)

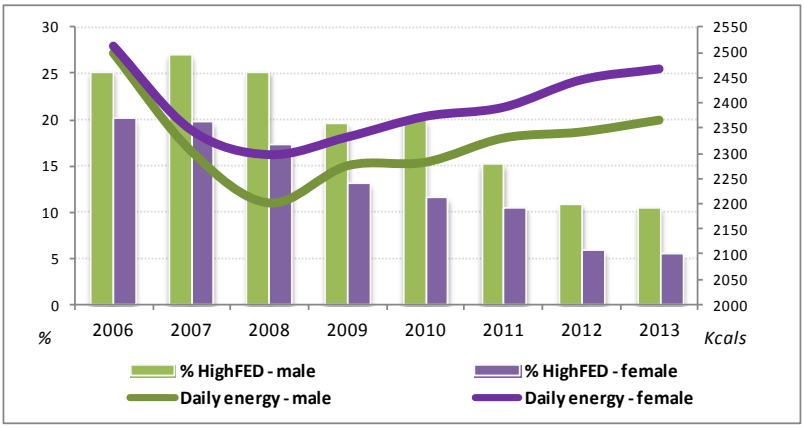


Source: HBS. *Note*: excluding Transnistria

50. **With the significant drop in FED and HFED rates among the urban population, food deficiency indicators among urban and rural households have converged.** As noted earlier, the rural population has traditionally suffered less food insecurity, but since 2013 this does not seem to be the case any longer. FED and HFED rates among rural and urban households are now at comparable levels.

51. **Female-headed households are less likely to be food insecure than male-headed households, and seem better at ensuring food supplies for the family in times of crisis.** The amount of daily calories consumed per capita in households headed by a female is consistently higher than in those headed by a male, while the proportion of female-headed households encountering food energy deficiencies is significantly lower and declining faster (*Figure 15*). Male and female daily energy consumption curves also clearly show that female-headed households registered higher values during the difficult years, such as 2007 and 2008. Severe food insecurity is again more characteristic for male-headed households.

Figure 15. Diet Quantity Indicators by female and male-headed households (2006-2013)

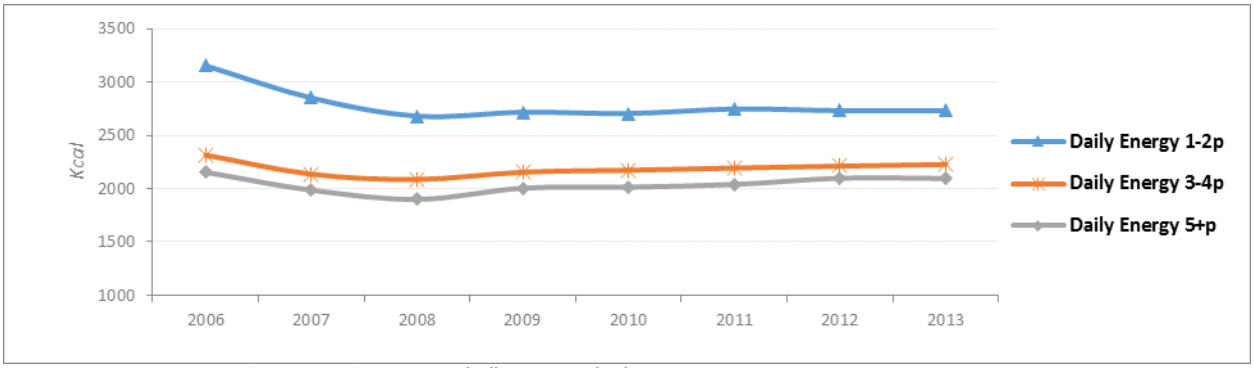


Source: HBS. *Note*: excluding Transnistria

[4] A primary reason for this discrepancy is how households source their food supplies, something the report addresses in *Part III*.

52. **The prevalence of food insecurity increases with household size.** There is a striking gap between the food security status of small households (1-2 members) and that of larger households (3+ members). While all households on average consume sufficient amounts of daily energy, the calorie gap between the small-sized households and others is large, amounting to approximately 500 kilocalories per day, per capita in 2013 (*Figure 16*).

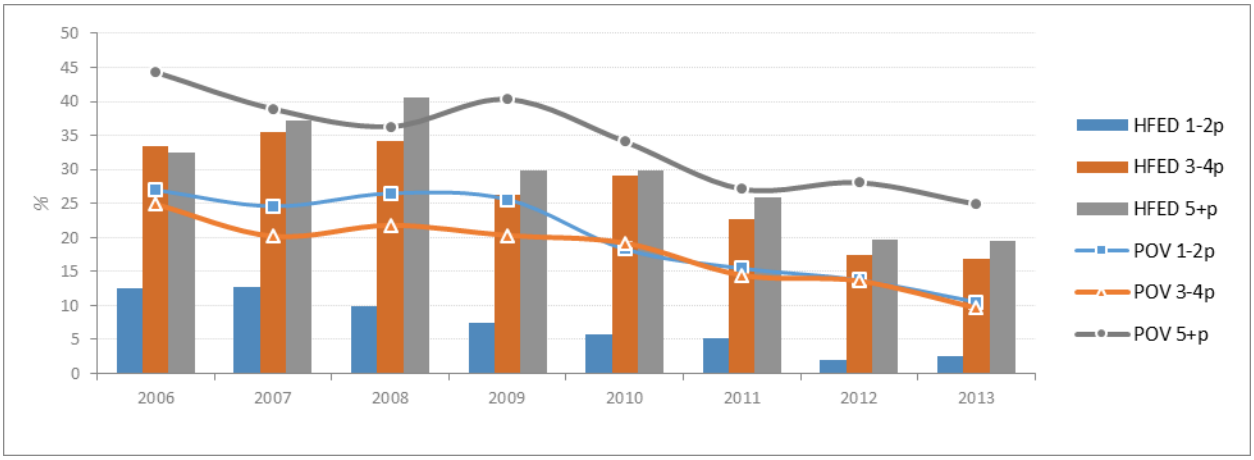
Figure 16. Daily energy consumption per capita by household size (2006-2013)



Source: HBS. *Note*: excluding Transnistria

53. **Not surprisingly, the picture changes little in terms of food deficiency indicators: there is a wide gap between small and larger households.** What is surprising though is that the proportion of households in the middle-sized household group with a HFED is exceptionally high, and in fact quite similar to that of the largest (and worst off) households. Such high level of HFED among middle-size households is surprising considering the great difference in poverty levels among the middle-sized and large-size households: in 2013, 25% of large households were below the poverty line, while only 10% of medium-sized households were in the same situation. For small households the food situation is much better than one would expect if only looking at the poverty rate: 2.5% of households in this group are suffering from HFED, while more than 10% live below poverty line (*Figure 17*).

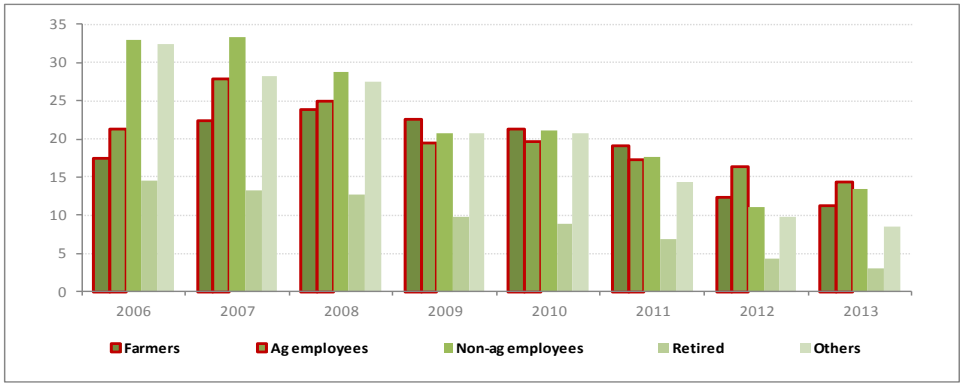
Figure 17. High Food Energy Deficit rate and poverty rate by household size (2006-2013)



Source: HBS. *Note*: excluding Transnistria

54. **Of all socio-economic groups it is those identifying as 'employees' (either agriculture-based or not) who showed the poorest food energy intake**. Even though the average per capita amount of daily calories consumed by each socio-economic group is above the requirement, many households within most groups consume insufficient calories (*Figure 18*). All groups have shown visible improvements in their HFED rates over time, but progress has been slowest for farmers and other agriculture-based employees.

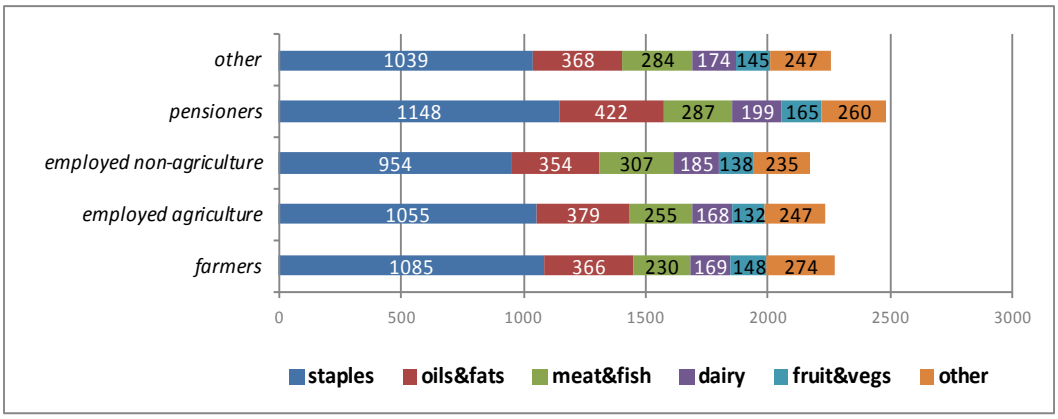
Figure 18. High Food Energy Deficit rate by socio-economic groups (2006-2013)



Source: HBS. *Note*: excluding Transnistria

55. **Households headed by pensioners or non-agriculture employees have a better diet composition compared to that of other socio-economic groups.** Their diet includes larger amounts of meat, fish and dairy products, and a smaller share of staples and fats (*Figure 19*). The diet quality of agricultural-based households has been improving over recent years along with enhanced economic access.[5] This has, however, not led to considerably lower levels of food energy deficiency though, as has been the case for other socio-economic groups, such as the non-agricultural employees and pensioners.

Figure 19. Diet composition of different socio-economic groups of households (2013)

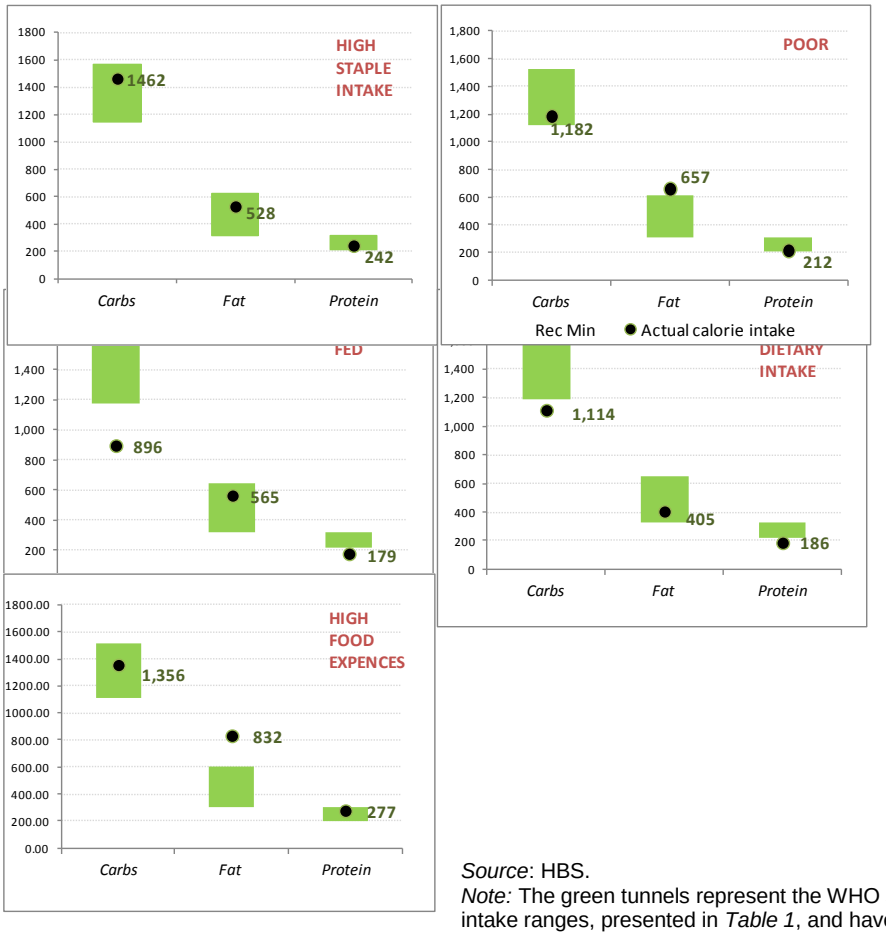


Source: HBS. *Note*: excluding Transnistria

56. **Among the different food insecure household categories, the HFED households (9% of all households in 2013) exhibit the most alarming food insecurity characteristics (*Figure 20*).** The *High*

Food Expenses and the *High Staple Intake* groups are encountering less difficulties and households in these two groups consume, on average, more than enough daily calories. Interestingly, the *High Food Expenses* group even consumes levels of fat that are higher than those recommended. The diet of those households living below the poverty line (11% of households) shows a small average daily calorie deficit, which is composed by a somewhat borderline sufficient quantity of carbohydrates and protein and a rather excessive amount of calories derived from fat.

Figure 20. Diet composition of different food insecure groups by *nutrients* (2013)

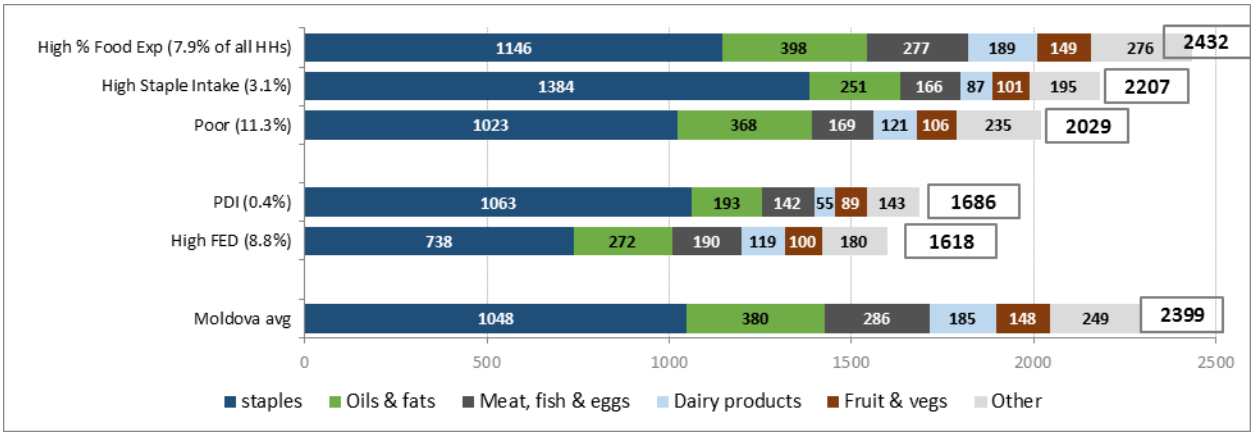


Source: HBS.
Note: The green tunnels represent the WHO suggested nutrient intake ranges, presented in *Table 1*, and have been applied to the daily recommended calorie intake for an average person.

57. **The *HFED* group of households proves much more problematic, both in terms of quantity and quality of the food consumed.** Data compiled in *Figure 21* show that HFED households suffer an alarmingly high deficit of over 400 calories daily and, on average, should be consuming around 300 calories more of carbohydrates and around 40 calories more of protein each day.[6] The *Poor Dietary Intake* sub-group of the HFED group that includes the severely food insecure households represents a tiny proportion (0.4% of households), but shows the worst diet outcomes with a very high share of their calories consumed coming from staples.

[5] Improved economic access is associated with declining share of households with high levels of food expenses.
[6] Actual consumed by this group – 1,618 calories versus the 2,123 calories recommended for this particular group.

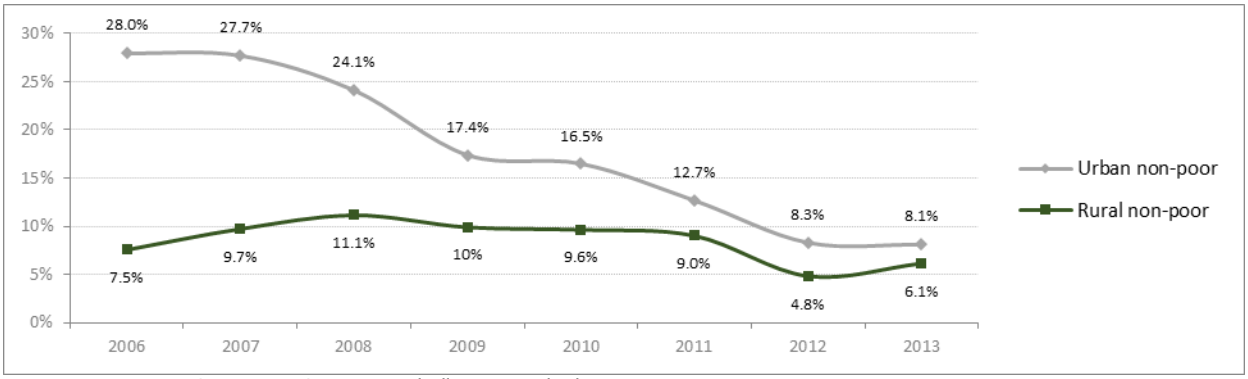
Figure 21. Diet composition of various food insecure groups by food groups (2013, in kcal)



Source: HBS. *Note*: excluding Transnistria

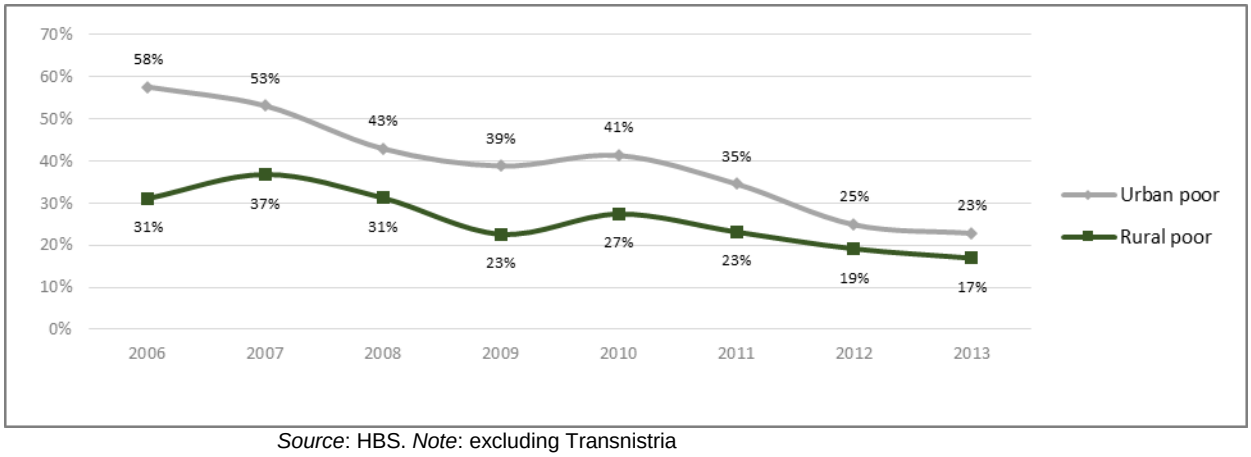
58. **The prevalence of non-poor households falling into the HFED group remains higher in urban areas than in rural areas, but the gap has diminished in recent years due to the rapid improvements in urban food security**. 8.1% of urban non-poor households belonged to the HFED group in 2013, while the respective rate among rural households reached 6.1% (*Figure 22*). In 2006 28% of non-poor urban households were facing HFED, compared to 7.5% of rural households. The significant reduction of HFED among non-poor urban households has resulted in a convergence that likely reflects a lowering of the relative urban living costs – something that had previously negatively affected the ability of many non-poor urban households to consume sufficient amounts of calories. As *Figure 23* shows, the rates for poor households, both urban and rural, show a similar trend, yet remain much higher.

Figure 22. Proportion of HFED households among *non-poor* urban and rural households (2006-2013)



Source: HBS. *Note*: excluding Transnistria

Figure 23. HFED rate among *poor* urban and rural households (2006-2013)



Source: HBS. *Note*: excluding Transnistria

59. **In terms of poorest food security outcomes, a number of common household characteristics are prevalent**. In 2013, the most food insecure households were likely to: (i) belong to the lowest expenditure quintiles; (ii) contain more than four household members; (iii) be headed by males who work as employees in the agricultural sector; and (iv) be situated outside Chisinau.

II.4 WHEN IS FOOD INSECURITY HIGHEST?

60. **The cyclic fluctuations in households' food security generally follow the normal seasonal pattern, i.e. food insecurity problems intensify during off-season (Q1 and Q2) and then loosen up over the harvest season (Q3and Q4**).[7] In normal years, households thus face greatest food insecurity challenges during Q1 and Q2, with Q3 then providing the time of lowest risks, while difficulties increase again during Q4. However, this pattern is regularly interrupted by various destabilizing factors – of either climate-related or economic nature - that occur in some years; and these deviations affect the urban and rural populations differently. For example (marked on *Figure 24*), when a severe drought occurred in Moldova in 2007, the number of rural HFED households has gone up during the post-harvest months (Q3 and Q4): this was due to a bad harvest for most of the crops and thus a reduced availability of own food supplies. Interestingly, the urban population that relies primarily on food purchases did not experience a similar distress. Another example was 2008 when the HFED rate went up again in Q3 quarter, triggered by economic factors, such as depressed incomes combined with rising food prices, but affected the rural and urban residents alike. Since then the regular pattern has been largely reinstated.[8]

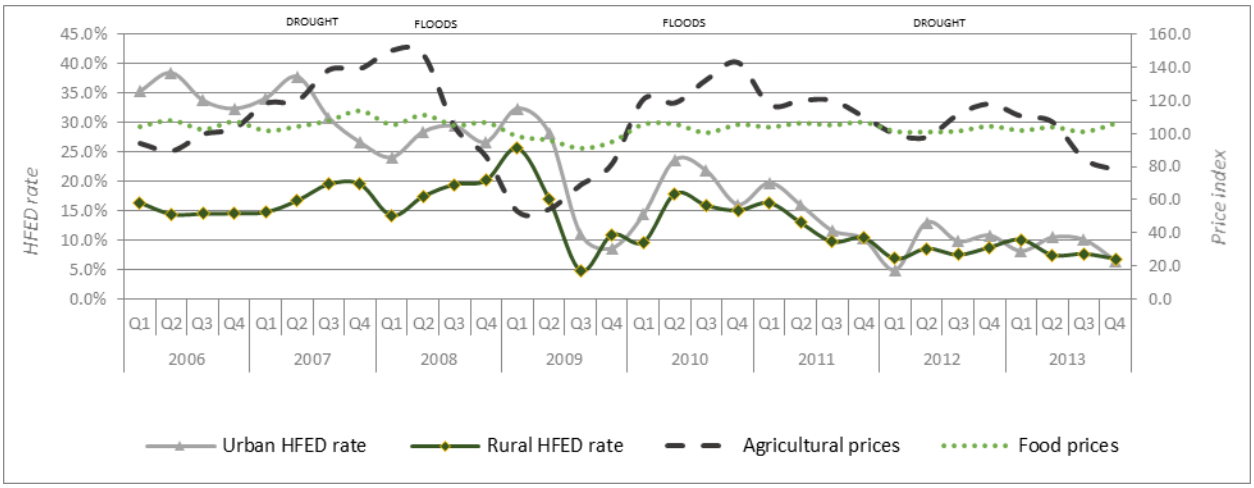
61. **Agricultural price movements appear to have a strong impact on rural diets: as agricultural prices - a key component of rural incomes - go down, the rural food deficiency rates tend to go up**. *Figure 24* shows this correlation: as agricultural prices began to fall in Q2of 2008 the proportion of rural HFED households started increasing and reached the peak high level in the Q1 of 2009, which is exactly

[7] The report uses the standard quarters: (Q1) January, February and March; (Q2) April, May and June; (Q3) July, August and September; and (Q4) October, November and December.

[8] It is worth noting that the convergence of HFED rates among urban and rural households tends to hold throughout the course of each year. Most intense divergence occurs in Q2.

the timing when agricultural prices reached their lowest point. The subsequent 2009-2013 upward price movement led to significant reductions of rural HFED rates in that period.

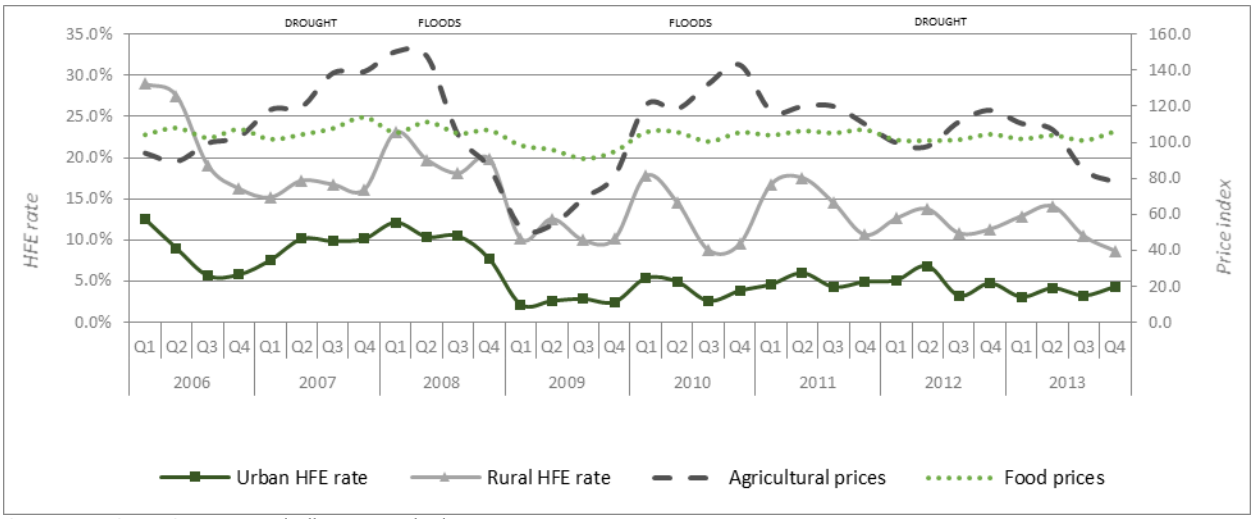
Figure 24. Quarterly fluctuations of HFED rates and price indexes (2006-2013)



Source: HBS, NBS. *Note*: excluding Transnistria

62. **Both urban and rural households are sensitive to seasonal food price fluctuations, but improved economic access to food during the harvest season (Q3) is particularly pronounced in rural areas (*Figure 25*).** While occasional adverse climate events alter the established pattern somewhat, the eased economic access to food in Q3 - when the availability of food is abundant - is particularly visible among rural residents, largely due to consumption of self-produced foods. For urban residents, food prices remain the most important factor.

Figure 25. Quarterly fluctuations of HFE rates and price indexes (2006-2013)



Source: HBS, NBS. *Note*: excluding Transnistria

II.5 CONCLUSIONS

63. **The latest Household Budget Survey (HBS) shows that the food energy requirements of Moldova's residents are largely being met and that food security has overall increased in during the recent years.** The individual average daily energy consumption was around 2,400 Kcal, well above the World Health Organization's recommended benchmark of 2050 Kcal. The proportion of households registering a food energy deficiency has dropped from a recent peak of 36.5% in 2007, to less than 21% in 2013. Similarly, the proportion of households registering a *high* food energy deficiency (deficit larger than 300 Kcal) has decreased from a peak of 24% in 2007 to less than 9% in 2013. The rate of households suffering any form of *chronic* deficiency has decreased significantly and only a very limited proportion of households (0.4%) suffered *severe* food insecurity in 2013.

64. **The diet composition has largely remained unchanged over the recent years: the average household continues to consume adequate proportions of carbohydrates (54%) and proteins (11%), but somewhat excessive quantities of fats (35%).**Moldova's households have gradually reduced their consumption of staple foods, maintained the level of consumption of meat and fish products, while gradually increasing the consumption of dairy products, fruit and vegetables and fats and oils. The high staple intake rate (indicating the proportion of households consuming 60% or more of their daily calories from staples), has been rapidly declining over recent years, falling from 17% in 2006 to just above 3% in 2013.

65. **However, progress has been uneven and considerable differences in recent trends can be noted for urban and rural areas.** In fact, the rate of food energy deficient households in urban areas had decreased from 48% to 21% between 2006 and 2013, while rural areas have registered a much more modest improvement, with the proportion dropping from 24% to 21% during the same period. Similarly, the decrease in the prevalence of *high* food energy deficiency among urban households (from 35% to 8%) was larger than among rural ones (from 15% to 8%). This divergence in trends has also led to a change in the historical pattern of daily caloric intake: since 2010 urban households consume more calories on average than rural households (2,445 Kcal vs. 2,365 Kcal in 2013).

66. **There are two main drivers behind the shift: (i) faster income growth in urban areas; and (ii) recent weather-related adverse events.** While Moldova's economy overall registered a cumulative growth of 58% between 2000 and 2012, agriculture only grew by 28% during the same period. This has resulted in faster income growth among the non-agriculture-related salaried workers, while farmers and agricultural workers benefited less. In addition, severe droughts (2003, 2007 and 2012) and floods (2008 and 2010) have had a devastating effect on agricultural production and revealed higher food security vulnerabilities in rural areas. In fact, due to their significant dependence on self-consumption, any distress in production can result in food shortages among rural households. Coupled with the related income loss, this limits rural residents' capacity to manage risks and sustain shocks.

67. **Not surprisingly, food insecurity is highest among the poorer households, both in urban and rural areas.** Despite overall improvements the proportion of poor households that suffer from food energy deficiency remains high: 44% of poor households consumed less energy than the minimum

requirement in 2013, and 19% were suffering from *high* food energy deficiency. In addition, while economic vulnerability to food insecurity has decreased among the general population, it increased notably for those living below the poverty line: the proportion of poor households with high food expenses (more than 60% of total expenditure) had increased from 20% in 2009 to 34% in 2013.

68. **In addition, the HBS shows that: (i) male-headed households are more likely to be food insecure than the female-headed households; and (ii) the prevalence of food insecurity increases with the household size.** The amount of daily calories consumed per capita in households headed by a female is consistently higher than in those headed by a male, while the proportion of female-headed households encountering food energy deficiencies is significantly lower and declining faster. In terms of household size, there is a striking calorie consumption gap of 500 Kcal per capita per day between the small households (1-2 members) and that of larger households (3+ members). Somewhat surprising, there is little difference in *high* food energy deficiency rates between households with 3-4 members (17%) and those with more than 5 members (19.5%), despite the fact that poverty is much more prevalent among large households.

III. ANALYSIS OF FOOD SECURITY DIMENSIONS

69. **This chapter explores the four dimensions of food security (availability, access, utilization and stability) in an attempt to explain the underlying causes of Moldova's food insecurity.** The aim is to answer the question *why* some people are food insecure and/or vulnerable to food insecurity in Moldova.

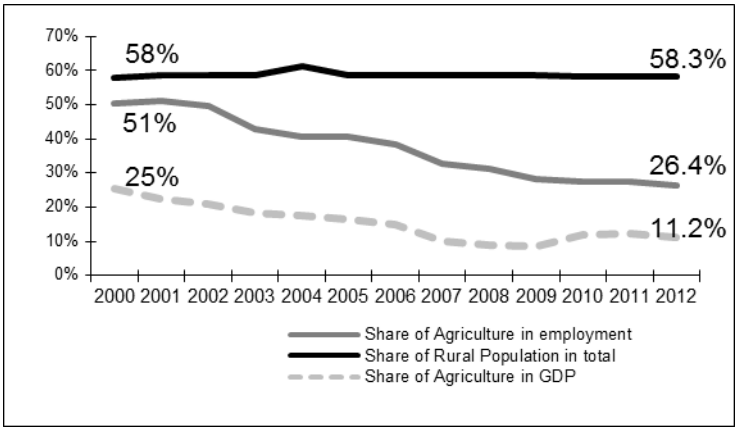
III.1 FOOD AVAILABILITY

Food availability refers to the supply side of the food economy. It is the amount of food that is physically present in a country through all forms of domestic production, private and public stocks, and commercial imports.

DOMESTIC PRODUCTION

70. **After services and industry, agriculture is the third largest sector of Moldova's economy**. While the share of agriculture in both gross domestic product (GDP) and employment has been in decline over the last decade, the sector's contribution to the economy in 2012 was still sizable, accounting for around 11% of GDP and providing employment to over 26% of labor force (*Figure 26*). In rural areas, farming remains the prevailing activity and the important role of agriculture is further amplified by a large agri-processing industry that accounts for about half of Moldova's industrial output and accounts for around 40-50% of Moldova's total exports.

Figure 26. Agriculture's contribution to the economy (2000-2012)

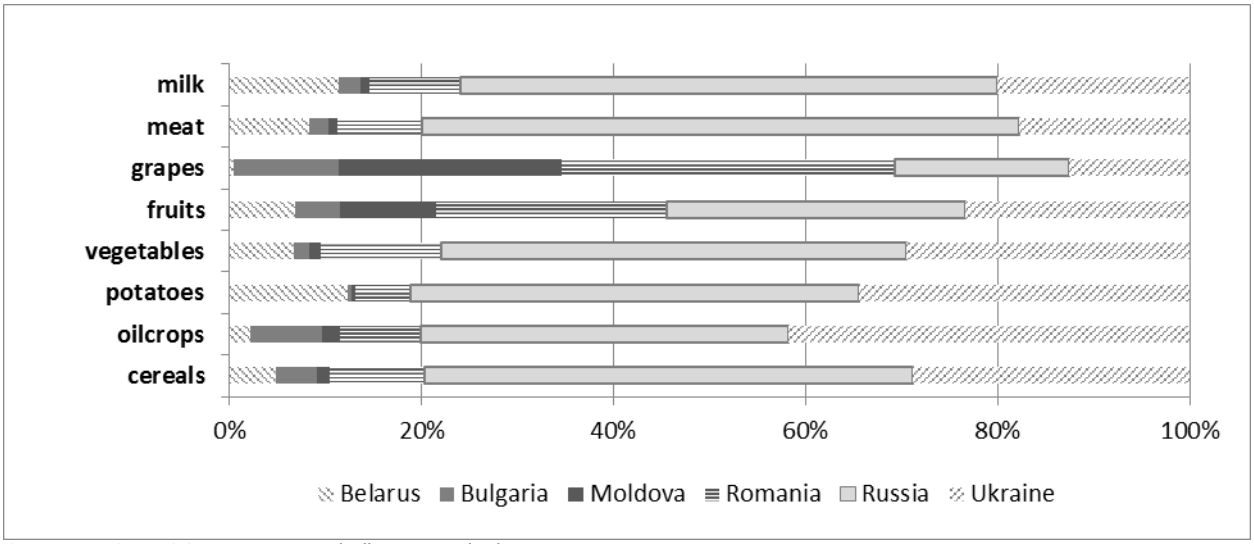


Source: NBS. *Note*: excluding Transnistria

71. **Surrounded by large agricultural producers and exporters, Moldova - despite its small size - is an important producer of agricultural products**. This is hardly visible from the absolute production volumes: Moldova is a comparatively small regional producer in most agricultural sub-sectors with the exception of grapes - where Moldova accounts for as much as 23% of selected countries' production - and fruits where it holds a 10% share (*Figure 27*). However, the picture changes substantially when

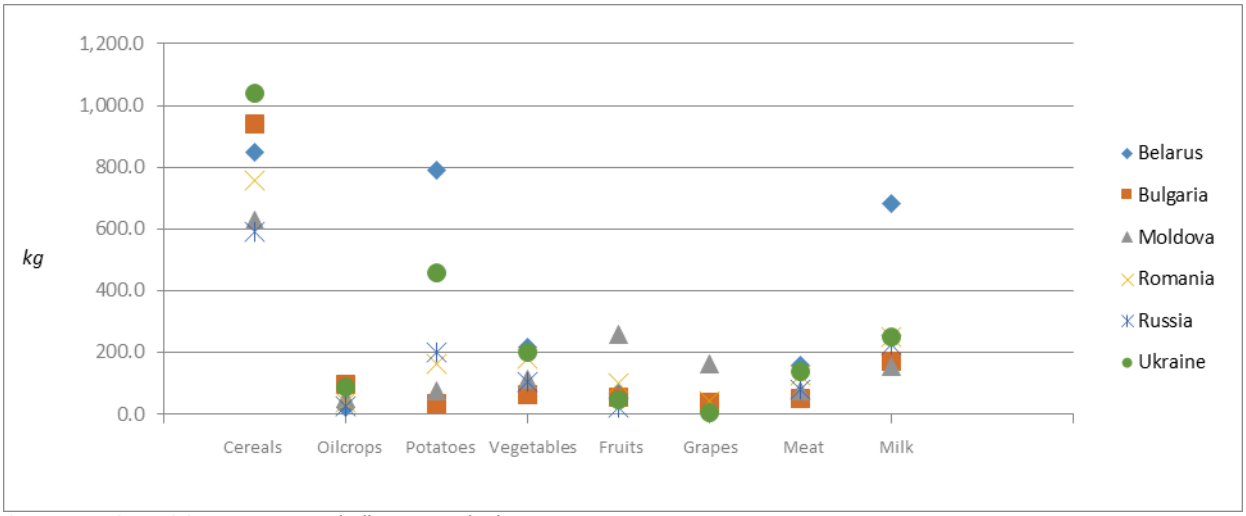
production *per capita* is taken into account (*Figure 28*). Again, Moldova excels in the production of fruits and grapes, where it tops production *per capita*. This reflects Moldova's specialization in the production of wine and both fresh and processed fruits. In fact, wine and fresh fruit are also the two top export categories, accounting for about 40% of Moldova's total agri-food exports.

Figure 27. Agricultural production of selected crops: Moldova and selected countries (as % of total, 2008-2012 annual average)



Source: NBS, FAOSTAT. *Note*: excluding Transnistria

Figure 28. *Per capita* production of selected crops: Moldova and selected countries (2008-2012 annual average)

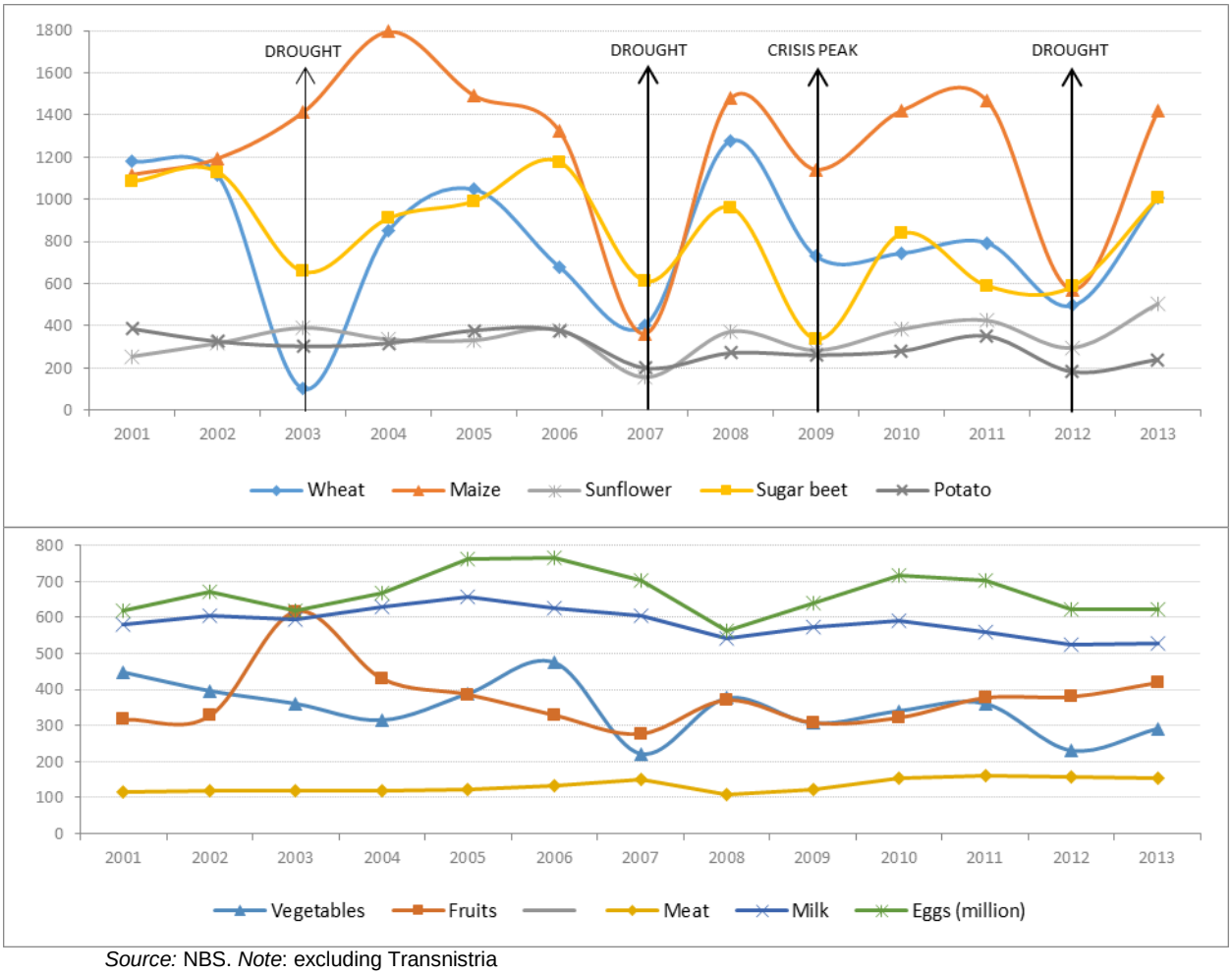


Source: NBS, FAOSTAT. *Note*: excluding Transnistria

72. **Yet, sector output is subject to great volatility, especially driven by adverse climate events.** *Figure 29* illustrates production volumes between 2001 and 2013 and shows that the severe droughts of 2003, 2007 and 2012not only devastated the crop sector, but also had a negative effect (with a lag) on

the livestock sector.[9] The dramatic reduction of grains during the drought year consequently led to reduced livestock output over the subsequent year, due to slaughtering of animals/poultry given the shortage of fodder. This is particularly visible for the period between 2007 and 2008.

Figure 29. Evolution of domestic agricultural production (2001-2013, thousand MT)



Source: NBS. *Note*: excluding Transnistria

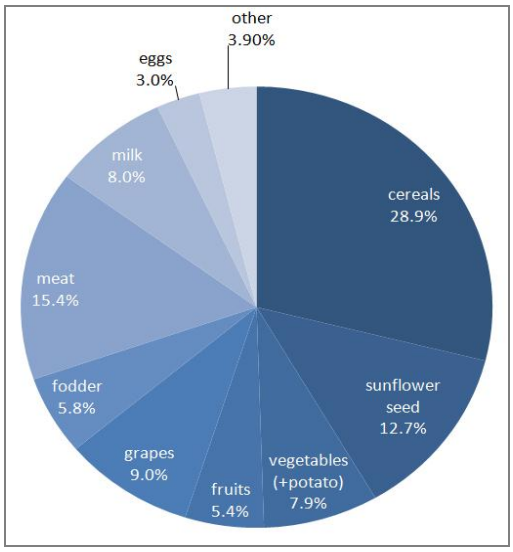
73. **Limited and slow uptake of agricultural risk instruments to stabilize production and the inability to meet international standards in food quality and safety represent the main obstacles to sustainable crop sector growth**. High volatility of crop output reflects underdeveloped weather-related risk mitigation instruments. Moldova's crop production suffers from (i) limited access to irrigation, (ii) low rates of adoption of modern agronomic practices and technologies (such as drought- and pest-resistant varieties, anti-hail protection tools), (iii) lack of innovative insurance schemes for agriculture (such as index-based weather insurance), as well as (iv) lack of timely meteorological information enabling effective responses to extreme events. On the market side, the key challenge is for domestic supply to meet both domestic and international demand. Most of the agricultural produce

[9] High output volatility is more characteristic for crops and is most pronounced for rain-fed crops, such as wheat, maize, sunflower seed, sugar beet.

presently grown in Moldova does not meet the market requirements in terms for safety, quality, quantity, variety and packaging. This is particularly the case for the high-value products, such as fruits, berries, grapes and vegetables.

74. **Moldova's agricultural production structure has remained largely the same over the last decade with crops representing approximately two-thirds of the Gross Agricultural Output (GAO)**. Favorable climate and high native soil fertility makes Moldova well suited to growing most temperate fruits, vegetables, cereals and oilseeds. These key crops play a prominent role in today's economy, as they have in the past (*Figure 30*).Cereals and oil seeds dominate the agricultural landscape by covering 70% of total cultivated land. Fruits and vegetables, on the other hand, are grown on less than 20% of cultivated land. These cultivation patterns have persisted over the last decade, suggesting that the transition of production from low-value crops to high-value crops is not without its challenges. Possible constraints to the expansion of high-value crops include: (i) high capital requirements; (ii) need for irrigation; and (iii) costly investments (orchards and vineyards).

Figure 30. Gross Agricultural Output structure (2013)



Source: NBS. *Note*: excluding Transnistria

75. **The development of the livestock sector has proven somewhat more difficult, and has been hindered by deeply-rooted competitiveness limitations and market-related constraints**. The key livestock product groups are meat, milk and eggs. There is also wool and honey production, but these are small in comparison. Unlike crops, livestock production is primarily managed by smallholders, contributing as much as 95-98% of total milk and wool production, 75-90% of meat and 60-65% of total eggs production.[10] Production primarily serves to satisfy consumption needs of rural households, while the surplus is sold on the local market. The livestock sector suffered a profound shock after the dismantlement of the production and market structures specific to the former planned economy, which resulted in the de-capitalization of the sector and the erosion of the livestock genetic base. The

[10] The percentage range shown is from the period 2005-2010.

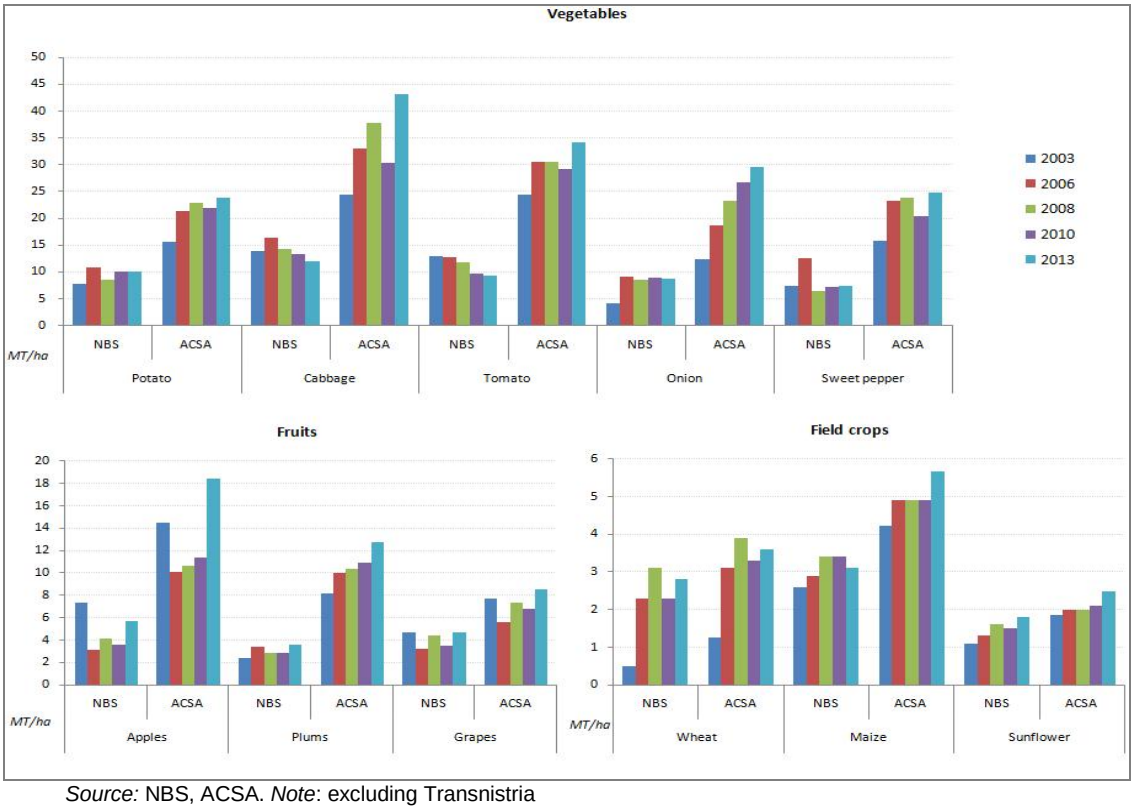
domestic resource constraints (in particular feed and energy), coupled with growing input prices (including feed and energy), a difficult/unstable access to key foreign markets (EU, Russia) and fierce import competition have all contributed to the low performance of the Moldovan livestock sector. With the setting up of the DCFTA between Moldova and the EU in 2014, access to the EU single market should offer new opportunities, but only provided that Moldovan producers are able to meet stringent European standards.

76. **Data on yields in Moldova is subject to some controversy, thus blurring conclusions about sector performance, and land productivity in particular.** The biennial farm survey conducted by the National Agency for Rural Development (ACSA) - Moldova's rural extension network -indicates significantly higher yield levels for all crops than data reported by the National Bureau of Statistics (NBS) do. The ACSA data show that field crops, such as cereals and sunflower seeds, have yields that are between 30% and 70% percent higher than those reported by the NBS. For high-value crops yields are reported to be 2 to 3 times higher than those indicated by NBS (*Figure 31*). The ACSA survey also shows increasing yields over time for many crops: something that is not the case with NBS data. There are several reasons that might account for such disparities between ACSA and NBS data:

- Farm data reported to NBS are allegedly under-reported, and enterprises assumed to do this for tax reasons. Therefore, the actual yield levels are believed to be higher than the ones reported by the official statistics.

- Although the ACSA sample shall be considered representative at the national level, the farms included in the survey are only small and medium size (0 to 100 ha). Farms using over 100 ha are not covered by this survey; given that they operate on almost 60% of the agricultural land (according to the 2011 agricultural census), the disparity is even more significant.

Figure 31. Yields of selected crops as reported by NBS and ACSA (2003-2013)

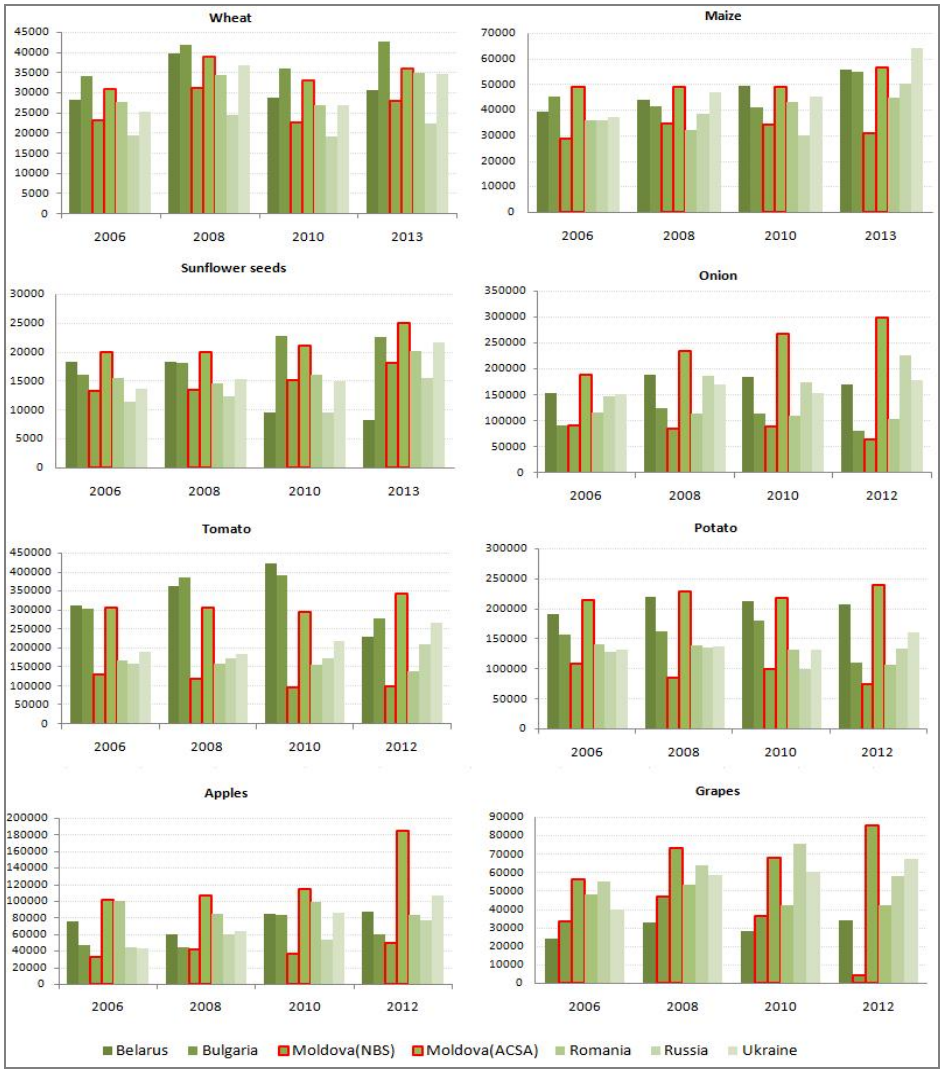


Source: NBS, ACSA. *Note*: excluding Transnistria

77. **As a result, a regional comparison provides mixed perspectives as to the country's performance position.** As discussed above, there is a significant gap between the officially reported yields (NBS data) and yields collected through surveys (ACSA data). Looking at the NBS data alone, Moldova registers low yields when compared to regional comparator countries. However, ACSA data paint a different picture: Moldova's crop yields ranked highest in the region for 6 out of 8 selected crops in 2012/2013, and were close to the top for the remaining crops (*Figure 32*).[11] This indicates Moldova's existing comparative advantage that represents a good basis for the agricultural sector growth and market positioning, both domestically and externally.

[11] The specific crops and years shown in *Figure 34* were selected based on NBS, ACSA and FAOSTAT data availability.

Figure 32. Yields of selected crops: Moldova and selected countries (Hg/ha, 2006-2012/2013)



Source: NBS, ACSA and FAOSTAT. *Note*: excluding Transnistria

78. **The dual structure of the Moldovan farm sector impacts on farm specialization.** Moldova's farms can be roughly divided into two groups: (i) small-sized, subsistence and semi-subsistence farms; and (ii) large commercial farms (*Box 3*).This dual structure of the agricultural sector to a large extent determines the difference in specialization. Smaller, individually owned farms produce a variety of crops to ensure their self-sufficiency, but also often focus on labor intensive high-value crops (fruits, nuts, grapes, vegetables, potatoes) that are largely sold for cash.[12] Large-scale enterprises, on the other hand, are specialized in production of low-value crops, such as cereals, oilseeds and sugar beets. The medium-sized (10ha to 100ha) commercial farm sector is gradually emerging in rural areas, most often specializing in production of high value horticulture crops.

[12] In fact, NBS survey data show that small producers grow low-value crops primarily for home consumption, while high-value fruits, grapes and nuts are cultivated for commercial reasons.

BOX 3. A BRIEF OVERVIEW OF MOLDOVAN FARMS

The farm sector in Moldova consists of two major sub-sectors: (i) the corporate sector comprising large-scale enterprises; and (ii) peasant farms and household plots. Nearly all large-scale enterprises are privately owned, with very few farms still state-owned. The corporate sector consists of about 1,000 large farms and covers nearly half of all agricultural land. The other half is divided between 380,000 peasant farms and over 700,000 household plots that cover 32% and 18% of all agricultural land respectively. The size of corporate farms is usually between 400 ha and 600 ha and in 90% of cases the land is leased from small farms/households. A large majority of small peasant farms of around 10ha operate on own land, while only a fraction leases land to farm. The household plots are very small farms that practice intensive high-value agriculture and keep livestock primarily for subsistence purposes.

79. **This is due to several factors.** For instance: low-value crops require relatively low amount of capital, agricultural machinery enabling quick cultivation of large areas is widely available, post-harvest handling requirements are relatively simple and low-cost and market access for these crops is easy. Farm land tenure is another important factor in production decisions. While low-value staples are mainly grown on large leased areas, high-value crop production (including orchards, vineyards and protected field vegetables) is usually undertaken on own land, since these crops require longer term investments.

80. **The agricultural production potential and specialization also follow a spatial differentiation.** There are three main agricultural zones in Moldova: (i) the North; (ii) the Center; and (iii) the South.[13]The Northern zone is hilly with forests, steppe and meadow vegetation. It has the most fertile soil with high water holding capacity, which makes the zone best for field crops. The Central zone, which is also hilly, has deep valleys and less fertile soil, and is best for perennial crops like orchards and vineyards. The Southern zone has steppe and meadow terrain with both highly fertile and not very fertile types of soils. Due to high temperatures the zone has only marginal production in the absence of irrigation.

81. **The concentration of agricultural production by region is more pronounced for crops than for livestock (*Figure 33*).** Cereals, oilseeds, fruits and vegetables are rather evenly distributed across the three regions. However, the North produces the majority (over90%) of sugar beets and potatoes. Grapes, on the other hand, are largely grown in the Southern and partly (about 25%) in the Central zone of the country. Livestock production is more evenly spread.

[13] World Bank (2013) *Reducing the Vulnerability of Moldova's Agricultural Systems to Climate Change: Impact Assessment and Adaptation Options.*

Figure 33. The distribution of crop and livestock production by region (2011-2013, annual average)

Source: NBS. *Note*: excluding Transnistria

82. **These differences in production potential also translate into and explain regional differences in poverty rates and food security outcomes**. The Northern zone is the most vibrant agricultural region in Moldova and poverty is lowest in its rural areas, and so is food insecurity (*Table 4*).

Table 4. Moldova's rural poverty rates and food deficiency rates by region (2010 and 2013)

	Poverty rate (2010)	Poverty rate (2013)	HFED rate (2010)	HFED rate (2013)
North	28%	12%	13.3%	6.0%
Center	29%	15%	16.0%	9.7%
South	31%	17%	15.0%	9.2%

Source: HBS.

FOOD STOCKS

83. **An important part of rural and urban households' food intake is sourced from own food stocks.** HBS data reveal that between 8% and 12% of the rural household meals are sourced from own food stocks, while values for urban households are lower, between 5% and 8%. Both rural and urban households keep stocks of low perishable vegetables (e.g. potatoes, onions, carrots), as well as preserves of perishable fruit and vegetables during the harvest time that are consumed throughout the cold season. In addition, rural households keep year-round stocks of both agricultural and food products that include a large variety of self-produced produce: e.g. wheat, maize, sunflower seed, potato, pulses, field vegetables, walnuts, as well as honey.

84. **Rural households' vulnerability to production-related shocks reflects the volatility of their food stocks.** *Table 5* shows the end-of-year stocks kept by small farmers and rural households. Rural households' vulnerability to annual production distress is reflected in their behavior with regard to holding stocks: low production and stock levels in a drought year induce a risk-averse attitude, resulting in above-average stock volumes in the year that follows. In the absence of major shocks over the subsequent years, households' stocks get back to their normal levels.

Table 5. End-of-year rural households' stocks (% of total production, 2007-2013)

	2007	2008	2009	2010	2011	2012	2013
	Drought year: low stocks	Post-drought year: stocks higher than average	Normal year: stocks back to normal	Normal year: average stocks	Normal year: average stocks	Drought year: low stocks	Post-drought year: stocks higher than average
Wheat	27	47	33	35	38	33	43
Maize	23	59	41	46	42	28	55
Pulses	20	46	35	46	39	20	44
Sunflower seed	28	41	38	37	40	29	37
Potato	27	32	23	32	30	24	32
Vegetables	13	18	11	14	14	13	16
Walnuts	28	38	26	26	35	21	29
Honey	18	48	19	30	17	2	22

Source: NBS. *Note*: excluding Transnistria

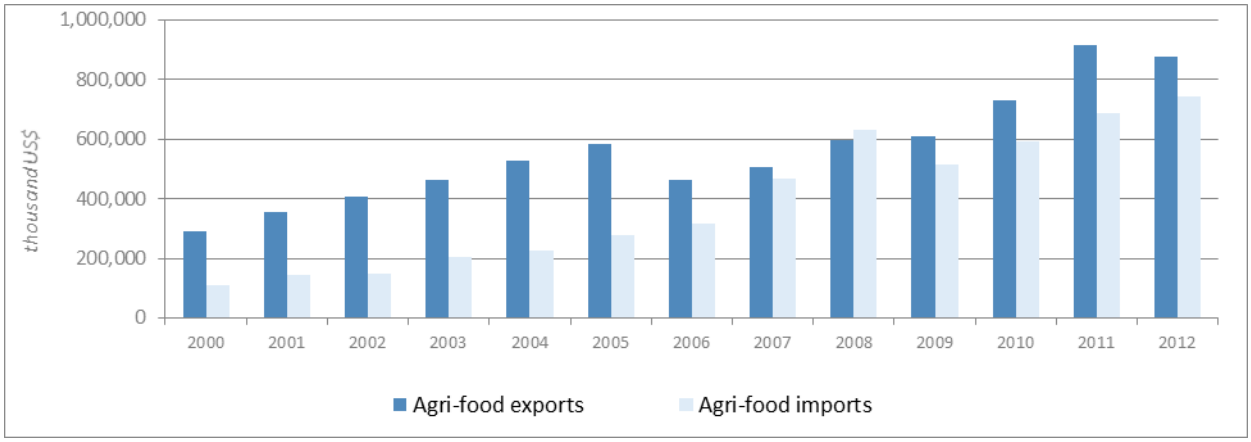
85. **The Government of Moldova holds public food reserves that are aimed at ensuring food security for the country's population in case of emergency situations**. Food products held by the Agency of Material Reserves include canned meat, pasta, sunflower oil, sugar, tea, coffee. The only agricultural product held by the reserve is wheat. The annual volumes of food-grade wheat held in reserve vary between 30 and 50 thousand tons - an amount that is estimated to meet the population's consumption needs for approximately 1 to 1.5 months. The size of the wheat reserve accounts for

approximately 5-8% of total Moldova's wheat production registered in normal years, and for 10-20% of food-grade wheat production.[14]The state reserve releases wheat several times per year, particularly in the off-season, and replenishment of the reserve occurs at the beginning of the following harvest.

AGRI-FOOD IMPORTS

86. **The value of Moldova's agri-food imports has grown consistently over the last decade on the back of a fast growing and increasingly sophisticated domestic consumer market for food products**. The import growth was only weaker in 2009 in response to the effects of the crisis - falling remittances and rising food prices reduced domestic consumption - but quickly gained pace over the following years, and is presently above the pre-crisis level from 2008 (*Figure 34*).The value of imported goods has grown considerably over the last decade: in 2012 it was roughly five times as large as in 2001.[15]This indicates that the quantity, quality, variety and reliability of domestic food supply does not always match the growing demand, both in size and sophistication.

Figure 34. Moldova's agri-food imports and exports (2000-2012)



Source: NBS. *Note*: excluding Transnistria

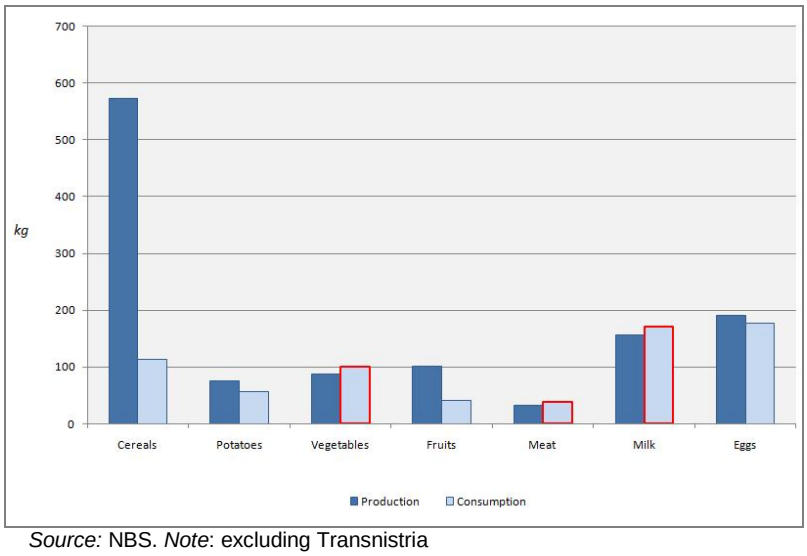
87. **Limited diversification of domestic agri-food production is a key factor driving up the food import bill**. The low diversification of domestic production and exports is clearly visible from disaggregated export data. Large absolute volumes or values for most agro-food export groups are in fact driven by one or two major export products that account for the bulk of the group total value. For example, in 2011 *wine* accounted for about 70% of the total value of the *alcoholic drinks* group - the largest group accounting for over 25% of total agro-food exports. *Fresh apples* and *shelled nuts* accounted for 68% of the total value of the *fruit and nuts* group – another large group that represents 20% of total agro-food exports. Similarly, *sunflower seeds and sunflower oil* represent over 85% of the total value of the *oil seeds and oils* group – again, a large export contributor with 9% of total agro-food exports. Not surprisingly, most of the food present on local supermarket shelves is imported.

[14] Food-grade wheat, i.e. wheat with gluten levels of above 18%, accounts for between 30% and 50% of the total wheat production in Moldova.

[15] It is also worth noting that the increase in the value of imports has occured while the population of Moldova has been shrinking: from 4.04 million inhabitants in 2001 to 3.51 million in 2012.

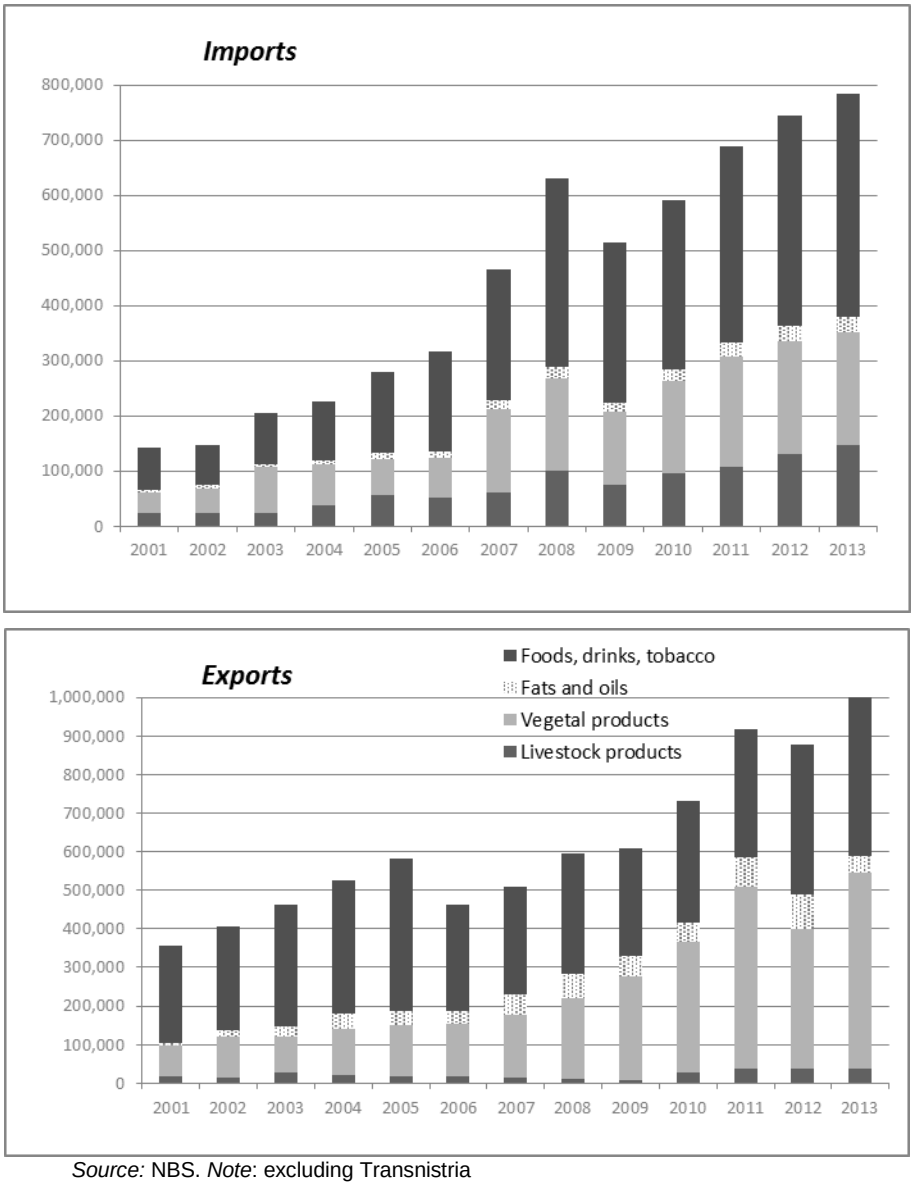
88. **Moldova's agriculture produces a surplus of cereals, fruits, potatoes and eggs, but does not meet the consumption needs for livestock products, vegetables and milk (*Figure 35*).** The trade patterns confirm this (*Figure 36*): Moldova is a net exporter of cereals, fruits and wine, but is a net importer of meat and dairy products. Fresh vegetables are also a net importing category as domestic supply of vegetable production falls short in the off-season, and on the other hand, the range of domestically produced vegetables is not sufficient to cover the demand. However, production figures alone might be in some cases misleading. For example, even though Moldova is a large exporter of wheat (of feed quality mainly), it is - in some years - a net importer of food-quality wheat and high-quality wheat flour. Due to the low quality of the domestic wheat supply bakeries import higher-quality flour. The present rapid pace of food imports clearly represents an opportunity for Moldova's agricultural production, as it could - with improved local supply – meet the already existing demand.

Figure 35. Per capita *production* versus per capita *consumption* of main foods (2010-2012 average)



Source: NBS. *Note*: excluding Transnistria

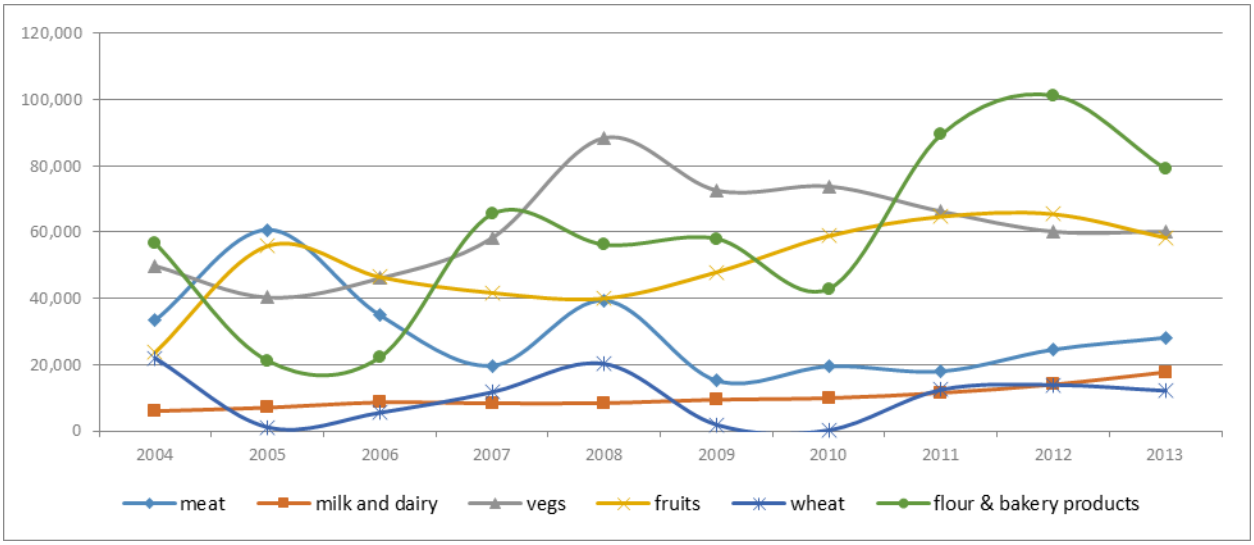
Figure 36. Structure of Moldova's agro-food exports and imports by main produce categories (2001-2013)



Source: NBS. *Note*: excluding Transnistria

89. **Despite the increase in the value of agri-food imports, the actual imported volumes of key food commodities– wheat and wheat flour, fruits and vegetables, meat and dairy products – do not follow a prominent upward trend**. However, the annual volatility of imported volumes of these commodities is relatively high and mirrors the high volatility of domestic supplies (*Figure 37*).

Figure 37. Moldova's import volume of key food commodities (2004-2012)

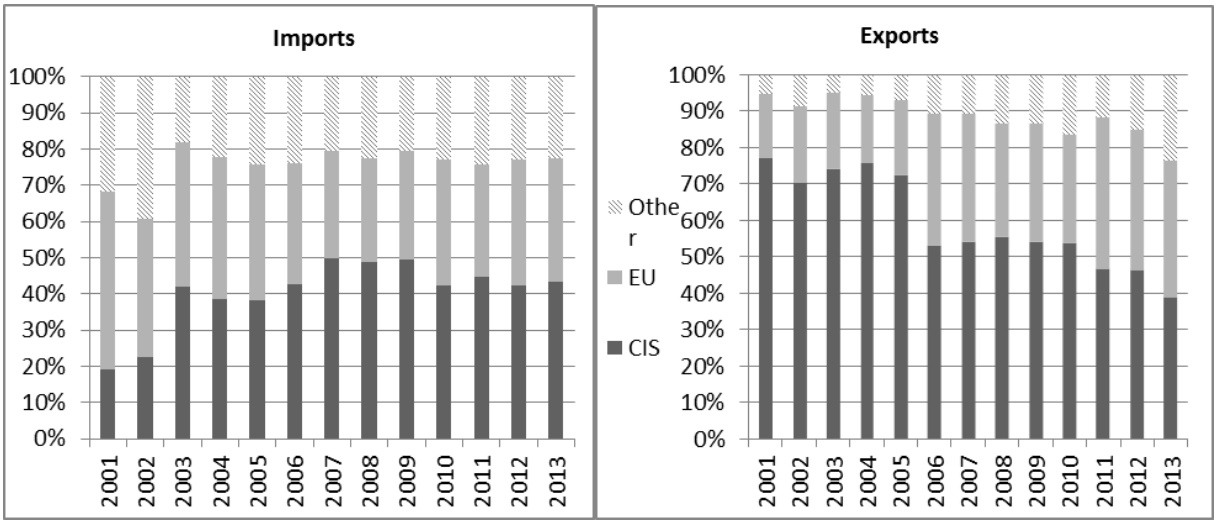


Source: NBS. *Note*: excluding Transnistria

90. **In terms of regional trade partners, both the destinations of Moldova's exports, and the sources of imports have been subject to increased diversification, but vulnerabilities remain.** The last decade saw the most significant developments in this regard. As *Figure 38* shows, sources of imports have been diversified for many years, but exports have only recently became more equally distributed between the EU, CIS and other destinations. In fact, almost 80% of Moldova's agri-food exports in 2001 were sold in CIS countries, today the share of CIS is closer to 40%. CIS and the EU also dominate imports, with their respective shares remaining relatively stable over the last decade.

91. **The CIS countries, primarily Russia and Ukraine, remain the main destination of Moldova's food exports, while quality issues prevent access of high value added agri-food products on the EU market.** This is mainly due to the historical reputation of Moldova's products, as well as to similar standards and food safety norms across all CIS. The EU's share of Moldova's food exports includes mainly low value added products such as raw agricultural commodities (cereals and sunflower seeds) and bulk semi-processed products requiring very basic and limited handling (dried fruits, shelled walnuts, or apple juice concentrate – in bulk packaging). Entering the demanding EU market with high value products is a challenge for the future: it would require costly investments in upgrading domestic production and processing approaches, technologies and infrastructure, as well as complying with stringent food safety and quality controls.

Figure 38. Moldova's agri-food trade: main sources and destinations (2001-2013)



Source: NBS. *Note*: excluding Transnistria

92. **The weaknesses and risks of such a competitive position were fully exposed during the recent Russian bans**. Following the geo-political developments in the region, the Russian Federation introduced a number of bans on Moldovan agricultural exports through 2013 and 2014. The products impacted were wines, followed by a ban on meat and meat products and a nearly complete ban on fruits and vegetables, and canned goods. Prior to the trade bans approximately 30% of the country's wine exports (valued at USD 35.0 million), 93% of apple exports (valued at USD 43.7 million) and 80% of plum exports (valued at USD 21.1) went to the Russian Federation.[16] Despite the recently adopted Deep and Comprehensive Free Trade Agreement (DCFTA) with the EU and despite an increase of the European import tariff rate quotas, the Moldovan products were not able to find outlets on the EU market. This resulted in a glut on the domestic market, accompanied by a sharp fall in domestic prices (50% for apples and plums, and 40% for technical grapes) and consequent negative consequences on the domestic producers' incomes.

[16] World Bank (2015). *Project Paper for a Proposed Additional Credit for a Moldova Agriculture Competitiveness Additional Financing Project*.

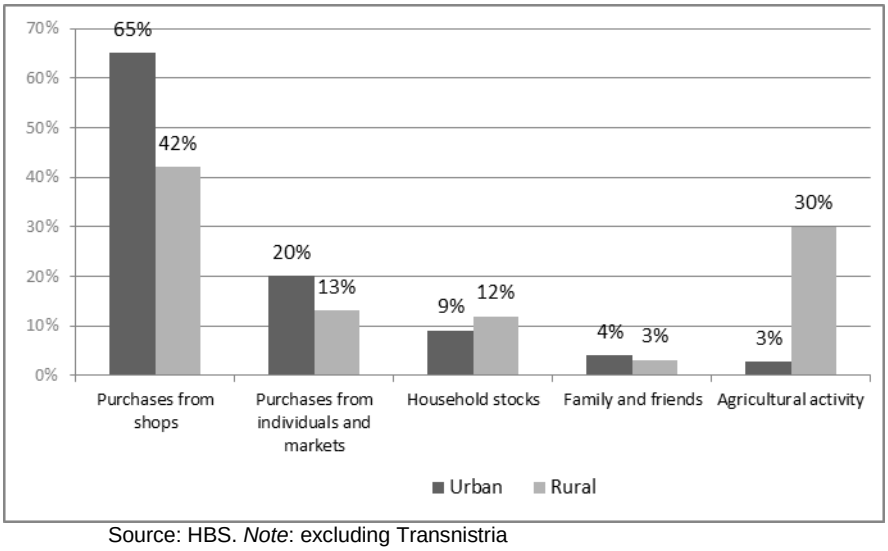
III.2 ACCESS TO FOOD

Access refers to the capacity of households and individuals to obtain the food they need, either by producing it on their own, by buying it on the market, or obtaining it through transfers. Access to food is largely influenced by market factors and the price of food, as well as individuals' purchasing power.

PHYSICAL ACCESS TO FOOD: Sources of Food

93. **There is an essential difference in how urban and rural households in Moldova source their food.** Urban residents buy around 85% of their food from shops and markets - and are thus dependent on availability and their ability to buy - while rural households rely strongly on what they produce at home (*Figure 39*). In 2013, shops (65% share) were the primary source of food purchases in urban areas and markets (20%) were distant second. In rural areas shops and markets combined provided 55% of food to households, the remainder was sourced from own agricultural activities (30%), as well as household stocks (12%). The latter are most often outputs of previous season's own agricultural production. Transfers of food from family and friends do not appear as a substantial source of food.

Figure 39. Sources of food: rural and urban households (2013)

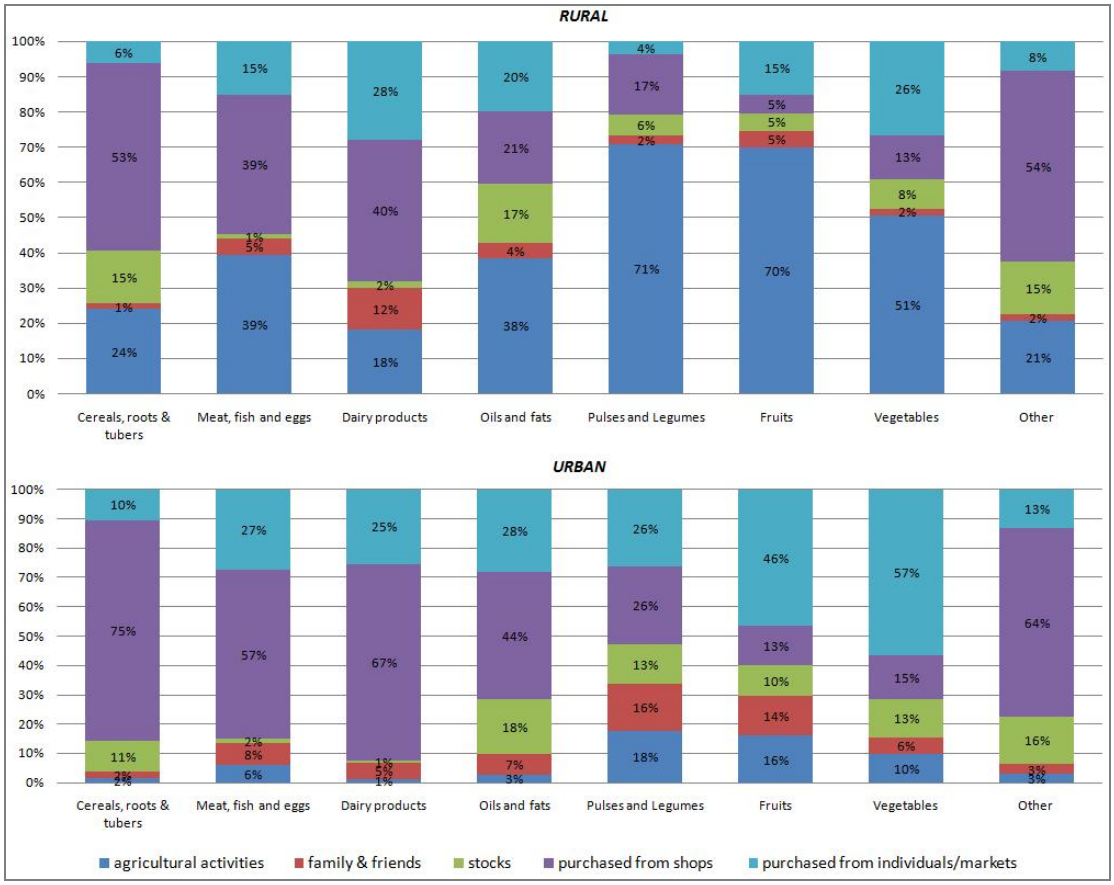


Source: HBS. *Note*: excluding Transnistria

94. **A similar picture emerges when analyzing sources of individual food groups: own production is highly important for rural households for all groups, while purchases are the main source of food for urban households.** *Figure 40* also shows that urban households purchase fruits and vegetables from markets in larger proportions than shops, and that they, unsurprisingly, rely on food transfers from family and friends to a larger extent than rural households. Rural households, on the other hand, show an overwhelming (over 70%) reliance on self-produced pulses and legumes, as well as fruits and vegetables. Similarly, own production is also very important for meat, fish and eggs (39%), as well as vegetables (51%). Staples and dairy products are largely purchased. Three food groups that are stored in

relatively large proportions by urban and rural households alike are oils and fats, pulses and legumes and staples.[17]

Figure 40. Sources of food groups: rural and urban households (2013)

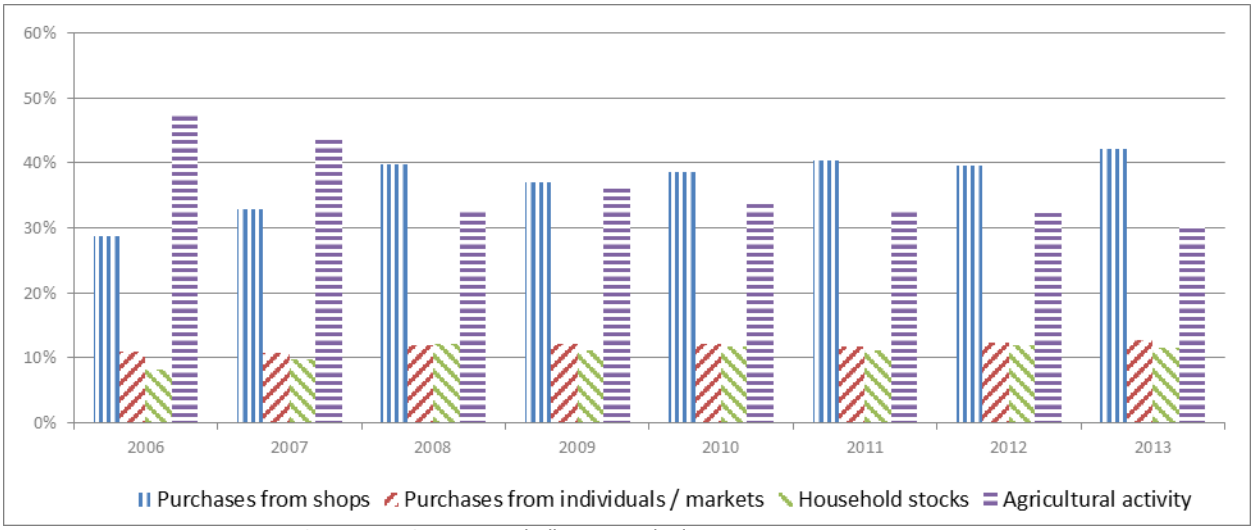


Source: HBS. *Note*: excluding Transnistria

95. **The nature of sourcing food in rural areas is gradually changing.** As *Figure 41* illustrates, the importance of self-production has been steadily declining and is slowly being replaced by higher reliance on purchased foods. Changes are taking place also in urban areas, but in rural areas they are far more pronounced. In fact, rural households have increased their food sourcing from shops over the recent years, and this happened at the expense of reduced utilization of self-produced foods. Two developments are occurring simultaneously and are most likely driving these transformations: (i) a part of rural agriculture-based farms have been increasing their specialization and market orientation, and thus producing more for the market and less for in-house consumption; and (ii) parts of rural population have been moving out of agriculture (as confirmed by year-to-year declining labor force in agriculture) and/or reducing their agricultural activities, thus unavoidably leading to higher reliance on purchased foods. As for urban residents, the most visible change is the shift from markets to shops - a trend which most likely has to do with the recent expansion of supermarket chains in both cities and smaller towns.

[17] Rural dwellers often store sizeable amounts of cereals, roots and tubers, as it is common for rural households to bake their own bread throughout the year. Urban households usually store fruit and vegetable preserves for consumption during the cold

Figure 41. Food sourcing evolution in rural areas (2006-2013)



Source: HBS. *Note*: excluding Transnistria

PHYSICAL ACCESS TO FOOD: Food market infrastructure

96. **The food market infrastructure in Moldova is fairly developed and well spread throughout the country**. There were about 100 supermarkets and over 1000 convenience stores and groceries in Moldova in 2010. Supermarkets are located primarily in cities and more recently also in towns (so-called *rayon* centers), while smaller-scale food stores and groceries are present in every village. Rapid growth and expansion of supermarket chains has been quite evident over the last years, both in cities as well as in rural areas. This is a major development: just a few years ago supermarkets were limited to urban areas, mainly the capital Chisinau.

97. **In addition to large- and small-scale food stores, there is a large network of agricultural and food open-air markets located throughout Moldova.** Agri-food markets in Moldova can be generally grouped into three categories: (i) local (village-based) markets which are available in nearly every village or at least every second village; (ii) regional (*rayon*-level) markets are located in larger towns and include both wholesale and retail trade; and (iii) urban/city level – there are two wholesale markets in Chisinau and one in Balti. In addition, there are district-level retail markets in cities (Chisinau has 12 of these markets).

98. **The food offer is plentiful and diversified, composed of both local products and imports**. Not surprisingly, the offer is more diversified in larger conurbations than in more remote areas. However, this does not reflect a supply failure, but rather the current demand pattern. Besides, the geographical distances in Moldova are rather small, and *rayon* centers are reasonably close to any village in a given *rayon* (within a distance of up to 20-30 km). Village markets are supplied mainly by local farm products usually sold by farmers themselves, while markets in larger villages also offer imported produce sold by

season.

intermediaries. These local markets operate seasonally, i.e. when domestic products are available and are open one or two days per week. The regional (*rayon*-level) markets are accessible throughout the year. Farmers, as well as middlemen, sell agricultural and food products on these markets. An important share of the wholesale trade in regional markets is supplied by products purchased from Chisinau (or in some cases from Balti) wholesale markets.

99. **Most urban inhabitants are regular clients of urban agri-food retail markets that are conveniently located in practically every district of the city.** These markets offer a wide range of food products, including fresh fruit and vegetables, home-made preserves and canned products, as well as products of animal origin: meat, milk and dairy products, eggs and honey. Even supermarket shoppers prefer to buy their fresh produce supplies from the market, especially in season when domestic products are freshly harvested. Urban wholesale markets sell primarily fresh horticultural produce, mainly local, but also imported (including tropical and exotic fruit). The main customers of urban wholesale markets are the regional wholesale markets, supermarkets and food stores, restaurants, as well as multiple retailers. During the agricultural season (i.e. from May to October-November) the domestic produce prevails in the both retail and wholesale markets, while in the off-season imports dominate.[18]

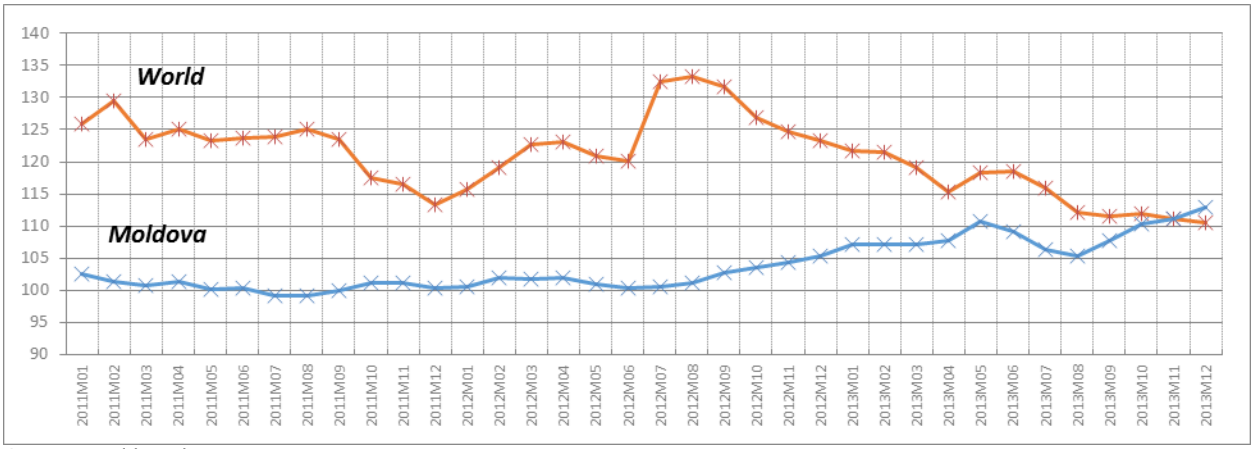
100. **Moldova's road network is extensive, but in poor condition.** Every village is accessible by asphalt roads and even the most remote farms are located within a few kilometers of a paved road. However, less than 10% of the national road network is in satisfactory condition, while local roads are in an even worse state. Poorly maintained roads result in transport-related damages: to vehicles, as well as to transported products, especially soft fresh products. This not only increases transportation costs and therefore prices throughout the supply chain, but also adversely affects produce quality.

ECONOMIC ACCESS TO FOOD: Food prices

101. **Food prices in Moldova have grown steadily over the last decade, but at a slower pace and with less volatility than the world food prices.** Over the last 6 years (2005-2011) food prices in Moldova increased by about 50%. In the same time, food prices in the world more than doubled over this period. In addition, it looks like the global food price shocks of 2008 as well as of 2010 had been felt less in Moldova than in the rest of the world. This is thanks to the fact that the local supplies of agricultural and food products – 2008 and 2010 have been particularly good agricultural years in Moldova – have smoothed down the effects of the global price swells on the domestic food markets.

[18] Turkey and Poland are the main suppliers of fresh horticultural produce, and Ukraine of dairy products.

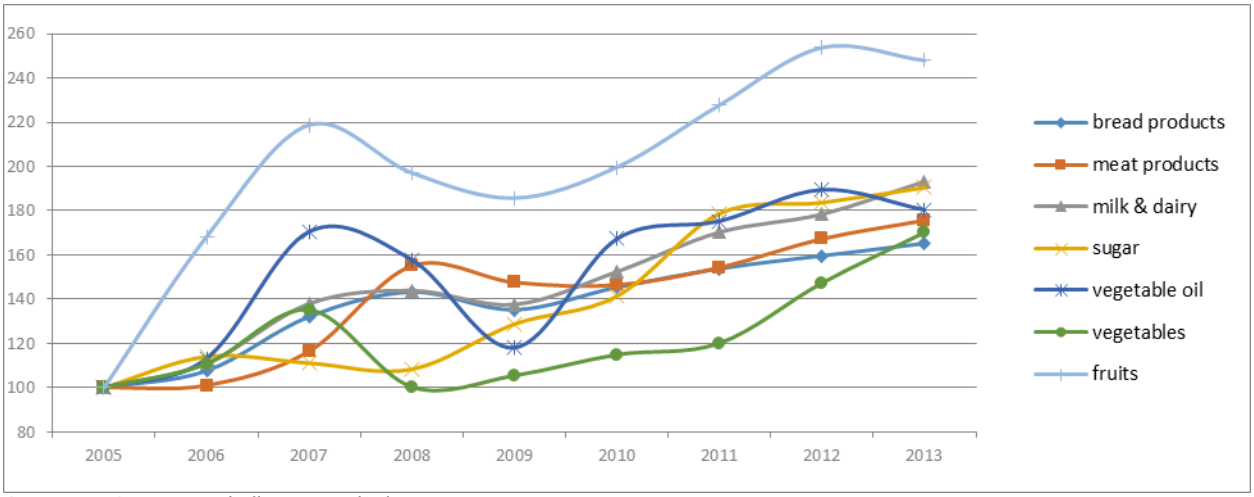
Figure 42. Evolution of the Food CPI: Moldova and world (2011-2013, 2010=100)



Source: World Bank.

102. **Domestic prices for most key foods in 2013 were some 50% to 80% higher than in 2005**. Fruits have registered the highest price rise – by over 100% - over the eight-year period (*Figure 43*). The price evolution has been influenced by two sets of factors: domestic supply shortages and regional price patterns. Either one or the other was more or less pronounced at a specific time, depending also on the type of produce. However, this dynamic was affected by the 2014 trade development, worsening the terms of trade for Moldova's agri-food products and negatively impacting the incomes of the wine and horticulture producers.

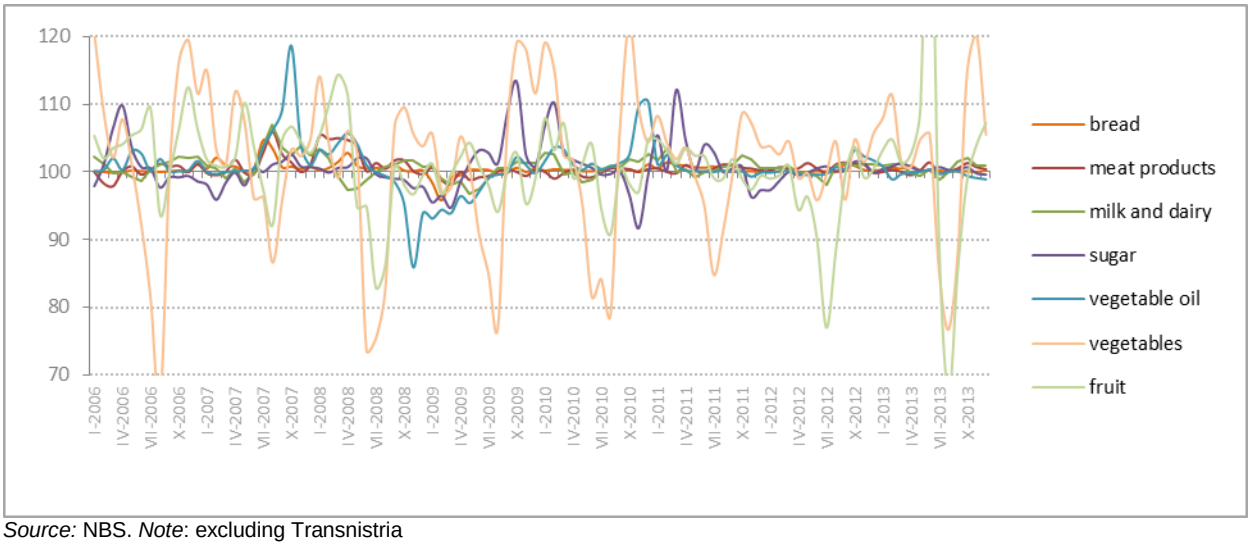
Figure 43. Domestic price dynamics of key foods (annual, 2005=100)



Source: NBS. *Note*: excluding Transnistria

103. **Moldova's food market features high seasonal price volatility.** Seasonal price volatility appears highest for fruits and vegetables, lower for meat and dairy products, and almost non-existent for bread and bread products. The prices of sugar and sunflower oil are very much dependent on price movements in the region, but also on the price of domestic raw products.

Figure 44. Domestic price seasonality of key foods (monthly, previous month=100)



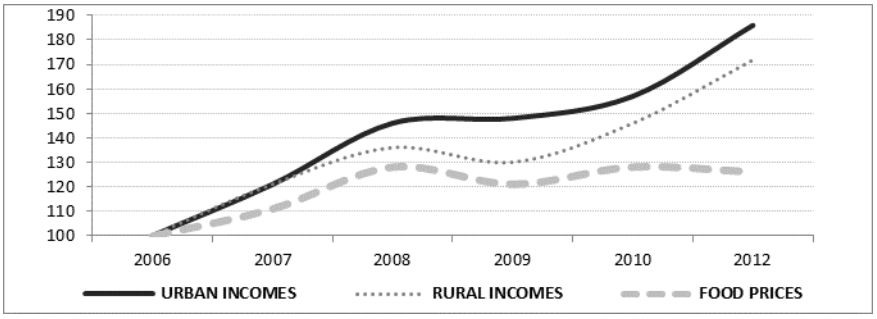
Source: NBS. *Note*: excluding Transnistria

104. **Markets throughout Moldova seem to be relatively well integrated as no substantial price gaps are observed across markets.** The prices registered in markets (wholesale and retail, urban and regional) throughout the year reflect a mix of domestic and imported produce prices, the share of domestic products prevailing in the high season and the share of imported products prevailing in the off-season. During the harvesting season imports practically disappear, as there are abundant local supplies, but as local supplies decline, imports are back on the shelves. The Chisinau wholesale market, which is the largest market in the country (also serving as supplying market for domestic regional markets) offers the largest diversity of products, as well as the highest degree of produce availability throughout the year. During the harvesting season when prices are lowest, the Chisinau market shows a somewhat higher price level compared to regional markets, while in the off-season, regional markets are slightly higher priced for some imported products (which are most often brought from the Chisinau market).

ECONOMIC ACCESS TO FOOD: Income and Expenditure

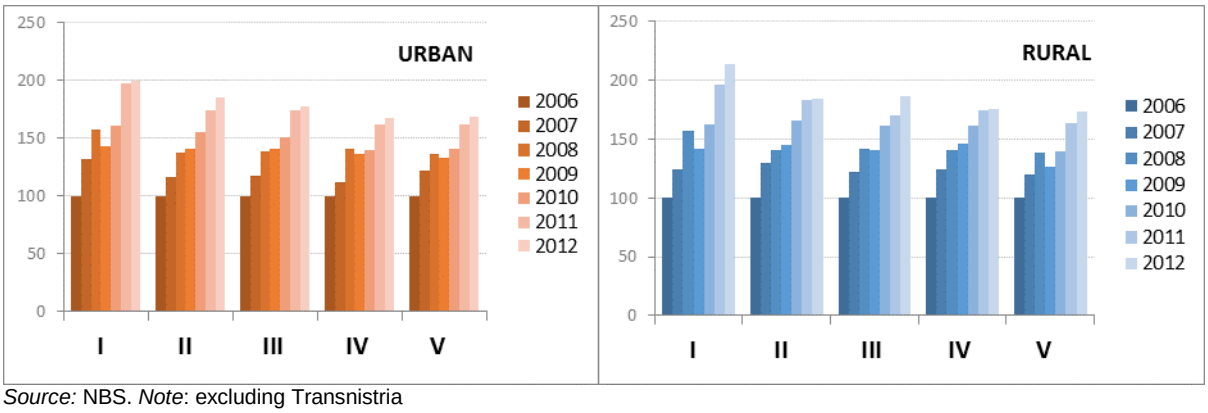
105. **Nominal incomes of Moldovan households, poor households in particular, had increased significantly between 2006 and 2012and overall grew faster than food prices (*Figure 44*).**Most importantly, the incomes of the poorest quintile (I) have doubled over the observed period, both in urban and rural areas. However, poor households' incomes have dropped most in 2009, when the effects of the economic crisis were strongest - with the exception of the highest quintile (V) in rural areas (*Figure 45*).This indicates the vulnerability of these households that in practice results in greater volatility of incomes. Between2010 and 2012 incomes in all quintiles bounced back strongly with the rise in incomes of poorer households particularly pronounced. In rural areas - where most of the population is either full- or part-time involved in agricultural activities - the bounce back in income was driven by the 2010 agricultural price rises and by restoration of remittance flows.

Figure 45. Evolution of nominal household incomes and food prices (2006-2012, 2006=100)



Source: NBS.

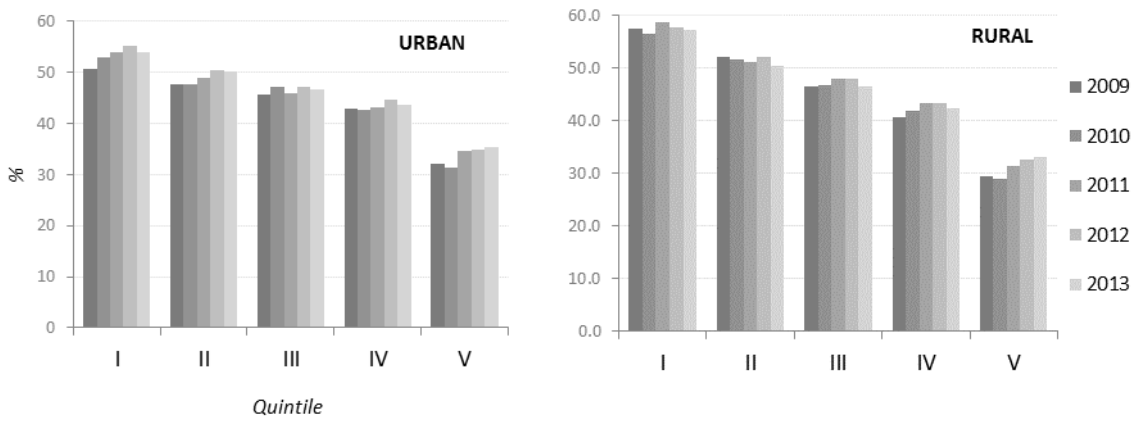
Figure 46. Nominal income growth by population quintile: urban and rural areas (2006-2012, 2006=100)



Source: NBS. *Note*: excluding Transnistria

106. **In spite of income growth exceeding food price growth, the share of food expenditures in total expenditure of poor households remains high in both urban and rural areas.** In fact, between 2009 and 2013, the share of food expenditure of urban and rural households changed very little, if at all, across all income groups - the only exceptions being the poorest urban quintile and the richest urban and rural quintiles, where the share has increased (*Figure 47*). As illustrated earlier this is due to multiple - and positive - developments over the observed period: (i) increase in caloric intake; (ii) reduction in high staple intake rates; (iii) reduction in food energy deficiency levels and severe food insecurity levels, especially among urban households, but not only. The stubbornly high share of food expenditure is therefore the result of increased food expenditure in absolute terms and a shift towards better, more nutritious food.

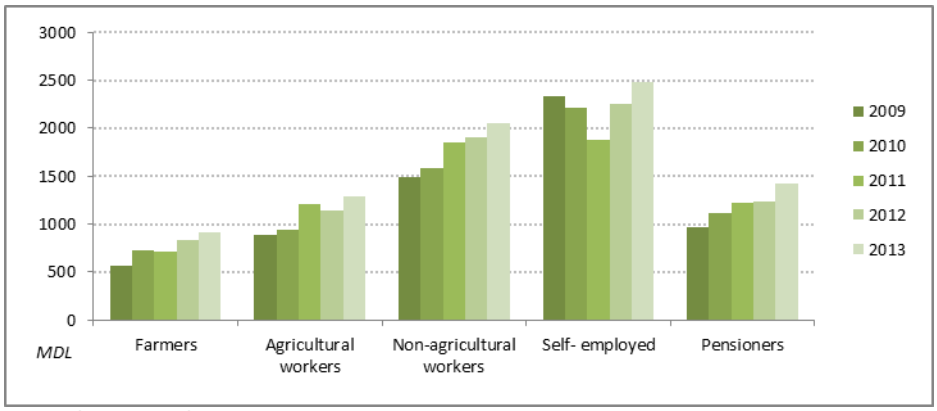
Figure 47. Food expenditure as percentage of total expenditure: per capita, by expenditure quintiles (2009-2013)



Source: NBS. *Note*: excluding Transnistria

107. **Farmers and agricultural workers represent the two socio-economic groups with the lowest income levels (*Figure 48*).**The largest share of farmers' income comes from farming and accounts for 30-40% of total income(depending on the year), while remittances (25-35%) and wages (15-25%) account for the rest. Farmers' reliance on remittances is highest among all socio-economic groups. Agricultural workers derive 40-60% of their income from agricultural wages, and another 20-30% from own farming activities. Remittances represent a smaller share (5-10%) of their income.

Figure 48. Monthly average income levels per capita by socio-economic groups (2009-2013, in MDL)

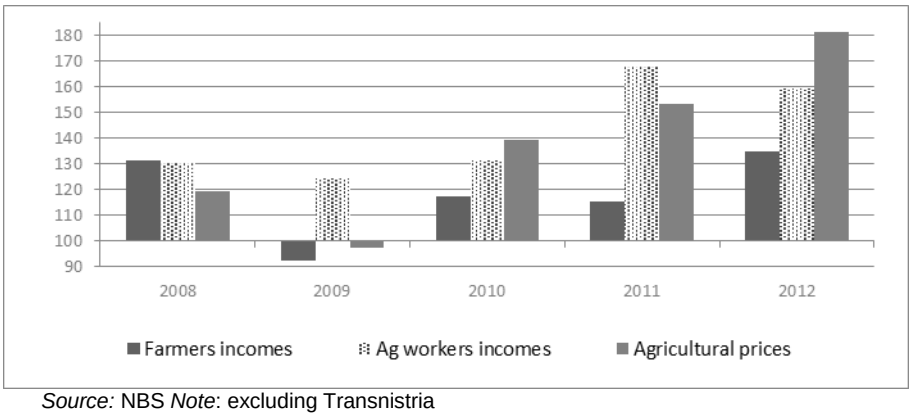


Source: NBS

108. **Not surprisingly, the movement in agricultural prices is reflected in farmers' income patterns, as well as, to a lesser extent, in the movement of wages of agricultural workers.** As *Figure 49* shows, both farmers' incomes and agricultural workers' wages have responded - with a slight delay - to the drop in agricultural prices between 2007 and 2009. The drop in farmers' incomes was far more pronounced, reflecting also the steep fall in remittances. Similarly, once the agricultural prices started to rise again, both the farmers' income and agricultural workers' incomes registered growth as well, but the difference in pace was even more noticeable. What emerges clearly from *Figure 49* is that farmers

remain significantly exposed to market price fluctuations - something that a switch to higher-added value products and the development of farm income stabilization tools can address in the future.

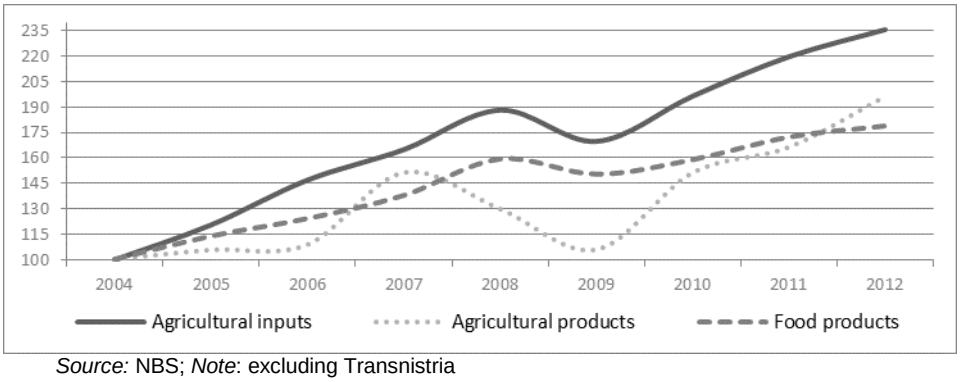
Figure 49. Farmers' and agricultural workers' incomes vs. agricultural prices (indexed change over previous year, 2007-2012)



Source: NBS *Note*: excluding Transnistria

109. **The growth in prices of agricultural products has been lagging behind the growth of prices for agricultural inputs by a significant margin, putting pressure on farmers' incomes (*Figure 50*).** In addition, the growth in product prices has been more volatile than relatively smooth and steady growth of agricultural input prices. The rise in agricultural prices since 2010 has temporarily lifted farmers income, but fundamental challenges remain, both upstream (e.g. access to market, quality standards) and downstream (e.g. productivity, technical know-how) of the value chain. If these challenges are not addressed farmers' income will continue to suffer.

Figure 50. Prices of agricultural inputs, agricultural outputs and food products (2004-2012, 2004=100)



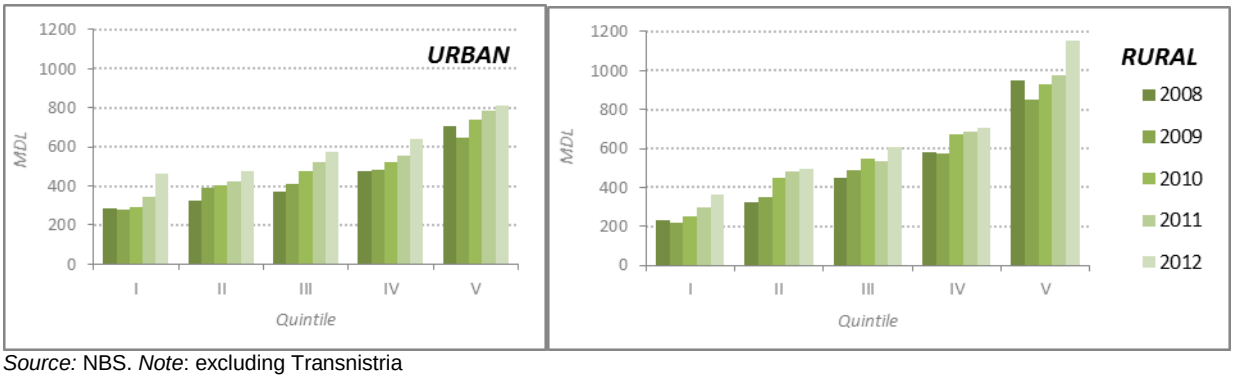
Source: NBS; *Note*: excluding Transnistria

110. **Not surprisingly, the share of people employed agriculture has been in steady decline.** As *Figure 26* showed earlier, the share of agricultural employment in total employment almost halved between 2002 and 2012, dropping from 50% to 26.4%. Most of the labor released from agriculture emigrated abroad, while part obtained jobs in the growing domestic services sector concentrated primarily in the urban area. Since 2009 the number of people employed in agriculture has remained relatively stable, supported by the rise in agricultural prices and incomes.

ECONOMIC ACCESS TO FOOD: Public and Private Transfers

111. **Public and private transfers are a major source of income for Moldova's population, especially for the rural population**. Transfers account for between 30-40% percent of urban incomes, and 40-50% of rural incomes. *Figure 51* illustrates the absolute nominal values of public and private transfers to all population quintiles and shows that transfers had increased during 2008-2012 for both rural and urban groups, as well as across all income groups. In addition, the higher one's income, the higher one's absolute level of transfers.

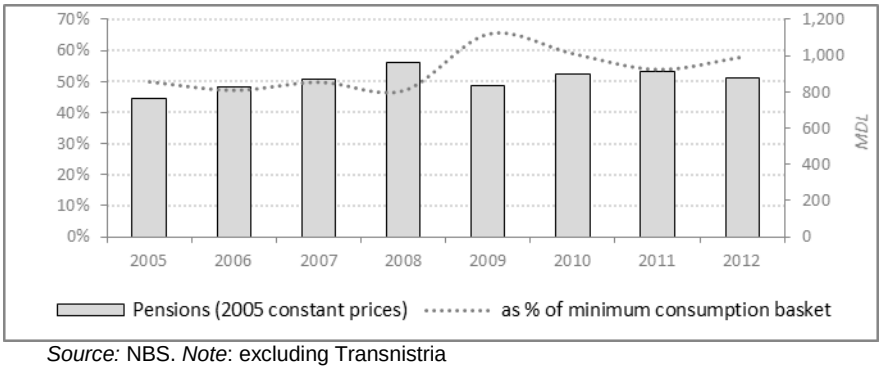
Figure 51. Evolution of income transfers by population income quintiles (2008-2012, in MDL)



Source: NBS. *Note*: excluding Transnistria

112. **All public transfers account for 10-30% of total household incomes, with no significant difference between urban and rural areas.** Pensions account for the bulk of public transfers (80-90%) and represent an important safety net. Yet, they represent only half of retirees' incomes (the remaining half filled by salaries, farming and remittances) and they cover less than 60% of the minimum consumption basket (*Figure 52*). Still, data for 2012 reveals a positive trend: during the pre-2009 period pensions covered less than 50% of the minimum consumption basket.[19]

Figure 52. Pensions and the minimum consumption basket (2005-2012)

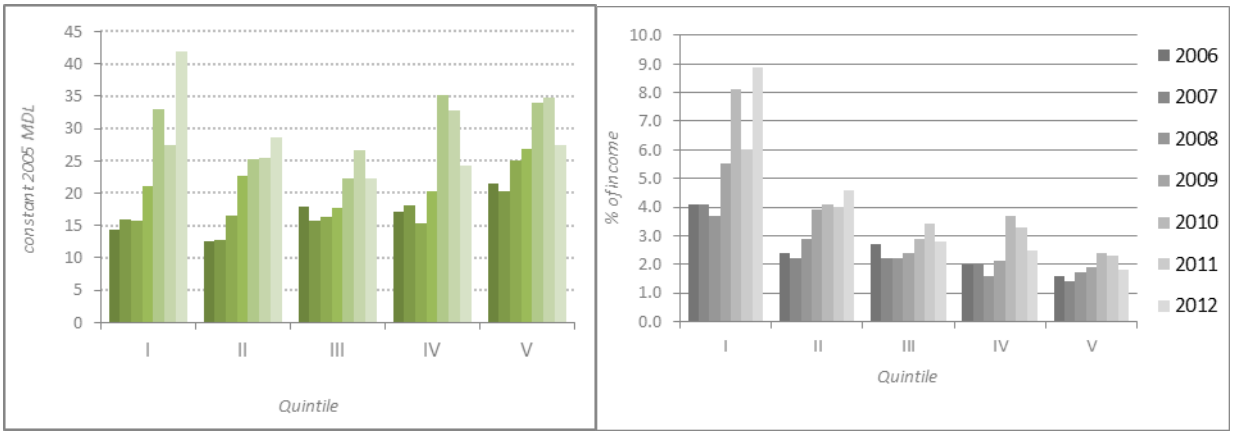


Source: NBS. *Note*: excluding Transnistria

[19] Pension payments represent a large public expenditure item: 25% of total public expenditures and 13% of GDP in 2010. This is primarily due to a large number of pension beneficiaries (19% of Moldova's population in 2013), which is in turn a consequence of the relatively low retirement age in Moldova: 62 years for men and 57 for women.

113. **The remaining part of public transfers –the non-contributory social assistance payments– represent a relatively small income component, and seem to be insufficiently targeted at low-income households**. Moldova's social assistance is delivered through the poverty-targeted cash benefit program called *Ajutor Social* (*see Section IV.2*), introduced in 2008/9, and phasing out the previously used categorical programs. Overall, the lower the income level of households, the larger proportion of their income comes from social assistance payments, making this an important source of income: accounting for some 9% of income in the case of low-income recipients (*Figure 53*).

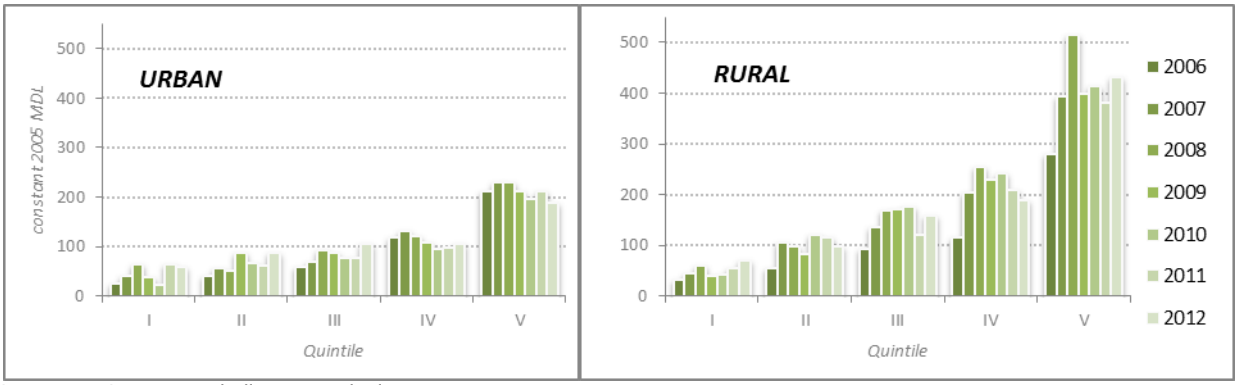
Figure 53. Non-contributory social assistance payments by income quintile: absolute values and % of income (2006-2012)



Source: NBS. *Note*: excluding Transnistria

114. **Private transfers dominated by remittances are a crucial determinant of the level of income households have.** Private transfers represent between 15-30% of household incomes, with remittances accounting for around 70-80% of all transfers. Smaller categories of private transfers include cash and goods received free of charge, alimony and other incomes. Rural households across all income groups obtain twice the average amount of remittances received by urban households (*Figure 54*). This suggests that most of Moldova's migrants who are sending remittances from abroad originate from rural areas. However, the differences between the sizes of remittances among rural households are stark: the households in the highest income quintile receive ten times as much in remittances as those in the lowest income quintile. While the remittances received by the socio-economic group 'others' (including mainly unemployed persons) represent between 40% and 50%of this groups' income, the remittances to farmers are also hugely important for their wellbeing. In fact, remittances represent between 25% and 40% of farmers' income and - since farmers are the socio-economic group with the lowest average incomes in Moldova - provide them a key resource against poverty, including extreme poverty for those farmers belonging to the lowest income quintile.

Figure 54. Evolution of remittance flows by area and income quintile (2006-2012, constant 2005 MDL)



Source: NBS. *Note*: excluding Transnistria

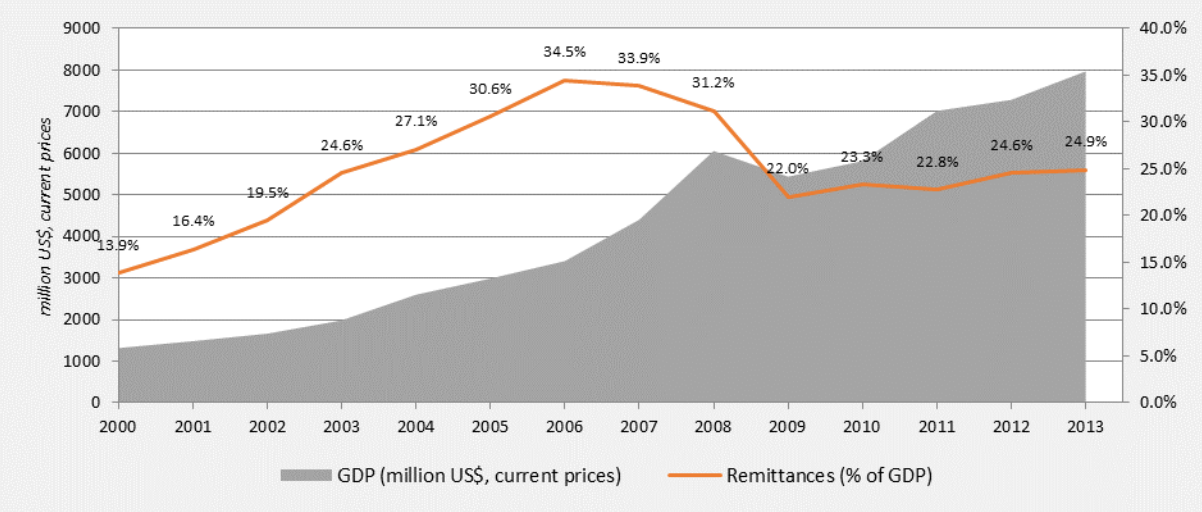
115. **Private transfers, remittances in particular, are at present considered a more important vehicle for reducing poverty and food insecurity than public transfers, despite the fact that data suggests that both private and public transfers are significant components of household incomes in Moldova.** The main reason for this is that the positive income effect of private transfers is stronger and much wider spread among all population groups. Pensions - the largest pool of public transfers - provide important income support to retired-age households, but are by definition limited to impact a specific population group. The remaining tools have traditionally been too weak.

BOX 4. REMITTANCES AND MOLDOVA'S ECONOMY

Moldova is among the most remittance-dependent economies in the world. In 2013, remittances represented one quarter of the country's GDP; only in Nepal and the Kyrgyz Republic remittances represented larger shares of the GDP, 28.8% and 31.5% respectively.

Between 2000 and 2006 remittances flowing into Moldova acquired an ever larger share of the GDP, growing from around 14% to 34.5% (*Figure 60*). With very strong economic growth in 2007 and 2008, the share dropped to 31.2% before declining by almost 10 percentage point in 2009 as the economic crisis spread. Since 2010, the flow of remittances has slowly grown again, yet it has remained - in terms of share of GDP - at much lower levels than around 2008, also due to Moldova's economy strong performance.

Figure 55. Remittances and Moldova's economy (2000-2013)



Source: World Bank, IMF.

III.3 FOOD UTILIZATION

Food utilization is commonly understood as the bodily use of various nutrients in the food. Adequate food utilization requires a diet with sufficient energy and essential nutrients, safe food and potable water, proper hygiene and sanitation, access to health services, proper feeding practices and illness management.

KEY NUTRITIONAL OUTCOMES

116. **The latest Multiple Indicator Cluster Survey (MICS) conducted in 2012 suggest relatively low overall malnutrition levels in Moldova, as well as improvements across all categories of malnutrition.**[20] Between 2005 and 2012 the national rate of children under the age of five who were *stunted* dropped from 8.4% to 4.4%, the rate of children who were *underweight* dropped from 4.3% to 3.2%, and the rate of *wasted* children from 3.9% to 1.4%. During the same period the rates of children under the age of five who are severely affected by malnutrition dropped below 1% in all categories (0.9% of severely stunted, 0.1% of underweight and 0.2% of wasted children).Overall, according to the internationally adopted WHO classification of malnutrition severity, the level of malnutrition in Moldova can thus be considered as low (*Table 6*).[21]

Table 6. WHO classification of severity of malnutrition

Severity of malnutrition	Stunting	Underweight	Wasting
Low	<20%	<10%	<5%
Medium	20-29%	10-19%	5-9%
High	30-39%	20-29%	10-14%
Very High	≥ 40%	≥ 30%	≥15%
Rates in Moldova (2012)	4.4%	3.2%	1.4%

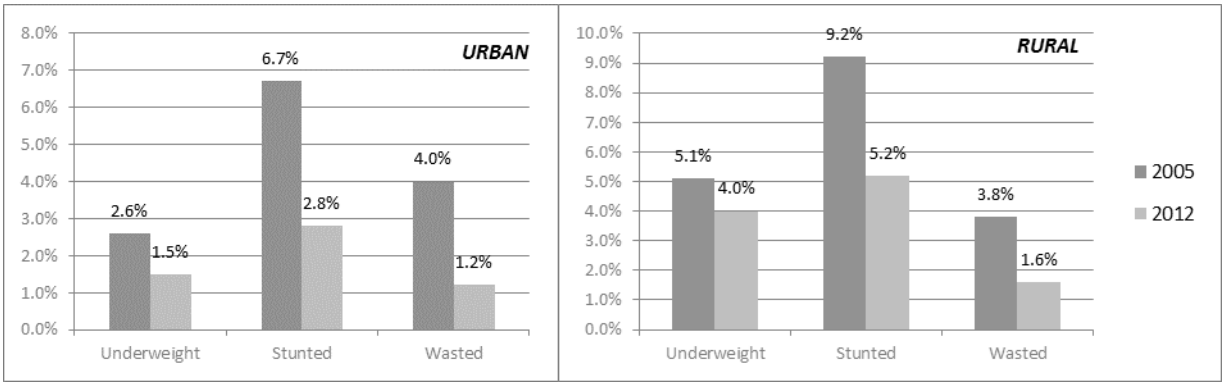
Source: WHO, UNICEF.

117. **However, the share of children affected by malnutrition among children living in rural areas is higher than among their urban counterparts.** As *Figure 56* shows, while the rates have improved for both urban and rural areas between 2005 and 2012, the difference between them persists: (i) 2.5% more children were reported as underweight in rural areas than in urban areas; (ii) 2.4% more were reported stunted; and (iii) 0.4% more were considered wasted. At the same time, the values for rural areas are higher than the national average in all categories.

[20] This section relies heavily on the following sources: (i) the Demographic and Health Survey (DHS) final report for Moldova, published in 2005 and accessible at http://dhsprogram.com/what-we-do/survey/survey-display-258.cfm; and (ii) the UNICEF Multiple Indicator Cluster Survey 2012, published in 2014 and accessible at http://dl.dropboxusercontent.com/u/18545482/Moldova_2012_MICS.pdf.; the UNICEF definition of malnutrition was used (http://www.unicef.org/progressforchildren/2006n4/malnutritiondefinition.html)

[21] Especially when compared to similar estimates for other countries in Eastern Europe and Eurasia.

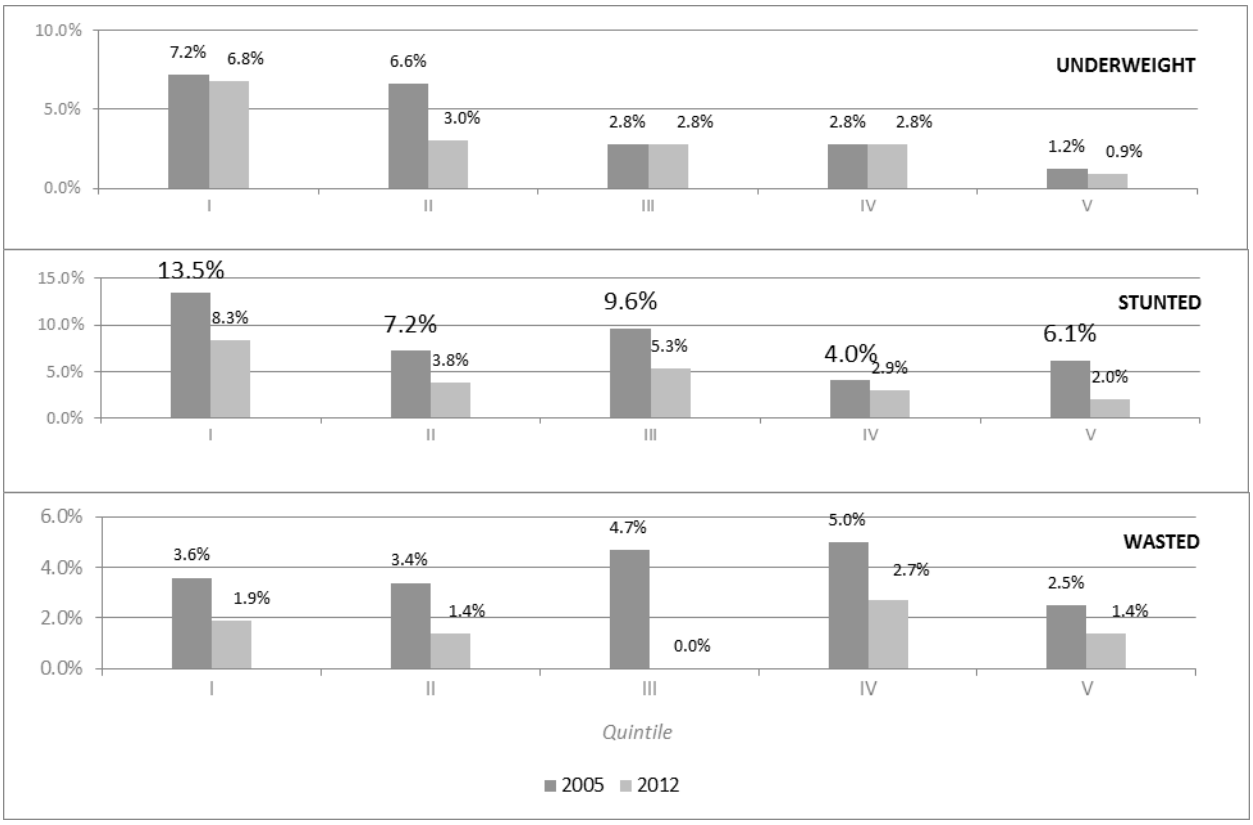
Figure 56. Severity of malnutrition in Moldova: urban and rural areas (2005, 2012)



Source: UNICEF.

118. **The rates of children with growth deficiencies have also dropped among all income level groups (*Figure 57*).** Children from low-income households are still more likely to report higher rates of growth deficiencies than children from higher-income households, but not uniformly so: the share of stunted and wasted children from the two lowest-income quintiles is in some cases even lower than that of the higher-income groups.

Figure 57. Severity of malnutrition in Moldova by income group (2005, 2012)



Source: UNICEF.

119. **The 2005 DHS report revealed that a majority of Moldovan women (52.6%) had registered normal values of Body Mass Index (BMI).**[22] The proportion of women with chronic energy deficiency was rather low at 6%, while the share of severely thin women (with BMI < 16) was only 0.4%. Obesity, on the other hand, appeared to be a much more pressing problem. The proportion of overweight women was as high as 42%, and the proportion of obese women stood at 18%. The DHS report also indicated that the percentage of women with higher BMI values was larger in rural areas than in cities.

BOX 5. ASSESSING THE NUTRITIONAL STATUS OF INDIVIDUALS

The nutritional status of individuals is commonly assessed through:

(i) *Anthropometric measurements* used to measure growth in children and body weight changes in adults. There are three primary anthropometric indices for children under five years of age: *stunting* (low-height-for-age) that reflects chronic malnutrition, *wasting* (low-weight-for-height) that reflects acute malnutrition, and *underweight* (low-weight-for-age) indicating either acute or chronic malnutrition, or both.

(ii) *Clinical examination and biochemical testing* used to diagnose deficiencies of micronutrients. Key indicators used to assess micronutrient deficiencies include iron deficiency anemia, vitamin A deficiency and iodine deficiency.

120. **Insufficient iodine and iron intake appear to be key micronutrient deficiencies in Moldova, especially among the rural population, and the trend is worrying.** The 2005 DHS report data on iodine intake revealed that overall almost 60% of all households, 77% of urban households and 49% of rural households consumed adequately iodized salt. The level of iodization was highest in Chisinau where 84% of households used iodized salt in their diet, while the most problematic was the low (44%) level of iodization in the South. In 2005, this represented a significant improvement over earlier data from 2000 when only 33% of Moldova's population used iodized salt.[23] However, by 2012 only 44% of households were reported as using adequately iodized salt, a drop of 16 percentage points since 2005. The negative trend was registered among urban households where the use of adequately iodized salt dropped from 77% to 61%, as well rural households where the share dropped from 49% to 34%. The level of iodization was still the highest in Chisinau (68%) and lowest in the South (34%) and North regions (37%). The difference between households of different income groups was stark: the wealthiest households consume adequately iodized salt three times more frequently (68%) than the poorest households (24%).

121. **The 2005 DHS report noted that the consumption of foods rich in Vitamin A appeared fairly regular over the summer months in Moldova.** Over 90% of children aged 12-35 months were reported as having a diet that included fruits and vegetables rich in vitamin A. Data from the MICS 2012 report

[22] BMI is an additional anthropometric indicator used to assess the nutritional status of adults. A BMI in the range 18.5-24.9 indicates the norm, while a BMI of less than 18.5 is considered an indication of chronic energy deficiency. MBI values of 25 to 29.9 indicate that a person is overweight, while values over 30 indicate obesity.

[23] The MICS 2000 is the source of 2000 data.

show that within the six months prior to the survey, a quarter (26%) of children aged between 6 and 59 months received a high dose of vitamin A supplement, emphasizing that no real difference emerged in children's vitamin A supplementation when divided by sex, region, area, age, mother's education level and household wealth.

122. **The estimated anemia levels of children and women in Moldova had been assessed by the WHO to be a medium level public health concern.** The 2005 DHS report data showed that 28% of women in had some level of anemia (mainly mild and moderate) and 32% of children aged 6-59 months had mild or moderate anemia. Women and children living in rural areas were more prone to anemia than those in urban areas, however, severe anemia for children and women was practically absent. Anemia levels for both children and women tend to decline as household income levels increase. The prevalence of anemia among women and children in Moldova was generally somewhat lower than that in other countries of Eastern Europe and Eurasia.

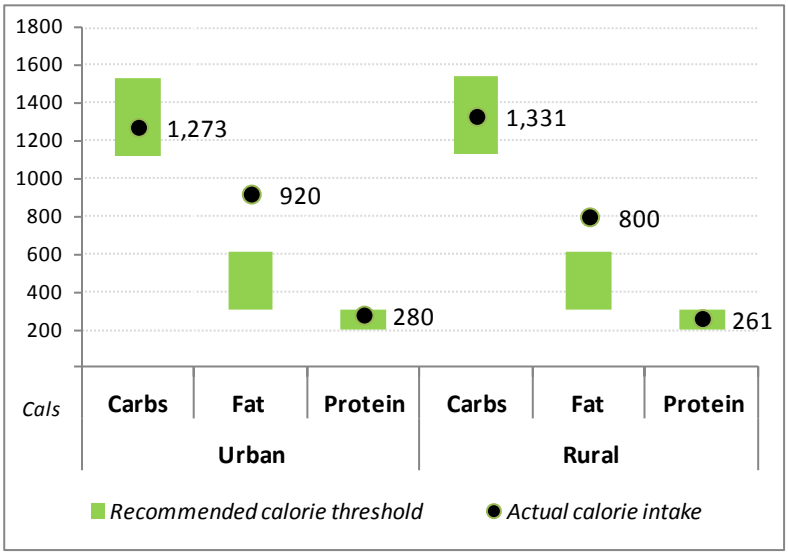
123. **Breastfeeding is nearly universal in Moldova: according to the MICS 2012 report 97% of children are breastfed at a certain point, with no significant difference between children born in rural and urban areas, as well between income groups.** However, the children are breastfed for a relatively short period and receive supplements from an early age. 36% of children between 0-5 months are exclusively breastfed, while by age 12-15 months more than half (52%) of them are no longer breastfed. The remaining breastfed children also consume plain water, water-based liquids or juice, other milk in addition to breast milk, and complimentary foods.

DIET DIVERSITY

124. **The diet diversity of an average household in Moldova is within the range of WHO recommended values for *carbohydrates* and *proteins* and somewhat above them for *fat* (*Figure 58*).** There is little difference between the average urban and rural diet, with the only real exception being the slightly higher share of fats in the urban diet: both urban and rural households consume amount of fat that are considerably higher than the recommended WHO values. The difference in the consumption of proteins and carbohydrates exists, but is not significant.

125. **While the urban and rural diets do no differ much at present, recent trends suggest a possible divergence.** In fact, the increasing daily food energy intake in urban areas has been accompanied by increasing consumption of proteins and fats, while the declining rural daily food consumption has involved diminishing intake of calories from all three nutrient groups. The share of rural residents with high staple intake (over 60% of total food intake) has been diminishing over the past years – from 20% in 2006 to 5% in 2013. The consumption of calories derived from fat has continued to increase both in urban, as well as rural households.

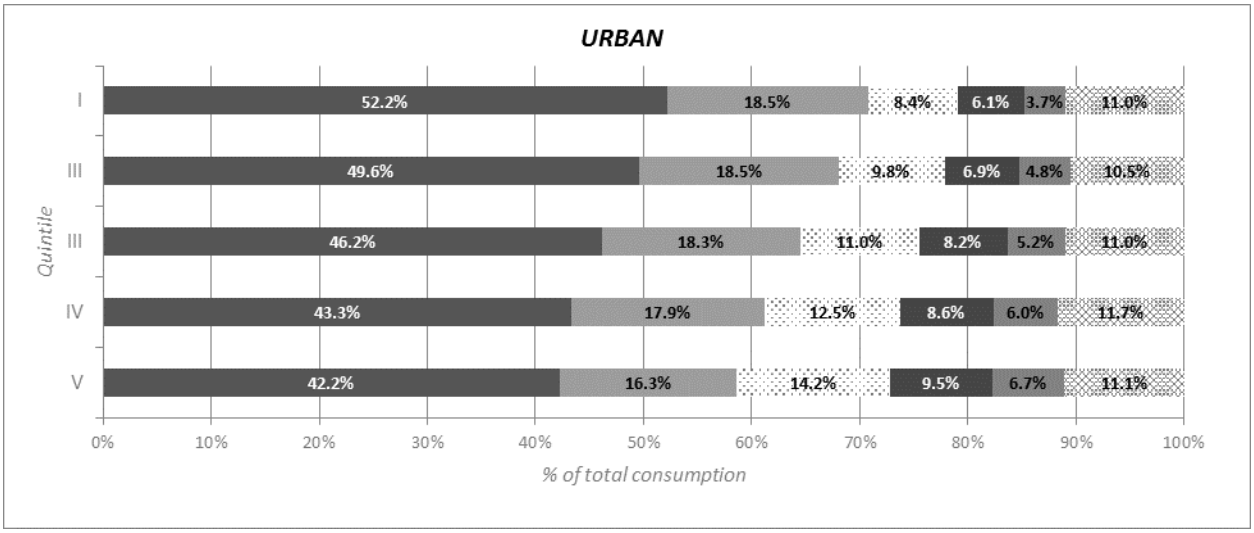
Figure 58. Individual calorie intake by nutrient groups: urban and rural households (2013)

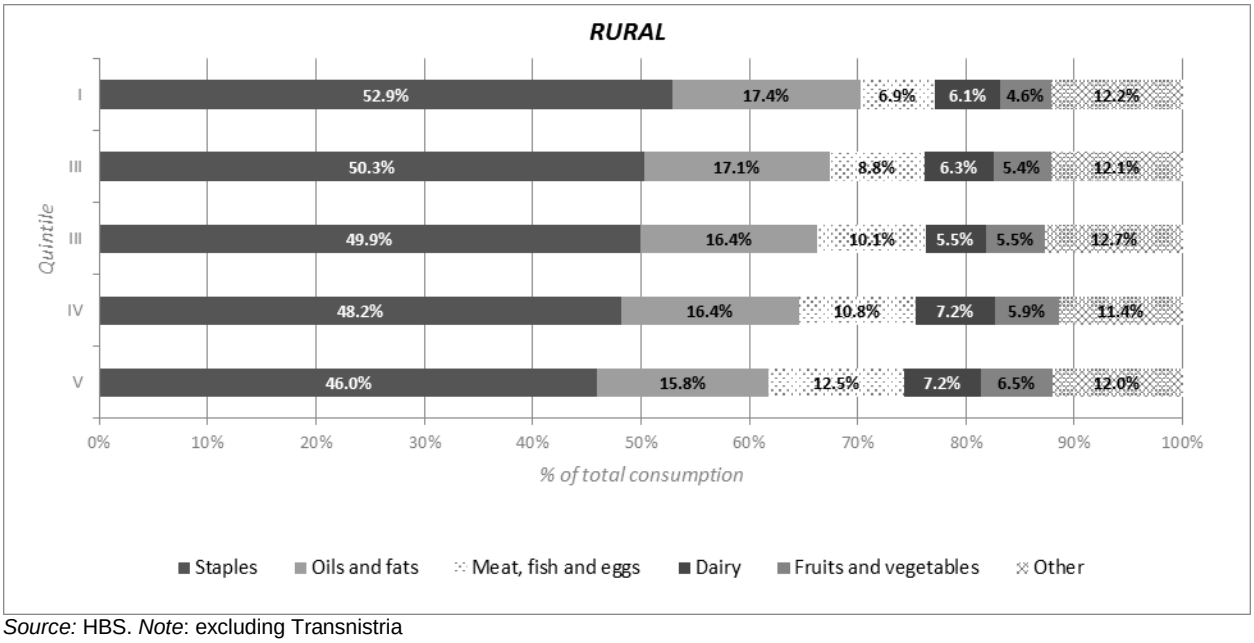


Source: HBS. *Note*: excluding Transnistria

126. **Diet diversity improvements go hand in hand with higher income levels, both in urban and rural areas.** Households with higher incomes tend to consume more daily calories through meat, fish, eggs, dairy products, as well as fruits and vegetables, while at the same time reducing the consumption of staples, fats and oils (*Figure 59*). However, high-income rural households still consume more staples than their urban counterparts, and the high-income urban households consume slightly larger shares of meat and dairy products than their rural counterparts. The consumption of fats among the urban households of all income groups is also somewhat larger than that of rural households.

Figure 59. Calorie intake by food groups: urban and rural households (2013)





Source: HBS. *Note*: excluding Transnistria

FOOD SAFETY

127. **The regulatory and institutional food safety framework in Moldova has made important progress in recent years**. The underlying reforms in the food safety and quality have been initiated under the framework of a Food Safety Strategy for 2011-2014 that has provided for the creation of a single competent authority [National Food Safety Agency - ANSA] meant at unifying all food safety functions and regulations. Legislation enabling the creation and operation of the envisaged authority has been adopted throughout 2012, thus ensuring the legal foundation of the new institution that was set up and became operational in early 2013. The newly created agency is in charge of ensuring the control over the entire food chain "from farm to fork", and is subordinated to the Government. It is the result of merger of several public institutions previously responsible for various aspects of food safety and quality management. The scope of work for the newly created institution in reforming the food safety and quality area in Moldova is huge indeed, and making priorities and selecting among areas/agri-food subsectors shall be considered.

128. **However, the present food safety framework does not yet ensure a proper safety control of food sold within the country, thus posing serious threats to public health**. Control over the safety of food products sold year-round in open markets is presently fairly weak. Reports from market players suggest that safety controls on food products of animal origin are better enforced than those on products of plant origin, but gaps remain. Most often cases revealing gaps of the current food safety control system in open market places are usually evident in seasonal poisoning hotbeds among population resulting from excessively high level of nitrates in early spring vegetables (cucumbers, in particular) as well as in water melons. There are no safety controls on the food products sold in village-level markets, though some controls and inspection are performed in regional and city food

markets. Supermarkets and food stores do generally require from their suppliers documents attesting the safety of their food supplies, but show less stringency with regard to fresh products of plant origin.

129. **A key problem of the current system is that even the availability of food safety certificates does not guarantee produce safety**. This is due to several reasons. First, there are some gaps in sample drawing procedures that allow for inaccuracy of final test conclusions. Second, there is generally a low credibility in the lab test results, as laboratories are under-supplied and poorly equipped, whilst the situation allows sufficient room for rent seeking. The integrity of test results produced by Moldovan labs have been also challenged by Moldova's trading partners (primarily Russia but also EU) a number of times over the recent past.

III.4 FOOD STABILITY

The phrase "all people, at all times" is integral to the definition of food security, recognizing that people's food security situation may change over time. The stability dimension thus emphasizes the importance of reduced shocks to the other three dimensions: food availability, access to food and food utilization. Food security is only ensured if these three dimensions are stable over time and not affected negatively by natural, social, economic or political factors.

STABILITY OF FOOD AVAILABILITY

130. **The national-level availability of food in Moldova has not shown any signs of instability and/or disruption recently, but household-level food supply of rural families was negatively affected by domestic crop scarcity caused by adverse weather in some years**. No evidence has been found of disrupted stability of food supply in Moldova over the recent years. Food availability at the national level is fully and regularly ensured by both domestic supplies and food imports. However, since rural population' food consumption is largely based on self-produced foods, any form of local production distress affects the stability of their household food supply. This is confirmed by overtime dynamics of food security outcomes. For example, the 2007 drought had led to worsening of food security outcomes for the rural population, which continued declining and reached their peak low point in 2008 in response to a combination of negative factors, such as depleted households stocks (the result of the previous year drought), continued weather distress (country-wide floods), as well as rising food prices.

131. **Achieving higher yield stability is critical to improving the stability of food availability (but also access to food) at household level, especially in view of climate change forecasts predicting more frequent and severe weather events in Moldova and in the region**. The high volatility of crop yields at the farm-level is a reflection of underdeveloped weather-related risk mitigation instruments, as well as limited access to irrigation, older farming practices and technologies (limited use of drought- and pest-resistant varieties, optimization of fertilizer application, anti-hail protection tools including hail nets and plastic tunnels), and lack of innovative insurance schemes for agriculture. Provision of timely weather information enabling farmers to effectively respond to extreme weather events is also contributing to greater yield stability.[24]

132. **The structure of Moldova's agri-food imports shows that increased diversity of domestic agricultural production could contribute to improved stability of supply**. A more diverse domestic supply of agricultural products would positively impact the stability of all food security dimensions affecting the rural population engaged in agriculture. Production of a larger variety of agricultural products would directly contribute to improved diet stability (in terms of both quantities and qualities of foods consumed) of those households relying on self-production, thus positively affecting both the availability and utilization of food for a sizeable amount of rural population. In addition, access to food would also be positively affected through increased income: responding to the market demand by

[24] As part of the World Bank Disaster and Climate Risk Management Project initiated in 2010.

supplying the required variety of products would increase farmers' market opportunities, thus helping them to realize higher incomes.[25]

Stability of Access to Food

133. **Domestic food price trends and the evolution of food expenditures suggest that access to food in Moldova, both for its rural and urban population, has not suffered from sizeable shocks over the past years**. Consistent income growth and a relatively smooth increase of food prices over the past years have led to improved economic access to food, reflected in declining share of food expenditures, as well as a diminishing share of households with high food expenses. The only exception that has recently negatively affected the overall continuity of the trend were the 2010 food price swings that resulted mainly in worsening food access for the urban poor.

134. **The seasonal price variation – a potential source of unstable access to food – appears significant primarily for fresh horticultural products**. Indeed, the share of household expenditure allocated to food during the high season (3rd quarter) is between 3-6% lower than during the rest of the year. A cross-country comparison based on 2010 prices showed that the intra-seasonal price gap for fruits and vegetables was larger in Moldova than in the neighboring countries: while fresh products are cheaper in Moldova during the high season, the off-season prices in Moldova are similar or even higher (for some products) than prices in the neighboring markets.[26]Four factors appear key in this respect: (i) there is an over-supply of fresh produce at harvest time in Moldova, with producers encountering difficulties finding alternative markets, and this is reflected in the low price; (ii) the domestic fresh produce is of sometimes of lower quality or appearance than the regional average; (iii) low level of adoption of capital intensive production technologies (such as greenhouse and other protected-field production) that could supply fresh produce over an extended period; and (iv) scarce availability of post-harvest infrastructure for fresh produce storage, handling and packaging. All four would require attention in order to improve the stability of access further.

135. **Unlike food prices, agricultural prices in Moldova are generally lower and more volatile than the world agricultural prices, resulting in adverse effects on the income stability of agriculture-dependent population, farmers in particular**. Not surprisingly, farmers thus represent the socio-economic group with the lowest income levels and very high poverty incidence in Moldova (second highest after agricultural workers). Volatility has been well noticed recently: farmers' income fall was substantial in 2009 in response to the drop of agricultural prices, followed by the 43% increase in agricultural prices in 2010 that significantly (27% in nominal terms) boosted their incomes and drove down their poverty rate by 10%.

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[25] Interviews conducted in Moldova for this report have revealed a sometimes relatively basic disconnect between market demand and supply. For example, METRO Cash & Carry representatives in Moldova stated that they import lettuce from Italy because they struggle to find reliable local suppliers.

[26] The cross-country analysis was based on 2010 weekly prices collected from wholesale markets from 4 countries: Chisinau (Moldova) wholesale market, Odesa (Ukraine) wholesale market, Moscow (Russia) wholesale market and Braniste (Poland) wholesale market. Source: www.agravista.md.

136. **To benefit from high global agricultural prices over a longer period of time, Moldova's farmers need to focus on enhancing the competitiveness of their output, requiring improvements in produce safety and quality, as well as increase in quantity and variety**. Moldova's producers and traders successfully managed to reap the benefits of their low-price and low-quality produce position on export markets during the 2010 price rise, but that was a one-off shock and such events are rare. Markets for low-price and low-quality fresh and processed products are shrinking and Moldova's farmers need to adjust through production modernization, as well as harvest, post-harvest, processing and handling practices.

137. **Government's self-sufficiency policies that have at points materialized in ad-hoc export restrictions represent a serious destabilizing factor, contributing to eroded farmers' incomes and suppressed production**. Numerous studies, some of them prepared specifically for Moldova, have shown that export bans generally cause more harm than do good to domestic economies: they result in depressed production, inhibited processing, disrupted trade and thus reduced incentives to make investments in agriculture and the rural sector.[27] As a net exporter of cereals, with low dependency on cereal imports and close proximity to international grain markets, Moldova's pursuit of national self-sufficiency in grains at the expense of its domestic sector of producers and traders is hardly justified.

138. **Transfers from abroad, although presently an important vehicle of poverty reduction, are also a source of income vulnerability, since their flow remains unpredictable.** The exposure of Moldova's households became evident in 2009 when the global economic and financial crisis negatively impacted the remittances flows, with a particularly sharp drop in remittances flowing to rural areas. In combination with the concurrent drop in agricultural prices, the impact on the poverty rates of agriculture-dependent population has been severe. From 2008 to 2009 farmers' poverty rate rose by 10 percentage points (from 37% to 47%) and agricultural workers' poverty rate by 5 percent points (from 43% to 48%). Households in the lowest income quintile (in both urban and rural areas) had then suffered the largest remittance and income fall. There are two main factors that forecast declining remittance patterns over the medium to long run: (i) households tend to reunite abroad and family ties loosen up over time; and (ii) external environment is unpredictable, as the current economic slowdown in Russia and Ukraine (both large emigration destinations) shows. The strengthening and optimization of the present system of public transfers aimed at mitigating remittance-driven vulnerabilities and reducing poverty levels is therefore crucial.

STABILITY OF FOOD UTILIZATION

139. **Threats to stable food utilization are higher in rural areas, due to the dependency on self-production and higher income volatility**. The diet of rural households is thus more unstable than that of urban households. Rural households largely depend on the food produced on farm, as well as

[27] World Bank (2008). *Moldova Food Security and Grain Price Stabilization Study*; World Bank (2005). *Moldova Agricultural Policy Notes – Agricultural Markets*.

in-kind food purchases and exchanges – this is why rural diets are more severely affected by any production distress. For example, while in normal years the diet quality and diversity visibly improve during the high season (Q3), in 2007 – when production was affected by a severe drought – that pattern was broken and, contrary to the general rule, the rural population increased its consumption of staples. High staple consumption in the rural area persisted throughout 2008 as a result of poor 2007 harvest and depleted household stocks. No dietary changes had been noted in urban areas during the same period. In fact, diet quality of urban households has been consistently improving over the last decade.

140. **The rural population is negatively affected by a significantly poorer and unstable access to safe drinking water, proper hygiene conditions and sanitation systems.** Coverage and access to health care services are also worse in rural areas, and decline with individuals' income status. As a result, poorer households benefit less from medical services than higher-income households. In addition, control over the safety of food sold in village markets is practically non-existent and this poses a serious and constant threat to the health of rural dwellers. Not surprisingly, nutritional and health outcomes registered in rural areas are worse than those in urban areas.

III.5 CONCLUSIONS

AVAILABILITY OF FOOD

141. **Availability of food at the country level does not appear to be a challenge, yet rural areas face greater food insecurity during periods of lower production.** Both domestic production and food imports fully ensure the national supply of food. Growing agri-food imports suggests a fast growing and increasingly sophisticated consumer market in Moldova that presents both opportunities and challenges for the domestic production sector. The various shocks in recent years (droughts and floods) have generated significant distressed in Moldova's agricultural production and the sector has been struggling with high volatility of output. Under-developed income stabilization tools and weather mitigation instruments leave the agrarian population exposed to adverse weather events and thus prone to suffer greater food insecurity. Even low production periods (i.e. off-harvest months) are associated with deteriorating food security indicators in rural areas, exposing the limited purchasing power and lack of storage infrastructure.

142. **High yield volatility is a reflection of under-developed weather mitigation instruments.** These include: (i) limited access to irrigation;(ii) low rate of adoption of modern farming techniques and technologies (e.g. drought- and pest-resistant varieties, optimization of fertilizer application, anti-hail protection tools); (iii) absence of innovative insurance schemes for agriculture (e.g. index-based weather insurance program); as well as (iv) lack of timely meteorological information available to farmers. Climate change will only exacerbate all of the above.

ACCESS TO FOOD

143. **Access to food in urban and rural areas is determined by a numerous set of factors because urban and rural households source their food differently.** While urban households have to primarily purchase their food, rural households rely largely on self-produced foods. As a result, the access to food of urban households is almost entirely dependent on their purchasing power and food price patterns, while for rural households their agricultural activities represent not only a source of income, but also a safety net in terms of actual food. Of course the opposite is also true: rural households face the additional direct threat in the form of any adverse events that affect their harvest. The implications of such distinct methods of food sourcing are in practice manifested by the fact that poor urban households more often suffer from deficiencies related to food *quantity* (e.g. higher food energy deficiency rates), while poor rural households suffer more often from deficiencies related to food *quality* (e.g. higher staple intake rates).

144. **The nature of sourcing food in Moldova's rural areas is gradually changing.** The importance of self-production has been steadily declining (from almost 50% of total food consumption in 2006 to 30% in 2013) and is slowly being replaced by higher reliance on purchased foods (from less than 30% to more than 40%). Two developments are most likely driving this shift: (i) increasing farm specialization and market orientation, leading to less in-house consumption; and (ii) parts of rural population have been

moving out of agriculture, increasing their reliance on purchased foods. Cash incomes are thus becoming more important for the rural households, as they have always been for their urban counterparts. This has important implications for targeted poverty assistance in both rural and urban areas, something that the Government has been pursuing with the *Ajutor Social* program since 2008.

145. **The food market infrastructure in Moldova is fairly developed and well spread throughout the country**. The most important recent development is the rapid growth and expansion of supermarket chains, both in cities as well as in rural areas. This is a major change: just a few years ago supermarkets were limited to urban areas, mainly the capital Chisinau. In addition to large- and small-scale food stores, there is a large network of agricultural and food open-air markets located throughout Moldova. Overall, the food offer is plentiful and diversified, composed of both local products and imports. Not surprisingly, the offer is more diversified in larger conurbations than in more remote areas.

146. **Food prices in Moldova have grown relatively slowly and steadily over the last decade, but have exhibited high seasonal volatility.** Domestic prices for most key foods in 2013 were some 50% to 80% higher than in 2005. However, both rural and urban nominal incomes have grown faster, thus increasing the average household's purchasing power. Overall stability is somehow undermined by high seasonal price volatility: highest for fruits and vegetables, lower for meat and dairy products, and almost non-existent for bread and bread products.

FOOD UTILIZATION

147. **Elements ensuring proper utilization of food are more accessible in urban areas than in rural areas.** Nutritional and health indicators registered in urban areas show better outcomes compared to similar rural indicators. The basic conditions ensuring adequate food utilization in rural areas are considerably worse than in urban ones: the urban-rural gap is particularly striking with regard to drinking water quality, hygiene conditions and sanitation systems. Rural residents' access to health care services is also poorer and more unstable. Urban households exhibit a somewhat better diet diversity than rural households, although differences are narrowing over time and both are increasing their intake of fats. Public control over the food safety is also better enforced in urban areas, but rural households retain more control over what they eat through larger reliance of self-production.

148. **The level of malnutrition among children remains low.** Between 2005 and 2012 the national rate of children under the age of five who were *stunted* dropped from 8.4% to 4.4%, the rate of children who were *underweight* dropped from 4.3% to 3.2%, and the rate of *wasted* children from 3.9% to 1.4%. During the same period the rates of children under the age of five who are severely affected by malnutrition dropped below 1% in all categories (0.9% of severely stunted, 0.1% of underweight and 0.2% of wasted children).

STABILITY

149. **The review of the *stability* dimension of food security reveals several areas of concern.** First, the stability of food availability of rural households is disrupted by regular production shortfalls caused by adverse weather events. High yield volatility poses serious threats to both agricultural sector development and the food security of rural households, especially in view of intensifying climate change events. Second, access to food for both urban and rural population in Moldova does not seem to have suffered from sizeable shocks over the past years due to relatively smooth food price growth surpassed by household income growth. However, volatile agricultural prices have obviously reflected on the income stability of Moldova's agrarian population. In fact, recent downturns in agricultural prices have pushed up the rural food deficiency rates. Another source of income vulnerability, especially in times of external crisis, are the remittances which provide a significant income supplement for households and are an important vehicle out of poverty, especially for the rural population. Third, stable *food utilization* is exposed to multiple risks in Moldova, and, as emphasized earlier, these risks appear significantly higher in rural areas. Potential solutions would extend beyond the remit of agriculture or food security into social policy, deliver of public services, investment in public infrastructure and other areas.

IV. INSTITUTIONAL MANDATES AND THE FOOD SECURITY POLICY FRAMEWORK

IV.1 INSTITUTIONAL MANDATES FOR FOOD SECURITY POLICIES

150. **Moldova's food security agenda has been historically driven by self-sufficiency goals, and led by the Ministry of Agriculture and Food Industry (MAFI), though usually in coordination with the Prime Minister's office.** The MAFI takes the lead to develop, coordinate and implement the state policy for ensuring the efficient strategic management of food resources. It leads in matters of agriculture development, where safety and food security are fundamental criteria for ensuring both consumers' health, as well as competitiveness. It also monitors closely the national agricultural markets in order to prevent the emergence of imbalances, where lack of foodstuffs would generate food insecurity. The Agency of Interventions and Payments in Agriculture (AIPA) is MAFI's key instrument in executing its agriculture policy mandate. AIPA has been setup in early 2010 to manage the allocation of the annual agriculture subsidy fund.

151. **Yet, several other public institutions are involved in formulating and/or delivering response in case of food crises or simply in improving food security on a regular basis (*Figure 60*).** In addition to the MAFI, there is a number of ministries and state agencies involved in the process of defining and implementing food security policy and its multiple dimensions:

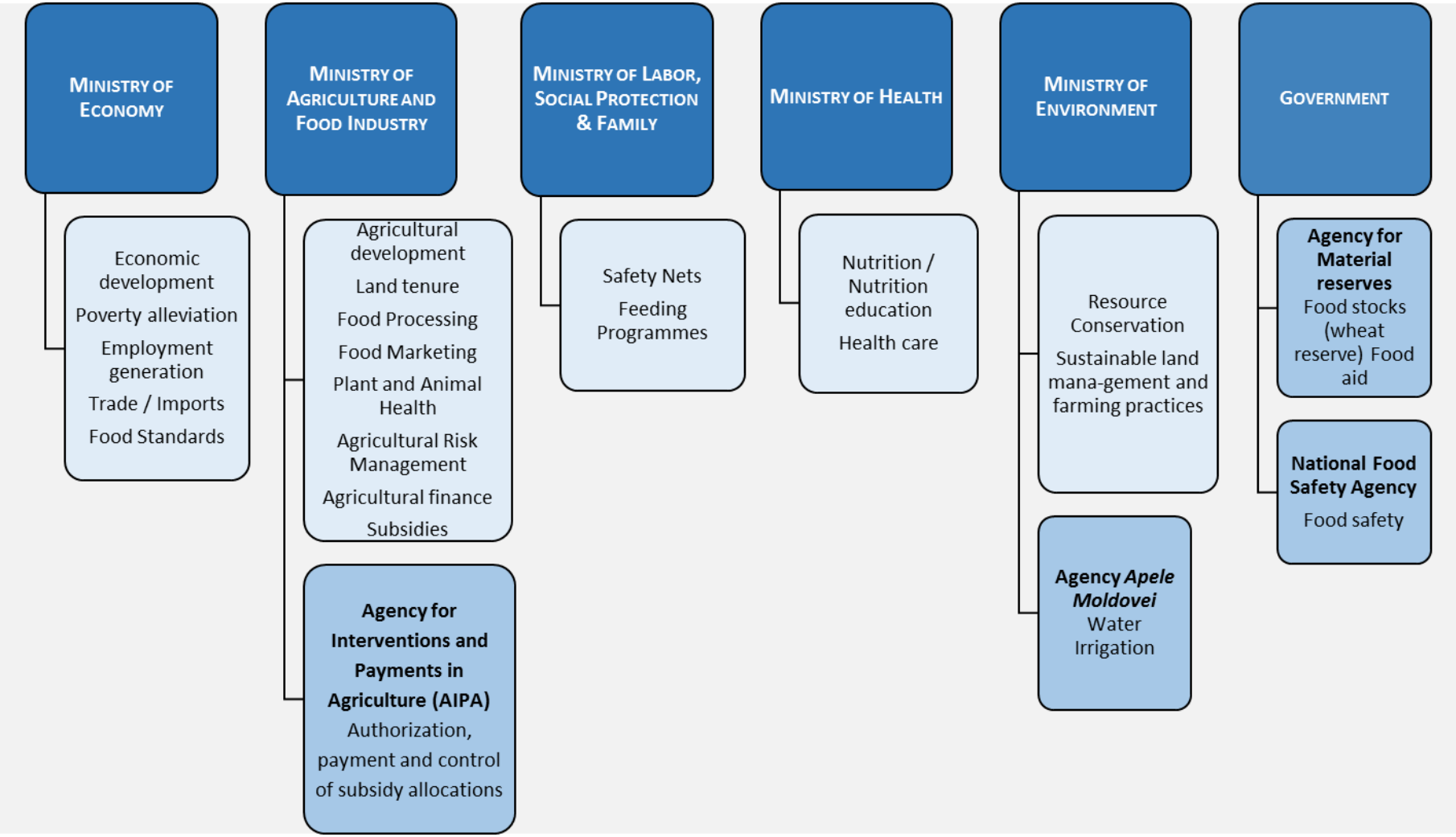
(i) *National Food Safety Agency (ANSA)* – control over safety and quality of food products (before 2013 this area was under the Ministry of Health' mandate);
(ii) *Ministry of Economy* – economic development and poverty alleviation policies; as well as trade policy;
(iii) *Ministry of Labor, Social Protection and Family (MLSPF)* – social assistance policy, including safety net/ feeding programs;
(iv) *Ministry of Health* – kept responsibilities over the safety of baby food and some food additives;
(v) *Ministry of Environment and its Agency Apele Moldovei* – management and maintenance of state-owned irrigation systems; sustainable land management programs (including draining, forest strips, protection dams, etc.) aimed at improving agricultural resilience.

152. **The Material Reserves Agency (MRA), a distinct government body, is mandated to manage the national strategic stocks.** In practice this entrusts the MRA with (i) the accumulation, storage and maintenance of material reserves; and (ii) the release of material reserves. **The Government of Moldova holds a public food reserve that is aimed at ensuring food security for the country's population in case of emergency situations**. Food products held by the state reserve include canned meat, pasta, sunflower oil, sugar, tea, coffee. The only agricultural product held by the reserve is *wheat*. The Agency

is not specialized in food reserves only; it also covers fuel, humanitarian and military supplies for emergency situations, as well as other reserves. Its current setup appears to be still a legacy from the Soviet times, when strategic reserves were managed in an integrated fashion. Nowadays, while many countries maintain publicly owned reserves to reduce food price instability and food insecurity, they tend to rely on dedicated food reserve agencies. Even so, such bodies need to abide by critical standards to ensure that they do not cause market disruptions, enjoy a certain autonomy and are professionally managed. They may also tender operations, including storage, to the private sector. In fact, in the OECD countries, most food stocks are held by farmers, traders and processors.

153. **Due to the involvement of a large number of ministries and agencies in the formulation and implementation of policy areas associated with the broad concept of food security framework, cooperation and coordination remain a challenge.** In fact, there is only limited interaction and coordination on food security issues among the various institutions, as there is little understanding of the cross-sectoral nature of food security. Aspects such as health care, food safety and/or sustainable farming practices are hardly seen as an integral part of the food security agenda. The MAFI should – as the institution with the leading role in food security – come forward with a blueprint for better inter-institutional planning and coordination.

Figure 60.Institutional mandates for food security policy



IV.2 THE FOOD SECURITY POLICY FRAMEWORK

154. **As shown above, distinct policy mandates separately address the different dimensions of food security**. So far, there is little evidence that food security challenges are tackled in an integrated fashion across all the responsible government agencies, following a unified policy approach. MAIA is taking the leadership in ensuring *food availability*, though food stock management is under MRA, yet irrigation systems (as an important component for reducing food supply volatility) are under *Apele Moldovei*, in turn subordinated to the Ministry of Environment. *Economic access to food* falls mostly under the purview of the social policy mandate, led by the MLSFP, though the Ministry of Economy can also play a major role through regulating trade. *Physical access to food* is mostly shared between Ministry of Transport and Road Infrastructure and MAIA, whereas food utilization is the joint responsibility of MAIA and the Ministry of Health.

155. **The analysis of the food security outcomes and dimensions in Moldova has revealed that the most critical issues to address are: (i) smoothing food availability, especially by addressing the volatility of domestic supply and increasing trade integration, and (ii) improving economic access to food to the most vulnerable population groups.** As a result, the discussion below will focus on agricultural production, price and market regulation, trade and social assistance, as key policy pillars that can further improve food security outcomes in Moldova.

AGRICULTURAL PRODUCTION

156. **Until recently, Moldova's food security agenda consisted mainly of aspirations to self-sufficiency and price stabilization that materialized in trade restrictions and market distortions**. Ensuring food security for the country's population was deemed a priority, and affirmed as such in the Government strategic documents in place prior to 2014. The food security agenda aimed at enhancing domestic production of agricultural and food products, and supporting food import substitution along with export expansion: a context that also justified price stabilization interventions in times of domestic and/or regional shocks. As a result, the food security agenda was occasionally used to protect local producer groups, particularly larger ones. Policy measures associated with food security mainly consisted of *ad-hoc* trade restrictions and market interventions, especially in the market for cereals. This led to market distortions by depressing producer prices and significantly harming competition within the affected sectors.

157. **The current strategy for the agriculture and rural development in Moldova sees sector modernization and improved climate resilience as the main vehicles for achieving better food security.** The strategy for the ARD sector covers the 2014-2020 period and was adopted by Government Decision in 2014. Its structure and design reflect Moldova's aspirations for a closer alignment with the EU policy framework and markets. The strategy rests on three pillars: (i) enhancing sector competitiveness through structural transformation and agri-food market modernization; (ii) ensuring the sustainable management of natural resources in agriculture; and (iii) improving the quality of life in rural areas. While better food security is not an objective per se, it remains a concern that transpires throughout the document. Measures such as investments in farm modernization, promotion of water saving technologies and climate resilient farm practices, as well large scale investments into the rehabilitation of the irrigation sector can be generally seen as conducive to better food security outcomes.

158. **The Government has been addressing these constraints with its 'competitiveness' agenda by providing around USD 30-40 million[28] per year delivered through AIPA.** Measures to stimulate farmers' adoption of agricultural risk mitigation instruments include subsidization of agricultural insurance premiums, co-financing of irrigation equipment, as well as funding of anti-hail and anti-frost systems. Production-enhancing subsidies are primarily focused on supporting the High-Value Agriculture (HVA) sector of fruits and vegetables through adoption of advanced production technologies and

[28] The financial envelope disbursed on competitiveness enhancing measures in 2014 was USD 38.75 million, according to AIPA.

setup of post-production facilities aimed at facilitating farmers' market access. The subsidy percentage varies between 30% and 50% of the total investment. However, the number of subsidy beneficiaries per year is limited due to budget constraints.

Price and Market Regulation

159. **State reserves, in particular for wheat, are used as an emergency intervention tool, but also to stabilize domestic prices of cereals and to maintain low bread prices.** Prior to 2009, the procedures for procurement and release were opaque and often destabilizing for the private sector (*Box 6*). Attempts to limit the rise in seasonal prices crowded out the private sector's willingness to procure stocks after harvest for domestic storage. This resulted in lower producer prices, higher exports and thus reduced domestic availability. Policy intervention that aimed to stabilize the seasonal grain price in the short term, destabilized the market on the long term. In addition, downward pressure on producer prices had a significant impact on the rural economy as a whole: it depressed the incomes of cereal producers, as well rural labor and land renters (rent is often paid in kind as a proportion of the harvest).

BOX 6. PRE-2009 USE OF THE STATE WHEAT RESERVE

Three types of interventions were particularly destabilizing:

i) The reserve was setting fixed prices for the purchase of wheat from producers, and these prices were usually either above or below market prices – resulting in tenders being either over-subscribed or under-subscribed. This type of intervention had an overall destabilizing effect on the market by creating false expectations and stimulating ambiguous behavioral patterns regarding holding of stocks by the private sector.

ii) By providing preferential access to cheaper wheat from the reserve to large bakeries (see also below), the Government undermined the viability of small and medium scale bakeries. Normally, recipient enterprises were required to return the wheat received from the reserve at the time of the next harvest, however, there were cases in the past (2008 and earlier) when wheat was offered free of charge to the two largest state-owned bakeries from Chisinau and Balti, so that they could maintain low bread prices.

iii) The wheat rotation policy adopted by the state reserve – buying when the wheat is cheapest (at post-harvest time) and selling/releasing when it is most expensive (in pre-harvest periods) – has been undermining the private sector of producers, millers, traders and bakers. The expectation that the state reserve would sell heavily in the pre-harvest period generally reduced the private sector willingness to hold stocks. This was in turn reflected in lower producer prices in the post-harvest period, increasing the incentives to export. These developments led to a thinning of the market during the rest of the season and increased tendency to speculation-driven price movements.

160. **Since 2009 more transparency has been introduced in the operation of the state grain reserve, but the policy framework for interventionist measures has not been removed.** The process of selecting recipients of reserve wheat has been made more transparent and the number and diversity of bakeries supplied with wheat from the reserve (to be returned from the next harvest) has significantly increased to include both large and medium-size enterprises. Wheat is now "loaned" to bakeries, on concessional terms, and the recipients must replenish the reserves thus used within a given period, usually during the off-season. Failure to comply with the deadline may trigger financial penalties. The quantities to be allocated to bakeries are based on requests filed by beneficiaries, and decided within a joint working group involving

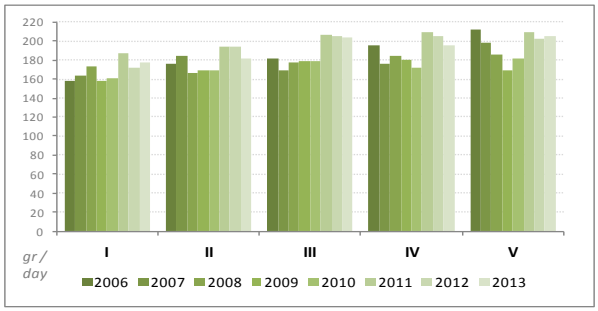
MAFI and ARM. A total of 31.94 thousand tons of wheat were released in early 2013[29], in an attempt to counter for the shortage of domestic supply and subsequent price surge that followed the 2012 drought. However, since state control over bread prices remains in place, the possibility that the grain reserve is used as a short-term "stabilization" tool also remains an option.

161. **While wheat reserves can be used as indirect price subsidies, price controls also persist, mostly motivated by social reasons; these remain applicable across-the-board rather than being targeted to vulnerable groups.** The Government continues to maintain the policy of "cheap bread for everyone", consisting in a mix of awarding wheat free of charge to bakeries out of the state reserves, and of exercising price controls on bread. Thus, state-owned bakeries need to abide by price caps on plain bread (also referred to as "welfare bread" – or *painea sociala*), while they remain free to set the price on more sophisticated bread and bakery products. Unsurprisingly, *Franzeluta*[30] and other bread companies are incurring significant losses at present, and the artificially maintained low bread prices stifle the growth of privately owned small- and medium-sized bakeries. As a result, the company has recently (i.e. January 2015) requested the liberalization of the price of bread, possibly accompanied by targeted government compensations to the most socially-vulnerable groups. This would indeed be a more sensible and more effective measure that the Government could consider introducing.

162. **The state regulation of food prices has been limited to bread price controls and capping of profit margins of some key foods**. Designated 'socially important' food products - wheat flour, pastry, sugar, sunflower oil, meat and meat products, milk and dairy products - are subject to a 20% cap on domestic sales' profit margins, the only exception being bread, where the cap is even lower at 10%.The control of bread prices is in practice realized through the state bakery *Franzeluta*, the largest bakery in Moldova (80% market share in Chisinau and about one third of the country-wide market for bread and bread products). *Franzeluta* is required to produce part of its bread output within the cheapest price category that is well below the cost of production. The price for this most affordable type of bread, also called 'welfare' bread, has been kept flat since 2004.

163. **Despite the bread price cap policy, consumption of bread still varies among the different urban income groups.** As *Figure 61* shows, the poorest population quintile consumes the least quantity of bread and bread products as compared to the higher-income quintiles. This result might imply that higher income groups benefit more from the non-targeted nature of the price cap. Another unintended consequence of the bread price cap policy concerns the animal feed sector: with prices for welfare bread (MDL3 per 0.5kg loaf) well below the current price of animal feeds (e.g. around MDL8-10 per kg for pigs) agricultural livestock producers have strong incentives of substituting animal feed products with welfare bread.

Figure 61. Urban population' daily consumption of bread by expenditure quintiles (grams per capita)



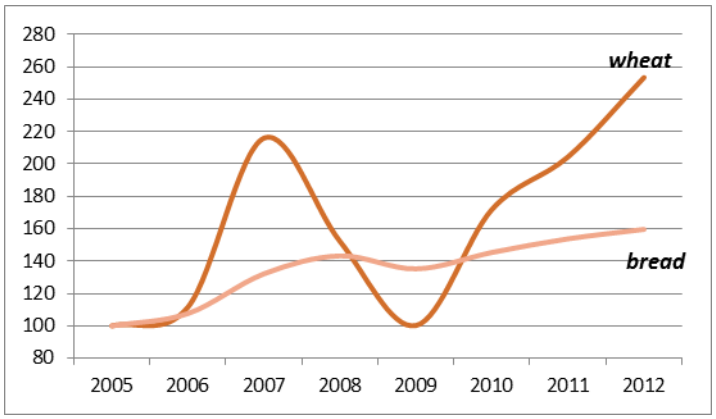
Source: HBS. *Note*: excluding Transnistria

[29] According to the Government Decision no. 151 of February 26, 2013, available at: http://lex.justice.md/index.php?action =view&view=doc&lang=1&id=346878.

[30] *Franzeluta* is located in Chisinau and controls over 80% of the market share there, while also commanding about one third of the country-wide market share for bread and bread products.

164. **The bread price cap is hurting existing producers and preventing the emergence of a healthy sector.** As *Figure 62* shows, the price cap has not been adjusted to reflect the growing price of wheat, resulting in economic difficulties incurred by bakeries. In addition to the price cap, the10% ceiling on bread margins leaves bakeries, including *Franzeluta*, with very little opportunity to compensate losses incurred from some produce categories (e.g. the 'social' bread) with profits from other categories. Both policies are also crowding out the private sector by making it difficult for local bakeries to compete on price with larger state-owned bakeries, threatening their sustainability over a longer run.

Figure 62. Price evolution: bread vs. wheat (2005=100)



Source: NBS. *Note*: excluding Transnistria

TRADE

165. **While the agriculture strategy continues to regard food security through production lenses, the country has made significant strides in terms of improving market access and trade, with implicit food security benefits**. In the agriculture and rural development strategy document, food security is still mostly referred to in relation to the performance of the cereal sector; an improvement in wheat production and productivity is thus seen as a major contributor to food security. In turn, improving access to broader food supplies through trade is insufficiently featured and recognized.

166. **Moldova is a small open economy with a liberalized regime for imports and exports of goods and services.** The country has become a member of World Trade Organization (WTO)in 2001, and since then Moldova's tariff policy has been based on the trade regime and norms established by the WTO. Moldova does not apply any prohibitions or quantitative restrictions on imports that would not conform to WTO provisions, nor does it apply any customs duties, prohibitions or other measures on exports. The average customs duties on agri-food imports are 12%, which is higher than the 5% average for all imported goods but still remains relatively low in an international perspective.

167. **The signing of the deep and comprehensive free trade agreement (DCFTA) with the EU in 2014 marked a decisive step towards greater trade opportunities**. The DCFTA foresees, among others, the gradual elimination of import duties or tariff rate quotas for many agri-food products, including some deemed sensitive from the domestic industry perspective (e.g. pig and poultry meat, dairy, sugar and sweeteners). In addition, and prior to this, Moldova also joined the multilateral Central European Free Trade Agreement (CEFTA) in 2006, and signed bilateral free trade agreements with countries from the Commonwealth of Independent States (CIS).[31]

[31] Moldova is also member of the Organization of the Black Sea Economic Cooperation (BSEC), Organization for Democracy and Economic Development (GUAM), Southeast European Cooperative Initiative (SECI) and other regional economic initiatives.

168. **However, developing the ability to meet the EU Sanitary and Phytosanitary (SPS) requirements will be an important milestone towards taking full advantage of the DCFTA.** For agricultural and food products the greatest challenge in this context will be to achieve full compliance with EU SPS and quality standards, including the private ones. But even beyond the EU, a comprehensive reform of the domestic food safety and quality management system is a priority and should ensure public health, help domestic agro-food industry to maintain market share and enable growth of exports to both traditional and new markets.

169. **Export restrictions (on wheat) have only been used occasionally in recent years**. In February 2011 the Government introduced a ban on wheat exports, arguing at the time that this would increase food security, since the domestic stocks has been depleted due to higher external wheat prices. The Government was concerned that limited availability of domestically produced wheat would ultimately result in higher prices thus lowering accessibility to Moldova's consumers.[32] The ban had been kept in place for three months and was lifted when the regional market stabilized, but also due to the Government's obligations stemming from the then arrangement with the International Monetary Fund (IMF).[33] However, the increased participation of Moldova in free trade agreements, such as the DCFTA, is likely to limit the use of export bans.

SOCIAL ASSISTANCE

170. **Social assistance programs can have a strong positive impact on improving economic access to food for the most vulnerable groups; various such dedicated instruments are currently being implemented, mainly in the form of subsidized meals.** Since 2003, MLSPF has been coordinating a social canteen program, targeting primarily children, the elderly and the unemployed. The program is being delivered through the local authorities, who ensure the financial resources. This initiative is complemented by a school meal program aimed at children grades 1 to 4, which expands the supply of crucial nutritional needs in this population segment. With additional funding, the extension of school meals to pre-school care facilities and higher school grades (5 and above) would further improve food security through existing and well-functioning channels.

171. **More broadly, the *Ajutor Social* program has proven very important in expanding assistance and better targeting, and has been improving its reach.** *Ajutorul Social* is an innovative cash transfer program aimed at protecting the poor; it combines incomes- and proxy means-testing to determine eligibility and channel benefits to the poor. It was introduced in 2008 on a pilot basis and was scaled up in 2009. In parallel, the categorical programs preceding it (*Box 7*) have slowly been downsized and in April 2012 the program of Nominative Compensations was abolished. The monthly number of *Ajutor Social* beneficiary households increased from 30,000 in 2010 to 50,000 in 2012, expanding the overall coverage of the population from the poorest quintile from 14% in 2010 to 19% in 2012. At the same time, the share of transfers going to the poorest 20% of the population has exceeded 70% since 2010.[34]

172. **Overall, the recent reforms of the social assistance system, and especially the introduction and expansion of the targeted *Ajutor Social* program, are inspiring confidence.** Building a stronger safety net to protect those most vulnerable to the volatility and potential reduction in private transfers is key and further reform of the public social assistance programs would allow to amplify the effects of public transfers on poverty reduction.

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[32] At the time, the prices of wheat in Ukraine and Russia were about 40% higher than in Moldova.

[33] The ban was considered as largely ineffective, since the exports of wheat flour significantly increased during the period it had been in effect.

[34] World Bank (2014). *Enhanced Social Safety Nets for Moldova's Poorest Households.* URL: http://www.worldbank.org /en/results/2014/04/15/enhanced-social-safety-nets-for-moldovas-poorest-households (April 15, 2014)

BOX 7. MOLDOVA'S SOCIAL ASSISTANCE SYSTEM

Before 2010, the composition of Moldova's safety net was dominated by programs that were among the weaker performers in the Europe and Central Asia region in terms of coverage and targeting accuracy. The following *categorical* programs were previously part of the social assistance system:

1) Nominative Compensations (30% of all social assistance in 2010): cash transfers for 14 categories of population to support payments of heating bills, water consumption, natural gas consumption and other utilities.

2) Family and Child Benefits (27%): include one-off birth grant payments, monthly child payments and maternity leave payments.

3) Social pensions (14%): for elderly, disabled and children is a categorical type of payment granted monthly to 5 categories of people that do not meet the criteria of getting a pension based on the Law on Pensions.

4) Material aid (5%): one-off financial support to 5 categories of vulnerable population groups.

Acknowledging the weak performance of these programs, the government initiated a reform of social assistance, starting with *Ajutor Social*, in 2008/2009, and phasing out the categorical programs.

The Government is now committed to policy reforms aimed at integrating the overall social safety net into the platform provided by the targeted *Ajutor Social* program. The Bank is supporting these efforts via the Strengthening the Effectiveness of the Social Safety Net Project. Pursuing a results-based financing (RBF) approach, the USD 37 million IDA credit co-finances the interim transitional costs of expanding the *Ajutor Social* program, while consolidating other benefits. The project is also investing in improving the administrative efficiency of the social safety net as well as strengthening institutional roles and capacities, operating procedures and systems, and communications activities to reduce resistance and generate support for reforms

Sources: World Bank (2010). *Summary of Social Safety Net Programs in Moldova*; World Bank, "*Strengthening the Effectiveness of the Social Safety Net Project*," Project Appraisal Document, May 2011, and World Bank Group, *Moldova Partnership – Country Program Snapshot*, October 2014

IV.3 SUMMARY OF RECOMMENDATIONS

173. **On an institutional level, the government could further improve policy formulation and implementation.** In fact, in the areas of disaster preparedness and management it has done a remarkable job in the past. All stakeholders – central and local governments, as well as donors – have proven able to effectively join forces in times of need, either under the leadership of MAFI, or, in some cases, under the auspices of the Prime Minister's office. Examples of successful work, particularly in post-disaster response, were seen in cases of many weather-related shocks, such as the droughts of 2003, 2007 and 2012, as well as the floods of 2008 and 2010. Above all, the institutional framework on food security requires clarity of focus on policy objectives and increased emphasis on coordination.

174. **The role and structure of the AMR could be revisited further, in line with current international good practice and towards greater transparency and market orientation**. Nowadays, while many countries maintain publicly owned reserves to reduce food price instability and food insecurity, they tend to rely on dedicated food reserve agencies. Even so, such bodies need to abide by critical standards to ensure that they do not cause market disruptions, enjoy a certain level of autonomy and are professionally managed. They may also tender operations, including storage, to the private sector. In fact, in the OECD countries, most food stocks are held by farmers, traders and processors.

175. **International experience suggests that the most effective use of food stocks tends to be as part of a comprehensive safety net approach, targeting the poor and the vulnerable**[35]. Such systems could include early warning mechanisms, and rely on small (hence cost effective) public reserves with a clear pro-poor targeting, that allow countries to buy time, in the event of a crisis, until additional imports arrive. At the same time, they do not interfere too strongly with the market forces, thus allowing producers to respond to higher prices by adjusting upward their supply. In terms of ensuring a better targeted and more cost effective institutional response in case of food emergencies, Moldova would be well served considering reforming its AMR in line with such good international practices.

176. **In particular, price controls could be removed and replaced with socially-targeted measures, to benefit the most vulnerable groups**. The analysis above has shown that the poorest population quintile falls behind the more affluent groups in terms of bread consumption, in spite of the widely subsidized price. In addition, the bread price caps hurt existing bakeries by eroding their profit margins, and discourage smaller bread and pastry companies to enter the market. A social assistance program – properly integrated into the existing social policy framework – would allow for better targeting and a more efficient delivery of public support, and would avoid creating distortions in the wheat and wheat product markets.

177. **The Government would be well advised to continue reforms and investments that encourage higher sector productivity, better market integration, and greater resilience in face of climate and market risks**. This would reduce the country's vulnerabilities to external shocks, which negatively impact producers and consumers alike, and are accompanied with spikes in food insecurity.

178. *Sector productivity*: the current investment program in the agriculture sector is a major step forward from the former subsidy system (before 2009). However, the program is currently under-resourced relative to the needs and weight of the sector in the economy[36], which causes the sector outcomes to be still modest. Additionally, some improvements could be made through better targeting and increased equity of the program outreach.

[35] World Bank (2012). *Using public food grain stocks to enhance food security*, September 2012.

[36] World Bank (2012). *Public Expenditure Review - Capital Expenditures: Making Public Investment work for Competitiveness and Inclusive Growth in Moldova*, May 2012.

179. *Markets and trade*: the recent developments towards greater regional and international trade integration are salutary, and open up important opportunities for Moldova's economy and markets. The country needs to continue focusing on improving the safety and quality of its food products, in order to be in the position to take better advantage of the newly reduced barriers on various export markets, including the EU. In addition, the diversification and quality upgrade of Moldova's agri-food production base would also reduce the dependence to foreign markets

180. *Risk management*: while agriculture proves to be more and more affected by adverse events, the risk management tools in place are still in their infancy. The Moldovan agriculture sector would benefit from a comprehensive risk assessment, followed by the design of a risk management framework that lays out the policy instruments that are most adequate in the country and sector context.

181. A revised policy framework is needed to help farmers better manage various external shocks. While the volatility of agriculture and its vulnerability to shocks have been high in recent years, response policies continue to be reactive, and focused on compensation of losses and damages, rather than on prevention and mitigation. This generates uncertainty for the affected farmers, results in long response times and is not conducive to effective targeting of public expenditure. The various types of risks (e.g. weather-related, market-related, phytosanitary and veterinary – such as pests or outbreaks of animal diseases), need to be managed strategically, via an integrated framework. This needs to also encourage farmers and the private sector take greater responsibility in preparing for shocks, and reduce their dependence on emergency public support.

182. In particular, some of the current policy instruments aimed at helping farmers cope with weather-related risks may need to be re-examined. A number of investment-type subsidies encourage adoption of on-farm risk management practices, such as grants for purchase of irrigation equipment, anti-hail and anti-frost technologies, protected-field crop production. There is also a recurrent subsidy aimed at stimulating adoption of insurance in agriculture by subsidizing insurance premia for farmers. A Government-run hail prevention service based on ground-based rockets and radar stations has been operating in Moldova for many years. Previous World Bank sector work[37] has noted shortcomings in the system and recommended several policy options to better cope with such risks.

[37] See "Rural Productivity in Moldova – Managing Natural Vulnerability", The World Bank, May 2007. The report recommended that subsidization of hail insurance premiums – within a clear time span – could be a better use of scarce public resources. The same study indicated that the traditional insurance system is not well-suited for managing national systemic risks such as drought, and therefore is not an advisable option for Moldova. Alternatively, the piloting of privately-run index-based weather insurance for broad-based threats like drought and frost has been recommended.

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