

# AGRICULTURAL STATISTICS SYSTEM IN U.S.S.R.\*

BY DAROGA SINGH

*Institute of Agricultural Research Statistics (I.C.A.R.), New Delhi*

## INTRODUCTION

STATISTICAL system in any country is always linked with its economic and administrative structure. The post-revolution history of the development of the U.S.S.R. statistics may fall into two periods, the period before the collectivisation of farming (1918-30) and the period of development and consolidation of land in collective and state farms since 1930 onwards. The first was the period when the land was distributed among small private holdings as it is, at present, in most of the countries in the world. During this period, a separate branch of agricultural statistics was established in the Central Statistical Department which existed at that time. This branch took the necessary steps to collect reliable statistics for improving agricultural development and for studying the economic conditions of the farmers. A number of agricultural censuses was organised during this period. Annual sample surveys were conducted for obtaining data on the economic conditions of the farmers. For every 400 holdings, one voluntary correspondent was appointed to report about the crop condition and livestock. The number of such crop reporters in the country was about 60,000. From that number, a set of specially qualified field correspondents was selected to fill in complicated forms relating to the living conditions of the farmers. In spite of all these efforts, data on several items of agricultural economy were not sufficiently reliable as a large number of peasants refused to give the relevant information. However, to organize agriculture on scientific basis comprehensive sample surveys on roughly 10% of the farms were also conducted annually during that period.

---

\* The material presented in the paper is based on the author's study of agricultural statistics system in U.S.S.R. in the course of Seminar on "Collection, Processing and Analysis of Agricultural Statistics in the U.S.S.R. and their Uses in Planning the Development of Agriculture" conducted jointly by the F.A.O. of the United Nations and the Government of U.S.S.R. in Moscow during May and June, 1962.

After the collectivisation of the peasants' farms the contents and system of agricultural statistics were completely changed. After 1930, the current accounts maintained at the state and collective farms and machine and tractor stations and voluntary accounts of State enterprises became the main source of statistics on agriculture. Time for submitting current accounts—quarterly, monthly, every five days—was fixed depending on the nature of items. Various modifications and improvements in the accounting system of the collective and state farms were introduced during the period 1930–55 in order to meet the need of basic data for planning agricultural development. But in agriculture, chiefly in livestock breeding, even after the socialist transformation, the role of auxiliary plots of farmers, workers, employees and other population still had considerable significance. Therefore, there was a necessity of conducting censuses and sample surveys to complete the coverage of different items. Annual censuses of livestock were introduced and budget surveys for providing comprehensive data on various aspects of agricultural economics were also conducted. It was significant that every time the livestock census was followed by a sample survey in order to verify the accuracy of the census results. Another objective of such surveys was to collect information on the items which were not covered by the census.

The statistical organisation responsible for the statistical work in the country consists of the central statistical department of U.S.S.R. in Moscow and the corresponding central statistical departments of the 15 republics located in the capital of each republic. These central statistical departments in the capitals of the republics are assisted by regional statistical offices, 108 in all, in the country and the district statistical offices, numbering about 3,421. Thus, for supervising and checking the accuracy of the statistical work a strong chain has been established from collective farms to the district statistical offices, from the district statistical offices to the regional statistical offices, from the regions to the republics and finally from the republics to the central statistical department of the U.S.S.R. In all about 30,000 statistical workers are at present engaged at various levels for dealing with the statistical work in the U.S.S.R. Of these workers, about 50% are engaged in the statistical work relating to agricultural economy.

Prior to 1958 apart from the central statistical department of U.S.S.R., much of the statistics on agriculture was systematically collected and analysed by ministries and departments concerned with agricultural production. From 1959, the entire statistical work has been centralised in the central statistical department. However, the

ministries and departments are always consulted while organising any new statistical project and interpreting the results of the data.

#### STATISTICS OF LAND-OWNERSHIP AND LAND TENURE

As a result of the October Revolution (1920) important changes took place in the tenure system of the country and this greatly influenced the development of agriculture subsequently. A decree of the Soviet Government abolished private proprietary right on land, and land became public and state property. Consequently, the peasantry received free of rent over 150 million hectares of land formerly belonging to land-lords. A number of state farms were also organised. In the state farms entire agricultural assets belong to the state and workers are paid either daily wages or monthly wages like industrial workers. Simultaneously with the organisation of state farms, the voluntary unification of peasants into collective organizations (collective farms) took place. The collective farms were organised by the efforts of the peasants themselves with material, technical and financial aid from the state. The collective farms are agricultural enterprises comprised of the land previously belonging to the individual farmers. Majority of the peasants working on these collective farms are members of them and they control the entire production plan of the farms. In the collective farm enterprises, besides the collective farms, there are the personal households of the members, which consist of a household plot, living quarters, productive livestock, poultry and small implements. Besides the members of the collective farms, teachers, doctors, and other representatives of rural intellectuals as well as workers and employees of state farms and other state agricultural industrial enterprises hold subsidiary plots. Thus the state farms, collective farms, farms attached to other enterprises and individual plots of collective farmers, workers and employees form the socialistic system of agriculture in U.S.S.R. The relative role played by various sectors in Soviet agricultural economy can be studied with the help of the following tables in next page.

By 1932, the collectivisation of land was completed. However, there is still a certain number of peasants with individual holdings but their contribution to the agricultural statistics is insignificant. About 97% of the cultivated area at present belongs to the collective and state farms. The remaining 3% of the area is accounted for by the subsidiary plots and others.

TABLE (a)\*

*Area under crops in different sectors (in million hectares)*

Crop	State enterprises	Collective farms	Others	Total
Total cropped area	94.8	114.4	6.8	216.0
Area under grain crops	64.4	70.3	1.2	135.9

\* U.S.S.R. in figures 1962.

TABLE (b)

*Number of productive livestock in different sectors (in million)*

Category	State farms	Collective farms	Others	Total
1. Cattle ..	23.8	38.6	19.7	82.1
2. Cows	8.2	13.6	14.5	36.3
3. Pigs ..	21.9	31.9	12.9	66.7
4. Sheep ..	43.2	66.6	27.7	137.5
5. Goats ...	0.2	0.9	5.9	7.0

The share of various categories of farms producing marketable output in the U.S.S.R. in 1960 (in %) is given below to judge the agricultural structure:

1. Total marketable produce of agriculture	..	100
2. State farms and other state-owned enterprises	..	28
3. Collective farms	..	56
4. Subsidiary plots of collective workers, employees, etc.		16
5. Private-owned peasants' holdings	..	0.1

Although the subsidiary plots of the collective farmers, workers, etc., account for 3% of the cultivated area, their contribution to the marketable produce is relatively substantial. This high contribution comes mostly from livestock production like milk, poultry, meat, etc., and in some areas from fruit and vegetable crops.

In 1959, the collective farms and state farms accounted for 130 million hectares and 58 million hectares respectively in the country. In 1960, the corresponding figures were 110 and 78. Some small collective farms merged with other collective farms in order to increase their combined resources for developing agriculture on more profitable basis by using high degree of mechanisation and some of the collective farms were converted into state farms as they were not running on profitable basis.

Thus at present, in the Soviet system, the following categories of tenants are distinguished.

1. Co-operative agricultural enterprises—collective farms.
2. State farms.
3. Subsidiary farm establishments of enterprises and organisations.
4. State land reserves (unused).
5. State forest assets.
6. Collective farmers' subsidiary plots.
7. Office workers and other citizens' subsidiary plots.
8. Individual farms.
9. Enterprises, institutions and other land users utilising specially allocated areas in:
  - (a) industry
  - (b) transport
  - (c) other organisations and undertakings.
10. Towns and organised villages.

The state, through its authorised bodies, distributes plots of land for rightful use to individuals, organizations, and enterprises. Documents maintained at the district give the details of tenure of each piece of land. Each document states the number of hectares allotted for use according to the plan provided therein with the boundaries duly marked. Collective farms have land for use without rent or time-limit according to a special title deed. The collective farms

include besides farm land, common lands and household plots allotted to the farmers for their private use. The collective farmers have no right to dispose of this land and have right only to use it for their private needs. Each house is allotted a plot of land varying from 0.25 to 0.5 hectare and upto one hectare in certain districts.

People employed in the rural area are entitled to a plot of ground upto 0.15 hectare in size including land for housing, and agricultural specialists are entitled to a piece of land upto 0.25 hectare.

The basis of the land tenure statistics in the U.S.S.R. at present is the documents maintained at the district headquarters. The title deeds regarding any piece of land is prepared in duplicate. One copy is handed over to the user of the land and the other is kept by the district executive committee. Each collective farm maintains a register along with a cadastral map of the land to keep a record of all land whether used collectively or privately by the members of the farm. The register has three sections. In the first section a record is kept of the farm's total land, subdivided into community land and household plots used by the members of the farm. In the second, lands used commonly are recorded, according to different types of usable land. In the third section of the book, a record is kept of all land allotted for the personal use of each household. All changes are entered into the book at the end of the year. This land register serves as a source of information for compilation of statistics on the distribution of land according to the types of land and its utilization.

#### STATISTICS OF ANNUAL CROP ACREAGES

Statistics of crop acreage in the collective and state farms are obtained on the basis of comprehensive registration of the area made by the administrative executive of these farms. As regards the programme of registration of farms that should present reports on crop acreages, the farms are divided into two groups. The first group includes all collective and state farms that occupy a crop area more than 50 hectares. Enterprises belonging to this group send their reports on a detailed form that has more than 100 entries. All the small-scale state and collective farms with a crop acreage of less than 50 hectares present final reports according to a short programme.

Prior to 1957, similar registration of crop acreage was done for the subsidiary plots of the collective farmers and workers by volunteers chosen from the locality. Since, these subsidiary plots occupy

a comparatively small area of less than 3% it was considered unnecessary to exercise a comprehensive annual registration of crop acreage belonging to this category. Consequently, since 1957 information on such crop acreages is obtained by conducting sample surveys of about 20% of households of collective farmers, workers and employees working in rural as well as in the urban areas. Since 1961, the size of crop acreages of these categories of households is estimated on the basis of the data obtained from multi-purpose budget surveys of the collective farmers as well as from the quarterly surveys of livestock numbers.

Periodical reports are submitted from each of the state and collective farms to the regional statistical office. The statistical boards aggregate these reports and make estimates of the acreage of the crop in the district, territory and autonomous republic. These returns are presented according to their programme to the central statistical boards of the republics, which communicate them to the U.S.S.R. central statistical board. Data on extended programmes with the economic analysis are forwarded later to the same agencies. The reports originating from the collective and state farms, besides containing information on acreages under different crops, supply data on improved seeds and acreage under them.

#### STATISTICS OF PERENNIAL CROPS

Statistical information on perennial crops is collected only on those crops which are considered of economic importance. These include fruit crops and forest plantings, crops for wind breaking, water conservation and for other purposes. Mature forestry in U.S.S.R. is considered part of industry and not part of agriculture. In collective and state farms, the main source of information on fruit crops, berry leaves and other perennial plantings are periodic stock-taking, and the annual accounts of these enterprises as also special censuses of fruit and berry plantation based on documentary evidence. Twice a year at the end of Spring (April-May) and Autumn (September-October) planting, collective and state farms and other state enterprises submit reports to the state statistical bodies on the orchards, berry plantations, vineyards, hops plantations, sub-tropical plantings laid-in, the nurseries of perennial plantation laid and growth of material planted. The actual accounts of state and collective agricultural farms show the area under different perennial plantings, the number of fruit-bearing plants, the area of newly planted orchards and also total volume of different fruits and berries gathered in from the entire area. Thus, the periodic stock-taking and annual reports of collective and state

farms make it possible for accounting for the area under different species and varieties of perennial planting of fruit-bearing trees and the estimate of the total quantities of fruit and berries gathered in.

Data on fruit and berry plantings in personal household plots of collective farmers and other groups of population are obtained through quarterly sample surveys of personal household plots of collective farmers. Special censuses of fruit and berry plantations are also organised periodically for the personal household plots.

#### STATISTICS OF CROP PRODUCTION

As mentioned earlier, prior to the collectivisation, there was a large number of crop reporters throughout the Soviet Union. Their duty was to report the area sown, conditions of the crop during the growth period, and harvested yield. These data sent by the reporters were the basis of systematic crop production statistics. All the crop reporters were not expected to send observations on yield as it was considered a complicated subject and only those who were better qualified and trained in assessing the crop yield were supposed to report on the crop yield. The number of yield reporters was roughly of the order of 30,000. Besides these crop reports, use was also made of additional sources of information on crop projection reports from different district expert commissions composed of the chairman of the district executive committee, the district agronomist, the district statistician, insurance agents, and representatives of the tax commission and the local co-operatives.

After the collectivisation of farming, the network of correspondents was abolished and their reports were superseded by compulsory accounting of agricultural undertakings for crop estimation and the submission of the reports were the responsibility of their management (chairman of the collective farm and director of the state farm) and of their crop specialists. Crop estimates for individual peasant households and their communication were the responsibility of the village soviets, the lowest organ of the Government. The communications from village soviets and the reports of the collective farms were collected by the district department of agriculture which drafted district summaries of the report and wherever necessary corrected them. These summaries were sent to the statistical agencies. In case of the state farms, the reports were sent directly to the statistical agencies. Crop estimates were made for all cereal crops, all major industrial crops, potatoes, vegetables, and the basic fodder crops such as natural hay and sown

grasses, silage crops and food tubers. Normally, one to three estimates were made in the year depending on the importance and the duration of the crop.

During this period, crop sampling was also used for determining the yield rate of the crops. Crop cuts used for this purpose were usually of the size of 1 sq. meter. The Soviet statisticians were aware of the fact that samples based on very small crop cuts lead to overestimation of the yield. They have made a study of the subject and range of the plot sizes studied was  $\frac{1}{4}$  sq. metre to 1 sq. metre.

In locating and demarcating the cuts on the ground different methods were followed depending upon the cultivation operation of the crops. The sampling rate was very high. For cereals, on areas of upto 30 hectares 200 samples, from 30 to 100 hectares 300 samples, and over 100 hectares 400 samples were taken. For commercial crops also, sampling rate was very high. The samples in the fields were located systematically starting from a fixed point of the field. The technique of crop cutting did not succeed on the cotton crop.

The Soviet statisticians, however, found that the job of measuring the yield from the standing crop does not merely require great accuracy but is fairly laborious. Therefore, the results of crop-cutting experiments were used only for the purpose of checking the accuracy of the accounts of the collective and state farms on the harvest and in order to determine the overall harvest in the country. The method of estimation of crop yields on the basis of crop sampling has been abandoned now and no crop sampling is done on the collective and state farms.

Now, the actual crop yields are determined on the basis of data received in the reports relating to the harvest. Data on progress of the harvest are obtained through the compulsory periodical reports of the collective and state farms. For the purpose of calculating the prospective harvest these reports comprise the following indices:

(a) The acreage of winter and spring cereals and leguminous crops thrashed in the harvesting by means of combined harvesters with pick-up attachments and by means of combined harvesters with simultaneous thrashing.

(b) The quantity of grain thrashed by means of combined harvesters.

(c) The acreage on which the grain was harvested by means of combined harvesters.

(d) The quantity of grain harvested from this acreage.

(e) The acreage on which industrial sugar-beet was harvested.

(f) The quantity of industrial sugar-beet dug out on the entire harvested acreages.

(g) The harvested acreage on sunflower.

(h) The quantity of sunflower harvested.

(i) The harvested acreage of potato crops.

(j) The quantity of potato production.

By making use of these data, which in case of cereal crops, corn and sunflower are submitted every 10 days and in the case of sugar-beet and potatoes every 5 days, the statistical agencies systematically calculate the average yield per hectare of the above crops, and taking account of the trend in yield from period to period they calculate the prospective size of the crop yields in districts, territories, republics and in the country as a whole.

The actual and final size of the crop is determined by the Central Statistical Board of the U.S.S.R. on the basis of a special report on the yield of agricultural crops submitted by each collective and state farm. For individual plots cultivated by the individual farmers it is established on the basis of the data yielded by the budget surveys which are conducted regularly on a nation-wide basis. The yield rate is calculated for the sown area. For winter crops, the acreage, in which the crop perished during the winter season, is, however, excluded from the sown area. Another significant feature of the soviet yield statistics is that crop loss due to various operations like harvesting, thrashing, storing, etc., is estimated by using sampling method. Data on this crop loss are not, however, added to the total collected harvest. These data are used for improving the operations in future.

#### STATISTICS OF LIVESTOCK NUMBERS AND THEIR PRODUCTS

Since 1935, data on livestock numbers are based on annual livestock censuses. The reference period for the censuses conducted during 1953-54 was October, while for the remaining years it was January. The cattle censuses covered the whole territory of the U.S.S.R., including the cattle on distant winter pastures as well as the cattle in all categories and groups of farms. The census data are tabulated according to the following categories of farms.

1. State agricultural enterprises.
2. Co-operative agricultural enterprises:
  - (a) Collective farms.
  - (b) Farms of consumers co-operatives.
3. Members of the Co-operative agricultural enterprises (collective farmers and peasants).
4. Workers and employees in rural areas.
5. Workers and employees in urban areas.
6. Individual peasant farms and farms of other population groups.
7. Places of pre-slaughter upkeep of cattle and stables of the State and Co-operative Procurement Organization.
8. Total in all categories of farms.
9. Cattle in transit.
10. Total.

During the censuses, cattle are registered by the place of the owner's residence and not by the place of presence. The cattle registration in these censuses is not based only on the voluntary information by the owner but on the compulsory house to house visits and careful spot verification of the cattle. The cattle-owner is obliged to give correct information. This registration is based on the enquiries and on the careful verification of cattle on hand, which is carried out in the presence of the representative of the village soviet or the cattle farm. As regards the state and collective farms the problem is dealt with differently. Here the census is based on the official non-recurrent report of farms included in the system of census forms. The report is drawn up on the basis of the inventory data and is certified by the administration of the enterprises, which is responsible for the accuracy of the data.

The accuracy of the census data of the individual household is verified by organising sample surveys. Sample verification is conducted in 10% of the households selected systematically. Care is taken that there is not much time lag between the actual census and the sample verification. Experience has shown that data obtained through these censuses are fairly accurate. Difference between the census figures and the sample estimate has not been found more than 1% for any category of animals. The sample verification, however, still preserves its importance as a measure against the possibility of reporting

inaccurate data. In the conduct of these censuses, the assistance from the local workers, secretaries of the soviet, accountants of collective farms, teachers, etc., is taken.

Previously, census operations used to take 10-15 days, but now time has been reduced considerably. The census during 1962 was conducted in 5-6 days.

In the Soviet Union, livestock wealth is considered very important, and, therefore, for comparison a number of economic indicators is calculated on the basis of data obtained in the censuses and the periodical reports received from the collective and state farms. For evaluation of the situation in livestock breeding, the data on the number of cattle of different kinds is not always convenient. Therefore, animals of different categories are brought to common standard unit (adult horned cattle) by using suitable price conversion coefficients for various categories of animals.

*The following are the price conversion coefficients for some of the important categories of animals :*

(a) Adult horse, cow, bull, bullock	..	1.0
(b) Young horses, and horned cattle of one year of age	..	0.5
(c) Foal under one year of age	..	0.25
(d) Calves under one year of age	..	0.125
(e) Sheep and goats (adult)	..	0.1
(f) Lambs and yearlings	..	0.062
(g) Hogs and gilts over 4 months old	..	0.25
(h) Piglets under 4 months old	..	0.05

#### LIVESTOCK PRODUCTS

In U.S.S.R. the livestock product constitutes the sum of value of primary products resulting from the breeding of cattle and other agricultural animals. It consists of the value of (a) off-spring and increase of weight of the agricultural animals and young stock and poultry, (b) milk, wool, eggs, honey and other products not connected with the slaughter of the animals obtained during the year, and (c) meat.

In the state and collective farms, the livestock product is registered at the enterprises in the process of the current inter-farm registration, *i.e.*, in the same way as industrial output is registered at plants and factories. The periodical reports from these farms are the basis of

calculation of the livestock products. In this procedure not only the estimate of production of milk, eggs, honey, etc., is obtained but with the help of certain calculations, particular products like the off-spring, increase in the young stock, increase in the weight of livestock are estimated. The animals are weighed and changes in the weight that occur during the period since the previous weighment are recorded. In this way, the estimate of increase in weight is obtained for different categories of produce which is not delivered to the state in its physical form but remain with the animal till it is sent for slaughter or sold for breeding. This method of registration of the increase of weight is practised regularly at the state and collective farms.

The estimate of meat, hide and skins is made on the basis of data received from the reports submitted by the collective and state farms. Data obtained as a result of the sample surveys of livestock product of collective farmers' households make possible the estimation of dead weight of cattle slaughtered in the individual households of collective farmers, workers and employees. While estimating meat production, the data available from the state procurement agencies on the average live weight of the animals less 3% and discount for the content of the gastrointestinal tract are used. These average weights of the cattle delivered or sold are transformed into average dead weights for the purpose of estimation of meat. A similar method is followed for determination of poultry meat.

The unsatisfactory position of livestock statistics has recently been realised by the Soviet authorities. Particularly, the data on livestock products relating to the individual households were found to be inaccurate. As mentioned earlier, the individual households account for substantial contribution to the total livestock products. Now, special surveys for collection of only livestock data from individual households are organised periodically.

#### STATISTICS OF FEEDING AND MANAGEMENT OF CATTLE

The data on the availability of the feeds for cattle are obtained from the periodical reports submitted by the collective and state farms. The monthly reports from collective and state farms on the condition of livestock breeding contain the information on the availability of the fodder by kind at the end of the reported monthly period for the co-operatively owned cattle, which are registered in the process of procurement. The annual reports include tables on the fodder consumption of different kinds with the breakdown of kinds and

groups of animals. The estimation of consumption of fodder by the animals in the households of collective farmers, workers and employees is obtained on the basis of data collected in the budget surveys.

Data on accommodations for livestock in collective and state farms are obtained through the annual reports. The budget surveys provide information on housing and other management practices of the cattle in the individual households.

Information on the mechanisation of labour-consuming process of the collective and state farms is extracted from the annual reports. The indicators of the level of mechanisation of certain jobs constituted the ratio of work done with the implementation of mechanised equipment to the total volume of work done in the collective and state farms, expressed in figures pertaining to the number of animals, to the milk yield, processed fodder, wool yield, etc.

#### LABOUR STATISTICS IN AGRICULTURE

The principal sources of statistical information on labour in agriculture are, at the present time, the materials of periodic and annual accounts of the state and co-operative agricultural enterprises and also occasional surveys conducted by the statistical offices. The state agricultural enterprises provide information on the number, composition, and movement of manpower and labour outlay in days and man-hours. The personnel department of each enterprise has a personal card made out for every worker and employee on which his social and demographic data are entered. Time cards, work done, pay rolls and other documents, attendance, number of days or hours of work, reasons for absence, earnings, expenditure of materials, etc., are given on the personal card. These data are used in current and annual accounting of labour in state farms and other state enterprises. The state farms do not have a special current account of labour except for their quarterly accounts which contain certain indices of labour and distribution of income. Annual reports are the main source of information regarding labour in collective farms. These accounts show the composition of the collective farms, ardent membership showing the number of able-bodied men aged 16-60, able-bodied women aged 16-55, elderly persons (men over 60 years and women over 55 years) and children from 12-16 years. In addition, the annual accounts of collective farms contain information on the number of work day units due for payment to the members.

The budget sample surveys of the families of the collective farmers supplement the information on how the labour of collective farms is utilised. These surveys also report the family composition of the collective farmers each month. The number of collective farmers and the number of families who work on the farm, number of man-days and hours work on the farm, at state enterprises at private household plots, time spent in studying, etc. Specially organised surveys of state and collective farms supply additional information on the number of specialists with higher educational qualifications and also on the number and composition of administrative workers according to the position held, education, sex, work records, etc.

Accountancy and analysis of labour productivity are of the greatest importance in the national economy of the U.S.S.R. Statistically, the productivity of labour in agriculture is studied in terms of labour and quantities of goods produced per working time unit in different categories of agricultural enterprises, according to different branches, crops, and species of livestock. On the basis of the data contained in the annual accounts of the collective and state farms, output of agricultural produce in terms of money at comparable prices per worker employed in agriculture and per one man-day is worked out. Similarly, for studying labour productivity a number of different indices is calculated on the basis of data obtained from the annual reports in the state and collective farms. In short, labour productivity is determined by dividing the total gross output in terms of money by the number of man-days utilised for producing this output.

#### BUDGET SURVEY OF PEASANT AND COLLECTIVE FARM MEMBERS

As mentioned earlier, gaps in agricultural statistics which are generally not filled through the records maintained at the state and collective farms are made good through the data collected in the budget surveys of the farmers. The budget survey of the farmers in the U.S.S.R. is one of the most important comprehensive surveys. It has been continued over a hundred years without any significant change in principle although the object of the survey is changed for obtaining information relating to collective farm members after collectivisation as against that for peasants before collectivisation. In the present budget survey almost all items relating to economic activities of the collective farmers are covered. Some of the important items covered by these surveys are:

- (1) Characteristics of the family according to their age, literacy and other indicators.

- (2) Employment of the members of the family.
- (3) Characteristics of the individual subsidiary plot of the collective farmer's family.
- (4) Family income (in money or in kind).
- (5) Family expenditure.

A substantially large number of families is systematically selected to ensure representativeness. A two-stage sampling procedure is applied. First, collective farms are chosen by a systematic method and then collective farmers' families are systematically chosen from the selected farms. For selecting collective farmers' families in each selected collective farm two lists of families are drawn up, one for those with cows and the other for those without them. It is because of the fact that the source of subsidiary income of collective farmers' families is mostly from the breeding of cows. A very elaborate and comprehensive form is used for recording of data. The interview method is adopted for recording information from the selected farmers. It may be mentioned that samples once selected are repeated for collection of data year after year for a long period varying from 5-10 years.

It has, however, been recently realised that a comprehensive multi-purpose survey cannot provide reliable information on all items of economic activities of the households. For example, it has been observed that the estimates of livestock products based on data collected in the budget surveys are far from the real values. There is considerable non-response and non-sampling errors in the data. Because of this reason, special surveys are now planned annually for estimating livestock products and vegetables and fruits produced by individual households.

#### PLANNING AND STATISTICS OF AGRICULTURE

The starting point in the agricultural planning is the state planning of the volume of commodity production to be put out by the collective and state farms. The state plan, approved by the Council of Ministers of U.S.S.R., specifies the volume of agricultural produce sufficient to meet the food requirements of the population and guarantees the necessary volume of agricultural raw materials for industries and for building up state reserves and assets. In accordance with the state plans, the Council of Ministers of Union Republics lay down the plans for consideration of the Agricultural Board of the Regions and territories, who in turn hand them down to collective farms, state farms,

and district executive committees. Collective and state farms, guided by the amount of farm and livestock produce they have to deliver to the state and the amount needed to meet their domestic requirements, themselves determine the areas under different crops, the yield of farm crops, the number of livestock according to type and their productivity, and other indices of farming. The plans drawn up by the state and collective farms under the direction of territorial boards are approved by the general meetings of the members, in the case of collective farms and by the territorial boards themselves in the case of state farms. However, if there is a difference between the target of procurement fixed up for the farm by the territorial boards and the availability as determined by the executive of the farms, the plan is modified in consultation with the expert agricultural bodies set up at the territorial and republic levels to advise the council of ministers.

The plan provides for the establishment of annual indices as a general rule and also a number of quarterly and monthly indices. Statistical data are compiled accordingly. Considering the requirements of the plan guidance and control over the fulfilment of plans, agricultural statistics provide data on plan fulfilment in a short period of time which is particularly important in agriculture which is a seasonal business. The source of data for these indices are the reports received from the collective and state farms at regular intervals.

#### ACKNOWLEDGEMENT

The author is thankful to Dr. V. G. Panse on whose initiative this paper was prepared.