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Agriculture income assessment for the purpose of social assistance: The case of Ukraine

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CASE Network Studies & Analyses

Agriculture Income Assessment for the Purpose of Social Assistance: the Case of Ukraine

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Abstract

Ukraine belongs to the group of countries which are known for the widespread phenomenon of subsistence and semi-subsistence farming. Individual farmers are not obliged to produce financial reports and their incomes belong to the category of unobservable incomes. When checking the eligibility for social assistance the level of their incomes needs to be estimated. In a country, where poverty rate is quite high, the coverage of the poor with financial aid is relatively low and public finances under constant control, the importance of a fair and justified methodology for income imputation is particularly strong. In this situation, an outdated and unfair current system of agriculture income estimation in Ukraine calls for immediate changes. This paper presents recommendations for the Ukrainian government in the area of agriculture income imputation, where several methods of estimating farm income were proposed (including the one based on Household Budget Survey). The recommendations were preceded with the analysis of five countries' practices in this area: Kazakhstan, Kyrgyzstan, Moldova, Russia, and Poland. A review of different means testing methods, including direct means testing and proxy means testing, served as an introduction to the topic.

INTRODUCTION

According to the World Bank classification,¹ Ukraine is a lower-middle income country characterized by high income concentration². The poverty rate remains stable at 27%.³ At the same time, poverty targeting continues to be rather weak. The recipients of the two main schemes of cash social assistance (support for low-income families and housing subsidies) each account for only 2.3% of the population. The eligibility for social assistance is quite tightfisted, in response to the strict fiscal measures Ukraine has faced since the beginning of independent macroeconomic policy. Budgetary restrictions and the domination of pensions in the welfare system, as in many post socialist economies, has left few resources for targeted social assistance. In addition, the high share of informal incomes does not support the enlargement of the social assistance coverage.

Ukraine belongs to the group of countries which are known for the widespread phenomenon of subsistence and semi-subsistence farming. Almost 60% of Ukrainians have landplots at their disposal and use the land for harvesting (either for sales or for private consumption). The popularity of agro-activity among individuals stems mainly from the low incomes of Ukrainians rather than cultural specifics (as is often believed).

This report presents the main results of the research conducted within the project “Social reform in a country with high role of unobservable incomes: improving social assistance mechanisms in Ukraine” realised by the Center for Social and Economic Research CASE-Ukraine and its mother-organisation CASE – Center for Social and Economic Research located in Warsaw and co-financed by the 2009 aid program of the Ministry of Foreign Affairs of the Republic of Poland. The aim of the project was to diagnose the system of means testing in Ukraine and provide the Ukrainian government with recommendations concerning the necessary and feasible changes. During the first stage of the project, an overview of different methods of testing the eligibility for social assistance was undertaken (presented in Chapter 2), including methods of unverified means testing and proxy means testing aimed at estimating income from sources not covered by official registries. Further research concentrated on the Ukrainian system of estimating the income from agriculture of individual farmers (Chapter 3). We found the system to be outdated, inconsistent and inappropriate to the real needs of impoverished groups of farmers. A review of international experiences on

¹ 6,400 USD PPP per capita in 2009, ranked 128th in 2009 CIA ranking, compared with e.g. Poland: 17,800 USD PPP per capita, ranked 69th. out of 228 countries

² Gini at 29.73 in 2006 acc. to Boyarchuk et al. (2008)

³ at the poverty line of guaranteed minimum; the latest available data by the Ministry of Labour and Social Policy.

agriculture income assessment (presented in Chapter 4) provided examples of five countries' practices. The analysis of the usefulness of different solutions for Ukraine is presented in Chapter 5. Finally, based on the diagnosis of the Ukrainian system and a review of international practices, we have formulated recommendations for the Ukrainian government in the area of estimating the income from agriculture for individual farmers. The general recommendations are followed by detailed suggestions in three variants: long-term changes, that would require the development of a comprehensive database on individual farms, short-term solutions, that is until the problem with data scarcity is solved, and short-term, immediate changes that describe the minimum adjustments which need to be made to the system in order to unify it, thus ensuring fairly equal access to social assistance and responding to the widespread situation of impossible land usage (Chapter 6).

Presently, the responsibility for formulating methods of agricultural income estimation is diluted and has been ceded to local governments. The Ministry of Labour and Social Policy has practically no control over the system nor does it have complete knowledge of its elements. The formulation of these recommendations has been met with great interest on the part of MLSP officials with the hope that it will enhance the reform of the farming income assessment.

Dmytro Boyarchuk, Katarzyna Piętka-Kosińska

CHAPTER 1. DATA SOURCES AND METHODS

1.1. Data sources

The quality of information available about any phenomenon gives an answer to the question about what is really happening behind the numbers that can be observed and analyzed. For the purpose of income imputation for farm-operating households, this statement is especially topical given that imputed income affects the wellbeing of subsistence and semi-subsistence farm households which by definition live in poverty, if they do not have alternative incomes.

The information used for describing the agriculture system in Ukraine as well as in the countries selected for the review was drawn from publications of the central statistical offices (Statistical Yearbooks, Statistical Yearbooks of Agriculture) as well as the FAO (Food and Agriculture Organization).

The description of the system of farming income estimation was based on the official documents of the selected countries, including legal acts and decrees of relevant ministries.

In the process of preparing normatives for the farming income assessment, we studied databases covering the incomes and costs of agro-enterprises as well as those of individual farmers.

Data on agriculture in developed countries and the CIS region

The main source of information about agriculture performance is the database on agro-enterprises activities. In European countries this information is collected through *farm accounts surveys*. However these datasets do not cover individual farms as they are not obliged to produce financial reports. In some countries like Denmark, the Netherlands and United Kingdom, accountancy in agriculture is universal. At the same time in other EU members, the percentage of farms with accountancy was much lower – 1% of all farms in Greece (2000) and 5% in Austria (2000). The sampling for the survey covers mainly large “commercial” agro-producers (in 2000 only 31% of agro-producers kept accountancy) which means that this datasource is only able to offer a realistic representation of big farms.

A similar approach is exercised in the CIS region (especially when discussing Russia and Ukraine), however, in the CIS region this ‘survey’ is conducted in the form of obligatory reporting. All legal entities (large and medium agro-companies) report on their performance (sown area, productivity, livestock etc.) on a monthly basis. The collected data on large and medium agro-companies is usually used as a basis for the extrapolation of performance on

small agro-companies (which report on a yearly basis) and farm households. The collected, highly detailed information about livestock, land usage and the harvesting of farm households does not offer full answers about income flows. We have tried to use the aggregated data on Ukrainian agro enterprises⁴ to develop normatives for individual farm income estimation (mentioned in Annex D), however, due to the obvious differences between the functioning of subsistence farms and agro enterprises, the outcomes have been far from satisfactory.

Some literature indicates that tax records could also provide information on incomes. However, this source can not be used for CIS countries because, on the one hand tax information is confidential and its distribution is strictly prohibited, on the other hand, the shadow economy is much bigger than in developed countries. Most importantly, however, the incomes of small farms in the CIS region are not subject to taxation.

Another datasource referring to the agricultural activity of individual farmers is the *household budget survey* (HBS) which is available in both developed and transition countries. There are questions in the questionnaire that refer not only to incomes from selling agriculture products (on the income side) but also to using them for household purposes or purchases of agriculture inputs (on the expenditure side). However, the information is too general to estimate net incomes from agricultural activities very precisely. European countries are covered by the EU-SILC survey that concentrates mainly on the income side. This is not surprising as semi-subsistence or subsistence farms are not a phenomenon in those countries, where farmers account for only a small share of the population (3.2% of EU15 population in 2007).

In order to cover farmers with a more representative survey, European countries developed FADN (Farm Accountancy Data Network), which was formally initiated in the mid-60s. Collected data allowed for the calculating of the average Standard Gross Margin (SGM) for each type of selected agriculture activity; SGM is defined as a surplus of the 3-year average value of production over the 3-year average direct costs. The SGM indicators, often differentiated across regions, are applied to the size of land used for each kind of production of a given farmer. The positive aspect is that SGM indicators reflect the real (micro) situation of surveyed farms (unlike normatives calculated based on the macro data). The Ukrainian Statistical Office undertakes a representative survey among farmsteads covering nearly 29 thousand cases (called "*Sample survey for households in rural areas*"), however, the

⁴ Published in several sources: yearly Statistical Bulletin "Harvesting Agricultural Crops, Fruit, Berries and Grapes in Region of Ukraine in 2008", Statistical Bulletin "Sale of Agricultural Produce by Enterprises in 2008," Statistical Bulletin "Major economic indicators of agriculture production in agriculture enterprises in 2008", Statistical Bulletin "Animal Husbandry in Ukraine".

information on farming income is only partial and the information on costs is lacking so the survey does not allow for providing estimates of net income in such farms.

Among the four types of databases described (agro-enterprise statistics, tax records, HBS, FADN), HBS remains the most valuable database in CIS countries for studying and analyzing the phenomenon of subsistence farming, including in the context of income imputation. In contrast to developed countries, HBS in CIS countries offers a good sample of farm-operating households (57.6% in Ukrainian HBS 2008). Ukrainian HBS for 2008 served as a source of data for developing normatives for income estimation of farming households in the variant of short-term solutions (presented in Annex D).

1.2. Methodology

We can distinguish two stages of research undertaken within the project. The first stage concentrated on studying targeting methods for the purpose of social assistance and reviewing international experience in terms of estimating incomes of individual farmers. This stage also included researching the current system of agricultural income estimation in Ukraine and diagnosing problems related to the number of poor covered under the social assistance policy and how the policy is carried out. The activities in the second stage of the project were devoted to formulating recommendations for the Ukrainian government in the area of better farming income estimation, including the development of techniques for setting the income normatives.

The review of literature on targeting methods, especially in the area of modern schemes, was largely based on the most recently available case studies of new methods implemented by different countries. There is very little literature on international practices in estimating farming income. The analysis relied on the scarce materials available, including governmental (central and local) documents (mainly in Russia, Moldova, Kyrgyzstan, Kazakhstan, Poland, Australia, and the United Kingdom), news services (e.g. Euroasia) or legal networks (such as *bestpravo* in Russia). The diagnosis of the current system of farming income estimation required, among other things, approaching local welfare offices in order to get information on the normatives being used in their oblasts (and rayons, if applicable) because a unified system of regional normatives does not exist. This part of the research was supported by field research in 2 welfare offices (in the rayon of Koriukivka in Chernigivska oblast of Ukraine and Bashtanka in Mykolayivska oblast) as well as consultations with the Ministry of Labour and Social Policy, Department of Social Assistance.

In the process of developing recommendations, two methods of calculating normatives for farming income estimation were formulated and tested. The first method used 2008 data from agriculture enterprises on yields, sowing areas, average annual gains of the live weight of different types of livestock and average milk yields, the selling prices of agricultural products, and the costs of crop and livestock production (adjusted for labour costs) in order to calculate the average net income (defined as sales revenues minus costs of production) in 2008 from crop production on 1 ha of land and the average net income from raising livestock (cows, other cattles, pigs and poultry). The normatives were differentiated across regions (oblasts). The weak point of this method is that it uses data for agro enterprises that operate in quite a different economic reality than farming households. The recommendations at the end of this document address this issue.

The second method of calculating normatives used data from HBS 2008. Based on information about the revenues and costs of crop production of each farming household, as well as agro products used for own consumption, the average net income per 1 hectare of land (defined as sales revenues plus consumption of own production minus costs of production) was calculated. The income from animal production per head of a given animal kind/poultry is based on a regression analysis employing regression without a constant for all households having livestock. The estimated coefficient represents the relationship between net income from the production of any livestock kind (defined as sales revenues plus consumption of own livestock production minus costs of livestock production). The number of heads of a given livestock kind is a regressed coefficient. The coefficients for both crop and livestock production have been set for cities and rural areas separately in order to account for the factor of distance to the markets. The results of the second method seem to reflect the reality on the ground much better than the first method. The drawback of this methodology is the fact that it relies on datasets that are not precise enough nor highly representative of farming households because HBS is not constructed to closely reflect the agro activities of the surveyed population.

Irina Sinitsina

CHAPTER 2. MEANS TESTING METHODS – BACKGROUND

2.1. Methods of targeting social assistance

The existing literature on social benefits targeting is extensive. It is, however, mostly represented by descriptions of individual programs as well as comparative analyses covering a single region (e.g., Grosh 1994 and Lindert, Skoufias and Shapiro 2006 for Latin America and the Caribbean; Castañeda and Lindert 2005 for the United States and Latin America; Braithwaite, Grootaert, and Milanovic 2000 and Grosh et al. 2008 for Eastern Europe and Central Asia) or method (Bigman and FoFack 2000 on geographic targeting, Henninger and Snel 2002 on poverty mapping, Conning and Kevane 2001 on community-based targeting, and Subbarao 2003 on self-targeting) or intervention (Rawlings, Sherburne-Benz, and van Domelen 2003 on social funds). Works providing a general overview of experiences and addressing lessons learned with methods used to target interventions are very scarce and started to appear only recently (e.g. Coady, Grosh and Hoddinott 2004, Grosh et al. 2008, Fiszbein and Schady 2009).

Targeting is a relevant subsidy factor for improving the allocation of resources so that they can be more beneficial to the target group (Wodon & Angel-Urdinola, 2008). Targeting can increase the benefits that the poor can realize within a given budget (maximizing impact) or can achieve a given impact at the lowest budgetary cost (minimizing cost). Targeting is an attractive option for many kinds of poverty reduction programs. Grosh et al. (2008) have demonstrated that the theoretical gain from targeting can appear to be large. In practice, however, the full theoretical gain is not realized, because targeting is never completely accurate and always associated with costs. These costs include administrative costs borne by the program, transaction and social costs borne by program applicants, incentive costs that may affect the overall benefit to society, and political costs that may affect support for the program.

As opposed to the universalist approach (in which all citizens of a nation receive the same state-provided benefits), targeting proposes that state-provided benefits differ depending on individual circumstances. In reality, the distinction between the two approaches is not absolute. Even the European welfare states that have gone the furthest in terms of universal provision of child allowances, education, and health insurance and have extensive minimum wage laws, labour market activation and the like, have last resort needs-based programs that

are tightly targeted. Thus even though they may choose wider or narrower ranges of programs to target or different mixes of programs, all countries use targeting in their social assistance programs to some extent (Grosh et al. 2008).

In a recent World Bank review of 'conditional cash transfers' (CCT)⁵ across the globe, Fiszbein and Schady (2009) found that almost all CCT programs established to date have tried to target their benefits rather narrowly to the poor.⁶ At the same time, while targeting has obvious benefits in terms of combating poverty, a comprehensive World Bank study concludes that targeting is neither a panacea nor an impossible feat; rather it is a useful but always limited tool (Coady, Grosh and Hoddinott 2004).

Numerous methods have been employed for directing resources to a particular group. The vast literature on targeting problems suggests the following menu of options of the methods used so far: individual/household assessment (means-testing and/or proxy-means testing, community-based); categorical (geographic or demographic); self-selection.

– **Individual/household assessment:**

(1) The *means testing method* is usually regarded as the 'gold standard' of targeting. Income and assets are measured directly, and individuals or families below a certain threshold are eligible for benefits. As a rule, the information collected is verified against independent sources. It has three main variants: (1) third-party verification of income, (2) documents to verify income or related welfare indicators provided by the applicant, and/or (3) a simple interview aimed at collecting information. However, simple means tests with no independent verification of income (or no verification at all) are not uncommon (Grosh et al. 2008). Means testing is widely used in the US, the OECD, FSU and some Latin American countries. Means testing can be extremely accurate. However, the main problem with this method (leaving aside the problem of whose income to count and what types of income should be included) is that it is very administratively demanding, especially when combined with meaningful attempts at verification, requiring accurate records on income, home visits, etc. In countries with no agriculture income reporting, an additional effort is associated with estimating and applying indicators on land size or livestock to get the proxy for agriculture income. On the other hand, this method does not allow for the consideration of non-formal income. This method may also induce work disincentives when earnings exceed threshold limits. Means testing is regarded as the

⁵ Conditional cash transfers are programs that transfer cash, generally to poor households, on the condition that those households make prespecified investments in the human capital of their children.

⁶ Of the approximately 40 CCT programs reviewed in the World Bank report, to date, only Bolivia's Juancito Pinto program is targeted broadly to all first-graders in public schools.

most appropriate where declared income is verifiable or where some forms of self-selection limit non-target groups in applying for benefits, where administrative capacity is high, and/or where benefit levels are large enough to justify the costs of administering a means test.

- (2) *Proxy means testing* (PMT) is a synthetic measure correlated with income calculated as a “score” for each household based on easily observable characteristics. The indicators used to calculate this score and their weights are derived from statistical analyses of data from detailed household surveys (Coady, Grosh & Hoddinott 2004). Eligibility is determined by comparing the score against a predetermined cutoff. This method is becoming increasingly popular in Latin America, Armenia, Russia, Turkey, Indonesia and other countries (Subbarao 2009). It is also administratively demanding and needs representative household surveys. On the other hand, the indicators used tend to be static and focus on the long-term poor (not transient poor). PMT is most appropriate when a country has a relatively high administrative capacity, when programs mean to address chronic poverty in stable situations, and when they are used to target a single program with large benefits. (see more in Chapter 2.3)
- (3) *Community-based* targeting exploits an existing local actor (teacher, nurse, religious leader), or a group of community members or leaders, whose principal functions in the community are not related to the transfer program, or a newly established civic committee which determines eligibility for benefits. The advantage of community-based targeting is that it relies on local information on individual circumstances, which may be more accurate and less costly to collect than using other methods. In addition, it can permit local definitions of needs and welfare; in addition, targeting decisions may be based on a wide range of factors beyond poverty. This method may be relatively cheaper as it transfers the costs of identifying beneficiaries from intervention to community (although this can also be seen as a limitation). On the other hand, this method of targeting may generate conflict within a community or capture by local elites may become possible. Also such a system may continue or exacerbate any existing patterns of social exclusion. While generally providing less accurate targeting in terms of household income compared to other methods, communities tend to use a different concept of poverty: the results of community-based methods are more dependent on how individual community members rank each other and on their self-assessments of their own status. When local definitions of welfare are used, it may create the risk of more difficult and ambiguous evaluations. However, for the same reason, community-based methods generally result in higher levels of satisfaction with beneficiary lists and the targeting process (Alatas et al. 2009). The most appropriate circumstances for applying this method exist where local

communities are clearly defined and cohesive and where programs to be implemented propose to include a small portion of the population. It can also be useful in situations where temporary or low benefit programs cannot support an administrative structure of their own.

– **Categorical targeting:**

Under categorical targeting, receipt of a benefit or service is based on belonging to a particular category or group based on location of residence (geographic targeting), age and/or sex (demographic targeting), disability, unemployment status, or ethnicity. This method is also referred to as statistical targeting, or group targeting.

(1) Under *geographic targeting*, benefits or services are provided to those located in a particular region. Few programs target exclusively on the basis of geography, but many programs use geographic targeting in conjunction with other targeting methods (often PMT), especially when programs are not fully funded (such as Colombia's Familias en Acción program or the Oportunidades program in Mexico). The geographic method produces noticeably better results if poverty is regionally concentrated (Ghana, Kenya) (Subbarao 2009). In such cases poverty maps are usually used to focus the program in only some areas of the country or to allocate spaces in the program among subnational jurisdictions. The efficiency of the method increases with reducing the size of the geographic units, which is usually achieved by increasing the accuracy of poverty maps, a concern that is diminishing in importance as small area estimation techniques improve and are more widely applied. The advantage of geographic targeting is that it is administratively simple, and it is more appropriately used in countries with limited administrative capacity, where living standards across regions vary significantly (see more in Bigman and FoFack (2000)). It helps if the delivery of the intervention uses a fixed site such as a school, clinic, or ration shop. This method is unlikely to create stigma effects or labour disincentives although it can be politically controversial.

(2) Child allowances and social pensions are the most common types of *demographic targeting*. Apart from being fairly simple in administration, this method carries the appeal of universality, and is thus often politically popular. It does not stigmatize beneficiaries. The major limitation of categorical targeting is that age/sex may be only weakly correlated with poverty (Grosh et al. 2008). Thus the targeting may not always reach the poorest, as target categories do not necessarily contain many poor. Current research suggests that the observed correlations are sensitive to assumptions made about household scale economies and adult equivalences. This method is most

appropriate where registration of vital statistics or other demographic characteristics is extensive as well as where a low-cost targeting method is required.

– **Self-selection targeting:**

In self-selection targeting, benefits or services are technically open to everyone, but designed so that only the poor will choose it, or the level of benefits is expected to be higher amongst the poor. There is no external targeting mechanism other than free choice. One of the most common applications of self-targeting in social assistance is the use of low wages in public works programs to induce participation only by the poor. It is rather unlikely to induce labour disincentives. The administrative costs of such targeting are quite low, although administering public works programs is not simple (Grosh et al. 2008). On the other hand, the limitation of this method is its imposition of costs, which can be substantial, onto the recipients, which lowers the net value of the benefit. Also, the stigma of recipients under this method may be considerable. The other common application of self-targeting is the use of in-kind benefits with 'inferior' characteristics clearly separating the poor from the non-poor (e.g., low quality wheat or rice). Universal staple food subsidies can also be viewed as a form of self-selection since these foods are more heavily consumed by the poor than by the non-poor (Coady, Grosh & Hoddinott 2004).⁷ This method may be especially useful in situations where individuals are rapidly moving in and out of poverty.

2.2. Targeting outcomes: an overview

In their comprehensive study of targeting mechanisms, based on information for 122 antipoverty interventions drawn from 48 countries, Coady, Grosh and Hoddinott (2004) found out that although cash transfer programs account for a large proportion (40 percent) of interventions, the other intervention types are also well represented (Annex A, Table A-1). In some regions, a particular intervention type dominates: e.g. cash transfers are prevalent in Eastern Europe and FSU, universal food subsidies prevail in the Middle East and North Africa, and near-cash transfers⁸ in South and South-East Asia. By contrast, there is a wider mix of reported interventions in other regions. Most of the cash transfer programs occur in Latin America, the Caribbean and Eastern Europe/FSU. Most of the near-cash transfer programs occur in South Asia, most of the universal food subsidies in the Middle East, and

⁷ For more details on public works, reviews, design, features, and experiences pertaining to self-targeting through wage selection see Subbarao (2003) and Alderman's (2002) papers on food subsidies. The paper reviews self-selection through the choice of commodities.

⁸ Near cash transfers include food stamps, coupons, or vouchers that may be used by households to purchase food at authorized retail locations, or the right to purchase a limited quantity of food at a subsidized price.

most of the social funds⁹ in Latin America. Dividing the sample by per capita GDP levels, we find that cash transfer programs are more likely to be found in less poor countries and near-cash transfers in the poorest countries. Most social assistance programs tend to use different combinations of targeting mechanisms. Across the 2004 sample, 253 occurrences of different targeting methods could be observed, so that each intervention in the sample used just over two different targeting methods on average.

In a recent World Bank review of CCT programs, Fiszbein and Schady (2009) estimated that almost two thirds of countries used geographic targeting; about two thirds used household targeting, mostly via proxy means testing; and many countries used both. Moreover, many programs used community-based targeting or community vetting of eligibility lists to increase transparency.

There are some marked differences in the area of distribution of targeting methods by region, e.g. according to Coady et al. (2004), most of the interventions using categorical targeting (especially by age) are concentrated in Latin America, Asia and Eastern Europe/FSU. There are also broad differences across income levels. Generally, poorer countries tend to rely more on self-selection methods and categorical targeting, whereas forms of individual assessment are relatively more common in less poor countries. The important exception to these general patterns is categorical targeting by age, which is used relatively less frequently in poor countries.

At the same time, targeting performance across countries varies greatly. While median performance in the 2004 sample was good, in approximately 25 percent of cases targeting was regressive, meaning that a random allocation of resources would have provided a greater share of benefits to the poor. Coady et al. (2004) provided a weak ranking of outcomes achieved by different targeting mechanisms, assessing which methods delivered the best results in relation to errors of inclusion. The ranking demonstrated that these differences could be partly explained by variations in country characteristics:

- Countries with better capacity for program implementation, as measured by GDP per capita, do better at directing benefits towards poorer members of the population.
- Countries where governments are more likely to be held accountable for their behaviour appear to implement interventions with improved targeting performance.

⁹ Social funds are multi-sectoral programs that provide financing (usually grants) for small-scale public investments targeted at meeting the needs of the poor and vulnerable communities and at contributing to social capital and development at the local level (Grosh et al. 2008).

- Countries where inequality is more pronounced and presumably differences in economic well-being are easier to identify also demonstrate better targeting outcomes.

Thus, targeting performance generally improves along with countries' income level (the proxy for implementation capacity), the extent to which the government is held accountable for its actions, and the degree of inequality.

Differences in targeting performance also reflect the choice of targeting method. Interventions that use means testing, geographic targeting, and self-selection based on a work requirement are all associated with a relatively high share of benefits going to the bottom two quintiles. Proxy means testing¹⁰, community-based selection of individuals, and demographic targeting to children show good results on average but with considerable variation. Demographic targeting to the elderly, community bidding, and self-selection based on consumption demonstrated limited potential for good targeting. However, Coady et al. (2004) estimated that in the sample of programs they looked at, only 20 percent was due to differences *across* methods; the remaining 80 percent of the variability in targeting performance was due to differences *within* targeting methods.

Thus, international experience evidently demonstrates that there is no clearly preferable method for all types of programs or all country contexts. In reviewing a menu of targeting options, policy makers should be mindful of two important considerations. First, individual targeting methods are not mutually exclusive and can be used in different combinations and sequences. A child allowance (categorical targeting) may be means- (or proxy means-) tested (individual assessment). Subsidized coarse grain (self-targeting) may be available for sale only in food shops in poor neighbourhoods (geographic targeting). In fact, experience shows that using more targeting methods generally produced better targeting. Second, country context could explain some, but by no means all, of the variability in targeting performance. Unobserved factors explained many of the differences in targeting success. Improvements in the design and implementation of targeting methods thus have great potential. Grosh et al. (2008) estimated that if programs with poor targeting success were brought up to the median level of success, the share of program benefits going to the poor would increase by 10 percentage points.

¹⁰ When Coady et al. (2004) undertook their study, outcome data were only available for a few of the new proxy means tests. Since then data have become available for several more programs, all of which are quite well targeted. If these measurements had been part of the original study, proxy means tests would likely have joined the ranks of the methods that reliably produce progressive results (Grosh et al. 2008).

Most of the available literature confirms that *implementation matters tremendously to outcomes*. Two important crosscutting themes emerge from literature on the subject:

- increased creativity, diligence, and/or administrative budget are usually able to reduce errors of exclusion (that is exclusion of the poor) in the majority of the targeting programs. Targeting *incidence* (errors of inclusion, that is, including the non-eligible) outcomes are, however, more dependent on the choice of targeting mechanisms compared to targeting performance in terms of coverage;
- improved administration — streamlined procedures, better manuals, more training, more attention to quality control, adequate staff and equipment — often appear to be justified. In a significant number of cases, there appear to be unexploited economies of scale because a single program is small and/or because structures could be but are not shared over several programs (Coady et al. 2004).

2.3. Targeting by proxy means testing: international experience

The term "proxy means test" (PMT) is used to describe a situation where information on household or individual characteristics correlated with welfare levels is used in a formal algorithm to proxy household income, welfare or need. Given the administrative difficulties associated with sophisticated means tests and the inaccuracy of simple means tests, the idea of using other household characteristics as proxies for income is appealing (Grosh and Baker 1995). PMTs use fairly easy-to-observe household characteristics, such as the location and quality of the household's dwelling, ownership of durable goods, demographic structure, education and possibly the occupations of its adult members, as well as some other indicators (state of health, disability, etc., or potential indicators belonging to certain poverty dimensions), to proxy a means test, thus avoiding the problems involved in relying on reported income. PMT is used in order to overcome the difficulties associated with collecting and verifying detailed information on household income or consumption levels in many developing countries (Coady et al. 2004). The results of PMT application demonstrate that household characteristics can reliably serve as reasonable proxies for information on income in assessing eligibility for social programs.

The first step in designing a proxy means test is to select a few variables that are well correlated with poverty and have three characteristics: their number is small enough to enable application of the proxy means test to a significant share of the program applicants, they are easy to measure or observe, it is difficult for the household to manipulate them. The



number of variables used varies from about ten to as high as forty, but usually is in the order of two dozen. The variables used are typically drawn from the data sets of detailed household surveys of a given country. PMTs use household characteristics in order to calculate a score that indicates the household's economic welfare. This score is used to determine eligibility for the receipt of program benefits and possibly also the level of benefits. Once the variables have been chosen, statistical methods are used to associate a weight with each variable. The indicators used to calculate the score and their weights are derived from a statistical analysis (usually a regression analysis or principal components analysis) of data from detailed household surveys. The total income or consumption of the household is regressed on the selected variables. Eligibility is determined by comparing the household's score against a predetermined cut-off (threshold). Often these regressions are run separately by region so that variable weights differ across regions. A well-instituted proxy means test should guarantee "horizontal" equity, i.e. that the same or similar households (at least in terms of the variables chosen) will receive the same treatment.

PMTs have several advantages that make it a promising and feasible alternative to unverified means testing (UMT) and verified means testing (VMT) for household targeting systems (Castañeda and Lindert 2005; Coady et al. 2004):

- *Targeting Accuracy*: targeting outcomes of PMT are nearly as accurate as VMT and, in some cases, are more accurate than UMT.
- *Cost Efficiency*: the financial costs of administering PMT are *far* cheaper than VMT and in line with those for UMT: it requires less information than true means testing, and yet it is objective.
- *Political Appeal*: The use of multi-dimensional indices to determine eligibility for programs can be more politically appealing than the more narrow reliance on incomes since, in many developing and middle-income countries, public opinion commonly holds that poverty is multi-dimensional and spans more than just "income."
- *Transparency*: The use of multiple observable variables for PMT is more transparent and verifiable than reliance on self-reported income, as in UMT. Moreover, because it does not actually measure income, PMT may discourage work effort less than a means test would.
- *Administrative Feasibility*: administrative requirements are more manageable for developing countries, particularly middle-income countries, than those for true means testing.



PMT is a relatively new tool in the targeting toolbox. Chile was the first country to use this approach when it introduced its Ficha CAS (unified household registry system) program in 1980. Since then, the tool has been monitored and its implementation and use refined over the years (Larrañaga 2003; Clert and Wodon 2000). The approach has spread elsewhere in Latin America, however PMT systems are in the early stages of design or implementation in many countries of the globe. Armenia has used a proxy means test since 1994 for humanitarian assistance and cash transfers (World Bank 1999, 2003); Indonesia has used one as well for targeting its subsidized rice rations (Sumarto et al. 2003). Turkey introduced such a system in 2002 as part of a response to its financial crisis (Ayala 2003), and other countries have done some piloting without fully setting the PMT systems up – e.g., Russia¹¹, Egypt (Ahmed and Bouis 2002), Philippines (Reyes 2006), Sri Lanka (Narayan and Yoshida 2002), Cabo Verde (Wodon and Angel-Urdinola 2008) and Uganda (Houssou et al. 2007).

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CHAPTER 3. CURRENT SYSTEM OF AGRICULTURE INCOME ASSESSMENT IN UKRAINE

Definition of income for the purpose of social assistance

In Ukraine, social assistance benefits are means-tested. Under the law, the right to the following benefits is determined based on aggregate family income:

- Benefits to low-income families;
- Subsidies to compensate for costs of housing and utility services and purchase of liquefied gas, solid and liquid furnace fuel (so-called housing subsidies);
- Child benefits to single mothers and nursing aid for children under the age of three;
- Care aid (monthly monetary aid to a low-income individual cohabiting with a disabled person of 1st or 2nd psychiatric disability group who was deemed a person requiring permanent outside care by a medical consultation commission of a health care institution).

¹¹ In Russia, pilot programs for social support of poor households were introduced in 1997-98 in the Komi republic, Voronezh and Volgograd oblasts. PMT systems were used in several regions in the Volgograd oblast and in the city of Volgograd (Mintrud Rossii 2001).

*The Methodology for calculating the total income of a family*¹² defines the total income of a family taken into account when social assistance eligibility is checked; it includes monetary components and monetary equivalent of in-kind inflows, with some exemptions (see Table B-1 in Annex B). The monetary equivalent of incomes in kind is based on average (market) consumer prices in a relevant region. Incomes are presented in gross value. Given the flat PIT rate in Ukraine (at 15%), this should not cause any unequal treatment of different income sources.

The level of the majority of incomes can be verified with official documents, which are also available from tax authorities. At the same time, farming, which is the source of income of the majority of social assistance claimants,¹³ is not covered by any register, except for farmers who are legal entities. Small farmers or land plot users are not obliged to undertake book keeping so both monetary and in kind incomes from that activity need to be estimated.

Society to be potentially affected by individual farming income estimation

In Ukraine, 32% of the society lives in rural areas and 18% of all workers are involved in agriculture both officially and unofficially, as well as in private farming (own computations based on official data for 2008). However, farmsteads refer to an even larger share of population: according to HBS for 2008, 57% of the population lives on farmsteads that make use of their land. Farmsteads are almost equally spread between rural and urban areas (54% and 46% respectively). The income from farmsteads greater than 0.06 hectare is subject to estimation for the purpose of social assistance. According to HBS, 75% of all farmsteads, or around 43% of the total population, have land plots that exceed this area in use or ownership. At the same time, there is a cap on the amount of land which enables one to seek financial support: owners of land plots greater than 0.6 ha are not eligible for social assistance.

The agricultural sector accounts for nearly 8% GDP of Ukraine. Farmsteads produce more than half of total agricultural production, though their role has been steadily decreasing in recent years. However, the productivity of farmsteads is very low. According to our calculations based on the official data, farmsteads' net incomes from agricultural activity amounted to about 5.4% of total disposable incomes of the Ukrainian population in 2008. According to the numbers from HBS, the pure farming income remains at around 18% of

¹² „Approved by the order dated November 15, 2001 of the Ministry of Labor and Social Policy, Ministry of Economy and European Integration, Ministry of Finance, State Statistics Committee, and State Committee on Youth, Sport and Tourism of Ukraine, № 486/202/524/455/3370

¹³ According to HBS (2007) 80% of beneficiaries have a land plot.

total incomes of farmsteads¹⁴. Taking into account the great number of those employed in the agricultural sector, the productivity of private farms is extremely low. Farmsteads are mainly family-based workplaces, which means they are characterized by huge hidden unemployment.

The structure of farmstead land area is varied¹⁵ – 50% of rural farmsteads have plots of up to 0.5 ha, over 28% have plots between 0.5 ha and 1.0 ha, and 18% have plots between 1 ha and 5 ha; only 3.4% of farmsteads have plots greater than 5 ha¹⁶. At the same time, yields are relatively low¹⁷. Although, productivity in agriculture generally increases along with the level of land consolidation, in Ukraine low productivity is not directly associated with the broken up structure of the land. First of all, in situations where land turnover is practically impossible, many owners of relatively bigger land plots lack the machinery and resources to work on their land. Moreover, the crops produced on small plots, such as vegetables and potatoes, are more profitable compared to grain crops and sunflower produced on bigger plots. According to HBS, in Ukraine, land productivity is negatively correlated with land size.

An important part of the land owned by farmsteads is *payi*, i.e. land granted during the land privatization to previous collective farm workers who accounted for 15% of the total Ukrainian population. A majority of *payi* owners (63%) signed lease agreements which, due to structural and operational reasons, are a source of a very low income, though it differs significantly depending on the region (on average UAH 139.3/ha per year, according to 2007 data).

Table 1. Agricultural Production in 2008 (in 2005 prices)

	Total in Ukraine		Businesses (incl. farming economies)		Private farms		Share of private farms %
	Mln. UAH	Structure %	Mln. UAH	Structure %	Mln. UAH	Structure %	
Total agricultural production	103,977.9	100.0	47,865.4	100.0	56,112.5	100.0	54.0
Plant growing	64,899.1	62.4	32,136.1	67.1	32,763.0	58.4	50.5
Cereals	22,397.0	21.5	17,546.4	36.7	4,850.6	8.6	21.7
Industrial crops	12,226.1	11.8	107,18.6	22.4	1,507.5	2.7	12.3
Potatoes, vegetables, gourds and melons	23,808.5	22.9	1941.1	4.1	21,867.4	39.0	91.8

¹⁴ According to HBS (2008) incomes of farmsteads account for 52.5% of total income of the society, and pure farming income stayed at 17.8% of it.

¹⁵ Only rural area structure available.

¹⁶ For comparison, in Poland where productivity of individual farming is considered to be very low, the land is more consolidated: 30% below 1 ha, 40% 1-5 ha, 30% above 5 ha.

¹⁷ Compared with Poland, it is lower by 10% in the case of wheat, nearly 40% in the case of sugar beets, and more than 30% in the case of potatoes.

	Total in Ukraine		Businesses (incl. farming economies)		Private farms		Share of private farms %
	Mln. UAH	Structure %	Mln. UAH	Structure %	Mln. UAH	Structure %	
Fruits, small fruits, grapes	3,753.5	3.6	881.9	1.8	2,871.6	5.1	76.5
Forage crops	1,988.3	1.9	616.2	1.3	1,372.1	2.4	69.0
Other	725.7	0.7	431.9	0.8	293.8	0.6	40.5
Livestock farming	39,078.8	37.6	15,729.3	32.9	23,349.5	41.6	59.7
Meat	20,459.8	19.7	10,683.0	22.3	9,776.8	17.4	47.8
Milk	12,470.0	12.0	2,179.9	4.6	10,290.1	18.4	82.5
Eggs	4,565.7	4.4	2,585.8	5.4	1,979.9	3.5	43.4
Wool	17.1	0.0	4.0	0.0	13.1	0.0	76.6
Other	1,566.2	1.5	276.6	0.6	1,289.6	2.3	82.3

Source: State Statistics Committee

According to the State Statistics Committee data, only 11% of farmstead production in monetary terms is related to grain and industrial crops, however, 62% of farmstead land is used for that purpose. Using the remaining 38% of their land, farmsteads receive income mainly from the production of potatoes and vegetables (39% of output value), milk (18%) and meat (17%); the remaining 14% comes from the production of fruit, eggs, fodder crops and other. It is worth noting that the yields for the main crops in farmsteads are only slightly lower compared to the national average: grain crops by 8%, sugar beet and sunflower seed by 12-15%, potatoes by 1%, vegetables by 3% lower¹⁸. However, in the case of fruit and berries as well as grapes, yields are far above the national average (by 34% and 78% respectively).

Table 2. Major crop yields, centers/ha

	2004		2006		2008	
	Total	Private farms	Total	Private farms	Total	Private farms
Grains	28.3	29.4	24.1	25.6	34.7	31.9
Wheat	31.7	31.1	25.3	25.8	36.7	33.5
Corn	38.6	40.6	37.4	36.0	47.1	39.3
Sugar beet	238.3	227.4	284.7	229.9	354.7	300.0
Sunflower seed	8.9	9.2	13.6	13.3	15.2	13.4
Potatoes	133.4	133.3	133.2	132.8	138.7	137.9
Vegetables	148.7	150.1	171.4	171.6	173.9	169.1
Fruit and berries	58.1	103.8	45.0	69.7	65.0	87.1
Grapes	45.2	133.0	39.7	118.3	58.6	104.2

Source: State Statistics Committee

Farmsteads own mainly poultry. On average, each farmstead has 12 poultry heads. Other kinds of livestock are much less frequent: on average, every group of 10 households will own 6 heads of cattle other than cows, 4 cows, and 6 pigs or hogs. The ownership of livestock in

¹⁸ The small difference in potato and vegetable yields is conditional to the fact that private farms produce more than 90 percent of potatoes and vegetables.

smaller farmsteads (up to 0.5 ha) is even more modest: 3 cattle other than cows, 2 cows, and 3 pigs or hogs per 10 households, and 9 birds in every household on average. Nearly 70% of all farmsteads do not keep pigs/hogs at all; 65% do not have any cows and 64% any other cattle. Such a situation is, again, the result of the large number of very small farmsteads.

Table 3. Livestock and poultry, thous. of heads (as of 1 Jan, 2009)

	Total	Private farms	Share of private farms, in %
Cattle, incl.:	5,079.0	3,358.9	66.1
Cows	2,856.3	2,232.0	78.1
Bulls	2,222.7	1,126.9	50.7
Swine	6,526.0	3,795.1	58.2
Sheep and goats, incl.	1,726.9	1,426.8	82.6
Sheep	1,095.7	797.6	72.8
Poultry	177,555.9	89,582.2	50.5

Source: State Statistics Committee

At the same time, farmsteads own 83% of sheep and goats and 78% of cows in the country. Farmsteads own a relatively smaller share of hogs, other cattle and poultry: 58%, 51% and 50% respectively (see Table 3).

The analysis of this data suggests that subsistence farming dominates among farmsteads, with a concentration of activities around growing potatoes and vegetables as well as poultry or other livestock (if any) for own purposes.

According to HBS, in 2008 in Ukraine 1.6% of all farmsteads were receiving benefits for low-income families and 4.3% were receiving subsidies for housing, utilities and fuel. The seemingly low percentage of households owning land and receiving SA benefits compared to the wide potential eligibility may reflect on the one hand, low levels of the threshold, and on the other hand, some data obstacles¹⁹. At the same time, however, households owning land are the main receivers of financial aid: they account for 80% of all beneficiaries of low-income support; it is 55% in the case of housing and utility subsidies.

3.1. Description of the system

The current system of estimating homestead income is very much regionalized. The income standards developed in 1998 were differentiated across administrative units (oblasts) and 4 types of land usage (see Table B-2 in Annex B):

¹⁹ Families are the recipients of social assistance, however, there is no information in the HBS data set that would allow for distinguishing families within households. Moreover, HBS underestimates the total number of both kinds of benefits by nearly 50%.

- farmstead land and land plots for plant growing purposes;
 - urban
 - rural
- land plots for haying purposes;
- land plots for livestock grazing purposes.

In 1999, the standards for payi were set, and were additionally differentiated across rayons. They have been applied to payi that are not rented or are rented with no rental agreement signed. If local authorities peg the income from payi to the land monetary value, it is subject to indexation for consumer price changes if CPI exceeds 10% per year.

Also, a unified one-off indexation to initial normatives for the other four types of land was enforced. Two years later the Government delegated setting the normatives to oblasts without defining any rules to ensure a basic unifying mechanism between different regions. This unconditional delegation of decisions led to the complete lack of coordination of the indexation process. Authorities of different oblasts introduced one-off indexations of normatives in different years; some of them have not changed the normatives since 2000. Moreover, some oblasts have differentiated all of the standards further across rayons²⁰, or set them at different levels for farmsteads and land used for gardening. In some oblasts, the standards for the land used for haying or grazing purposes were differentiated across brackets of milk prices for the oblast, as it was initially supposed; in others the same standards were used no matter how the milk prices changed.

The system of financing social assistance is highly centralised. The responsibility for social assistance payments to those entitled to them lies with local administrations; however, relevant funds are received in full in the form of targeted subventions from the central budget. Subventions are generally distributed based on requests from local administrations. In this regard, the existing practice of the local government setting land income normatives has led to a separation of benefit entitlement oversight from the source of this assistance financing.

3.2. Diagnosis of improprieties

The policy of uncoordinated changes in agriculture income estimation methodology has led to a situation in which:

- People in farmsteads using the same category of land across different regions are facing different eligibility criteria for social assistance due to the uncoordinated

²⁰ *Rayons* are the next administrative units after *oblasts*.

process of land income normatives setting. As a result, they are not equally treated by the state without transparent justification. Moreover, the Ministry of Labour and Social Policy has limited control over social assistance policy: it defines the level of benefits, however it does not have any control over the income eligibility criteria for farmstead families;

- The methodology of setting the normatives is not linked to the changing reality (the level of gross income from farming, costs of farming). As a result, the access to SA benefits may be unfair in some regions and detached from reality;
- The income from lands for haying and grazing purposes is calculated only if there is such a plot in use or ownership of the claimant and when it can be documented. Otherwise, it is almost impossible to calculate income from cows and other cattle;
- There is inconsistency between normatives of income from land and maximum land size allowing families to qualify for benefits to low-income families. A family having a plot greater than 0.6 ha is not eligible for social assistance even though its imputed income from land is lower than the income threshold allowed for applying for the benefit²¹. As farmsteads usually own or have in usage more than 0.6 ha, they cannot apply for the benefit. The exception is made for families comprised of only children and persons aged 65 and above, or disabled persons in the 1st or 2nd disability group, or families with disabled children and families otherwise entitled to apply to the commission for aid (i.e. multi children families or families with members that are disabled or suffer a long-time illness.)

The above defects and inconsistencies of the system (in our opinion) require the introduction of a farmstead income estimation methodology corresponding to the reality on the ground and a mechanism of updating the methodology to the changing environment. Also, the required role of MLSP in shaping and conducting social assistance policy in the area of social assistance towards farmsteads should be re-formulated.

²¹ For example, available standards for farmstead land in Kharkiv oblast in 2008 were set at UAH110/ha for urban areas and at UAH60 for rural areas. Such standards meant that a single able-bodied person would be eligible for SA provided his/her land plot was not greater than 1.2 ha (1.2 ha would bring the income that is equal to the current threshold for such a person to UAH133); a 2+2 family, consisting of 2 able-bodied parents and 2 children aged 0-16, would be eligible for social assistance provided their land plot was not greater than 5.8 ha (nearly 1.5 ha per head). In rural areas, a single able-bodied person would be eligible for SA if the plot was not greater than 2.2 ha, and 2+2 family – if the plot was not greater than 2.7 ha per head. If income standards were similar in other oblasts, the vast majority of at least rural farming households would be eligible for SA (taking into account that nearly 80% of rural farmsteads do not exceed 1 ha).

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CHAPTER 4. REVIEW OF INTERNATIONAL PRACTISE

Farming in developed countries is a type of the economic activity highly dominated by monetary transactions and requires regular financial reporting. Income assessment by authorities is not needed. Subsistence or semi-subsistence farming where small farmsteads undertake agricultural activity and, due to historical reasons or only a limited market presence, are not required to register their transactions, is typical for post-socialist countries. An example could be Poland or the CIS countries, where farmers account for a large portion of the society²². For the purpose of the project we have analysed several countries: Kazakhstan, Kyrgyzstan, Moldova, Russia, Poland, Great Britain, and Australia; we have concentrated our analysis on the first 5 countries.

The table C-1 in Annex C presents an overview of methodologies of individual farming income assessments in the 5 selected countries compared to the one applied in Ukraine. All countries use normatives for crop production as income per 1 hectare of land used for that purpose; only in Ukraine in some oblasts is the income from hayfields/pastures expressed as income per 1 cow. In all countries except for Ukraine the normatives are calculated by central statistical offices (CSO). In all countries except for Ukraine, CSOs exclusively use data on yields, prices and costs of production of crops to set the normatives. In Ukraine, the original normatives that were set at the end of the previous decade, had been – in addition – based on closeness to market outlets; for pastures they were based on milk productivity and costs of production as well as milk sales prices, and for payi in some oblasts – on the monetary land value. All countries differentiate the normatives across different factors; the most frequent being administrative regions and land types. The livestock normatives expressed as income per head of animal are set only in Kyrgyzstan, Kazakhstan and Russia; in Moldova they are expressed as income per 1 ha of farm land. Only in Russia, Moldova and Poland is the procedure of updating normatives regulated by law.

In the CIS region, subsistence and semi-subsistence farming is quite a widespread phenomenon. Many households from former Soviet countries keep homestead land plots and use them to support a solid part of their living from those plots. As a rule, the output from semi-subsistence agro activity is used for personal consumption and only a small share of

²² According to HBS for 2007, 25% of the total population receives any income from individual farming, for 24% of them (or 6% of total population) it is the main source of income in their households.

produced products is placed on the market. A large portion of semi-subsistence farm income is therefore in-kind and CIS countries try to consider this income when determining the eligibility of a household for social assistance.

In general, all five countries use the same basic approach for estimating normatives for the potential capacity of income generation from landplots per one area unit. In all countries these normatives are based on the numbers from national statistical agencies for crop yields, prices and costs of production. Though the basic approach is similar, each country has its own peculiarities. In particular, Moldova and Poland incorporate information about the quality of the land plot of an applicant which is not the case in other countries. Kazakhstan, for instance, relies widely on local authorities, which are responsible for estimating imputed income for every type of crop that an applicant is harvesting in his or her landplot.

The imputation of income from livestock breeding is approached in a different way in every country. Russia and Kyrgyzstan estimate the potential income from every head of available livestock in nominal terms. In Moldova, separate land productivity normatives for applicants with livestock in ownership are applied. And for instance, applicants in Kyrgyzstan have to report verbally on the income from livestock at their disposal. Poland does not generate separate normatives for livestock production: the overall normative includes income from producing both crops and livestock.

In addition to the distinction between estimating different types of agro-incomes, the methodologies differ in terms of the approach to the procedures of imputation. The most interesting experience is observed in Kazakhstan where applicants have to submit to welfare offices a card with detailed information about landplots and livestock at their disposal. The card should be verified and approved by local authorities which is assumed to improve the quality of submitted information. This experience demonstrates how the decentralization of the income assessment process can make possible the collection of very detailed (e.g. an area for every type of crops) and presumably reliable information about farm activities of an applicant.

A more detailed description of the five countries' practices has been provided in points 4.1-4.5.

4.1. Moldova²³

Agro-sector description

In Moldova agriculture has been traditionally regarded as the cornerstone of the national economy: agricultural output accounts for 15% of GDP. It constitutes the most important sector of the national economy, using over 30% of the country's labour force. More than 70% of the country's total agro-output is produced by subsistence and semi-subsistence farms.

Moldova is well known for grape production which accounts for more than 19% of total agro-output (2007). Harvesting comprises close to 58% of the sector output (2007) and the rest comes from animal husbandry.

Land is predominantly private – 73.5% of the land area was in private ownership in 2008. Close to 50% of agricultural land (2007) belongs to subsistence and semi-subsistence farms.

Agro-income imputation

In Moldova, nominal income normatives are used for imputing household income from agro-activities. Similarly to the Ukrainian practice, in Moldova the normatives are estimated per one hectare of land used for cropping. The National Statistics Agency is responsible for calculating the normatives which are based on crop yields, prices and costs of production.

Normatives are estimated at the level of geographic zones. In Moldova, three geographic zones were defined – Northern, Central and Southern, which are compiled of administrative units.

An important characteristic of the Moldovan approach to calculating imputed agro-income is incorporating the yield class information. Each yield class has a rating number (based on points). Normatives for income imputation differentiate across geographic zones where an average yield class for a zone is applied. In each case a geographic zone normative is adjusted for the yield class of an applicant's land according to the land quality rating.

²³ based on National Bureau of Statistics of Republic of Moldova (www.statistica.md); The Land Policy and Farm Efficiency: the Lessons of Moldova by Dragos Cimpoies and Zvi Lerman, Discussion paper # 4.08; The Hebrew University of Jerusalem (<http://departments.agri.huji.ac.il/economics/>)

Zone normatives incorporate the information about types of crops. At first the normatives (net income per hectare) for each type of crop are calculated. The zone normative is an average of crop normatives weighted according to the sowing area structure in a given geographic zone. Last year statistics are used for the calculation of weights.

The zone normatives may be differentiated further. In Moldova we observe an interesting practice of applying coefficients for landplots with greenhouses. It is important to note that the methodology differentiates coefficients for heated greenhouses and common greenhouses.

The methodology considers a difference between farm-operating households and semi-subsistence farming. Two types of normatives in this dimension are calculated.

Livestock-breeding income, although also estimated per one hectare, differs from that estimated for cropping. For those social assistance applicants who have livestock in their household, the 'crop plus livestock normatives' are applied; for the remaining applicants, the 'crop normatives' are applied. The methodology for calculating livestock production per hectare is not available. The Agriculture Ministry is estimating the norms according to an internal algorithm. Similarly to 'crop normatives', the 'crop plus livestock normatives' differentiate across geographic zones and are adjusted for quality of land within each geographic zone. Additionally, 'crop plus livestock normatives' are also calculated separately for farm-operating households and for semi-subsistence farms.

The normatives are revised on a yearly basis (only last year's statistics are considered).

4.2. Kazakhstan²⁴

Agro-sector description

Kazakhstan is rich in land resources; more than 74% of the country's territory is suitable for agricultural production; however, only 11.1% of total land area is made up of arable land. The agro-sector represents about 9-10% of GDP and employs over 22.2% of the labour force. Households produce close to 30% of total agro-output.

²⁴ based on information available at The Agency of Statistics and of the Republic of Kazakhstan (www.stat.kz); Food and Agriculture Organization (www.fao.org)

Kazakhstan is a major producer of wheat (71.4% of agro-production in 2008). Cotton is the most important industrial crop grown on the irrigated soils of southern Kazakhstan. Stockbreeding is the traditional and dominant agricultural sector. No less than three quarters of all agricultural land is used for grazing. Sheep breeding is predominant, while cattle breeding and the rearing of pigs, horses and camels is also well developed. Animal husbandry accounts for about 40% of the production value of agriculture in Kazakhstan. Primary meat products include beef, veal, chicken, horse, lamb, pork and rabbit.

Agro-income imputation

In Kazakhstan, crop normatives are estimated per one hectare and local authorities are responsible for their calculations. Similarly to Moldova, the normatives are estimated based on data about crop yields, prices and costs of production. The National Statistics Office provides only partial information for estimations (yields and costs of production) while local authorities are in charge of defining average prices for agro-products.

The methodology differentiates yields and costs of production across six climatic zones for each type of crop. The final normatives are estimated at the administrative level by local authorities after combining zone yields and production costs with local prices.

Having normatives for each type of crop, local authorities request information about the sown area under every specific type of crop. Based on the information provided, they calculate total income from the harvesting activity of an applicant.

In contrast to Moldova, normatives for livestock are estimated per one head of livestock, based on the information about the productivity of the livestock head, production costs and sales prices of animal products. Data on productivity and production costs is provided by the National Statistics Office for six climatic zones and sales prices are defined by local authorities based on data from local offices of the National Statistics Agency. Normatives are calculated for every type of livestock in each climatic zone.

In addition to crop and livestock normatives, income from the sales of flowers, breeding and fur animals as well as bee-farming is also included into agro-income in Kazakhstan. Social assistance applicants should declare this type of income in their application forms.

Local authorities play an important role in the imputation of agro-income of social assistance applicants. An applicant should submit a card to the welfare office which should be filled in

and verified by a representative of the local authority. The card contains detailed information about the land area owned by an applicant, the types of crop and sown area under each crop, and the livestock owned by the applicant. Local authorities certify the provided information and estimate the imputed income of an applicant from agro-activity.

4.3. Kyrgyzstan²⁵

Agro-sector description

Kyrgyzstan has about 1.4 million hectares of arable land, which is only about 7 percent of the nation's total area. More than 70 percent of the arable area depends on irrigation. The agro-sector employs 32.1% of the labour force and produces 39.4% of GDP. Grains are the main crops in Kyrgyzstan (25.8% of agro-production in 2008).

An estimated 62 percent of the population lives in rural areas. Household farms have 8.5% of arable lands under their ownership and produce about 35% of total agro-production. Only 6.2% of total land is in private ownership.

Agro-income imputation

Kyrgyzstan's normatives are also based on the estimation of nominal income per one hectare. Available regulations do not describe the methodology of the normatives calculation but it is mentioned that the normatives depend on the quality of land, vary between regions, and differentiate between irrigated and non-irrigated land.

In addition, the Kyrgyz methodology differentiates between the normatives for incomes of farm-operating households and incomes from homestead land plots. As a rule, homestead land plots are used fully for personal consumption and normatives for those land plots are substantially lower compared to farm-operating households.

Nominal income from livestock-breeding is calculated based on a verbal declaration by a social assistance applicant on the livestock output in their household and current sales prices.

Other types of agro-income (in-kind or monetized) should be reported verbally by applicants at welfare offices.

²⁵ based on information available at National Statistics Committee of Kyrgyz Republic (www.stat.kg); Food and Agriculture Organization (www.fao.org)

The information about the landplot which an applicant submits to the welfare office should be verified by local authorities. An applicant should provide a certified document signed by local authorities which proves the size of the landplot at his or her disposal and the land quality.

4.4. Russia²⁶

Agro-sector description

The share of Russia's agriculture in GDP remains within the range of 6-7%. Employment in the sector accounts for 13-15% of the total number of employed. Russia is thus much less agrarian than the other analysed former Soviet republics. Moreover, Russia uses only a small share of its land surface for agro-production (7.5%).

Subsistence and semi-subsistence farms comprise a relatively small role in terms of land area usage. Individual farms possess close to 20% of agricultural land. At the same time, the share of subsistence farm production in gross agricultural output is about 43.4% (2008).

Russian subsistence farms specialize mainly in vegetable and animal products output. In 2008, households produced 83.7% of total potato output and delivered 51.7% of total milk production.

Agro-income imputation

The richest experience in normatives estimations that we have observed is in the Russian Federation. Effectively, every federal unit of the Russian Federation independently defines normatives for farm income imputation. In addition, the methodology on normatives derivation itself varies between federal units.

Normatives for cropping in federal units of Russian Federation are estimated per one hectare by the local offices of the National Statistics Agency. For calculations, a standard approach is applied using an average yield, average production costs and market prices.

The normatives are estimated at the level of administrative units; however, for some federations, information about climatic zones is also incorporated into the normatives (agro-

²⁶ based on information available at Federal State Statistics Service (www.gks.ru); Food and Agriculture Organization (www.fao.org); http://www.rosreestr.ru/upload/www/files/zemlya/rf_formsobs.PNG

income for unfavourable climates is not considered). Some administrative regions construct their normatives using also information about land types (for instance, in Altayskiy Kray and Chita oblast the methodology differentiates for orchard area, planting potato and vegetables).

Additionally some federal units apply the capability of applicants and their age as a criterion for considering agro-incomes or not. The logic is very simple: incapable and/or elderly people are very unlikely to participate in agro-activities. As a consequence, agro-income is not imputed for families with disabled or elderly people.

Income from livestock breeding in Russia is estimated per every head of livestock. The livestock normatives are based on productivity (meat output per head, milk yield per head) and average prices collected by federal units of the statistics office. Imputation is applied for every type of animal or poultry.

Similarly to Kazakhstan, some federal units also request local authorities (heads of the village councils) to certify information provided by an applicant to the social assistance office (Altayskiy Kray, for instance).

Normatives for farm income imputation are revised on a yearly basis (in some cases twice a year according to current prices, for instance, North Ossetia, Alania republic and Samara oblasts).

In Russia we can observe a variety of thresholds for farm income imputation. Many federal units apply a threshold for land area (in hectares) or livestock (in number of heads) which is not considered for income imputation. For instance, if the threshold equals to 0.1 ha and 10 rabbits, a farm household with 1 ha and 19 rabbits will be imputed for income from the land/livestock above the minimum (that is from 0.9 ha and 9 rabbits). Thresholds vary between regions.

4.5. Poland

Agro-sector description²⁷

Poland is a country that is less grounded in agriculture and forestry than the analysed CIS countries. Agriculture contributes close to 4.0 percent of GDP and provides employment to 15% of the labour force. Arable land accounts for 45% of Poland's territory; 75% of this area belongs to individual farms. Individual farms are relatively small: 6.4 ha on average.

²⁷ Based on „Statistical Yearbook of Agriculture and Rural Areas”, Central Statistical Office 2008.

However, 57% of them do not exceed 3 ha (2007). Gross output is nearly evenly spread between crop and animal production. Individual farms produce 90% of agriculture output. Over half of all farming households in Poland produce only for their own needs with little, if any, commercial sales.

Agro-income imputation

In Poland, the Central Statistical Office estimates the annual income from farming activities per 1 reference hectare. The reference hectare is 1 hectare of average quality land. Poland is divided into 4 tax regions based on economic as well as climate and farming conditions. Within each tax region there can be 6 soil valuation classes of land. For each tax region and each type of soil the reference coefficients are assigned (see Table 4). The reference hectare is assigned a value of 1.0 (for an arable land of IVth class in the 2nd tax region or IIIrd class in the 4th tax region). The rest of the land types have coefficients adjusted according to the quality of land and economic conditions.

The income from 1 reference hectare is multiplied by the relevant coefficient and the number of hectares of a given land type (which are owned or rented for agriculture production purposes). In this way, all the standardised hectares are added to the total number of reference hectares.

Table 4. Reference hectare coefficients for different types of land in Poland

Type of agricultural land →	Arable land				Meadow and pastures			
Tax regions →	1	2	3	4	1	2	3	4
Soil valuation class ↓								
I	1.95	1.80	1.65	1.45	1.75	1.60	1.45	1.35
II	1.80	1.65	1.50	1.35	1.45	1.35	1.25	1.10
III a	1.65	1.50	1.40	1.25	-	-	-	-
III	-	-	-	-	1.25	1.15	1.05	0.95
III b	1.35	1.25	1.15	1.00	-	-	-	-
IV a	1.10	1.00	0.90	0.80	-	-	-	-
IV	-	-	-	-	0.75	0.70	0.60	0.55
IV b	0.80	0.75	0.65	0.60	-	-	-	-
V	0.35	0.30	0.25	0.20	0.20	0.20	0.15	0.15
VI	0.20	0.15	0.10	0.05	0.15	0.15	0.10	0.05

Notes:

- (1) Orchards are treated as arable land; orchards of the IIIrd and IVrd class get coefficients from the IIIa and IVa class respectively.
- (2) Land under the fish pond (nursery) is attributed
 - 1.0 if the fish is salmon, trout, *trocia*, *głowacica* or *palia* (in Polish)
 - 0.2 if other fish.
- (3) Land under non-fish pond is treated as an arable land.

Source: Law on agricultural tax from November 15, 1984.

There is no specific approach for livestock output imputation. The information about income from animal output of household farms is assumed to be incorporated in reference hectares.



The agro-income imputation approach depends on the purpose of the estimates. Four different purposes of income imputation are defined: (i) taxation; (ii) unemployment benefits; (iii) means-tested family benefits; and (iv) means-tested social assistance. For the first three purposes, the National Statistics Office calculates income normatives from reference hectare based on data about yields, production costs and sales prices. The imputed income is estimated by multiplying the size of the land plot and reference hectare income normative and is adjusted for the reference hectare coefficients. The value of reference hectare for social assistance needs results from applying the minimum consumption basket approach as described in the section below.

An applicant for social assistance has to provide only information about the size of the landplot at his/her disposal when submitting the document to the welfare office. The authorities randomly verify information provided by the applicants.

The normatives are revised every year for all imputation purposes except for social assistance. Social assistance normatives are revised every three years or even less frequently.

Minimum basket of goods and services approach

In Poland, many years ago the interested parties worked out a consensus about comparing costs of living in rural and urban areas. They agreed that the level of consumption of a single person living in a big city and receiving a minimum pension and the level of consumption of a single person living in the country side and having a 2- hectare-farmstead are similar. Such a consensus reflected the fact that in the area of food and housing costs, which are crucial for social assistance, costs of living in a city (costs of housing, retail costs of food) are much higher than costs of living in the country side (due to ownership of a house and (partly) utilities, consuming self-produced food or at most purchased at producer prices). So the income threshold for social assistance, derived from the minimum basket of goods and services, is equivalent to the (threshold) income of farmers (monetary as well as in-kind) from 2 hectares. In other words, a family with up to 2 ha per person is eligible for social assistance. If a farmstead gets other incomes and all of them need to be added up, then each hectare is estimated to provide $\frac{1}{2}$ of the farming income threshold. Taking into account that the income threshold for a 1-person household in an urban area is higher than the

income threshold per person in a bigger family, some adjustments are made to use this differentiation in calculating threshold income for farmers²⁸.

In fact the estimated income from 1 hectare for the purpose of family benefits, based on the agro-income imputation, is smaller than the one for the purpose of social assistance. Such differences reflect different levels of social interventions of the state in different social situations. Social assistance is the 'last resort' state help and citizens should make use of all their resources in the first place (subsistence production of farmers as well as zero housing costs being taken into account here).

CHAPTER 5. CONCLUSIONS

Irina Sinitsina

5.1. Targeting by proxy means testing in Ukraine – advantages and prerequisites

We tried to outline the lessons from international experience for targeting cash transfer programs in Ukraine generally, and for integrating proxy means testing (PMT) into agro income assessment in Ukraine in particular, from three specific perspectives: the advantages of PMT application for the Ukrainian safety nets, the existing prerequisites for using PMT in Ukraine, and the role that PMT could play in targeting social assistance to the poorest rural population in the country.

Clearly, the use of PMT targeting has several advantages which make it a preferential targeting method in designing national safety nets in Ukraine. These advantages could be summarized as follows:

- PMT ensures a high degree of transparency and targeting accuracy.
- PMT is a more open and less costly system from the administrative viewpoint compared to true means testing.
- Targeting by PMT is particularly effective when:
 - There is a high degree of informality;

²⁸ Based on data on social assistance recipients, the Polish MLSP calculated that among the recipients in the country side, half of them are 1-person households and half of them are more than 1-person households. They calculated that the average threshold income from 2 hectares would be the average from the threshold for a 1-person household and the threshold for more than 1-person household in the urban area. Such proportions between SA recipients have been assumed for all the following years and the threshold for farmers has only been indexed (not recalculated). The indexation is to take place every 3 years on the basis of increases in costs of living of people in the first quintile.

- Income and/or acquisition of income in cash form is seasonal; employment is sporadic in the agriculture/informal sector;
- The targeted group is large and a majority are chronically poor.
- PMT targeting is particularly appropriate for the systems that allow for continuous payments of cash benefits.
- PMTs can be used for a multitude of specific social safety nets: various cash transfers, subsidized food rations, health insurance, workfare, scholarships for vocational training, and housing and utility subsidies.
- PMTs can be used for verification and/or assessment of income data supplied by the beneficiary and for forecasting the level of the household's well-being.
- As the PMT method is based on the concept of the "multi-dimensionality" of poverty, it could be more acceptable politically (compared to VMT) and more transparent.
- The PMT method could be easily adapted to virtually any country conditions; there is no need to copy foreign experience; on the contrary, national/geographic specifics (culture, infrastructure development, etc.) could be easily accounted for in designing the system.
- PMT's openness and transparency are important politically, since they allow for regular reporting of the respective governance level and facilitate reactions to criticism from mass media.
- The method could be efficiently used in both centralized and de-centralized systems, which is in line with the conditions prevalent in Ukraine. At the same time, centralization ensures greater transparency, as centralized management contributes to the consolidation of national databases.

Ukraine meets all of the requirements for the successful application of PMT and possesses many of the prerequisites necessary for using PMT targeting effectively:

- International experience suggests that targeting by PMT consistently demonstrates better outcomes in middle-income countries compared with poorer ones. Targeting performance generally improves with the country's income levels (the proxy for implementation capacity), the extent to which the government is held accountable for its actions, and the degree of inequality. Countries where differences in economic well-being are easier to identify also demonstrate better targeting outcomes. Ukraine meets all of these criteria.
- Ukraine has a considerable informal labour market associated with underdeveloped information and verification systems which prevent a precise verification of income and welfare characteristics of benefit recipients.



- PMT can serve as a reliable substitute for measuring the agricultural income of households in Ukraine for the purposes of social benefits targeting. Also, Ukrainians who depend on agriculture for their survival can be considered chronically poor.
- Ukraine possesses a reasonably high administrative capacity to ensure an efficient organization of PMTs, their effective verification, reporting and control, as well as the capacity to organize a consolidated nation-wide database to avoid duplication and to track beneficiaries.
- Ukraine has a solid household survey database on consumption/income (Ukrainian Longitudinal Monitoring Survey, ULMS) which can serve as a basis to determine the indicators used in PMTs and their weights.
- There is a large body of computer trained staff who can carry out the registrations and ensure effective database management. There are also moderate to high levels of IT development and computer networks throughout the country.

In designing the PMT system for Ukraine, one should keep in mind that the simultaneous involvement of other appropriate targeting methods (e.g. geographic, or self-selection, or categorical based on age, etc.) within the same program contributes to more efficient targeting and minimizes leakages, improves coverage rates and minimizes errors of exclusion.

Katarzyna Piętka-Kosińska

5.2. Agriculture income assessment – an analysis of the usefulness of other countries' practices for Ukraine

Returning to the issue of means testing methods, a detailed discussion of the usefulness of farming income assessment practices in the five analysed countries ("pros" and "cons") preceded the formulation of recommendations for Ukraine. There are several aspects of the system that need to be defined:

- the unit for which the net income is defined (e.g. 1 hectare of land in the case of crops, 1 head of livestock),
- the list of factors affecting the level of normatives,
- the level of normative disaggregating (e.g. separate normatives for all types of crops versus 1 normative for all crops together)
- the dimension and the level of normative differentiation (e.g. across climatic zones)
- the role of local authorities in the process of means testing
- the responsibility for calculating normatives and revision rules

Examples of good practices were discussed within the Ukrainian context. The most important conclusions from this discussion are presented below.

- Taking into account the following factors: many households owning land do not own livestock; farmsteads provide 60% of total livestock production in the country; livestock production accounts for over 40% of total farmstead production; and livestock availability at small farmsteads is very uneven, it is justified to develop separate normatives for crop and livestock production similarly to all of the analysed countries except for Poland and Kyrgyzstan. Although in Ukraine many farmsteads use the outputs of agro production for their own purposes or offer them in barter transactions, it is important from the social assistance perspective to estimate this in-kind income (as food is the main component of the consumer basket of poor people).
- Ukrainian land plots are very small, so we find it inadequate to disaggregate normatives across types of crop. Moreover, if normatives were differentiated across quality of land (as we recommend), then setting and using normatives for each type of crop would seem useless: the quality of land narrows the list of possible crop production so the land quality indirectly defines the type of produced crops. However, taking into account the strong differences in the composition of crop production across the country, the Moldovan idea of setting the climatic zone normative as the weighted average of normatives for each type of crop with weights of each crop sowing area could serve well in Ukraine too, as a (temporary) alternative to differentiating normatives across land quality.
A similar approach can be used in the case of livestock (that is, a universal normative per head of livestock as a weighted average of normatives for each type of livestock bred in a given zone). It would include the error of equal treatment of different kinds of livestock (much more differentiated in terms of income generation than crops). So, a minor disaggregating of livestock (though less than in Russia or Kazakhstan) may be reasonable.
- Differentiating crop normatives by climatic zones (there are 5 zones in Ukraine²⁹) could be a valuable element of simplifying the estimation of output and costs of production which are currently based on administrative units (oblasts). Although, climatic zone

²⁹ Depending on natural, economic and historical conditions, the following zones of agricultural specialization have formed on the territory of Ukraine: *Polissya* (Woodlands), *Lisostep* (Forest Steppe), *Step* (Steppe), mountainous regions of the Ukrainian Carpathian Mountains, and foothill and mountainous regions of the Crimea. The woodland agricultural zone includes Volyn, Rivne, Zhytomyr, Kyiv, Chernihiv, and Sumy Oblasts. The forest steppe zone includes L'viv, Chernivtsi, Ivano-Frankivsk, Ternopol, Khmelnytsk, Vinnytsia, Cherkasy, Poltava, and Kharkiv Oblasts. The steppe zone covers all the southern oblasts. The foothill and mountainous areas of the Ukrainian Carpathian Mountains extend to cover parts of L'viv, Ivano-Frankivsk, Chernivtsi Oblasts as well as Transcarpathian Oblast. The foothill and mountainous areas of the Crimea cover the southern part of the peninsula.

differentiation would provide too strong of a generalization if not followed by further normative differentiation accounting for strong differences in land quality within climatic zones or distance to markets in the situation of low mobility of farmers.

- Differences in prices of livestock (due to the limited mobility of farmsteads) and differences in some fodder costs across regions call for the need to differentiate the norms regionally, as seen in Kazakhstan or Russia. According to agro experts, the regional differentiation for livestock in Ukraine should be less fragmented however than for crop production and related rather only to climatic zones.
- In Ukraine, the options of selling agricultural products rise strongly as distance to market outlets lessens. Based on the material received from the Ministry of Economy, apparently the distance to market outlets was taken into account when setting the initial norms in 1998. Although the analysed countries use yields, prices of agro products and costs of production as the only factors affecting the normative level, in Ukraine it may be reasonable to account for distance to the markets as well (e.g. through differentiating norms for rural and urban areas).
- Differentiating norms across land quality was adopted in all countries except Kazakhstan. Land quality is a key factor of crop production productivity. Different quality land plots can exist within very small sub-regions. Although a system of land quality classification exists in Ukraine, access to such information by the average land owner is currently very poor. Probably only after free land trading is allowed will the process of clarifying the quality of land plots and increasing awareness of it by their owners take place. Differentiating norms across land classes would require defining separate yields and costs of the main kinds of crop production for each type of land, at least in the initial year; in the next period, land of average quality could serve as a reference and the costs and the yields for each other quality of land could be defined through the ratio between each non-average and the average type of land set in the initial year.
- Setting norms for other types of activities (such as sales of flowers, breeding, sales of fur animals, income from bee-farming in Kazakhstan) seems unjustified because the role of such activities in Ukraine is minimal.
- In light of the high level of SA system abuse (high error of inclusion according to HBS), confirmation of data provided by an applicant seems required, as practiced in Kazakhstan, Kyrgyzstan, and Russia. A partial solution could be an occasional verification. An important source of information in Ukraine could be the twice-yearly review of livestock in farmsteads by Rural Councils.
- The regular revision of norms should be regulated by law as it is at least in Moldova, Russia and Poland. The regular update of norms that follows changing economic

environment would encourage a regular update of the eligibility criteria for social assistance beneficiaries, and would also make farming income estimations more realistic at the advantage of the social assistance budget.

- The initial normatives in Ukraine were created by a consortium of several ministries (including the Ministry of Labour and Social Policy). In the analysed countries, central statistical offices are responsible for calculating normatives. This seems to be a logical consequence of collecting all the used data by those institutions. However, if access to social assistance was to take into account the different costs of living in rural and urban areas (as in the minimum basket approach in Poland, see p. 4.5), then the role of MLSP could be important.

Dmytro Boyarchuk, Liudmyla Kotusenko, Katarzyna Piętka-Kosińska, Roman Semko

CHAPTER 6. RECOMMENDATIONS FOR UKRAINE

Our general recommendation is to apply a well-justified, unified and realistic methodology for calculating the normatives for farmstead income assessment as well as unified rules for regular updates of the normatives.

We have divided the recommendations into 3 groups: (1) long-term solutions, (2) short-term solutions, (3) minimum solutions. The (1) long-term solutions assume access to regular comprehensive data on farmstead activities (incomes and costs of farming). The (2) short-term solutions include temporarily recommended changes, that would allow for the unification and adjustment of the system before the necessary database is developed. The (3) minimum solutions assume absolute minimum adjustments if the status quo has to remain (update of the initial normatives, unification of the system and adjusting it to the reality). The detailed recommendations in the long-term and short-term scenarios are preceded by general suggestions.

CASE-Ukraine, in cooperation with MLSP and under the supervision of the Ukrainian office of the World Bank, is working on the development of a Proxy Means Testing model that could serve as an alternative method of assessing the incomes of social assistance claimants. Our recommendations refer strictly to the means testing method.

6.1. General suggestions

1. We recommend defining the normatives for crop production only as income per hectare and the normatives for livestock production as income per head of livestock.
2. Taking into account that a popular way of using *payi* is to rent them without a lease agreement³⁰, we consider linking this income to the monetary land value as a reasonable proxy of the willingness of a renter (enterprise/farmer) to pay rent (instead of setting normatives per ha). We would recommend unifying this methodology throughout Ukraine. However we would like to stress here the need for systemic changes in agriculture that would allow for free land trading to enhance land consolidation, and an increase in the productivity of this sector.
3. Following our recommendation to set normatives for livestock production, we consider estimating income from hayfields and pastures unnecessary.
4. We recommend differentiating normatives for livestock production across the main types of livestock because there are strong differences between net income per head for each type of livestock. We advise the consideration of developing normatives only for the most popular types of livestock: cows, cattle, hogs and poultry.
5. Taking into account the low mobility of rural farmsteads and underdeveloped trade networks for small agricultural producers, the aspect of distance to market outlets should remain a reason for setting higher normatives for urban areas than in rural areas.
6. We support maintaining the rule that the land size of 0.06 ha belongs to the area under a house and the income is not generated by such a land plot. However, we recommend that this land size taken out of the total used land area is unified across all oblasts in Ukraine since there is no justification for assuming housing areas change across regions.
7. We recommend that the 0.6 ha cap on land size, which plays the role of an additional social assistance threshold, is lifted for at least 2 reasons. Firstly, farmsteads in many regions, especially those that are products of former collective farm privatisations, have no equipment to undertake farming activity. So, even if their land is greater than 0.6 ha, they are not capable of generating any income above the income threshold. Secondly, the recommended scrutiny methodology of calculating the normatives will exercise means-testing effectively enough and the 0.6 ha cap on land size is not necessary anymore.
8. We recommend giving the claimant the option of declaring no activity on the land. As mentioned above, there are owners of privatized land that are not capable of undertaking

³⁰ 63.2% *payi* owners signed lease agreements; the remaining 36.8% is either used by the *payi* themselves (which is rare according to the agro-experts) or renting it without a formal agreement.

agricultural activity due to the lack of equipment and resources to rent it. Moreover, there are *payi* land plots that have not been marked out. Access to such plots by their owners is practically nonexistent. Estimating income from such plots would be illusory and unfair. However, such an option is justified only until the land can be freely sold. Otherwise it would provide negative motivation to undertake activity on the land and to seek welfare benefits.

9. We suggest following the best practices exercised in some CIS countries and impose upon local authorities the responsibility to confirm the information provided by an applicant to SA, especially in respect to the declared zero activity on the land. This can be either obligatory or undertaken occasionally at random.
10. Indexation of normatives with CPI inflation (regional CPI inflation – if possible and justified) should be regulated by the law.
11. The Polish practice of estimating income of homesteads based on a minimum basket of goods and services, for the purpose of social assistance, should be considered as an option for Ukraine.

6.2. Detailed recommendations

6.2.1. Long-term solutions

In addition to the general suggestions we recommend the following long-term solutions:

12. We recommend using the climate zone division of Ukraine's territory and land quality as differentiating factors for farmstead income normatives for crop production. Based on expert opinions, such a rule of differentiating normatives reflects the most the natural conditions for agriculture activities.
13. The income estimation is to be based, among other things, on yields of different crop types. We recommend that the applied yields are the averages of the last 3 years to avoid weather-cycle fluctuations of normatives from year to year.
14. We do not recommend differentiating crop normatives by type of crop because we recommend differentiating the normatives across the quality of land. The quality of land narrows the list of possible crop production so the land quality indirectly defines the type of produced crops. However, the shares of crops' sowing area within a given sub-region should serve as weights for setting a weighted average of net income from crop production.
15. For livestock production, we suggest to differentiate normatives only across climate zones as the capability of letting animals out is the main differentiating factor of livestock

productivity and, according to agro-experts, the price differences (of livestock and inputs) are only up to 10-15% across the regions.

16. We recommend adding a “proximity-to-markets” premium to the normatives for the urban areas and villages which are less than 10 km from the nearest town.

Long-term solutions assume basing the normatives on comprehensive data on farmstead activities that would provide information about farmstead incomes from crop and livestock production as well as the costs of each type of activity per unit of production, representative for climate zones and land quality types. The State Statistics Committee undertakes a yearly representative survey among farmsteads covering nearly 29 thousand cases. During the annual survey, general data on households, availability of land plots, structures of its use and plant acreages for various crops, availability of livestock and poultry, economic infrastructure, and machinery and equipment is collected. During the monthly survey, data on yields and acreage of agricultural plants, changes in the number of livestock and poultry, fodder expenditures, livestock product produce and distribution of products of own produce (prices, quantities) is collected. The information collected during monthly surveys on farming income is only partial and the information on costs is lacking so the survey does not allow for providing estimates of net income in such farms.

17. We recommend that the survey is representative for each climatic zone and each land class. We recommend expanding this survey to also cover urban households. We recommend extending the survey for questions that would cover:

- income elements:
 - agricultural products produced for own consumption (income in kind);
- costs elements:
 - purchases of inputs for different types of agro production,
 - usage of own agro-products as inputs for different types of agro-production; and
- improvement of statistical weights.

We would like to draw attention to the survey of farmsteads launched in all European Union countries: FADN (Farm Accountancy Data Network) – a European system of collecting accounting data from the representative number of farms (see more in Chapter 1).

18. After the condition of having a comprehensive database on farmstead incomes and costs is fulfilled, we recommend using it in the process of calculating the normatives.

19. We recommend enhancing the process of land quality identification. It would be necessary not only for the purpose of differentiating normatives across land quality but also for preparing the ground for land turnover.

6.2.2. Short-term solutions

The outdated normatives that are currently in use and the inconsistency of the entire system calls for rapid steps towards orderliness and a system that responds to the reality on the ground.

Before the comprehensive database on farmstead incomes and costs is available and the information on land classes easily accessible and known by the land owners, we propose to rely on the available sources of data and set proxy normatives (the best available).

The first approach assumed using income and costs of agro enterprises. The results turned out to be inconsistent with the reality of farmsteads. The second approach used the incomes and costs of agro activities by households having any plots of land, based on levels declared in HBS (Method (2) in Annex D). In respect to the short-term solutions, we recommend the following rules for normatives (on top of the general suggestions).

20. Before the comprehensive database with data on revenues and production costs of farmsteads is compiled, we propose to use the HBS data set as it most likely reflects the reality in which farmsteads operate to a greater extent than data from agro enterprises. An alternative (not exercised in this project) could be the income/costs data for the group of smallest agro-enterprises.

21. In terms of differentiating the normatives (for both crop and livestock production) we recommend sticking to the oblast level since this is the only regional differentiating factor possible based on HBS.

22. The differences in the access to markets should be expressed through setting separate normatives for urban and rural areas.

6.2.3. Minimum solutions

The current system of farming income estimation in Ukraine has proven to be inconsistent and outdated. An absolute minimum reform should unify the system, assure fairly equal

access to social assistance and respond to the frequent situation of impossible land usage (the case of payi). We recommend that the minimum adjustment includes the following:

23. Indexation of normatives developed in 1998 for oblast cumulative CPI index between 2009 and the last indexation in 2000; a mechanism of regular indexation should be defined.
24. Lifting the 0.6 ha cap on the land plot size,
25. Taking into account that the area of the land plot excluded from calculating income from land is 0.06 in some regions and may reach 0.25 ha in others, we propose unifying the plot size excluded from the income estimation at the level of 0.06 ha in all the regions.

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Annex A. Distribution of Targeting Methods by Region, Country Income Level, and Program Type

Table A-1.

	Individual Assessment			Categorical				Self-selection means		
	Means tests	Proxy means tests	Community assessment	Geography	Age: elderly	Age: children	Other	Work	Consumption	Community bidding
<i>By region</i>										
Latin America and Caribbean, 68	8	5	3	20	4	14	4	4	0	6
Eastern Europe and former Soviet Union, 46	14	1	3	1	6	11	7	2	0	1
Middle East and North Africa, 23	4	0	0	2	1	1	2	0	12	1
Sub-Saharan Africa, 25	3	0	2	3	5	1	4	2	4	1
South Asia, 49	2	1	3	16	2	1	10	4	10	0
East Asia, 42	3	1	3	10	6	8	8	1	1	1
<i>By income level</i>										
Poorest, 147	12	3	10	37	10	14	28	8	19	6
Less poor, 106	22	5	4	15	14	22	7	5	8	4
<i>By program type</i>										
Cash transfer, 103	24	4	5	9	19	24	16	2	0	0
Near-cash transfer, 36	4	3	0	12	1	2	4	0	10	0
Food transfer, 35	0	1	5	9	3	9	7	0	0	1
Food subsidy, 23	3	0	0	2	0	0	0	0	17	1
Non-food subsidy, 9	3	0	0	2	1	1	2	0	0	0
Public works, job creation, 29	0	0	2	10	0	0	6	11	0	0
Public works, program output (e.g., social fund), 18	0	0	2	8	0	0	0	0	0	8
Total 253	34	8	14	52	24	36	35	13	27	10

Notes:

1. Many programs use more than one targeting method. Thus the total number of targeting methods tallied is greater than the number of programs.

2. Poorest countries have per-capita GDP in PPP dollars below 1,200; less-poor countries have per-capita GDP above 1,200 and below 10,840.

Source: Coady, Grosh & Hoddinott (2004)

Annex B. Selected aspects of current methods of social assistance targeting in Ukraine.

Table B-1. Sources of income included in total income defined for the purpose of social assistance eligibility

Monetary Income	
Included	Excluded
gross wages,	lump-sum payable at child-birth
other cash payments of a regular nature,	funeral benefits
incomes from entrepreneurship and other professional activities,	one-time allowances granted by executive authorities or local governments or other institutions
all types of remuneration for free-lance jobs,	voluntary health insurance paid by employers
stipends, pensions, benefits	incomes of conscripts
assistance for education granted by enterprises, institutions or organisations,	income from land plots in use or ownership of old-age, disabled persons or multi-small-children families ³¹
compensatory payments,	one-off benefit to women decorated with Mother Hero Honorary Degree ³²
alimony,	assistance from civic and charitable associations
temporary disability benefits,	
unemployment benefits,	
payments to Chernobyl victims,	
rental income,	
non-work related accident insurance,	
compensation for wage arrears	
incomes from land plots for individual farming, provided the land is bigger than 0.06 ha, land plots allocated for gardening, haying, grazing and income from land shares (Ukr. <i>payi</i>)	
other incomes that are subject to taxation (including house sale or receiving assets as a gift if not granted by a spouse, parents or a child)	
Non-monetary Income	
Included	Excluded
in-kind remuneration	state meal benefits granted by schools
privileges for housing and utility services	housing subsidies
	assistance from non-governmental and charitable organizations

Source: „Approved by the order dated November 15, 2001 of the Ministry of Labour and Social Policy, Ministry of Economy and European Integration, Ministry of Finance, State Statistics Committee, and State Committee on Youth, Sport and Tourism of Ukraine, № 486/202/524/455/3370

³¹ It is assumed that such individuals cannot effectively use the land plots so they cannot get any income out of it

³² mothers of 10 children

Table B-2. Land income normatives as of 1999

	Land for crop production, monthly		Haymaking*, monthly	Grazing lands*, monthly
	Rural areas	Urban areas		
AR of Crimea	0.48	0.91	0.61	0.34
Vinnytsia	0.28	0.48	1.05	0.53
Volun	0.18	0.29	1.07	0.77
Dnipropetrovsk	0.31	0.58	1.33	1.07
Donetsk	0.29	0.52	1.21	0.77
Zhytomyr	0.22	0.37	1.39	0.86
Transcarpathian	0.30	0.50	3.16	1.99
Zaporizhzhya	0.21	0.40	1.26	0.67
Ivano-Frankivsk	0.17	0.28	1.34	0.9
Kyiv	0.35	0.71	3.12	1.34
Kirovohrad	0.19	0.32	1.35	0.79
Luhansk	0.19	0.36	1.05	0.47
L'viv	0.20	0.37	1.46	1.69
Mykolayiv	0.26	0.43	1.34	1.14
Odesa	0.19	0.36	0.74	0.41
Poltava	0.20	0.33	1.35	0.56
Rivne	0.17	0.28	1.21	0.56
Sumy	0.19	0.32	1.42	0.56
Ternopyl	0.16	0.26	1.78	0.71
Kharkiv	0.23	0.42	1.16	0.54
Kherson	0.18	0.31	0.45	0.3
Khmelnysk	0.18	0.30	1.26	0.64
Cherkasy	0.27	0.44	1.71	0.32
Chernivtsi	0.21	0.35	1.22	0.49
Chernihiv	0.23	0.39	1.25	0.22
City of Kyiv	—	0.71	—	—
City of Sevastopol	—	0.91	—	—

Notes: * for plots used for haymaking and cattle grazing, income standards have been calculated per milk price on the level of UAH 0.3/kg

Source: State Statistics Committee



Annex C. Review of agriculture income assessment practices in 5 countries compared to Ukraine.

Table C-1.

		Kazakhstan	Kyrgyzstan	Moldova	Russia	Poland	Ukraine
1.	Type of information on income estimates from crop production	normatives per 1 ha	normatives per 1 ha	normatives per 1 ha	normatives per 1 ha	normatives per 1 ha	normatives per 1 ha; in some regions normatives for pastures and hayfields expressed as normatives per 1 cow.
2.	Source for normatives	Local authorities (CSO provides information about crops yield and cost of production)	N/A	CSO	CSO	CSO	Originally in 1998 Ministry of Economy, Agriculture, Labour and Social Policy and Finance; later - local administration
3.	Data used for setting the crop normatives	crops yield, prices and costs of production	N/A	crops yield, prices and costs of production	crops yield, prices and costs of production	crops yield, prices and costs of production	costs of production, sales prices, closeness to market outlets; for pastures: milk productivity, costs and prices for milk; in some oblasts for <i>payi</i> rented without lease agreement - monetary land value
4.	Differentiation of crop normatives						
	- climate/economic zones	(1a) across 6 climatic zones (for yield and cost of production)	Not applicable	across geographical zones	(3) some federal units do not consider income for unfavourable climate zones	(1) across 4 climate/economic conditions' zones	Not applicable
	- administrative units	(1b) prices are defined by regional authorities based on information from local offices of National statistics agency	(1) across regions	geographical zones are compiled based on administrative units	(1) across federal units	Not applicable	(1) across regions (oblasts); for <i>payi</i> as well as for regular land in some oblasts - also across <i>rayons</i> ; in some oblasts farmstead normatives across rural and urban areas
	- quality of land	Not applicable	(2) across quality of land (yield classes) within each region	(3) across quality of land (yield classes) within each geographical zone: zone normative (assumed for an average land quality) is adjusted for the quality of land of an applicant	(2) across types of land	(2) across 8 types of land quality (6 in case of pastures); effectively 23 normatives altogether; 17 in case of pastures	Not applicable



		Kazakhstan	Kyrgyzstan	Moldova	Russia	Poland	Ukraine
	- type of crop	(2) normatives are estimated for each type of crop; total income of an applicant is estimated based on information about sown area under each type of crop	N/A	(2) within each geographical zone - across types of crops: zone normative is the weighted average of normatives for each type of crop with weights of each crop sowing area	N/A	Not applicable	(2) across 4 types of land usage (farmstead, gardening, hayfields, grazing); in some oblasts normatives for farmsteads and gardening the same. [in 1998, altogether at the level of oblasts 66 normatives effectively]
	- other factors related to farming activity	N/A	(3) across irrigated and non-irrigated land	(4) across greenhouse and non-greenhouse production	N/A	Not applicable	Not applicable
	- other factors related to farmers or farms	N/A	(4) across farm-operating households and homestead land plots (subsistence)	(5) across farm-operating households and semi-subsistence farms	(5) across families with disabled or elderly and families without disabled/elderly people	Not applicable	in some oblasts normatives for farmsteads and gardening different; (3) across land used and land not used due to reasonable reasons (old age, disability) - then normatives equal zero
5.	Type of information on income estimates from livestock production	normatives per 1 head of livestock	verbal report about output from livestock per 1 head of each type of livestock	normatives per 1 ha; methodology: internal algorithm of the Ministry of Agriculture	normatives per 1 head of livestock	Not applicable - included into land normatives	Not applicable - included into land normatives
6.	Data used for setting the livestock normatives	productivity, cost of production, sales prices	reported livestock output and current sales prices for livestock output	N/A	indices of productivity per head and price indices collected by federal units	Not applicable	Not applicable
7.	Differentiation of livestock normatives						
		across 6 climatic zones (for productivity and cost of production)	Not applicable	across geographical zones	(1) across federal units	Not applicable	Not applicable
		sales prices are defined by regional authorities based on information from local offices of National statistics agency	Not applicable	across quality of land (yield classes) within each geographical zone	N/A	Not applicable	Not applicable
		normatives are estimated for each type of livestock	Not applicable	across farm-operating households and semi-subsistence farms	(2) across each type of livestock or poultry	Not applicable	Not applicable
8.	Info on other types of agro-income	sales of flowers, breeding and sales of fur animals, income from bee-framing	other agro-incomes like bee-farming should be reported verbally at welfare offices	N/A	N/A	Not applicable	Not applicable



		Kazakhstan	Kyrgyzstan	Moldova	Russia	Poland	Ukraine
9.	Procedure of application for social assistance	card with detailed information about landplots and livestock in disposal of an applicant	certified document from local authorities is needed. The document should verify information about size of landplot and quality of lands.	N/A	N/A	reporting the number of hectares of land	reporting the number of hectares of land and (in some oblasts) number of cows
10	Role of local administration	verification and approval of all the info on farm production provided in the card	verification of information provided by the applicants about size and quality of landplot	N/A	in some federal units it is requested verification and approval by local authorities of all the info on farm production provided by an applicant	acceptance of applications, occasional verification of information provided in the application form.	revision of normatives (timing not defined)
11	Revision of normatives	N/A	N/A	every year	every year, in some cases twice a year	in general - every year, however every 3 years (or less frequently) for social assistance purposes	not defined; occasional revision based on the decision of local authorities
12	Additional	N/A	N/A	N/A	in some federal units plots smaller than regionally defined level and/or number of livestock smaller than regionally defined excluded from income calculations	normatives for minimum income support purposes based on the minimum basket of goods and services	plots smaller than 0.06 ha excluded from income calculations; families with plots bigger than 0.6 ha excluded from social assistance.

Notes: CSO – central statistical office; (1), (2), ... – the order of factors differentiating normatives

Roman Semko

Annex D. Recommended methodologies for estimating agriculture income normatives

Following our recommendation of expressing the income from crop production as average income per 1 ha and the income from livestock production as an average income per head for the main types of livestock, we proposed two methods of estimating those normatives.

Method (1), where calculation of normatives was based on the Statistical Reporting Data by agricultural enterprises, appeared to have some obstacles associated with a rather weak reflection of the reality of farmsteads in agriculture enterprise statistics. The results of the second method, based on HBS data set, are more realistic.

Method (2). Calculating normatives based on Household Budget Survey

Data

Components of income from crop production include: income from selling plant products, cost of consumed foodstuffs taken from own farmstead (bread and baked products; oil and vegetable fat; fruit; vegetables including potato, other root vegetable, and mushrooms; mineral water, soft drinks and juice).

Components of plant growing costs include: goods needed for plant growing, services needed for plant growing, animal insurance, land tax, land rental and other costs incurred by a farmstead.

Components of income from livestock production include: income from selling animals, income from selling animal products, cost of consumed livestock products taken from own farmstead (meat, fish, milk, cheese, eggs, butter, margarine, jam and honey).

Components of livestock breeding costs include: goods needed for animal production; feeds and food products for feeding animals, poultry, and bees; services needed for animal production; purchase of animals.

Table D-1: Structure of income from crop production, based on HBS (UAH/ha/month)

Income components	Average value per hectare per household (UAH / hectare)		
	All farmsteads	Urban farmsteads	Rural farmsteads
Income from selling plant products	135	202	108
Bread and baked products	2	1	3
Oil and vegetable fat	0	0	0
Fruit	101	267	34
Vegetables including potato and other root vegetable; mushrooms	1087	2660	455
Mineral water, soft drinks and juice	53	134	21
Total	1379	3264	622

Source: own calculations based on HBS 2008

An average farmstead income from growing crops on 1 ha of land is more than 5 times higher in towns than in rural areas due to much higher prices. The main income comes from consuming own vegetables, especially potatoes that is income in-kind (81% of total income in case of urban areas and 73% in case of rural areas). The numbers may be distorted slightly by self-stocking of some products; at the same time, the total costs do not include expenses for goods and services needed for self-stocking. The average costs per hectare are UAH 342 in cities and UAH 87 in villages; expenses for purchasing necessary goods and services account for over 95 percent of total costs incurred by farmsteads in both areas.

Algorithm for calculating the Standard Net Income (normative) from plant growing

1. The net income from 1 hectare of agricultural land shall be defined as the difference between the household's income from plant growing and the costs incurred and adjusted for the effective area of the agriculture land (i.e. after deducting 0.06 ha which is free of income estimation).

$$\pi = \frac{R - C}{ES}, \quad (1)$$

$$ES = S - 0.06, \quad (2)$$

where:

π is the household's net standard income from 1 ha of the land (UAH);

R is the household's income from plant growing (UAH);

C is the costs of plant growing incurred by the household (UAH);

E is the effective area of the agriculture land (ha);

S is the total area of agriculture land owned by the household (ha).

2. The total standard net income from 1 hectare of agricultural land in oblast i is equal to the average weighted value of net incomes (applying household statistical weights):

$$\pi_i = \frac{\sum_{j=1}^{N_i} W_j \pi_j}{\sum_{j=1}^{N_i} W_j}, \quad (3)$$

where:

i is the oblast;

π_i is the net standard income from 1 ha of land in oblast i (UAH);

π_j is the net standard income from 1 ha of land of household j in oblast i (UAH);

W_j is the statistical weight of household j in oblast i ;

N_i is the number of households in oblast i who own agriculture land with the effective area above zero.

Algorithm for calculating the Standard Net Income (normative) from animal production

$$\pi = (R - C), \quad (4)$$

where:

π is household's net income from animal production (UAH);

R is household's gross income from animal production (UAH);

C is the costs incurred by the household i in the animal breeding process (UAH);

The average monthly income from livestock per household in cities is UAH 153. It is higher in villages (UAH 487) because rural households keep more animals. The monthly costs of animal production are UAH 70 and UAH 102 in cities and rural areas, respectively. Expenses for purchasing animals, feeds and food products for animal feeding purposes account for over 97 percent of the costs. The cost structure is similar in cities and rural areas.

We calculate the income from animal production per animal/poultry head based on the regression analysis applying regression without a constant:

$$\pi = \sum_{j=1}^k \beta_j * Q_j, \quad (5)$$

where:

π is household's net standard income from animal production (UAH);

k is the number of animal breeds for which the standard income is calculated and for which information in the database is available;

Q_j is the number of animals j of a given breed;

β_j is the standard income for the j^{th} breed.

Results

The average net income of urban households is more than five times as large as that of rural households (UAH 2,917 per ha per month and UAH 535 per ha per month, respectively). It can be partially explained by higher prices for plant products in urban areas and a relatively larger share of more profitable vegetables. Oblasts with high standard incomes are located in the east, far west (Zakarpatian oblast only), and the south (the Crimea only) of Ukraine. Low standard incomes are characteristic of most western and central oblasts for urban

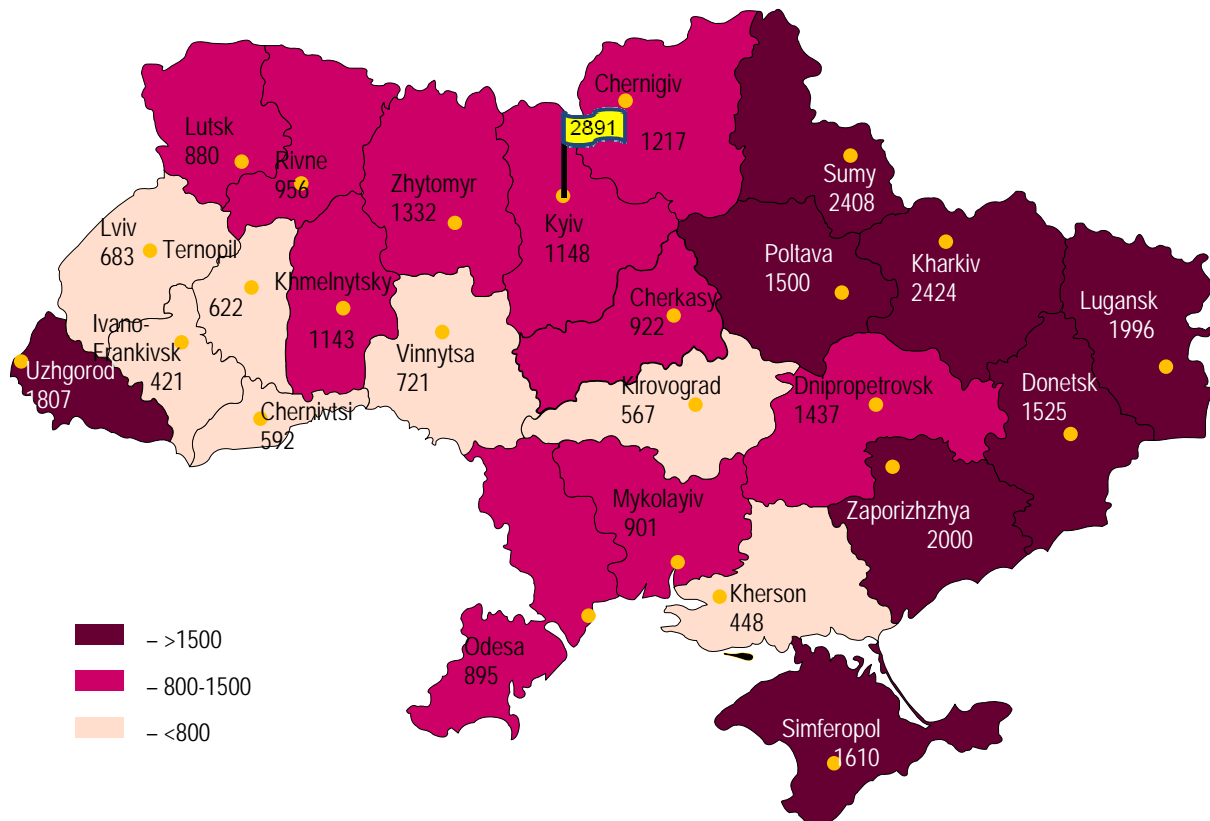


households, and western, central, and southern oblasts for rural households. Standard incomes in northern oblasts are characterized by average values.

The monthly income per cow in rural areas is UAH 387; it is slightly smaller in cities (UAH 372). The normatives for the remaining livestock in urban and rural areas differ significantly. The income from one cattle other than cow or one pig is nearly 10 times smaller.

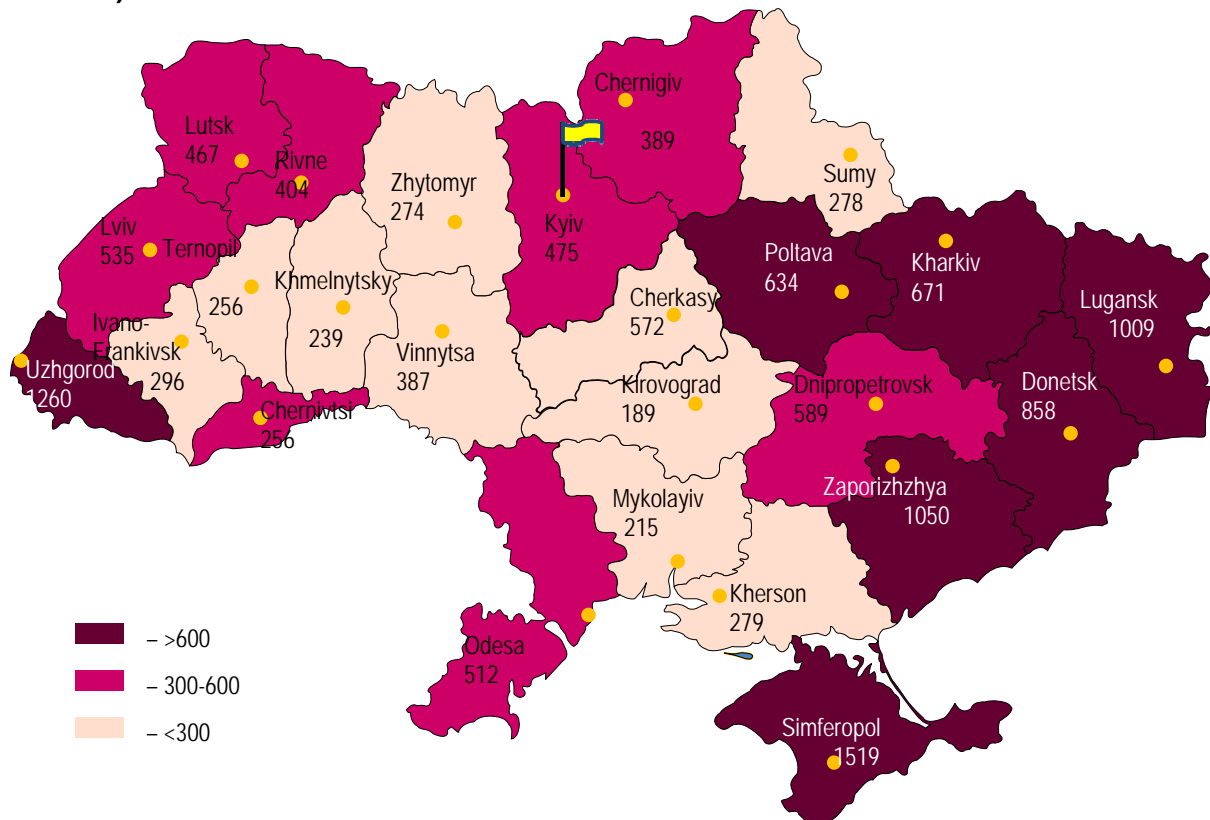
In general, the net income normatives calculated based on HBS data are more realistic than numbers received under Method (1), in terms of their average value (much higher if based on HBS) and differentiation across the regions.

Chart D-1. Standard Net Incomes from crop production by oblasts for 2008 (UAH / 1 ha / month) – urban areas



Source: own calculations based on HBS 2008.

Chart D-2. Standard Net Incomes from crop production by oblasts for 2008 (UAH / 1 ha / month) – rural areas



Source: own calculations based on HBS 2008.