Characteristics and Perplexities on China’s Agricultural and Rural Statistics and Its
Reform Ideas

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1. Characteristics of agriculture and rural statistics

China is a large agricultural country with billions of farmers in rural areas. The countryside stays stability, so does the country. It is our responsibility for truly understanding the actual situation of agriculture, countryside and farmers (i.e. “three-agriculture”), and providing foundation for the scientific system “three-agriculture” policy. Therefore, China's rural survey is focus on the "three-agriculture" development and changes to establish the systems, contents, and methods of the survey.

1.1 Formation of agricultural statistics system in which agricultural elements, productions, prices and accounts supporting with each other.

1.1.1 The main element of agriculture statistics is focus on the labor, use of arable land, machinery and equipment, water conservancy facilities and other content-based production statistics.

1.1.1.1 Labor force statistics engaged in agricultural production activities. Labor force is the most active important factor of the production. The quality and employment situation of the agricultural labor reflects a country's current agricultural productivity and development potential. China's agricultural labor force survey includes the quantity, gender, education level, industries and other sub-groups of labor to reflect the rural quality of the workforce and structure of the labor indicators. Along with the development of China's economy, a large number of rural laborers transfer to urban areas. In order to reflect this situation, the rural labor force survey increased contents of investigation on labor force flow and transfer, which including transfer of manpower, transfer distribution industries, geographical flows and so on. Meanwhile, more attention has been paid to the statistics of that stay in the rural areas engaged in the primary industry. Based on years of statistics was informed that, the agricultural labor shaped a stable and seasonal characteristics, the phenomenon of operating land farming industry by agricultural labor force of central and western areas is gradually increasing in east area

1.1.1.2 Cultivated land statistics. Cultivated land in agricultural production takes the most special and important position, which is the most essential factors of agricultural production and could not be replaceable. China is a country with a large population, and per capita cultivated land area is half less than that of the world. More population with less land is China's basic national conditions, therefore, how to accurately work on the cultivated land statistics, has been an arduous task in rural statistics. The cultivated land survey was an important content in National Census of Agriculture in 1997, which based on the land investigation, and scope of the village to conduct verification, has been obtained the data of national cultivated land resource at the end of October of 1996. In order to standardize and improve the statistical work of cultivated land, NBS carried on a research on the standard of cultivated land based on the National Agriculture Census, established the indicator system of cultivated land resource, cultivated land in common uses, and temporarily cultivated land in 2001, and started using the annual report of 2002. Meanwhile, the variation of cultivated land data also made use of the annual data of Ministry of Land and Resources.

1.1.1.3 Agricultural machinery and equipment. Mainly proceeds on agricultural impetus, and agricultural machinery and equipment to reflect the level of agricultural mechanization.
1.1.1.4 Agricultural water conservancy construction. Mainly from the irrigation facilities, water-saving irrigation machinery, irrigation area and benefit area of water conservancy, and other aspects to carry on the statistics task.

1.1.2. Agricultural production statistics

China is a big agricultural country; and the agricultural production is about national economy and the people’s livelihood. Government departments, social publics and international communities attach great importance and concern, and have made more and more requirements on agricultural survey work which reflecting agricultural production situations. The elementary content of China's agricultural production statistics is planting, forestry, animal husbandry and fishery products production, the statistical standards become increasingly standardized, and agricultural production statistics become improving in the last decade.

Improve sampling survey system on grain production. China is used to adopting the province as the population on the method of grain output sampling survey, taking the wheat, rice, corn and other major crops in unit area yield as the investigation theme, performing actual cutting and measuring survey, and actualizing the comprehensive statistics by calculating the planting acreage. Due to the lack of village-level statistical base, the quality of area data is affected. In order to improve the accuracy of data on the area, beginning in 2004, except for the few non-farmers planted area carried on the fully funded survey, more than 600 thousand rural household were random sampled from the survey villages and households to process the sample survey of the major food crops. This change is more perfect than before for grains yield surveys.

Cotton production is implemented sample survey. This investigation proceeding in Hebei, Jiangsu, Anhui, Shandong, Henan, Hubei, Hunan, Xinjiang and other major producing provinces.

Improve the calculation capacity of forestation area. From 1993, China's forestation area under the new method of calculation used, must go through the inspection and acceptance with the technical specification required number of "reforestation", the survival rate from the previous 40 percent increased to 85 percent of the area can count forestation area.

Improve the aquatic production of shellfish approach. In 1995, among China's output of aquatic products, shellfish production was calculated by fresh.

Adjust and joint annual data of animal husbandry. In the National Census of Agriculture of 1997, In the results of the census we found that the statistical data of livestock existed untrue problems. Afterwards, we adjust and joint animal husbandry data for all provinces according to the results and the calculated data after sampling survey.

Formulate new system of agricultural statistical report forms. Since 2001, China has re-enacted the comprehensive statistical system on the forestry, animal husbandry and fishery, mainly refined the agricultural and fruit varieties, and add "special crop and vegetable production." China's fruit production is implemented the international standards, including both yield fruit, garden fruit (fruit calculated by former capacity), and melon fruit as well. Dry dates, raisins, dried persimmons, orange cake are unified calculated by the fresh fruit.

1.1.3 Survey on price of agricultural products

The price is an important signal to reflect the market information, in the early 1950s; NBS launched investigations on the price of agricultural products. Currently, It has been initially formed the agricultural product survey system composed by the rural bazaars prices, producers’ price for agricultural products, and wholesale price agricultural for agricultural products.

1.1.3.1 Survey on bazaars’ price for agricultural products. In 1997, in order to objectively reflect the information of the rural market price, the rural bazaars’ price survey was performed on five major food crops of unprocessed and processed. In 2003, the survey expanded to 18 verities, 31 provinces,
regions and municipalities, the county survey was up to 200.

1.1.3.2 Survey on producers’ price for agricultural products. In 2000, the pilot task of survey on producers’ price for agricultural products was proceeding in 12 provinces throughout the country; in 2002, survey on producers’ price for agricultural products brought into the national system for implement.

Survey on producers’ price for agricultural products involves more than 280 varieties of the agricultural categories, which have been formed from a set of data collection, collation, review, compilation, and reporting system.

The survey on producers’ price in the first quarter of 2004 was brought into the economic statistics information released system of NBS, and periodically released survey data to the public.

1.1.3.3 Survey on price of wholesale markets for agricultural products. The pilot survey of wholesale markets’ price of agricultural products was launched in September of 2003. The tracking survey was carried on 50 large-scale wholesale markets in national wide for agricultural products at wholesale prices. The network of survey includes 30 large-scale comprehensive wholesale markets and 20 national professional wholesale markets.

In 2004, the network of survey of agricultural products wholesale market outlets was expanding to a hundred, and the contents of the survey involving grain, cotton, vegetables, fruits, flowers, meat, poultry and eggs, aquatic products and timber totaled 8 categories of 159 varieties.

1.1.4 Accounting of agricultural economic

Accounting of agricultural economic, is an important component part of the national accounts, and the macroeconomic and information systems for the agricultural economy in the process and its results for a full description. In order to match to the new system of national accounts, the agricultural added-value accounting was established in 1992. And the agricultural intermediate consumption survey was established in 2002.

1.1.4.1 Accounting of gross output value of farming, forestry, animal husbandry and fishery

It reflects the total scale and results of agricultural production during a given period, and was a basic index of observation of forestry, animal husbandry and fishery production levels, and agricultural output value calculation.

The extent of gross output value of agriculture, forestry, animal husbandry and fishery industries accounting, since 2005, according to the national classification standard of economic, the scope of the gross output value of agricultural accounting was the total value of agriculture, forestry, animal husbandry, fishery products and supporting services of forestry, animal husbandry and fishery production activities, was implemented the calendar year.

The define of calculation of the gross output value of agriculture, forestry, animal husbandry and fishery product was: rationally determine the prices of agricultural products was an important issue for calculated gross output value of agriculture, forestry, animal husbandry and fishery product. Generally, there were two prices adopted in the history; the current and constant prices.

1.1.4.1.1 Current prices: The prices of agricultural products, i.e. producers’ first-hand prices of selling the agricultural products, root in the survey of agricultural products’ price. The minority agricultural products in the survey which does not covered, which can be used the market price information fairs; crops without the market prices replaced by the production cost. Current price of agricultural products does not include profit-sharing, subsidies and production support fees. The output value at current prices mainly reflects the total scale and level of production.

1.1.4.1.2 Constant price: National generic fixed prices of agricultural products of the year. Measured in constant prices of forestry, animal husbandry and fishery output is to observe the development of agriculture speed, eliminating the annual change in prices between different regions

NBS regulated that, from the regular statements of 2004, in implementing the reduction of price index calculated agricultural development speed, constant price has been revoked.

Quarterly accounting of forestry, animal husbandry and fishery production value: accounting scope, calculation methods and statistical requirements was unanimously with forestry, animal husbandry and fishery product report. The general principle of output value accounting is harvest time, if the crops in the accounting period have been harvested, within the accounting period recorded its outputs and inputs to the growth of crops is nothing for the calculation.

1.1.4.2 Value-added accounting method of agriculture

The scope and methods of value-added of agriculture: scope of accounting was the same of the gross output value of agriculture. There were two accounting methods, agriculture, forestry, animal husbandry, fishery use the "production" accounting; value-added of agriculture, forestry, animal husbandry and fishery services mainly taken distribution method or methods of value-added ratio for calculation. This is the most effective approach due to the intermediated consumption was difficult to acquire.

In accordance with the regulation of agricultural development and reform program, the value-added of agriculture, forestry, animal husbandry and fishery product using annual data deducting intermediate consumption data, quarter (quarter cumulative) multiplied by the data output of value added ratio calculated. Because different forestry, animal husbandry and fishery production structure in different seasons were diversity, the value added ratio of different categories of products also exist differences, therefore, when calculated the value-added in quarterly, in accordance to the intermediate consumption of agricultural products to adjusted appropriate value added ratio of the previous year, formed corresponding seasonal value-added ratio.

1.1.4.3 Intermediate consumption sample survey of major agricultural products. Intermediated consumption sample survey of major agricultural products was launched in 2000. It reflected the status of the intermediate consumption comprehensively, and research on the changes of intermediate consumption among the agricultural production and farmers’ incomes.

The scope of survey was the entire agricultural production units, including farmers and non-farmers. The survey targets for agricultural intermediate consumption survey network, a total of 9,000 agricultural production units, survey on main types of products in the main producing areas. The data will be collected by the staff of the County Rural Survey Organization.

1.1.5 Large agricultural census (introduced by the topic, omitted)

1.2 Rural statistics

As China at the initial stage of socialism, the urban-rural economic structure of the prominent characteristics of various administrative, socio-economic development policies need to develop the rural area as relatively independent of the overall consideration, therefore, the rural socio-economic operation has also implemented independent monitoring and statistics. The conventional rural survey project established a fixed assets investment in rural areas, poverty survey, regional statistics, community environment, and ecological benefits.

1.2.1 Survey of investment in fixed asset in rural areas

Investment in fixed asset in rural agricultural production formed an important basis in rural areas to some extent reflects the modernization of agricultural production and the level of equipment.

In the 1980s of the 20th century, a comprehensive rural original value of fixed assets statistics has been started. Along with rural socio-economic development, rural investment in fixed assets
increased, and influenced rural socio-economic development more and more. Data of rural fixed
asset investment are accurate or not, directly affecting the quality of the national economy
accounting for the macroeconomic situation and the trend of judgment. In order to comprehensively
and accurately grasp the total amount, distribution and structure of investment in fixed assets in
rural areas, ensure the data's quality and limitation of time, in 1990, NBS regulated the sample
survey programs of investment in fixed assets in rural areas, increased the rural township and
village-level survey of investment in fixed assets survey reflects the rural economy in all sectors,
targets for farmers and non-farmers in two parts. This survey reflects a whole picture of improved
standard of living for farmers and farming, non-agricultural investment.

In 2005, NBS according to the requirements under the national norms investment in fixed asset,

1.2.2 Basic situation of the regional statistics

Administrative divisions as the basic unit for statistical work, research different parts of the
development and changes in the development of summing up the experience and regularities, extremely important for guide the socio-economic development, and formulate development
strategies.

County (city) Socio-economic statistics There has been 20 years of history that the NBS was
constituted the county (city) statement of rural socio-economic system, mainly for collection, collate the national sub-county (city) socio-economic statistics, such as GDP, fiscal revenue and expenditure, investment in fixed asset, and etc.

Township Survey This survey was brought into the Basic Conditions of the Rural Community
Survey System issued by NBS in 1990s of the 20th century. The survey was conducted every three
years for all of the townships basic condition; and annually in rural townships basic condition. The
content including rural township of basic production conditions, economic, financial and monetary
situation, rural community environmental conditions.

1.2.3 Rural poverty monitoring

Poverty eradication is an important task during the social development process. As to fully reflect
the evaluation on China's rural poverty situation, and evaluation on anti-poverty work, NBS was
cooperated with the relevant departments to 592 key state supports for the impoverished county
rural poverty monitoring in 1990s. The results released annually by briefing poverty monitoring
survey, and jointly published the China Rural Poverty Monitoring Report, released the findings to
the public. The current system of indicators includes ovety monitoring indicators and poverty
measurement indicators.

1.2.4 Monitoring on returning farmland to forest (grass)

From 2007, NBS started the monitoring on returning farmland to forest (grass). The range of survey
includes 24 provinces, regions and municipalities.

Main contents of the monitoring surveys: This survey set up county-level monitoring survey
questionnaire, farmers monitoring questionnaire, county-level monitoring questionnaire mainly
covers the information of counties (cities) to return farmland to forests, the follow-up to industrial
development, and change of ecological environment. Farmers monitoring questionnaire includes
three aspects: First, the basic completed situation of farmers and forest (grassland); second, income and expenses of the household of returning farmland; third, established of forest (grassland) farmers
cash payments ledger, farmers was keep records of production life of the balance of payments. its
role is to real-time tracking of forest (grassland) running conditions and trends, understand forest (grassland) project consolidate and ecological benefits, farmers grasp grain production and living
conditions, and constantly improve the forest (grassland) policies and measures to promote forest (grassland) the healthy development.
1.3 The income and consumption survey of rural household

The income and consumption survey of rural household, which is an integrated socio-economic surveys. It is based on rural families of residents, sample survey as the means to obtain the information on rural socio-economic for the purpose of the survey. The survey fully reflects the income, changes on quality of life, production and consumption status of rural residents, monitoring the process of rural residents’ quality of life and shake of the poverty, provide the important foundation to all levels of government in rural development policy and decision-making provides, and provide basic data to national accounts as well.

1.3.1 The indicators and content of rural household income and consumption has been continuously enriched and improved: on the one hand, along with the socio-economic development and to objectively reflect the widespread implementation of the rural household contract responsibility system, rural households as the basic units in rural economic activities, farmers’ source of income and consumption structure of the diversified characteristics gradually increasing the number of times to reflect changes in the social characteristics of statistical indicators; on the other hand, reference to the United Nations "National Household Survey Capacity Program", gradually form a relatively complete, systematic, standardized system of rural household survey, basically form of an integrity index system of rural households to reflect production, income, consumption, accumulation of a series of other economic and social elements. Currently, NBS has launched a rural household income and consumption survey in 31 provinces (autonomous regions and municipalities).

1.3.2 Sampling methodology. The survey in national wide has selected 857 counties as the survey spot, occupied 35 percent of the total number of counties in national wide. During 1984-2000, the rural household income and consumption surveys network were selected using a multi-stage, random starting point, symmetric equidistant sampling method. Generally, the sampling is selected by county from the province, village from the county, and household from the village. After the samples rotation in 2000, generally adopted method of the village directly extracted from the survey county, and county’s sample directly extracted from the survey province. Farmers income survey data collected gradually standardized, mainly adopted a combination of methods such as journals and interviews. One-time survey will completed by the county survey team and house inquiry.

China's agriculture, rural statistical survey can be summed up as statistical indicator system which possesses 3D statistical characteristics which are agriculture, rural areas and farmers; the survey methodology is in a possession of a comprehensive sampling and statistical combination features.

1.3.2.1 Agriculture statistics indicator system: from agricultural resources, factor inputs, outputs, output and value-added, reflecting the running and operating results of agricultural economy. Core indicators is the output of major agricultural products, corresponding to the policy direction of grain, cotton, oil, meat and other major agricultural products effective supply.

1.3.2.2 Rural statistical indicator system: from the rural investment, the flow of labor, poverty, regional economy and ecological environment, reflect the all-round socio-economic changes in rural areas. The investment and regional development are as the core indicators, corresponding to the orientation of the economic policies of structural adjustment and rural urbanization.

1.3.2.3 Rural household statistical indicator system: includes the production and livelihood, income and expenditure, consumption and accumulation of many other indicators, income and expenditures for core indicators corresponding to the policy direction are to increase the income of the farmers and stimulate the rural market.

2. Technical measures and organizational guarantees

2.1 Satisfy the survey scale of national and provincial calculation needs
Currently, the agricultural production, agricultural prices and farmers’ income and expenditure survey are mainly developed in our country use the province as the collectivity, the data obtained should be representative of the country and provinces. Therefore, the nationwide agricultural and rural sample survey collected a total of 857 counties, 200,000 rural households, carried out more than 10 theme of the survey, the network scale to meet the country and the provinces (autonomous regions and municipalities) data management needs.

The thematic scopes of national surveys are as follows:

(1) Unify the survey methodology and data collection tools
Our sampling methods are from simple to complex, continuous development and innovation. It has been used in selecting a classification and grading equidistant sampling, multi-stage sampling equidistance, and isometric symmetric multi-stage sampling method. Currently with a probability proportional to size sampling (PPS sampling), the more probability proportional to size sampling (MPPS sample) for the sampling method. Meanwhile, in order to ensure that rural sample survey representative networks, in accordance with international practice, the regular rotation of samples was at a fixed period. A large-scale national sample of the county below possesses the rotation in 1990, 1995, 2000 and 2004.

Data collection has always insisted staff and farmers account for the survey modes, namely, the various surveys for farmers or village survey to establish a unified, standardized accounting and grassroots-style table, and implement a unified account page indicators, unified questionnaire, reunification of the survey, unified projection methodology and uniform data processing procedures. This guarantees that all data must be based on the entire practical and to ensure grain output survey data from the measured field is actual cut and measured, rural household survey data from the survey of households account.

(2) Persist in data verification, assessment and management
Practical work implemented a Sample Survey of Rural Infrastructure and Standardize Regulation, and Rural Sample Survey Data Quality Assessment Approach to achieve super-critical data summary. Rural household survey, sample survey of food production implementation super summary. Required all provinces, autonomous regions and municipalities directly report the rural household survey data and grain output survey data, county summary projections will not be calculated, all levels directly across from the original summary information at the provincial and national data, effectively improving the quality of data.

2.2 Established effective security system.
National Rural Survey after 20 years of construction, which covering 31 provinces, autonomous regions and municipalities of the 857 national survey of counties (cities), 4,000 townships, 60,000 villages, 200,000 rural households. Formed by the state vertical management, directly under the provincial, city, county survey system, possess the survey team, and employ the more than 30,000 assisted investigators to assist in the survey. In addition to national survey organization, the majority of provinces and municipalities establish local rural survey organization, unified survey program to organize the survey to meet the needs of local decision-making stratification.

3. Obfuscation facing
3.1 Inadequate comprehensive statistical methods
Animal husbandry and poultry products, aquatic products output, utilized the comprehensive statements (administrative record) data collection methods to affect the reliability of data quality. As a result of the agricultural production in rural areas generally take small-scale operators, farmers keeping with the market demand changes, there is lack of specialized statisticians in the village and...
township, cannot report the number of business accurately in a timely manner, so the reliability of output report exists some problems. We are currently investigating how to change research methods.

3.2 Inadequate of current sampling methods

3.2.1 Crop acreage survey methodology. The main problem is the size of conventional survey is based on a sample units or households directory lists of the sampling frame for the sample, the use of selected households in crop acreage projections village, the village of this province projections sample the indirect method, with no arable land and agricultural changes in the structure of direct response, there the problem of inadequate representation. Crop acreage is the basis for crop production, and the key to ensure that the crop yield estimation accuracy level. Methods need improving currently.

3.2.2 The sampling design based on the provinces could not satisfy the needs of the classification decisions. The current sampling system is basically only satisfy the national decision-making needs, for the classification decisions required information below the provincial levels of government still do not have a good solution.

3.2.3 The existing information on the sampling frame coverage is not comprehensive enough, a large rural population and the flow of sources of income, expenditures, such as the diversity of channels is caused sampling frame information not complete are the main reasons, the solution to all problems also cover the lack of response. Technical research on how to ensure these representatives and scientific survey sampling looks more important.

3.3 The current rural household survey increased the difficulty of journals

The main problems: the respondents with lower levels of supports, large quantities of information through journals collection, in economically backward areas was an economic and effective method, but in economically developed regions of households tired of journals with the increasing sentiment; Some educated young adults work outside, the elderly persons and children stay at home face more difficulties for the journals; some specific pages cost more time.

3.4 Content of agriculture, rural survey can not meet the demand

Agricultural statistics index system is not perfect, reflecting the results of production targets, less indicators for reflect prenatal, before during, and post-production services; less indicators for reflect the balance between supply and demand in agricultural; direct market for farmers and information services is still weak links.

Obviously, more indicators reflect the economic development, and less indicators which reflect the rural development in agricultural statistics.

In the rural households’ survey, the deficiencies highlighted three aspects: firstly, the flow of labor survey increase, but the survey is still at the primary stage and for mobile population survey has not started yet, secondly, indicators system is lack of farmers access to education, medical care, social security and other social indicators; thirdly, lack of the content of energy consumption of rural households.

3.5 Increasing the difficulty of organization and costs of survey

Shortage of grass-force: While at the village and township lack of the fixed statisticians; due to the lower population quality in rural areas, high-quality inspector generally absence, these issues in the central and western regions is particularly prominent.

The consummate of survey system and decrease of sampling error are enslaving to acquire of the survey funds. The sampling counties are basically fixed throughout the country, these counties have been selected for the past long time, and although the larger number of samples, according to geographic, economic development is distributed more evenly, generally, still have good representation. But also bring some difficulties to the design of the thematic sampling, and appear
limitations to the establishment of cattle, forestry, and aquatic products output and price survey. Due to structural reasons, the survey breakthrough fixed county exist the insufficient investigation and shortage of funds.

On account of large demands of the establishment of sample survey, each theme for each sample, which difficult to make a compromise between samples, which resulted the decentralization of the networks, with great workload? Meanwhile, expenditure of survey will cost big.

3.6 Sampling methods, indicators scope, classification methods of rural and urban household survey are inconsistency affecting the integrity of data and data usage. The main features are: firstly, there were no efficient solutions for solving the entirely covering residents; secondly, urban household survey with the existence of different-homogeneity problems.

4. Ideas of Reform in the Future

China's long-term goal for statistical development is to adapt to improve the socialist market economic system, use the experience of the advanced international experience, institutional reform, improving mechanism, strengthen the rule of law, establish the modern statistical system which not only conforms to China's national situation but also the current international basic line, and effectively improve the statistical data accuracy, scientific, timely and authoritative statistical work, providing the quality and efficient service statistics for the government, national and international community.

Meanwhile, in order to meet the long-term requirements, the target of statistical system methods has been confirmed recently: in accordance with the new demands of the economic and social development of statistical work, improve the existing statistical system approach, establish the statistical system which in a position to reflect China's economic and social comprehensive, coordinated, and sustainable development accurately and timely, and implementation of the “11th Five-Year” plan.

Based on the long-term and short-term objectives of the reform of NBS, generalized the objective of the goal of the reform of the agriculture, and rural statistics systems approach is: building new socialist rural needs, and establish indicator system to scientifically and systematically reflect the changing development of the agriculture, rural areas and farmers; take full advantage of the second National Agricultural Census results to establish a new rural survey sampling frame, consummate the sample rotation implementation; further improve the rural survey methods and investigative techniques, boost up the statistical efficiency, and reduce the working load of grass roots.

The basic reform principles of the agriculture and rural survey are: based on the current situation, taking into account the long term with the possible combination. Survey system and method should not only consider the demands, but also should to fully consider their feasibility, surging in a proper sequence, to easing-off the survey burdens of the grassroots statisticians.

The ongoing research project of agriculture and rural statistics reform has the following aspects:

4.1 Utilized of the data of Second National Agricultural Census to establish a more comprehensive survey of rural sampling frame, building of new rural survey operations platform.

The Second National Agricultural Census launched at the end of this year, which laid a good foundation for preparations for the sampling frame of the completed conventional rural statistical survey. Through this census of agriculture, further improve the system of rural survey; regulate the rural survey work and construction of a new rural survey platform, soundly the statistical survey system based on the census, sample survey as the main body, and other methods as the supplements.

4.2 Research and establish integrated sample management system of a regular rotation and the rotation of the synthesized application

Samples rotation is the forthcoming work which has to face during the rural sampling survey. Since
the output of agricultural production survey, rural household survey, poverty surveys have faced the question of how carry through the rational scientific sample rotation are on the stage. It required to research on the practical problems such as fully consider the timing of survey units which under the existing data, reasonable choose samples from the cycle of rotation, and rotation of the scale, and get done with the connecting works in the implementation process, which needs to be studied in depth.

4.3 Adoption of the national 863 research projects, breakthrough the related key technical in the application of the model on the basis of gradual establishment of sample survey system of China's output of agricultural products.

Use the remote sensing technology to improve acreage sampling method. It aims to the main crop (wheat, corn, rice) and other relevant land cover types, under the support of the MPPS technology (multiple themes target sampling method), the integration of space technology and sample survey, research on a combined sample extrapolation methods to the establishment of statistical sampling and remote sensing technology, logically arrange the sampling counties, villages and plots for survey. Utilized the remote sensing technology combining with the statistical sampling for set up samples, including sample volume, shape, content, spatial distribution, through extrapolation method to backstopping the overall goal, providing space sampling techniques for the crop acreage and output remote sensing measurements, and combined with the existing sampling technology and mutual authentication. Actively explore the use of international agricultural sampling survey, which is commonly used to investigate ways to build up China’s crops survey system.

For measurement of the acreage: crop acreage is the foundation to yield estimation, and the key of the crop accuracy level. Crop acreage remote sensing measurement is the foundation which based on the sample data or high-resolution remote sensing data (QuickBird, IKONOS) for indoor plant growing area of remotely sensed information extraction and accuracy evaluation. Medium resolution (TM, IRS-P6, radar data, etc.) as the main yardstick acreage remotely sensed data sources and low-resolution remote sensing data (MODIS) as a supplementary source of data for national, provincial for the measurement crop acreage.

Research on the remote sensing for crop yield assessment: Crop production is the criterion of the macro-policy of agriculture which constituted by the State. The yield estimation remote sensing measurements of agricultural output combined with the remote sensing technology and statistical task, on the basis of extraction of the planting area, use of the ground sample data or high-resolution remote sensing data (QuickBird, IKONOS), and low-resolution remote sensing data (MODIS) as the auxiliary data source, and combined remote sensing model of the crop to estimate the yield of the crops for national and provinces.

4.4 Reform of rural household survey system

Study and reform on four areas: First, indicator system installing should be more conveniently, and integrity. Not only according to current needs and intensity of work to simplify the existing indicators, but also adapt the new demands on building of a new socialist countryside to enhance the survey on the quality of life of rural residents, improve the social statistics survey capacity of rural household. Actively develop the international cooperation and comparative study. Second is building of the new rotation of sample and rural households. Three, consummate the household survey system, carried out combined and supplement of the journals and interviews survey. Four, appropriate reduce the existing households’ living detailed accounting item.

4.5 Actively promote the integration of urban and rural household survey research

NBS was fully aware of the important significance for promoting the integration of urban and rural household survey, in order to study more international experiences, NBS and Statistics Canada has
conducted twice cooperation, and under the help of experts of Statistics Canada, NBS is conducting the research on sample design, questionnaire, acquisition method, and data processing program. NBS will according to integration objective, broadly collect the presently standard adopted by all the countries in world, and the recommended standard from the international organization, integrated with the present situation of China’s urban and rural household and requirements of the users, seeking for the proper standards which suit for China; full considering the practical conditions for improve existing urban and rural household survey design, data collection methods and sampling methods; and according to the framework of survey system to processing integrated pilot research, explore the existing household survey for realizing the conditions of national integration, and form the integration planning for national household survey.

4.6 Developing the research on the animal husbandry sample survey

Among the output value of agriculture, forestry, fisheries, the output of animal husbandry accounting for 1/3 of rural household, animal husbandry occupied 1/3 of the operating cash income, animal husbandry has become China's agriculture and rural economy's pillar industries. The survey data veracity of the animal husbandry counts for much to the national economy and people's lives. However, as the survey methodology is not scientific enough, quality of animal husbandry statistical data is generally not very high. The way out for improve the animal husbandry statistical methods system is transfer the administrative records to sample survey. Use the second national agricultural census’ results for building a more comprehensive sampling frame which suit for all the provinces. According to the status of provinces, adopt the criteria of “cut points” to determine classification scale, full scale investigation, and following scale sample survey.

Table 1

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<th>Survey theme</th>
<th>Survey Scale</th>
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<tr>
<td>Rural household survey</td>
<td>7200 Villages, 68200 Farmers</td>
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<tr>
<td>Grain yield survey</td>
<td>15,500 villages, 130,000 plots, more than 100 million small samples</td>
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<tr>
<td>Crop acreage survey</td>
<td>20,000 villages, 200,000 farmers</td>
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<tr>
<td>Cotton survey</td>
<td>8 major producing provinces, 292 counties survey, 870 villages, 7000 plots</td>
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<tr>
<td>Rural investment survey</td>
<td>7800 Village, 68000 Farmers</td>
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<tr>
<td>Agricultural intermediate</td>
<td>2300 Village, 8,000 farmers and 1,500 non-agricultural production units</td>
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<tr>
<td>consumption survey</td>
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<tr>
<td>Prices of agricultural production</td>
<td>2300 Village, 23,000 farmers and 1,500 non-agricultural production units</td>
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<td>Rural bazaars price surveys</td>
<td>200 survey counties, 200 rural bazaars</td>
</tr>
<tr>
<td>Agricultural Market Survey</td>
<td>30 provinces (autonomous regions and municipalities), 100 Markets</td>
</tr>
<tr>
<td>County poverty monitoring</td>
<td>592 counties, and 50,000 farmers</td>
</tr>
</tbody>
</table>