



GCP/RAS/171/JPN
Field Document No. 2/MYN/2

IMPROVEMENT OF AGRICULTURAL STATISTICS
IN ASIA-PACIFIC COUNTRIES
(GCP/RAS/171/JPN)

**Proceedings of the National Seminar
on the System of Food and Agriculture
Statistics in Myanmar**

Yangon, 29-30 January 2000

Volume I
Report of the seminar

THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Bangkok, 2001

This publication is produced by

**The FAO Regional Project
for the Improvement of Agricultural Statistics in Asia and Pacific Countries
GCP/RAS/171/JPN**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Introduction	1
Overview of the agriculture sector and of the system of food and agriculture statistics (Session 1)	2
Methodological review of statistical activities for crop and livestock (Session 2)	3
Methodological review of statistical activities for the fishery, forestry and agriculture census (Session 3)	8
Compiling national accounts and GDP on agriculture and summarization of the seminar (Session 4)	13
Closing	15
APPENDIX A	17
Summary and recommendations	
APPENDIX B	23
Agenda of the seminar	
APPENDIX C	25
List of participants	
APPENDIX D	27
Statements	
<u>Inaugural address</u>	
- HE Major General Nyunt Tin, Minister for Agriculture and Irrigation	29
<u>Opening statement</u>	
- Mr Francis Rinville, FAO Resident Representative in Myanmar	31
<u>Speeches</u>	
- U Win Kyi, Director General, Settlement and Land Records Department	35
- Mr Hiek Som, Chief of Statistical Development Service, Statistical Division, FAO Rome	37
- Mr Ryuki Ikeda, Agricultural Statistics Expert, FAO RAP	41

Wrap-up statements

- Mr Ryuki Ikeda, Agricultural Statistics Expert, 43
FAO RAP
- Mr Hiek Som, Chief of Statistical Development 45
Service, Statistical Division, FAO Rome

Closing speech

- U Win Kyi, Director General, Settlement and Land 47
Records Department

EXECUTIVE SUMMARY

Introduction

1. A national seminar on food and agriculture statistics was organized jointly by the Settlement and Land Records Department of the Ministry of Agriculture and Irrigation of Myanmar and the Food and Agriculture Organization (FAO). The seminar, held on 29-30 January 2001 at the International Business Centre in Yangon, was a follow-up activity of the Japan-FAO cooperative project for the improvement of agricultural statistics in Asia-Pacific countries. Representatives from various government departments, the private sector and UN agencies took part in the seminar.

2. H.E. Major General Nyunt Tin, Minister of Agriculture and Irrigation, delivered the opening address, and Mr Francis Rinville, FAO Resident Representative in Myanmar, the opening statement. The inauguration ceremony was kept brief as the minister had to attend to pressing matters of state.

3. Dr Sein Tin, Director General of the Central Statistical Organization, chaired the morning session. U Win Kyi, Director General of the Settlement and Land Records Department, made the first welcoming speech. The director general mentioned that the government had made his department the “focal point” of the project, and he highlighted the importance of bringing together data producers and data users of agricultural statistics. The seminar, he felt certain, would come up with workable ideas to improve the current system of agricultural statistics. In his own statement, Mr Hiek Som, Chief of Statistical Development Service, FAO Rome, elaborated on the FAO focus on food security. Mr Ryuki Ikeda, FAO Agricultural Statistics Expert and Chief Technical Adviser, introduced the project for the improvement of agricultural statistics in Asia-Pacific countries.

4. Eight papers were presented at the seminar, four on 29 January and four on the following day. The topics covered were:

- Overview of the agricultural sector
- Overview of the system of food and agriculture statistics
- Methodological review of statistical activities for crops
- Methodological review of statistical activities for livestock
- Methodological review of statistical activities for fishery
- Methodological review of statistical activities for forestry
- Methodological review of statistical activities for the national census of agriculture
- Compilation of the national accounts and of GDP for agriculture

5. The statistical system in Myanmar is decentralized. Each ministry has a Planning and Statistics Division. The Central Statistical Organization, under the Ministry of National Planning and Economic Development, disseminates through various publications the statistics collected by all ministries. Since 1995, electronic versions of

the *Statistical Yearbook* have been made available on diskettes or CD-ROMs. Papers were therefore invited from line ministries and from the government departments responsible for statistical activities related to agriculture, forestry, fishery and livestock.

6. The presence of a minister at the inauguration ceremony reflects the importance given by the government to the seminar. The two-day seminar was held in four sessions. Dr Sein Tin, Director General of the Central Statistical Organization, chaired the first session; U Kyaw Lwin, Director General of the Department of Fisheries, chaired the second; U Kyaw Tin, Deputy Director General of Forestry, chaired the third; and Dr Myint Thein, Vice President of the Myanmar Academy of Agricultural, Forestry, Livestock and Fishery Sciences, chaired the fourth. Two presentations were made in each session and each presentation was followed by questions, answers and comments from the chair.

7. Mr Ryuki Ikeda, Agricultural Statistics Expert, in his introductory statement, explained the purpose of the seminar. Its objectives were to: study the system of statistics in operation; identify the demand for and extent of use of agricultural statistics; find means for the electronic transfer of data using FAO concepts, standards and classifications; and formulate recommendations for improving the National Programme on Food and Agricultural Statistical Activities related to agriculture, forestry, livestock and fishery. Reliable, valid and timely data are a necessity in drafting policies associated with production, consumption and export of primary products, Mr Ikeda stressed.

Overview of the agricultural sector and of the system of food and agriculture statistics (Session 1)

8. During the morning session on 29 January 2001, two papers were presented, providing an Overview of the agricultural sector and of the system of food and agriculture statistics.

9. The first presentation "Overview of Agricultural Sector in Myanmar" was presented by U Soe Win Maung, Assistant Director from the Department of Agricultural Planning, which was consisted of an overview of the agricultural sector in Myanmar. The country's economy is predominantly agricultural. In FY 1999/2000, 10.10 million ha, i.e. approximately 15 percent of the land area, were under cultivation, and 66 percent of the total workforce was engaged in agriculture. The agricultural sector's contribution to GDP was 51 percent; crops contributed 23 percent, livestock and fisheries 10 percent, and forestry 12 percent. In that year, agriculture registered a growth rate of about 12.8 percent. Agricultural products such as rice, pulses, corn, sesame and rubber were the main export items. In quantitative terms, peas and beans ranked first in export, maize second and rice third. Export of fishery and livestock products, which amounted to 43 500 metric tons in FY 1995/96, rose to 45 500 metric tons in FY 1999/2000. Myanmar encourages the private sector to import agro-chemicals, farm machinery, seeds, etc. About eight million ha of cultivable wasteland and fallow land can be brought under

cultivation if demand for agricultural produce increases. Of the total water resources (the annual water inflow is estimated at 870 million acres), only six percent is used for irrigation. Agriculture will continue to remain the leading sector in the economy, obviously due to the resource base of the country.

10. It was pointed out that the extent of forest cover did not tally from one source to another. There was also concern about possible gaps in the data and about insufficient information being provided to the users.

11. The next presentation "Overview of System of Food and Agricultural Statistics" was presented by U Mya Aung, Director of CSO, which provided an overview of the system of food and agriculture statistics in the country. The seminar was told that the Central Statistical Organization (CSO) compiles data on food and agriculture from various sources and disseminates them through its publications viz. *Statistical Yearbook*, *Agricultural Statistics*, *Statistical Abstract* and others. CSO conducted a groundnut survey in 1978 and agricultural surveys in fiscal years 1972/73, 1981/82 and 1983/84. CSO was able to compile reliable agricultural statistics for the public and cooperative sectors, but had difficulty collecting and producing estimates for the private sector. CSO was of the opinion that coordination was needed among line ministries, business communities and the peasantry for producing data. The importance of preparing a food balance sheet was duly stressed.

12. The need for vertical as well as horizontal expansion of land use was then pointed out, as well as the need to form a high-level, i.e. national, committee for land use.

13. A series of remarks were then made from the chair, about the need to:

- quote legitimate sources;
- use sample surveys to estimate agricultural enterprises operated by the private sector;
- prepare the food balance sheet as a means to estimate the exportable surplus; and
- conduct a census of agriculture in 2003 as a follow-up to the 1993 Agriculture Census.

Methodological review of statistical activities for crops and livestock (Session 2)

14. During the afternoon session on 29 January 2001, two papers were presented, providing a methodological review of statistical activities for crops and for livestock under the chairmanship of U Kyaw Lwin, DG from the Directorate of Livestock and Fisheries.

15. The first presentation "Methodological Review of Statistical Activities for crop" was made by U Saw Hlaing, Deputy Director of Settlement and Land Records

Department (SLRD), Ministry of Agriculture and Irrigation (MOAI). It defined the following strategic guidelines for national development:

- Development of new agricultural land
- Provision of an adequate irrigation water supply
- Increased agricultural mechanization
- Application of modern agricultural technology
- Development of agro-based industries

16. The Ministry of Agriculture and Irrigation has the following guidelines:

- to allow free agricultural production
- to expand the area under agriculture while safeguarding the rights of farmers
- to allow the private sector to engage in the production of industrial crops, fruit trees and perennial crops
- to encourage the participation of the private sector in the production of agricultural machinery and inputs

17. The statistical system of the country, the seminar was told, has the following essential features:

- It is decentralized.
- Each ministry has its own statistical unit to serve its own needs.
- For food and agriculture statistics, three ministries are involved (the ministries of Agriculture and Irrigation, Forestry, and Livestock and Fisheries)

18. The system maintains three basic registers:

- Register of areas: Records of the area of each field in the *kwin*^{*} are kept, up to two decimal places of an acre.
- Register of fields: Covering all the various fields within each parcel of land held by one holder.
- Register of holdings: Same entries as in the register of fields except those related to non-agricultural land. (A holding is defined as a parcel of land *worked* by a farmer, not necessarily his total land.)

19. Again, the need for data was emphasized. As agricultural development is the basis for the development of other sectors in Myanmar, agricultural statistics have become all the more important. With the country's transition from a planned to a market economy, the current reporting system will not be able to meet the data requirements of the changing economy.

20. Emphasis was then put on the current crop surveys:

- Crop surveys are carried out to get reliable data on crop acreage and production.
- They have to be done while the crops of different seasons are on the ground.
- The three main crop surveys are the monsoon crops survey, the rice survey and the winter crops survey.

* A unit of the land administration approximating one square mile.

21. The methods used for the determination of agricultural produce were explained thus:
- Crop forecasting procedures are inadequate.
 - The data are not widely disseminated and few statistical publications are issued.
 - Based on the yield per acre and the harvested area of each type and variety of paddy, the total produce is calculated and estimated.
 - The calculations are made from plots to *kwin*, from *kwins* to village-tract level, then to townships, state and division levels and finally to the national level.
22. The problems encountered were identified as follows:
- Data collection is a very large operation, field procedures are not always followed strictly and control over fieldwork is difficult to maintain.
 - Estimating areas by using cadastral maps faces the problem of having to update maps
 - Significant data gaps exist, especially on agricultural holdings and household-level data, prices, farm costs, labour, farm income and consumption.
23. Despite its weaknesses, the existing system has several advantages, the seminar was told:
- It is based on land record information and the reliability of area statistics is quite high.
 - It is suitable to the management needs of the government at the various levels.
 - It is convenient to cover the entire country.
 - It is easier to simultaneously collect data on many items (many crops).
 - Data can be produced at *kwin* level and village-tract level.
24. In summary,
- The Settlement and Land Records Department has the resources necessary in the area of data collection and data processing.
 - This is less so in terms of analytical capacity.
 - The department needs assistance to provide training to the staff in such fields as statistical techniques or data management.
 - In the transition from a planned to a market economy, the continuous provision of accurate and reliable statistics is indispensable for policymakers to promote agricultural development programmes.
 - The introduction of sample surveys can supply reliable statistics with the ability to define error margins.
25. Various recommendations followed:
- Investigate and formalize the concepts, definitions and procedures used
 - Link and share data with the ministries concerned
 - Need for organizational coordination to avoid duplication of work and to complement one another
 - Educate field personnel on statistical concepts and sampling techniques

- Study photo interpretation and remote sensing for agricultural statistics
- Study the data need, demand and supply and their constraints in an integrated manner
- Crop area statistics should continue to be based on the existing crop recording system; items such as horticulture and perennial crops should be included in future.
- To get reliable data, the current reporting system needs to be strengthened
- Establishment of a computerized database of agricultural and related statistics should be accelerated
- Study and develop statistical methodologies and introduce sampling techniques on crop production statistics

26. The floor discussion started with the suggestion that the current method of crop forecasting was a legacy from the British colonial administration, and the procedures used for data collection were meant to produce information needed for taxation. Even though modifications have been made to the system, crop forecasting should be based on sampling techniques. It was then noted that crop forecasts were made at headquarters using the information supplied by field surveyors. A delay in data transfer did occur as information was transmitted from the lowest to the highest level of administration. The lack of information on perennial crops and on vegetables was also mentioned.

27. Furthermore, for the query on information dissemination, the answer came that it was circulated through the publication *Agribusiness News*.

28. Next presentation "Methodological Review of Statistical Activities for Livestock" was made by Dr Than Tun, Deputy Director, the Livestock Breeding and Veterinary Department (LBVD), Ministry of Livestock and Fishery. The presentation stressed the importance of the application of advanced methods in collecting, processing and disseminating livestock statistics. The methods of livestock census/survey taking, timing, and items of information being collected are as follows, the seminar was told:

Organization structure and timing of census taking

- Before FY 1983/84, a livestock census was undertaken as a component of the agricultural census conducted by the Settlement and Land Records Department.
- From FY 1983/84 up to FY 1993/94, the activities for animal censuses were undertaken by the LBVD.
- Livestock censuses were taken by the method of complete enumeration. The reference period for a census was one month, i.e. from 1st to 31st of March.
- Complete enumeration on a yearly basis for the livestock census was carried out over the decade FY 1983/84 to FY 1993/ 94.

Current activities in data collection on the livestock population

- In FY 1997/98, the development programme for poultry farming was initiated because of its quick return.

- LBVD provided veterinary services and monitored the progress of livestock activities.
- Commercial production of poultry was developing fast and needed physical assessment.
- The present status of semi-commercial and commercial livestock farms is recorded on a monthly basis by LBVD staff, either by interview of farmers or by head count.

Coverage of livestock statistical data

Data on livestock and related fields covered such items as:

Main items	Component parts
- Livestock census:	Status of livestock population, i.e. cattle, buffalo, sheep/goat, pig, elephant, horse, mule, donkey, mythun, poultry, duck, turkey, goose, muscovy, etc.
- Livestock products:	Draught Livestocks, meat, milk, egg, hide and skin, feather, etc.
- Animal feed:	Animal-feed resources and feed mills.
- Producer's price:	Baseline data on the price of feed, building, labour, services, etc.

29. Regarding constraints, baseline data for livestock population was needed for planning, implementing, monitoring and evaluating livestock development programmes. Veterinary personnel collected data on the livestock population every three months as they went about fulfilling their cattle disease control programmes. Besides, they also compiled data on livestock products, non-commercial slaughter, informal slaughter, family consumption, landing of milk, meat and eggs on the market.

30. The following suggestions were then made:

- Census taking for livestock population should be encouraged. The census should be conducted every five years.
- Use of updated technology and support facilities should be strengthened for data processing, and for dissemination purposes.
- International or national training courses on methodology for planning and implementation of livestock surveys, censuses and data processing, including biotechnology, should be conducted.

31. The attention of participants was drawn to the agriculture census to be taken in 2003 by the Settlement and Land Records Department. It was remarked that provision for livestock data could be made in the agriculture census questionnaire as a separate module.

Methodological review of statistical activities for the fishery, forestry and agriculture censuses (Session 3)

32. U Shwe Kyaw, Director General of the Department of Forest, Ministry of Forestry, chaired the morning session on 30 January 2001. Three papers were presented offering respectively methodological reviews of statistical activities for fishery and forestry censuses and for the national census of agriculture.

33. The presentation of fishery statistical activities made by Daw Ma Ma Lay, staff officer, Department of Fisheries, Ministry of Livestock and Fishery, noted first that the country possessed vast sea resources, abundant inland fresh water and a climate conducive to the growth of aquatic fauna and flora. More than two million people were engaged in fishery. Per capita consumption of fish was estimated at 18 kg. Private-sector involvement had given impetus to fish and prawn exports. The planning and statistics section of the Department of Fisheries had to collect data, draft plans and publish fishery reports. It also had to monitor wholesale and retail prices of fish by conducting market surveys. The objectives of the fishery sector were to:

- promote all-round development of the sector;
- increase fish production for domestic consumption and export surplus to neighbouring countries;
- encourage the expansion of aquaculture; and
- upgrade the socio-economic status of fishing communities.

If the rapid growth in aquaculture was noteworthy, mariculture remained unexplored. The fishery sector continued to provide people with protein, and government coffers with foreign exchange.

34. Regarding estimates of standing stock, experimental acoustic fishing surveys were carried out during the period 1979-1983. Efforts should be made to estimate the maximum sustainable yields both for inland freshwater and for offshore fishing grounds.

35. The discussion began with questions over (i) data related to subsistence fishing in inland waters, (ii) per capita consumption of fish and (iii) household income and expenditure surveys. These questions were answered satisfactorily. Officials in the field monitored production, issued fishing license to vessels, or for leasing ponds for fish farming or aquaculture, etc. In addition, they also had to conduct surveys at landing sites.

36. The presentation of forestry statistical activities made by U Myint Swe, Deputy Director, Department of Forest, Ministry of Forest noted that forest resources continued to provide various products for domestic consumption as well as for export. About 43 percent of the total land area (676 577 km²) was still covered with forests, and another 30 percent was woodland. If closed and degraded forests were taken into consideration, the forest cover could be estimated at 51 percent.

37. Regarding the organizational structure, there are four institutions, viz. the Planning & Statistics Department, the Department of Forest and the Myanmar Timber Enterprise, and the Dry Zone Greening Department, all within the Ministry of Forestry.

38. The 1995 Forest Policy currently under application has the following objectives:

- Protection of soil, water, wildlife, biodiversity and environment
- Sustainability of forest resources
- Supply of the basic needs of the people for fuel, shelter, food and recreation
- Efficiency to ensure the full economic potential of the forest resources
- Participation of the people in the conservation and use of the forests
- Public awareness of the vital role of the forest in the welfare and socio-economic development of the nation
- Environmental and biodiversity conservation, notably through the setting-up of permanent forest estates and of protected areas
- A balanced and complementary land use, gazetting 30 percent of the total land area as reserved forest and 5 percent under the protected areas system

39. Regarding the collection of forestry statistics, the various departments have the following tasks:

- The Forest Department and the Myanmar Timber Enterprise are responsible for the collection of forestry and industry statistics. The department keeps a record of statistics related to management and production, and the timber enterprise collects statistics associated with felling, transport, processing and marketing of timber.
- The Ministry of Industry, which owns pulp-and-paper mills in Myanmar, maintains information on pulp and paper.

40. The constraints, solutions and recommendations with respect to the system of statistical activities within the forestry sector are given below:

Constraints

National forest inventory cannot be conducted in the Kayin State, Kayah State, Mon State and Tanintharyi Division due to security problems. Even for the remaining states and divisions, forest inventory cannot be done in some areas due to inaccessibility and to difficulty in recruiting manpower. Because of rising labour charges, manpower with specific skills cannot be used in full capacity when establishing the sample plots. In remote areas, it is not easy to get labourers due to difficulties in transportation and in finding labour in sparsely populated areas. Salaries have been increased and daily allowances need to be increased proportionately. Due to very low daily allowances, public service personnel are reluctant to stay in the forest.

Proposed solutions

The following solutions are proposed to overcome the constraints encountered:

- In remote areas, stratified random sampling should be adopted instead of systematic sampling.

- Budget allotment for the conduct of national forest inventory should be increased in order to cover rising labour charges.
- The daily subsistence allowance should be increased sufficiently to cover living costs.
- The one-shot inventory method should be applied in those areas where forest inventory cannot be conducted.
- National forest inventory should be carried out on a continuous basis to know the state and condition of the natural forests.
- Permanent sample plots should be fully protected for a prolonged period so that successive measurements can be done.

Recommendations

- Precise, fresh and timely statistics on forestry sector should be collected and compiled regularly.
- A methodological review of statistical activities for the forestry sector should be done once every five years or whenever deemed necessary.
- The present survey method should be modified from time to time to facilitate data collection and to save time and expense during the survey.
- Items of data collection and timing of the survey should be adapted depending upon available resources, manpower and finance.
- The specially designed field sheets and questionnaire forms should be as simple and clear as possible.
- Computer databases for forestry sector statistics should be established by using suitable database software, so that many organizations can share them easily and conveniently.
- An advanced telecommunication system such as fax or electronic mail (e-mail) should be used to speed up the flow of reporting and dissemination of forestry statistics.
- Forestry statistics approved by the Ministry of Forestry should be disseminated to the organizations that use forestry statistics.
- Priority should be given to collecting urgently needed data.

41. During the following discussion, various questions were raised on i) maintenance of data on fuel-wood consumption by the forest department; ii) status of the reforestation programme; iii) the survival rate of trees planted; and iv) involvement of private-sector in the forestry sector.

42. The answers were that there was a community-based firewood tree-growing programme, and the use of alternative sources of fuel was under experiment. About 80 million seedlings had been distributed free of charge to a community for growing in homes, by the roadside, in family compounds, etc. Leasing out large tracts to the private sector to develop forest plantations was under consideration. Even foreigners would be allowed to develop forests, perennial crops, etc.

43. Regarding the use of GIS technology for agriculture and other sectors, the seminar was informed that GIS had been used at the Department of Forestry since 1993

and the resources shared with other departments. The Directory of Fisheries, for instance, offered its expertise in river training programmes.

44. The next presentation made by U Aye Myint, Director of SLRD provided by a brief account of the implementation of the various agricultural censuses, as follows:

- The first census of agriculture was conducted in 1953. It covered 2 143 village tracts in the neighbourhood of 252 towns. Plans were made to carry out a census during the period FY 1978/79 to FY 1981/82, but they were not implemented.
- The second census of agriculture was carried out in 1993 and covered 272 townships out of 319 in 7 states and 7 divisions.
- There are plans to carry out a census of agriculture in 2003.

45. A flexible sample design was chosen for the 1993 census of agriculture. A two-stage area sampling was used in rural areas, and systematic random sampling in urban areas.

Rural areas

Stratified two-stage sampling:

- **first stage:** Selection of a stratified sample of enumeration areas with probability proportional to the expected number of holdings (stratified PPS sampling);
- **second stage:** Within selected enumeration areas, the selection of a sample of agricultural holdings using systematic random sampling.

A different methodology was used in some areas:

- In townships where enumeration areas were small, a large second-stage sampling fraction was applied; systematic random sampling was used for the first-stage selection of enumeration areas, to avoid distortions in the second-stage sample arising from rounding.
- In townships with very few holdings or where a large sampling fraction was taken, all enumeration areas were selected. This amounted to the use of list sampling.

Urban areas

Areas with a high concentration of agricultural holdings were covered using two-stage sampling in the same way as in rural areas. In other areas, where there were few scattered holdings within a largely urban community, systematic random sampling was used.

46. Part of the agricultural census was disseminated through a workshop and a series of reports. A five-day national workshop on the 1993 Myanmar Census of Agriculture and the strengthening of the system of agricultural statistics was conducted in 1994, from 10 to 15 February, with assistance from UNDP and the government of Myanmar. Fifty-three representatives from the planning and statistics departments of line ministries, the Institute of Economics, UNDP, FAO and the private sector participated in the workshop. The workshop served as a forum for:

- providers and users of agricultural statistics to discuss the issues arising from the current state of agricultural statistics and to identify the most important issues and problems, and the solutions and actions to deal with shortcomings were identified; and
- funding agencies to assist Myanmar in improving its statistical systems and capability, and find ways to strengthen the existing agricultural statistical system and sustain a reliable and timely flow of information in the long run, making it more responsive than in the past.

The two main outputs of the workshop were a multi-year programme of agricultural statistics and a plan of action for the establishment of a system of agricultural statistics.

47. The seminar was told further about the problems encountered, the use of data, and the forthcoming 2003 agriculture census as follows:

- Farmers mistook the Settlement and Land Records Department for a land tax assessment agency. Compulsory sale of crops made them cautious in giving information on crop production and yield.
- Personnel who had gained data-processing skills either retired or left the department to join higher-paying jobs in the private sector.
- Stratification work could not be carried out properly due to time limitations.
- Agricultural holdings in some urban areas were deliberately left behind, as the holding sizes were too small.
- An enumeration area is expected to have 50 to 100 holdings, but some had more than 150 holdings. Moreover, within the selected areas, the estimated number of holdings differed considerably from the actual number of holdings listed.

48. The presentation ended with the following recommendations:

- Agriculture will definitely keep dominating the other economic sectors in terms of employment and income generation. Myanmar is still self-sufficient in food production, and food security can only be guaranteed by providing farmers with agricultural inputs through expanded agricultural services. As land-use practices and a stable natural environment are interrelated, information on on-land, off-farm economic activities is imperative. The 1993 agricultural census provided data on many facets or aspects of farming, livestock raising, growing of perennial crops, etc.
- Efforts were now being made to conduct a census of agriculture in 2003. Special attention should be given to the following areas:
 - Capacity building: new recruits need training in statistics, cartography, computer software applications, etc;
 - Extending coverage: remote border areas omitted from enumeration should be covered in 2003;
 - Satellite imaging: maps produced with the help of GIS and remote-sensing data should be used for demarcating enumeration areas;
 - Complete enumeration should be used in border areas;
 - Sufficient time should be given for all preparatory work associated with sampling design, questionnaire development, including field tests, training of staff for field operations, etc.

49. In the floor discussion for presentation on agricultural census, suggestions were made to i) adopt stratified Multistage sampling for the design of the census as large scale sample surveys, and ii) include survey items on aqua-culture (fish production) as similar to livestock items in 1993 census.

50. The objection was made against the opinion that agricultural census be a multipurpose survey. It was too ambitious, and might produce poor results. Sometimes ad hoc surveys might be of greater help.

Compiling the national accounts and the GDP for agriculture and Summarization of the seminar (Session 4)

51. The afternoon session on 30 January 2001 was chaired by Dr Myint Thein, Vice president of the Myanmar Academy of Agricultural, Forestry, Livestock and Fishery Sciences. This session had three components i) a paper presentation dealt with the complexities of compiling the national accounts and the GDP for agriculture by U Aung Tun, Director of the Department of National Planning, ii) wrap-up statements and iii) a general discussion.

52. The presentation "Compiling the national accounts and the GDP for agriculture" drew the attention of participants to the three methods used for estimating GDP:

- Gross output and intermediate input data (product method)
- Final demand data (expenditure method)
- Value-added data (income method)

There had been considerable improvements in the accuracy and availability of detailed statistics pertaining to the state and cooperative sectors, the seminar was told. The reliability of data for the private sector had also improved by compiling additional data from periodic economic surveys, work permits and licenses issued to private enterprises. The ministries concerned also estimated the values of output and expenditure for private firms engaged in the production of goods and services.

53. Regarding data gaps, and GDP estimation, the following proposals for improvement were made:

National accounts

- To provide training courses in order to adopt the 1993 United Nations System of National Accounts.
- To have ministries or agencies conduct regular or periodic surveys and special studies in order to have a wider coverage of statistics for the private sector, especially with respect to:
 - Production
 - Investment
 - Cost structure
 - Prices (producer prices, wholesale prices, retailed prices, etc)

- Household expenditure
 - Salaries and wages
 - Depreciation
 - Surplus
- To construct a food accounting matrix (an extension of a food balance sheet).

Agricultural sector

- To provide data on output of fruit crops, vegetables and flowers which have become important to the economy.
- To conduct small-scale surveys or studies on the cost of cultivation of important crops.
- To provide information on area and output of perennial crops and other crops in the monthly and quarterly reports.
- To provide cost of natural fertilizer, biochemical and organic fertilizer by ownership, such as state, cooperative and private sector ventures, in calculating the cost of cultivation.

54. The floor discussion focused on the data source for the cost of production. It was that one had to rely on different sectors for data. The cost of production for 22 out of 60 important crops was obtained from the Department of Agricultural Planning.

55. Furthermore, it was pointed out that recent data would be required to compile the GDP for the agriculture sector. The agriculture GDP was a good indicator, the seminar was told. It could reflect the welfare of farmers and their sources of additional income, including off-farm and non-agricultural activities. It would be interesting to have farm gate/producer prices and free-market prices of agricultural outputs.

56. The first wrap-up statement was expressed by Mr Ryuki Ikeda, Agricultural Statistics Expert, GCP/RAS/171/JPN, with the view of satisfaction over the way the seminar had been conducted. Two challenges were in store: transparency of data and new areas of data needs. The planned 2003 agricultural census, if conducted, could provide up-to-date data on agriculture. Scientific methods like sampling techniques should be introduced. Crop surveys were important for food administration, a necessary enterprise contributing to both domestic and world food securities. The need for data dissemination was stressed; timely release and exchange of data within the region would be desirable.

57. The second wrap-up statement was expressed by Mr Hiek Som. He noted among other things that the element of data dissemination was missing. Data quality needed improvement. Proper supervision of field operation and monitoring of the work in progress could increase the confidence of data users. Within the framework of the existing system of food and agriculture, efforts should be made to draw a food balance sheet. A national land-use committee should be in place to coordinate the various statistical activities.

58. The general discussion was preceded by Dr Thet Lwin, National Consultant for organization of the seminar, brief-summarizing the eight papers presented during the two-day seminar. Issues raised were concerned with limited resources, and the lack of coordination. The suggestions made by the presenters were associated with the need for a high-level coordination committee, the need to close data gaps and the need to upgrade the technical capacity and the capability of human resources.

59. The general discussion also highlighted that almost all departments in different ministries collected different types of data for different purposes. The collected data might be of poor quality. In this context, the departments, which are responsible for the collection and compilation of agricultural data, should assess and review their statistical tools and techniques to ascertain the reliability and quality of the data. The attention of the participants was drawn to the following needs:

- To review the past surveys, studies and research works if any.
- To review survey design and sample design in order to see whether they are statistically sound or not.
- To review the questionnaire design in order to see whether the relevant questions for the desired information are in line with the survey objectives or not.
- To examine the information system employed in the routine administrative reports.
- To assess the appropriateness of statistical methods including estimation procedures used to obtain reliable information.
- To assess the extent of data collected and to what extent the data were analysed.
- To review the quality of data from the perspective of robustness.
- To make recommendations for improving the system of data collection.

60. Finally, Dr. Myint Thein, the chair noted that there was a need for coordination among key players (at the central level) and that plans of action needed to be result-oriented, effective, efficient and expedient.

- Measures for increasing the level of activities: networking, strengthening existing facilities; increasing formalization; statistical activities; downstream technology; effective mechanisms for implementing agencies.
- Methodology and technology: FAO field experts, workshops; Myanmar case studies could be applied to the development of the economy; and training of more staff, who needed overseas training to bring knowledge back home.

Closing

61. The closing speech expressed thanks to guests from FAO, resource persons, participants from the public and private sectors, and to the staff from the International Business Centre for the enthusiasm they had shown, for the hard work they had done, and for the contributions they had made towards the success of the seminar. The participants were assured that their comments, suggestions and recommendations would be incorporated in future programmes of action.

**NATIONAL SEMINAR ON FOOD AND AGRICULTURE
STATISTICS IN MYANMAR**

Yangon, 29-30 January 2001

SUMMARY AND RECOMMENDATIONS¹

A National Seminar on Food and Agriculture Statistics was held at the International Business Centre, Yangon, on 29 and 30 January 2001. The seminar was organized jointly by the Settlement and Land Records Department of the Ministry of Agriculture and Irrigation of Myanmar and FAO under the FAO Regional Project for the Improvement of Agricultural Statistics in Asia-Pacific Countries (GCP/RAS171/JPN). The seminar had its focus on agriculture (crops), fishery, forestry and livestock and on the compilation of the national accounts including the GDP on agriculture.

The participants to the seminar comprised 50 Myanmar representatives from the following institutions:

- Department of National Planning, Ministry of National Planning and Economic Development
- Central Statistical Organization, Ministry of National Planning and Economic Development
- Department of Forest, Ministry of Forestry
- Department of Fisheries, Ministry of Livestock and Fisheries
- Department of Livestock Breeding and Veterinary, Ministry of Livestock and Fisheries
- Department of Agricultural Planning, Ministry of Agriculture and Irrigation
- Settlement and Land Records Department, Ministry of Agriculture and Irrigation
- Department of Population, Ministry of Population and Immigration
- Department of Statistics, Institute of Economics, Yangon
- Myanmar Chamber of Commerce and Industry
- Rice Traders Association
- Edible Oil Traders Association

The following international experts also attended:

- Mr Francis Rinvile, FAO Resident Representative in Myanmar
- Mr Hiek Som, Chief of Statistical Development Service, Statistics Division, FAO, Rome
- Mr Ryuki Ikeda, FAO Agricultural Statistics Expert, Chief Technical Advisor

The seminar opened with an address delivered by Major General Nyunt Tin, Minister of Agriculture and Irrigation, and a statement by Mr Francis Rinvile, FAO representative in Myanmar. Four paper presentation sessions were held during the two-day seminar. At

¹ The text was adopted at the end of the seminar as Recommendations.

the beginning of the first session, U Win Kyi, Director General of the Settlement and Land Records Department of the Ministry of Agriculture and Irrigation, and Mr Hiek Som, Chief of the Statistical Department Service, Statistics Division from FAO, Rome, made welcoming speeches. They stressed the importance of agricultural statistics and the interaction between data producers and data users, and expressed hope that the outcome of the seminar would be of great help to decision-makers in drafting future development programmes.

I. PURPOSE OF THE SEMINAR

This seminar aimed to:

- assess the state of national food and agriculture statistics service in Myanmar;
- review existing food and agriculture statistical activities;
- identify demands of and expectations from data users;
- discuss problems, issues faced in the collection, analysis, use and dissemination of food and agriculture statistics; and
- formulate recommendations for future improvement of the national food and agriculture statistical programme.

The seminar would serve as a forum for identifying data gaps, deficiencies in methodology, duplication of efforts and activities, and measures for improving or streamlining agricultural statistics.

In addition, the seminar discussed issues, problems and constraints faced in the collection, analysis, use and dissemination of statistics on crops, fish, livestock and livestock products, and formulated recommendations for future improvement in the status of food and agriculture statistical programmes.

II. ACTUAL SITUATION OF AGRICULTURAL STATISTICS IN MYANMAR

Over the two-day seminar, deliberations followed the lines set in the agenda. The main points clarifying the state of agricultural statistics in Myanmar were as follows:

1. The organization of agricultural statistics

In the near future, agriculture would continue to remain the leading sector of the national economy. The resource endowment together with improvement in technology, increased investment and proper management would pave the way towards a modernized and developed agriculture. In this endeavour, efficient use of resources, transfer of technology to farmers, availability of loans, adaptation of quality seeds, international market situations, and environmental impact would be instrumental in the development of the agriculture sector. On the other hand, these situations would demand for statistics that are both reliable and consistent.

The statistical system can be considered as decentralized. In Myanmar, planning and statistics departments exist in almost all ministries and statistics are compiled independently to serve their own purposes. The Central Statistical Organization collects data in accordance with the 1952 Central Statistical Authority Act, No.34 and plays a key role in the national system of statistical information as prescribed in Section (1):

1. to develop a comprehensive, efficient and reliable statistical system for social and economic policy, effective planning and administration;
2. to review and advise on all statistical operations of the central government performed for statistical, administrative or other purposes;
3. to coordinate and integrate statistics and statistical operations;
4. to establish, prescribe and maintain the highest statistical standards; and
5. to organize and conduct social and economic censuses or surveys with reference to the country's economic needs and requirements either on a prepared planned basis or at short notice, as may be required.

2. Agricultural statistics at the Central Statistical Organization

The Central Statistical Organization (CSO) is the only organization in Myanmar that has the mandate to collect, process, organize and supply data for the use of planners, policymakers and other users in the country as well as international bodies. Its prime function is to provide timely and reliable data to those who are in need of statistical information.

CSO collects data by means of physical observation, personal interview, small enquiry, method of registration, transcription from official records, and surveys. All organized data in CSO are processed stage by stage before the results are presented. Data processing is done either manually or using computers.

The main statistical publications of CSO associated with agriculture statistics are:

1. *Selected Monthly Economic Indicators*
2. *Statistical Yearbook* (bi-annually)
3. *Agricultural Statistics* (bi-annually)
4. *Statistical Abstract* (annually)
5. *Bulletin of Exports* (annually)
6. *Bulletin of Imports* (annually)

3. Crop, fish and livestock statistics

Three ministries, Agriculture and Irrigation, Forestry, and Livestock and Fisheries, are involved in producing data on crops, fish, livestock and food. Each ministry collects, often independently, information on items of interest. Methods used range from complete enumeration to sample surveys. Remote sensing, GIS, GPS, etc, are used for the production of maps.

3.1 Crop statistics

The Settlement and Land Records Department (SLRD) conducts agricultural censuses and makes crop forecasts.

Collection and compilation of crop statistics

- The principal agency is SLRD.
- In 1999, SLRD was reorganized and employed a staff of 13 570.
- SLRD collects area statistics and produces statistics of crops primarily through its crop forecasts and survey operations.

3.2 Fishery statistics

The Department of Fisheries produces data on inland freshwater fish and offshore marine products. Acoustic surveys were carried out to estimate standing stocks and maximum sustainable yield.

3.3 Livestock statistics

Animal census was taken by the Livestock Breeding and Veterinary Department (LBVD) from FY 1983/84 to FY 1993/94. Since FY 1994/95, veterinary personnel count animal population in each household with the assistance of trained personnel and village headmen in villages, every three months. The data for livestock products, i.e. working draught cattle, milk, meat and eggs, are obtained from the townships. Some basic data on landing of livestock for meat, eggs and registered slaughtered numbers are obtained from municipalities. Data for cattle/buffalo and sheep/goat market, animal moved over the township, animal feed mills, shops and stores of animal feed, drugs and medicine, commercial livestock farms, and production of livestock farms are collected by LBVD staff. Data for livestock and livestock products are also obtained from the Myanmar Livestock Federation. Data for informal slaughter, some of non-commercial slaughter, illegal slaughter and traditional home consumption slaughter are estimated.

3.4 Forestry statistics

Forest resources

Forest resources are being degraded and depleted worldwide due to expanding populations, increasing human needs, agriculture expansion and environmentally harmful mismanagement. As development activities have intensified and people have spread increasingly onto marginal lands, problems of deforestation, soil degradation, wetland drainage and diminished biological diversity have become important environmental concerns. Thus, there is an urgent need for adequate information bases from which appropriate resource management strategies and interventions can be derived.

Forest management plan

Forestry sector development is undertaken within the framework of a 10-year prospective programme with flexible targets. The targets are areas to be protected, areas to be reforested, estimating demand and supply of forest products, felling and regeneration programmes, management and conservation activities, research priorities and administrative arrangements for staff requirements, including estimates of cost and return.

Forest resource monitoring using geo-informatics including conventional remote-sensing systems

Remote-sensing technology in the form of aerial photography was introduced to Myanmar as early as the 1920s for forestry purposes and revision of topographic maps. Aerial photography continued to play an important role in the production of topographic maps, and for assessing the forest cover. Large parts of the country were covered by aerial photography in the 1950s and again in the 1970s. No coverage of the whole country has ever been undertaken. The Forest Department of the Ministry of Forestry has been a pioneer in the application of the GIS system and has now become one of the main GIS users, with a moderately well equipped GIS unit. The Magellan GPS were used to record the locations of the permanent sample plots established in Sagaing Division in FY 1998/99.

After the final classification is completed, results are digitized into the GIS system. At the same time, basic map data such as roads, streams or forest reserve boundaries are also digitized from topographic maps and created map layers. They are overlaid onto the classified image layers to get the final map. Spatial statistics for each class are calculated by using the table module of the PC Arc/Info GIS software.

4. Statistical information

The Ministry of National Planning and Economic Development is entrusted with the task of disseminating information on all sectors of the economy. Ministries do publish or release data as by-products of their routing functions.

The report on the 1993 census of agriculture is the main source of agriculture statistics. SLRD has plans to conduct a census of agriculture in 2003. The Department of Agricultural Planning of the Ministry of Agriculture and Irrigation is circulating a weekly magazine entitled *Agribusiness News*. This publication would eventually reach the grassroots level.

III. Recommendations

The deliberations of the two-day seminar led to the following recommendations:

- A national-level land-use committee should be formed to avoid duplication of efforts and actions and improve the reliability and timely release of data on land use, crops, fish, livestock, forest products, etc.

- Data needs for public and private sectors should be assessed and prioritized.
- A framework should be prepared within which the national system of statistics can be developed in an integrated manner.
- The Department of Planning of the Ministry of National Planning and Economic Development should be strengthened to compile national accounts, supply-and-demand policies on food, etc.
- SLRD should implement the 2003 census of agriculture to provide up-to-date information on the structure of the country's agriculture.
- The statistical skills of government officials should be enhanced through in-country and overseas training programmes.
- Means should be found for the dissemination of agriculture- and food-related information to users. The dissemination programme should have a strong user-producer feedback. Access to the Internet should be explored as an effective mechanism of disseminating agricultural statistics.

All the participants of the seminar fully endorsed the recommendations contained in this report.

30 January 2001

**NATIONAL SEMINAR ON FOOD AND AGRICULTURE
STATISTICS IN MYANMAR**

Yangon, 29-30 January 2001

AGENDA

Monday 29 January

Inauguration ceremony

- 08:00-08:15 Opening address
 HE Major General Nyunt Tin, Minister of Agriculture and
 Irrigation
- 08:15-08:30 Opening statement
 Mr Francis Rinville, FAO Resident Representative in Myanmar
- 08:30-09:15 *Refreshments*
- 09:15-09:30 Registration

Session 1

- 09:30-09:45 Welcoming speech
 U Win Kyi, Director General, Settlement and Land Records
 Dept
- 09:45-10:00 Mr Hiek Som, Chief of Statistical Development Service,
 Statistics Division, FAO Rome
- 10:00-10:15 Introductory remarks on Project GCP/RAS/171/JPN
 Mr Ryuki Ikeda, Agricultural Statistics Expert, Chief Technical
 Adviser
- 10:15-10:45 Overview of the agricultural sector in Myanmar
 U Soe Win Maung , Assistant Director, Dept of Agricultural
 Planning
- 10:45-11:15 Overview of the system of food and agriculture statistics
 U Mya Aung , Director, Central Statistical Organization
- 11:15-11:30 Discussion
- 11:30-13:30 *Lunch break*

Session 2

- 13:30-14:10 Methodological review of statistical activities for crops
 U Saw Hlaing , Deputy Director, Settlement and Land Records
 Dept
- 14:10-14:30 Discussion
- 14:30-15:10 Methodological review of statistical activities for livestock
 Dr Than Tun , Deputy Director, Department of Livestock

15:10-15:30 Discussion
15:30-16:00 *Tea break*
16:00-16:30 Comments from the chair

Tuesday 30 January

Session 3

09:00-09:40 Methodological review of statistical activities for fishery
Ma Ma Lay, Staff Officer, Department of Fisheries
09:40-10:00 Discussion
10:00-10:40 Methodological review of statistical activities for forestry
U Myint Shwe, Deputy Director, Department of Forest
10:40-11:00 Discussion
11:00-11:30 *Tea break*
11:30-12:10 Methodological review of statistical activities for the national census of agriculture
U Aye Myint , Director, Settlement and Land Records Dept
12:10-12:30 Discussion
12:30-13:30 *Lunch*

Session 4

13:30-14:10 Compilation of the national accounts and of the GDP for agriculture
U Aung Tun , Director, Department of Planning
14:10-14:30 Discussion
14:30-15:00 *Tea break*
15:00-16:00 Wrap-up statements
Mr Ryuki Ikeda, Agricultural Statistics Expert, Chief Technical Adviser
Mr Hiek Som, Chief of Statistical Development Service, Statistics Division, FAO Rome
16:00-16:30 General discussion on the improvement of the system of agricultural statistics in Myanmar
16:30-16:45 Comments from the chair

Closing

16:45-17:15 Closing speech
U Win Kyi, Director General, Settlement and Land Records Dept

APPENDIX C

LIST OF PARTICIPANTS

Name	Designation	Department
1 U Win Kyi	Director General	Settlement & Land Records Dept (SLRD)
2 U Gwan Shein	Deputy Director General	SLRD
3 U Aye Myint	Director	SLRD
4 U Paing Soe	Director	SLRD
5 U Win Htun Nee	Director	SLRD
6 U Khin Maung Gyi	Director	SLRD
7 U Shwe Thein	Director	SLRD
8 U Thein Win	Director	SLRD
9 U Kyaw Tint	Director	SLRD
10 U Saw Hlaing	Deputy Director	SLRD
11 U Naing Win	Deputy Director	SLRD (Yangon Division)
12 U Myint Thein	Deputy Director	SLRD
13 U Aye Ko	Deputy Director	SLRD
14 U Sein Win	Assistant Director	SLRD
15 U Ohm Myint	Assistant Director	SLRD
16 U Aye Maung Sein	Assistant Director	SLRD
17 U Zaw Min	Assistant Director	SLRD
18 U Hla Myint Lay	Assistant Director	SLRD
19 U Min Thein	Assistant Staff Officer	SLRD
20 U Hla Myint	Staff Officer	SLRD
21 U Aung Htun	Director	Planning Dept
22 U Myint Swe	Deputy Director	Forest Dept
23 U Mya Aung	Director	Central Statistical Organization
24 Dr Than Htun	Deputy Director	Livestock Breeding & Veterinary Dept
25 U Soe Win Maung	Assistant Director	Dept of Agricultural Planning
26 Daw Ma Ma Lay	Staff Officer	Fishery Dept
27 Dr.Khin Maung Nyo	Director	Livestock Breeding & Veterinary Dept
28 Dr. Nyi Nyi	General Manager	Myanmar Agriculture Service
29 U Myint Than	Deputy General Manager	Myanmar Agricultural & Rural Development Bar
30 Daw Yu Khin	Assistant Director	Water Resource Utilization Dept
31 U Thi Ha	Assistant Director	Fishery Dept
32 U Myint Swe	Lecturer (Stat)	Institute of Economics
33 U Kyaw Myint	Manager	Myanmar Agriculture Service
34 Daw Li Li Kyaw	Head of Department	Institute of Agriculture
35 U Tin Shwe	Staff Officer	Central Statistical Organization
36 Daw Than Than Win	Staff Officer	Dept of Agricultural Planning
37 Daw Than Than Htay	Staff Officer	Irrigation Dept

38	U Than Shwe	Deputy Director	Agriculture Mechanization Dept
39	U Hla Thwin	Deputy Director	Planning Dept
40	Daw Khin Lay Kyu	Deputy Director	Myanmar Farms Enterprise
41	U Khin Maung Nyunt	Deputy Director	Forest Dept
42	Daw Soe Soe Aye	Deputy General Manager	Myanmar Jute Enterprise
43	Daw Kyin Sein	Deputy General Manager	Myanmar Cotton & Sericulture Enterprise
44	Daw Win Win	Deputy Director	Irrigation Dept
45	U San Thein	Deputy General Manager	Myanmar Sugarcane Enterprise
46	U Maung Maung Lay	Deputy General Manager	Myanmar Perennial Crops Enterprise
47	Daw Nyo Mi Kyi	Deputy Director	Myanmar Farms Enterprise
48	Daw Khin Nyein Nu	Assistant Director	Myanmar Farms Enterprise
49	U Tin Maung Shwe	Deputy Director	Department of Agricultural Planning
50	Dr Thet Lwin	Local Consultant	Executive Member, Myanmar Academy of Arts & Science

STATEMENTS

Inaugural address

- HE Major General Nyunt Tin, Minister of Agriculture and Irrigation

Opening statement

- Mr Francis Rinvile, FAO Resident Representative in Myanmar

WelcomE speeches

- U Win Kyi, Director General, Settlement and Land Records Department
- Mr Hiek Som, Chief of Statistical Development Service, Statistical Division, FAO Rome

Introductory remarks on the project for the Improvement of Agricultural Statistics in Asia-Pacific Countries (GCP/RAS/171/JPN)

- Mr Ryuki Ikeda, Agricultural Statistics Expert, FAO RAP

Wrap-up statements

- Mr Ryuki Ikeda, Agricultural Statistics Expert, FAO RAP
- Mr Hiek Som, Chief of Statistical Development Service, Statistical Division, FAO Rome

Closing Speech

- U Win Kyi, Director General, Settlement and Land Records Department

INAUGURAL ADDRESS

DELIVERED BY HE MAJOR GENERAL NYUNT TIN, MINISTER OF AGRICULTURE AND IRRIGATION

Honourable Cabinet Ministers,
Resident Representatives of FAO,
Distinguished Guests,
Ladies and Gentlemen,
Good morning.

On this auspicious occasion, I would like to express my appreciation to the Food and Agriculture Organization and to the Settlement and Land Records Department for their joint effort in organizing this important seminar. I hope that this seminar will be able to review the strengths and weaknesses of the current statistical system in three main sectors of our country's economy: agriculture, forestry, and livestock and fishery.

I hope the topics to be discussed in this seminar prepared by our local resource persons will improve present statistical activities and will have great impact on the long-term development of our country's economy.

Nowadays, efforts are being directed towards increased food production, poverty alleviation and improvement of the socio-economic conditions of people in the global context. In developing countries, the majority of the population resides in rural areas and depends on agriculture, forestry, livestock and fishery for their livelihood.

In Myanmar, these valuable resources need to be properly managed for the development of the national economy. Through proper management of these resources, we can increase our wealth and can build our country into a modern and developed nation.

The economy of Myanmar has undergone many changes. The country followed a centrally planned economic system for a long time. Under the planned economic system, sufficient statistical data were collected and used for drawing and implementing plans for each sector in accordance with the prevailing economic situation. At present, our country has adopted a market-oriented economic system, and the private sector is increasingly playing an important role in economic activities. As our economy is in transition, the agricultural statistical system needs to be more responsive to changing market conditions.

Statistics play the most vital role in policymaking and the planning process as well as in business management.

Statistics made available must therefore be reliable and timely. Moreover, there should be a close link between data producers and data users. Cooperation among various

sectors also plays a vital role in planning and implementing development programmes in an integrated manner.

I hope the discussions in this seminar will provide a valuable outcome for the future development of the statistical system in relation to food and agriculture, and that it will recommend possible solutions to the existing constraints on processing, evaluating, using and disseminating statistics while reviewing the existing statistical system of Myanmar.

I also believe that this seminar gives an opportunity for statisticians to share experience in their respective sectors.

In conclusion, I would like to thank once again all those institutions and individuals, particularly the participants from the various departments, who will contribute in one way or another to the success of this seminar. I expect this seminar to be productive and to enhance the development of agricultural statistics. I, for one, do believe that our experts will serve the best interests of our country.

Thank you.

OPENING STATEMENT

DELIVERED BY MR FRANCIS RINVILLE, FAO RESIDENT REPRESENTATIVE

Your Excellency,
Distinguished Guests,
Participants and Colleagues,

It is my great pleasure to participate in this national seminar on food and agriculture statistics in Myanmar. On behalf of all FAO colleagues who are concerned with Myanmar's agricultural statistics, I would like to thank the Ministry of Agriculture and Irrigation for organizing this meeting.

The Union of Myanmar is an agriculture-based country. The agricultural sector contributes 51 percent of GDP and 48 percent of the country's exports.

To consolidate the agricultural sector in the role of economic leader, the Five Year Short Term Plan (FY1996/97 to FY2000/01) has placed priority on agriculture, livestock, fishery and forestry, and one of the economic objectives is the "development of agriculture as the base and all-round development of the other sectors of the economy".

Hence, improvement of agriculture and rural communities is a major challenge for the nation, particular for the 12 million people (63 percent of the labour force) who are engaged in agricultural production.

As regards agricultural statistics, only accurate data can contribute in planning, monitoring and evaluating agricultural development programmes. The strengthening of agricultural statistics in terms of collection, analysis and dissemination is even more imperative now given the recent shift to a market-oriented economy and the introduction of liberal investment policies.

It is extremely encouraging to note that Myanmar is one of the countries in the region which are investing in the improvement of their information system and are fully aware that well-focused development requires timely and reliable information. When the Japan-supported regional project which underpins this workshop, "Improvement of agricultural statistics in Asia-Pacific countries", was first presented at the Sixteenth Session of the Asia and Pacific Commission on Agricultural Statistics in Tokyo in 1996, Myanmar requested to be considered among the participating countries.

We at FAO are committed to assisting Myanmar in this development effort. Many among you will remember the assistance which was provided from 1984 to 1995 by FAO to Myanmar for the strengthening of the system of agricultural statistics and the undertaking of the agricultural census.

Under a technical cooperation project envisioned in 1984 by the government for the preparation of an agricultural census and the related national staff training, FAO assistance was considered within a broader perspective, encompassing the need to develop an integrated system of agriculture statistics. Consequently, the project “Agricultural census and strengthening of the system of agricultural statistics”, more ambitious than initially wished, was included in the government’s fifth four-year plan (86/87 to 89/90), as well as in the five-year investment plan (86/97 to 90/91) and the UNDP country programme. It started in September 1990 and was completed in December 1994.

The project activities were quite considerable but it is not the place here to elaborate exhaustively. It will be enough to say that, in addition and as a support to the assistance in the implementation of the 1993 Myanmar Census of Agriculture which covered practically the whole of Myanmar (272 townships in seven states and seven divisions), the project provided a wealth of training under fellowships (142 studies per month), nine work-months of study tours for 10 national counterparts and a wide array of in-service training.

But the main objective of the project was to develop a comprehensive and reliable system of statistics in Myanmar. This was achieved not only by carrying out the census of agriculture but, based on the results of the census, by preparing a plan of action for the establishment of a multi-year programme of agricultural statistics that would ensure a regular flow of agricultural data.

I will not elaborate on either the conclusions or the comprehensive and well-documented recommendations of this project. I only suggest that they be reviewed during the workshop.

In this context, allow me to emphasize that we view this seminar as an integral part of the continuing process engaged by FAO to help the government improve the quality and timeliness of its official statistics. We hope that the presentations during this seminar, which are focused on the review of the system of food and agriculture statistics in Myanmar, will help to revive a common understanding on how the data are collected at grassroots level, transmitted to the central government, processed and summarized and finally used for monitoring and adjusting agricultural policies and strategies. We also hope that this seminar, through an open and free exchange of views, will contribute to further improvement of food and agriculture statistics in Myanmar. It would certainly be extremely useful to refer to the above past project activities, conclusions and recommendations during this seminar. By doing so, you would add stones to a construction already solidly grounded in the local reality.

I would therefore like to encourage your active participation and frank discussions during this seminar to build on the existing legacy of national knowledge and skills and come up with useful new or updated conclusions and recommendations.

Finally, may I also express my best wishes for a fruitful meeting.

Thank you.

WELCOME SPEECH

DELIVERED BY U WIN KYI, DIRECTOR GENERAL OF THE SETTLEMENT AND
LAND RECORDS DEPARTMENT

Distinguished Guests,
Ladies and Gentlemen,
Good morning.

I feel greatly privileged to host this seminar. This seminar is a joint effort of SLRD and FAO with technical and financial support from the project called Improvement of agricultural statistics in Asia-Pacific countries. The seminar has a special significance; it focuses on food security. It in fact attempts to assess the status of food production within the country.

The agricultural sector still dominates the other economic sectors. It receives the highest priority in all development plans, agriculture-based industries being the next highest. Basic infrastructural development is being carried out. In 1950, the population of Myanmar was about 20 million. In 2001, it is about 50 million. The cropping system up until now has been monoculture. Rice is the staple food. We have a surplus for export of rice and rice products over domestic consumption. Since the size of the population doubled over the past 50 years, food self-sufficiency has begun to be an issue.

We are aware of the rising demand for food due to population growth. We are fortunate to have vast stretches of fertile land, a long coastline and an extensive forest cover. Moreover, we have four river systems. We have the natural resources to increase the capacity of our agricultural produce, including livestock and fishery.

We do recognize the need for reliable agricultural statistics. Our economic system is in transition; the change from a planned to a market-oriented system has caused problems in the flow and dissemination of data.

This seminar gives us the opportunity to bring together representatives from line ministries. Eight papers will be presented by resource persons. We have also invited users from the private sector. The response to our invitations has been very encouraging. I do hope that the discussions will be interactive, lively and illuminating. The deliberations of this seminar will be of great help to our future programme of action.

I would like to take this opportunity to extend my hearty welcome to all participants, in particular to our distinguished guests, Mr Hiek Som from FAO Rome and Mr Ryuki Ikeda, FAO Agricultural Statistics Expert. I am grateful to Mr Ikeda, who took the initiative to hold this seminar, and to his patience over the inconvenience caused by changes in the date for convening the seminar. Once again, I would like to thank the

heads of departments concerned, our secretariat, and the staff of IBC for their contributions towards the success of this seminar.

Thank you.

WELCOME SPEECH

DELIVERED BY MR HIEK SOM, CHIEF OF STATISTICAL DEVELOPMENT SERVICE,
STATISTICAL DIVISION, FAO ROME

Mr Chairman
Distinguished Guests
Ladies and Gentlemen

It is a great honour for me to be here for the seminar on the National System of Food and Agriculture Statistics in Myanmar. I have been to Myanmar before. I think this is my fourth time here. I still remember and am very happy to meet friends whom I met many years ago. Neither do I forget the support extended by the ministry and by the Settlement and Land Records Department for the holding of this seminar. From the ministry, I especially remember Dr Myint Thein, who was at the agricultural planning at the time.

I would like to thank SLRD for organizing the seminar. It is an occasion to get together for both users and producers of statistics in Myanmar. We at FAO are very happy to be associated to this exercise and hope that it will contribute to the development of the statistics system in the country.

Article one of the FAO constitution stipulates that the organization should collect, compile and analyse information on agriculture. As part of this duty, FAO collects information from the countries and publishes it in different forms, such as yearbooks, reports as well as a database, known as FAOSTAT, which provides data by country. Myanmar has contributed to our database, which is maintained mainly at FAO headquarters. FAOSTAT in electronic form has data since 1961. If you have an Internet connection, you can access the FAO website and you can see FAOSTAT within the framework of WAICENT, which is the FAO website, short for World Agriculture Information Centre. I would like to thank Myanmar for contributing to the database every year.

At FAO when we receive the data from the countries, we enter it into the database under the same format whenever possible, with a view to analysing it. Different types of analyses are done with data from member countries and from other sources of information. One example of FAO publications based on the analysis of data is *SOFA*, short for State Of Food and Agriculture. This publication is released every year and gives an overview of the situation of agriculture and of food in the world. Another important publication is *Agriculture towards 2015*. The latest version available looks ahead at fifteen years from now, or rather twenty from the time of publication. Both publications are based on the data that you have supplied to FAO. Another publication was brought out for the first time last year. It is entitled *SOFI*, short for State Of Food Insecurity. This publication presents the situation in different countries in the world to see where progress has been made in terms of fighting against hunger. I know that Myanmar does not have food problems or if there are, they concern very small areas or very small segments of

the population. The food surplus in Myanmar, on the other hand, contributes to the food supply of the world, through export or other mechanisms. *SOFI* is a sort of follow-up to the World Food Summit held in 1996. This publication will continue, I think, every two years or perhaps every year if we can find the budget for it.

Entering data into the FAO database is done by the Statistics Division of FAO. We know that countries have difficulties in getting reliable data. So as part of our efforts to contribute to the improvement of statistics collection, we publish methodological manuals. One of the publications on methodology comes under the programme of the world census of agriculture, which is carried out every ten years. The last publication came out in 1995 for the World Census of Agriculture 2000. To supplement the programme, FAO releases another publication, entitled *Conducting agricultural censuses and surveys*, which is in fact an update of a previous publication, *Taking agricultural censuses*. Through such publications, we hope the countries will benefit and improve their methodology in data collection.

Besides its programme of publications, FAO organizes workshops, additional training courses and sometimes training courses in the countries themselves. We provide technical assistance to countries through projects. Myanmar had received some assistance in the area of statistics. Mr Rinvile mentioned one this morning: the funding by FAO and UNDP of the agricultural census in Myanmar in 1993. Before that there was a technical cooperation programme in statistics and, more recently, around 1996 or 1997, the Ministry of Livestock and Fisheries had some assistance in statistics on fishery.

Over the last fifteen years, one of the priorities of FAO assistance has been to assist the countries in transition. Among the countries in Asia, there are six or seven countries in transition from a centrally planned to a market economy. This group of countries has received priority attention in the area of technical assistance, and I think we have been able to assist all the countries in transition. The latest one to receive assistance is the Democratic People's Republic of Korea, which, as you know, did not offer much cooperation in statistics in the past but which finally participates in many of the regional workshops organized by FAO.

Myanmar is a member of the Asia and Pacific Commission on Agricultural Statistics. Twenty-four countries of the region are members of the commission, which meets every two years at the invitation of member countries. The last meeting was held in Bali in November 2000, the one before in Australia, and the one before that in Tokyo in 1996, when the project to improve agricultural statistics in Asia and Pacific countries got started. Mr Ikeda will describe to you the activities of the project, current plans and what is likely to happen once the project is completed.

This national seminar is organized as part of the regional project and for us, it is very important to see the system of statistics develop and improve and in what ways the region and Myanmar can benefit from a regional exchange of information and data.

May I welcome you all to the seminar. Again, we are very grateful to the Settlement and Land Records Department for organizing the seminar. I wish you good deliberations and hope we will get very good recommendations thanks to your active participation.

Thank you.

OBJECTIVES OF THE NATIONAL SEMINAR

DELIVERED BY MR RYUKI IKEDA, AGRICULTURAL STATISTICS EXPERT, FAO RAP

1. Introduction of the project

This project was formulated following the recommendation of the sixteenth session of the Asia and Pacific Commission on Agricultural Statistics, held in Tokyo in October-November 1996. At the session, the importance of strengthening cooperation and the establishment of a system for the collection and dissemination of statistics among member countries of the commission were discussed. Japan expressed willingness to contribute in this matter and offered a budget for a trust-fund project to be executed by FAO. This project was approved and it actually started its activities in September 1998.

The two objectives of the project are to:

- Study national systems of food and agriculture statistics and organize national and regional seminars on the production and use of agricultural statistics, and national and regional workshops on specific issues.
- Formulate a plan for the establishment of a database and equipment facilities to provide a capability to transfer data in electronic format both to and from countries in the region, via FAO, using common concepts, standards and classifications.

Over the last several years, a number of country projects have been implemented at national level by FAO and other international organizations. This regional project is the first one to include most countries in this region in the field of agricultural statistics. The project covers 16 countries, namely Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, Iran, the Lao PDR, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand and Viet Nam.

Currently there are many issues on agriculture concerning international matters, such as trade, environment, freedom from hunger and so on. Accurate figures indicated by good statistics can greatly contribute to finding solutions on these matters. Demand for accurate and comparable statistics among countries will increase, and this project is expected to contribute to meet these needs.

2. Purpose of the seminar

This seminar aims to:

- Assess the state of national food and agriculture statistics service in Myanmar;
- Review existing food and agriculture statistical activities;
- Identify demands of and expectations from data users;
- Discuss problems and issues faced in the collection, analysis, use and dissemination of food and agriculture statistics; and
- Formulate recommendations for future improvement of the national food and agriculture statistical programme.

The seminar will serve as a forum for identifying data gaps, deficiencies in methodology, duplication of efforts or activities, and measures for improving or streamlining agricultural statistics.

Necessity of strengthening agricultural statistics

In most countries of the region, agriculture provides the foundation of industrial development. In Myanmar, beyond doubt, one of the main activities is agriculture, although industry and the service sector have been progressing rapidly.

As Mr Rinvile, FAO Resident Representative in Myanmar, already mentioned, agriculture accounts for almost 40 percent of GDP. The government of Myanmar intends to strengthen the agricultural sector as the basis of the national economy. Strong agricultural policies, therefore, are the mainstay of the country's development policies.

On the other hand, statistics can quantitatively represent the actual condition of society and the economy. This means statistics are like the soft infrastructure indispensable to contemporary society. These days, it is difficult to think of not using statistics of all kinds in the promotion of administrative and economic activities.

In the agricultural area, statistics also play the role of indicators for various policies of production, export, food supply and demand, etc. Furthermore, for qualified planning, formulation and evaluation of projects, basic data reflecting the actual situation is needed.

The need for accurate and timely statistics is well appreciated. In this connection, holding a national seminar at this time is highly significant.

I hope that this seminar will contribute to the improvement of agricultural statistics in Myanmar.

FIRST WRAP-UP STATEMENT

MADE BY MR RYUKI IKEDA, AGRICULTURAL STATISTICS EXPERT, FAO RAP,

I would like to thank you all for your active participation in this national seminar. Please allow me to mention my impressions on the exchanges we have had over the past two days.

Regarding the future of Myanmar agricultural statistics, I think there are two main challenges: the first is the development of the market economy; the second is agriculture modernization and internationalization. Because of these challenges, it is important to improve transparency. It is also necessary to obtain data on the private sector, and to cover new areas of data needs.

The introduction of the sample survey is of paramount importance not only for crops but also for livestock, fishery and forestry. Scientific methods of data collection are necessary. Crop surveys have long been carried out through complete enumeration. Such a method is costly and makes timely release difficult, although it worked well under a centrally planned economic system. It will become increasingly inadequate, however, as the market economy takes over.

There is no need to change all surveys to sample survey, as it is also costly and takes time, but at least the main items or main commodities should be covered by means of sample surveys.

I also think that it is important to implement the agricultural census. Fortunately, the Settlement and Land Records Department of the Ministry of Agriculture and Irrigation has a plan to implement a national agricultural census in 2003. This is very important, because in Myanmar only the agricultural census supplies data on the agricultural structure.

Data on production are needed not only in the country but also abroad, where such figures generate much interest. Their release will contribute to world food security as well.

Finally, a word on data dissemination: I think it is very difficult to say right now that data are released to all users, including the private sector and international society. The release of timely data is essential. This is why my project is considering an additional data system: this is a plan to introduce a database system through the Internet for all countries in the region.

Under the second phase of the project, the plan should take shape. May I take this opportunity to ask the government of Myanmar to join in this plan, too.

Thank you.

SECOND WRAP-UP STATEMENT

MADE BY MR HIEK SOM, CHIEF OF STATISTICAL DEVELOPMENT SERVICE,
STATISTICAL DIVISION, FAO ROME

Thank you very much Mr Chairman. I have actually the points that I want to say. They are similar to what Mr Ikeda has said. There is no need for me to repeat them. Let me simply focus on a few points to complement what has been said, and thus save time.

I noticed during the two days that there is actually plenty of data available in the country on the agricultural sector for crops, livestock, fishery and forestry. The data come from all the units concerned with production. So, when you need some data you will find them in the offices, and one thing that is probably still missing now in the system is dissemination, as Mr. Ikeda has pointed out. Probably my suggestion would be to have a schedule for releasing statistics at a certain date each year. If we could publish data on production of rice, data on livestock, data on fishery, specific times could be fixed for all types of statistics. Listing all the main ones will be a very important step forward.

One thing that I believe could improve the quality of data at least to, let's say, have a better impression or more confidence in the data, is supervision. I feel that now people in Yangon expect people from the divisions to report the data to them, the division fellows expect the same from the people in the townships, and so on down to the districts. Actually, in surveys this does not usually happen. People stay in their offices and wait for the forms to come. We have not really to chase but at least to monitor the progress of work and try to have people collecting the data to check the quality of the work. Checking the quality of their work is not to punish them. It's really to help and make sure that things are done properly. When enumerators or supervisors have problems in applying some concepts or in doing some specific work or even if they find problems in transmission, then a solution can be found during the operation. We should not look at supervision in statistics as a way to punish people for not doing their work well. What I propose is really to get our statistics right, and without supervision there is the problem of confidence in the data. This, I believe, is an important factor. So when you introduce sampling, do not forget the supervision to help the enumerators and supervisors to undertake their work properly and in time.

I think that the whole operation, the whole system in different units and different departments that undertake activities should be considered within the framework of an integrated system of food and agriculture statistics. We have looked at it as a whole during the two days, and that's good. The various departments are aware of what statistical activities are undertaken by other departments. But this is only a one-time thing, and each department may change course next year or two years from now. New activities may be undertaken, other cancelled, due to budgetary constraints or new priorities. I think something similar or another type of forum to bring together data users and producers would be a very good thing. See the censuses, agricultural censuses,

agricultural surveys, on crop yields, on crop production or on surveys on cost of production, surveys on livestock activities or livestock production. If all these were part of an overall programme, then with a prescribed list of publications or a list of statistical publications to be released according to schedule, that would be a very important aspect to look at.

Someone mentioned yesterday the food balance sheet as an exercise to check the consistency of data from various sources, especially between supply and use. One commodity in the country cannot supply or meet use in various forms. In the end, various statistics should show consistency; total demand should be equal to total supply in one year. And in the supply as in the demand, we should not forget that there is stock, whether in government warehouses or in private warehouses or at the household level. It was the director from the Central Statistical Organization who suggested this. But who will do it? I don't know. It was not clear. His organization could take this responsibility, since he suggested to have a food balance sheet or to study supply and demand for each commodity. We still expect somebody will do it. And maybe you can suggest which is the best organization.

Mr Ikeda has already mentioned the importance of crop forecasting; here again I think of when I took up the post of chief of the statistical development service one and a half years ago; my number-one priority was crop forecasting. My plan is to release a manual this year to be entitled *Statistical methods for crop forecasting*. I really believe that in the national statistical system, this is one of the main activities undertaken. And I hope in a few months, maybe by mid year or in the second half of the year, we will be able to bring out a manual on crop forecasting for use by different countries.

Finally, I would like to say that when we want to undertake a programme on statistics we need coordination. And I think there has been mention of coordination of various activities. I am not sure whether there is already a national committee on statistics or some working group. I know that when U Aye Myint presented the agricultural census this morning, he talked about the committee, the national committee on the agricultural census. There could be, there should be another committee either for all national statistics with subcommittees on food and agriculture or there could be a committee or working group on food and agriculture statistics. That is an important aspect, that committee could be established if it is not yet in existence. Then make it operational and the committee could meet once a year for example, to review the statistical activities of the various departments that produce statistics. So, coordination is an important aspect. I think that somehow, somewhere, some authority will have to establish a national coordination committee.

Thank you

CLOSING SPEECH

DELIVERED BY U WIN KYI, DIRECTOR GENERAL OF THE SETTLEMENT AND
LAND RECORDS DEPARTMENT

Distinguished Guests,
Ladies and Gentlemen,
Good evening.

It is indeed a great pleasure to be able to say a few words at this closing ceremony. We brought together representatives from line ministries: Agriculture and Irrigation, Forestry, Livestock and Fisheries, National Planning and Economic Development, and representatives from national NGOs. It is the first time that data producers and data users sit together and could share their views regarding the strengths and weaknesses of the current system of collection and dissemination of agricultural statistics in Myanmar. All the papers were informative. The presentations were excellent. The participants worked very hard during the four sessions, yesterday as well as today. We do appreciate the way in which the seminar has been conducted. Our distinguished guests from Rome, Mr Hiek Som, and from Bangkok, Mr Ryuki Ikeda, witnessed the enthusiasm shown by the participants; they too expressed their views. We are aware of the data needs of the changing world, particularly with respect to the fast-developing information technology. The participants with their practical experience and rich backgrounds did come up with workable ideas, approaches and suggestions.

Our secretariat has recorded on tape all the deliberations of this seminar, including comments from the chair. The salient points will be included in the proceedings of the seminar in due course.

We are improving the basic infrastructure in agriculture; more land has been brought under cultivation; new farming practices and agricultural machinery have been introduced. An assessment needs to be made regarding the adoption of new technology by farmers, the performance of modern farming techniques, and the cropping pattern.

We need to enhance inter-departmental cooperation. Farm-level, site-specific information is needed for developing appropriate technology to grow crops, raise livestock and promote fish farming.

I must say that the seminar has been very successful. We hope to meet again. Thank you for your presence, for your contributions, and for your hard work. May I now declare the seminar closed.

Thank you.