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METHODOLOGICAL ASPECTS OF STATISTICS RELIABILITY ASSESSMENT IN THE RUSSIAN FEDERATION•S DIVERSIFIED FARM ECONOMY

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1. For the purposes of economic management, determining the reliability of farm output indicators:

allows one to gain a true picture of the state of the industry;

makes for sounder economic decisions, due regard being had to the reliability of the information on which they are based;

enables reserves of farm produce to be optimized;

enables a reasonable size to be established for imports and exports;

enables processing industry to work under optimum loads.

2. The farm economy today is one area of knowledge where calculations are not necessarily accompanied by an indication of the reliability of the results obtained. The reliability of economic indicators should be understood as meaning the degree of proximity, of correspondence, between actual quantitative expressions and how they are reflected in the indicators.

3. Divergence between factual knowledge and a calculated value betokens an error (mistake) in the output indicator. Different errors have different effects on the results, and there are various means of forecasting and evaluating them. Errors occur and accumulate at all stages in the construction of an indicator, and are due to a variety of causes.

4. Errors (mistakes) in statistics are customarily divided into random and systematic.

5. Systematic errors result from a particular cause in identical circumstances, and can thus be studied individually. So, for instance, the many kinds of farm ownership encountered (private holdings, peasant (individual) farms, farming enterprises) have led to a variety of kinds of statistical records which, overall, do not provide reliable information about farm output.

Table 1: SOURCES OF INFORMATION FOR DETERMINING FARM OUTPUT VOLUME (of produce) BY CATEGORY OF FARM

Producers	**Output**	
	Plant crops	Livestock
1. Farming enterprises	Form 29-ag (large and medium-sized), annual	Form 24 (large and medium-sized), annual
	Form 7-ag (large and medium-sized), monthly during harvest-time	Form 24-ag (large and medium-sized), monthly
	Form 2 - peasant farmer. Annual Extrapolation	Form 3 - peasant farmer (small-scale). Annual Extrapolation
2. Private holdings	Reports, account books	Reports, account books
	Form 22 (land development service report), yearly	Form 7 (livestock report)
	Form 2 (household survey), quarterly	Form 12 (household survey), quarterly
3. Peasant (individual) farms	Form 2 - peasant farmer (annual)	Form 3 - peasant farmer (annual)
	Sample survey based on a subregister of peasant farms	Sample survey based on a subregister of peasant farms

6. As table 1 shows, information on private holdings and peasant (individual) farms is particularly error-prone.

7. The volume of output on private holdings is calculated regionally (no account being taken of variations between zones) on the basis of a sample survey of households, with information from rural administrations and from land use and development committees. Periodically - only once every 10-15 years - there is a census of land sown to crops and a livestock count on private holdings. Between censuses, livestock counts and areas sown to crops are arrived at by calculation, introducing additional errors. Changes in the relative proportions of crops sown and the composition of herds/flocks are determined highly arbitrarily.

8. Data on how much additional land has been allocated for use as individual or collective orchards and market gardens are used in the calculation of output from such allotments, although the land is often not used to grow fruit, vegetables or potatoes.

9. This short list of systematic errors already indicates that assessing the reliability of output figures is a very risky business. The source of the errors lies in incorrect indicators and wrong principles and methods of calculation. Systematic errors are always in one particular direction and can be quite large.

10. Random errors result from a host of causes and conditions, all of roughly the same significance, and thus do not lend themselves to individual analysis. They take the form of random values or functions, i.e. the limits on their size can be established only to within a certain degree of confidence. It is not possible to eliminate them completely.

11. Random components can be thought of in two parts. The first reflects the real variability of economic phenomena, which are massive and stochastic. This variability also comes about under the influence of the non-economic environment: the climate, political conditions, technological change. Another random component stems from the approximateness of the information-gathering process. Observations and reports contain errors, and calculation methods often do not make allowance for the inevitable variability in the indicators, sticking to a determinative description of economic phenomena in agriculture. If variability is assessed, then normally it will be only approximately. Economic phenomena are normally completely unreproducible, and one can therefore only produce an approximate assessment of the variation in actual output.

12. A random error occurs when indicators are amalgamated and aggregated, owing to the random nature of shifts in the composition of the farming community.

13. Both sources of random components in economic calculations to do with farming - actual variability in phenomena and random errors - have the same effect: the result of a calculation must be given either in the form of a precise value with an indication of variations from the value obtained, or in the form of an interval within which the value sought may lie.

14. Besides systematic and random errors, one must also reckon with deliberate distortions and the concealment or one-sided disclosure of particular data. Under the planned economy, farming enterprises tried to meet their production targets ahead of time and "bump" them up so as to secure a reward from the State or a promotion. Today people hide their income so as not to pay taxes to the State. A sample survey of peasant farmers in Orenburg *oblast* revealed that they underreported up to 35% of their output. This can be put down to shortcomings in the tax collection system, thefts, racketeering and so forth.

15. The violations uncovered by the tax service do not give rise to corrections (emendations) in the statistical record. Since 1990, the statistical bodies have not conducted any assessment of the reliability of the information supplied by businesses and the general public.

16. In conclusion it must be pointed out that, if allowance is made for these errors and distortions, the reliability of statistical indicators of farming output in the Russian Federation may be enhanced, and this will ultimately have a beneficial effect on the economy as a whole.