

Expert Consultation on Farmers' Income Statistics

Bangkok, Thailand
11 – 14 December 2007



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For copies write to: Senior Statistician
FAO Regional Office for Asia and the Pacific
Maliwan Mansion, 39 Phra Atit Road
Bangkok 10200
Thailand

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**Report of the Expert Consultation
on
Farmers' Income Statistics**



Food and Agriculture Organization of the United Nations
Regional Office for Asia and the Pacific
Bangkok, 11 – 14 December 2007

FOREWORD

The Expert Consultation on Farmers' Income Statistics was held at the FAO Regional Office for Asia and the Pacific from 11 to 14 December 2007. It was designed to contribute to the improvement of farmers' income statistics in the Asia and Pacific Region; to identify methodologies for collection and possible integration of surveys to obtain farmers' income data; to review processing of farmers' income data and identify appropriate strategies for imputation and analysis; and to make recommendations for optimal strategies for improvement of the collection and analysis of farmers' income data.

The lack of basic data has for long been a problem in establishing statistics on the economic situation of agricultural households. In most countries, the information available does not give a precise indication of the farm income situation. Farm families cannot be accurately classified according to their level of income. These limitations are a serious handicap in devising suitable policies and in assessing the results of measures taken.

Data on rural and farm households and on rural economies and environments are increasingly sought as measures of the efficacy of agriculture public policies. Accountability is more than ever a requirement in governance, in both developing and developed countries. Objective assessment of the well-being of a nation's households is one obvious important indicator of success. The need to quantify and understand the effects of government actions on economic well-being puts renewed emphasis on the careful selection of indicators and their policy relevance.

To fill these information gaps, alternative methods are needed to complete the analysis. This expert consultation helped to identify some of these approaches and illustrated the use of various analysis procedures. In addition, the consultation identified potential areas for regional technical development assistance to address constraints in the generation and exchange of useful statistics on farm income. Recommendations were put forward, bearing in mind that the ultimate objective of policy-makers and of FAO is to enable stakeholders to meet the Millennium Development Goal of halving the number of the world's malnourished by 2015.

Experts from Australia, India, Indonesia, Korea, the Philippines and Thailand, the Economic Research Service (ERS) of the US Department of Agriculture (USDA) and the Statistical Office of the European Communities (Eurostat), as well as concerned FAO technical officers from headquarters and the regional office, contributed to discussions on these issues and developed recommendations. It is hoped the summary account contained in this report will be useful to both decision-makers and information practitioners in meeting the Millennium Development Goal of halving the number of the region's malnourished by 2015.



He Changchui
Assistant Director-General and
FAO Regional Representative for Asia and the Pacific

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ACRONYMS

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
APCAS	Asia and Pacific Commission on Agricultural Statistics
ARMS	Agricultural Resource Management Survey
CABIG	Commercialization and Agribusiness Interest Group
CRS	Costs and Returns Survey
EAA	Economic Accounts for Agriculture
ERS	Economic Research Service
EU	European Union
EUROSTAT	Statistical Office of the European Communities
FADN	Farm Accountancy Data Network
FAO	Food and Agriculture Organization of the United Nations
IAHS	Income of the Agricultural Household Sector
IFHS	Integrated Farm Household Survey
LSMS	Living Standards Measurement Study
NASS	National Agricultural Statistics Service
PSU	Primary Sampling Unit
RAP	Regional Office for Asia and the Pacific
RIGA	Rural Income Generating Activities
SAS	Situation Assessment Survey
SNA	System of National Accounts
SSU	Secondary Sampling Unit
USDA	United States Department of Agriculture

Report of the Expert Consultation on Farmers' Income Statistics

OPENING SESSION

(Item 1 of the Agenda)

1. The *Expert Consultation on Farmers' Income Statistics* was organized by the Regional Office for Asia and the Pacific (RAP) of the Food and Agriculture Organization of the United Nations. It was held in the premises of the FAO Regional Office in Bangkok, Thailand, from 11 to 14 December 2007. The Expert Consultation was attended by a total of 16 participants, including six experts from various countries of the region and six experts from the US Department of Agriculture (USDA), Eurostat and FAO. Four observers, one each from the Ministry of Agriculture and Cooperatives and the National Statistical Office of the Government of Thailand, and two from the Ministry of Agriculture, Centre of Agriculture Data and Information, Indonesia, also attended the Expert Consultation.

2. The Expert Consultation was inaugurated by Mr HE Changchui, FAO Assistant Director-General and Regional Representative for Asia and the Pacific. In his opening address, Mr He welcomed all the participants on behalf of the Director-General of FAO and on his own behalf. Mr He explained that the Expert Consultation was one of the mechanisms in FAO for focused discussions on specific issues of special interest and as a means to gain feedback into the Organization's definition of policies and programmes.

3. Mr He pointed out that collection of farm income data was notoriously difficult due, among others, to the tedious collection of a large number of items associated with income as well as expenditure, and the farmers' reluctance to disclose information. He added that underestimation of farm income and gaps in data distorted or blurred the vision of policy makers in governments and international development organizations, and handicapped the optimal allocation of resources by national and international financial systems such as the World Bank and Asian Development Bank. He noted that the discussions could shed further light and correct perceived distortions. Reliable information on farm income could also enable better monitoring of the effect of policies addressing rural poverty.

4. He noted that during the Expert Consultation, experiences would be shared by the participants by reviewing methodologies for collection and analysis. He encouraged the participants to formulate recommendations and strategies for improving the collection and analysis of farmers' income data. He said that ways and means could be formulated for national statistical organizations in the region to improve the collection of farmers' income statistics, taking into consideration individual countries' capabilities and limitations. It could also be possible to identify potential national or regional technical development assistance that would provide relief to identified national and regional level constraints in the generation and exchange of useful statistics on farm income. As a result, governments, FAO and its development partners would be in a better position to address incomplete and missing data using various types of analyses for decision-making. The results of the Expert Consultation, Mr He added, would be reported at the 22nd Session of the Asia and Pacific Commission on Agricultural Statistics (APCAS) to be held in Malaysia in June 2008. The full text of Mr He's speech is given in Appendix C.

INTRODUCTORY MATTERS

(Item 2 of the Agenda)

5. Jairo Castano, Senior Statistician, FAO RAP, Bangkok, acted as Secretary for the Expert Consultation. He thanked the FAO Assistant Director-General and Regional Representative for Asia and the Pacific for his enlightening address, his support and assistance.

6. The Experts elected Mr Vince O'Donnell (Australia) as Chairman, Mr David Banker (USA) as Vice-Chairman and Mr Elmer Barrios (FAO Consultant) as Rapporteur. After minor modifications, the Agenda and Timetable (Documents STAT-INCOME-1 and STAT-INCOME-2) as given in Appendix A were adopted. The Experts and Observers who participated in the Expert Consultation are listed in Appendix D. The list of documents is contained in Appendix B.

BACKGROUND FOR THE EXPERT CONSULTATION AND OBJECTIVES

(Item 3 of the Agenda)

7. Mr Castano, in STAT-INCOME-3, provided some background for the Expert Consultation. He indicated that regional Expert Consultations on statistics were organized by FAO RAP every two years. The most recent Consultations included:

- Expert Consultation on Analysis and Dissemination of Census and Survey Data, July 2005.
- Expert Consultation on Livestock Statistics, July 2003.
- Expert Consultation on Agribusiness Statistics, September 2001.
- Expert Consultation on the Development of Agricultural Statistics for Food Policy, July 1999.

8. Mr Castano noted that at the 2006 APCAS session held in Phuket, Thailand, participants recognized the serious weaknesses faced in rural household income and expenditure statistics and the obstacles that these weaknesses presented to devising suitable agricultural policies and in assessing their effectiveness. This led to the organization of an Expert Consultation on the topic.

9. He explained that the general objective of this year's Expert Consultation was to contribute to the improvement of farmers' income statistics in the Asia and Pacific Region. More specifically to:

- identify methodologies for collection and possible integration of surveys to obtain farmers' income data;
- review processing of farmers' income data and identify appropriate strategies for imputation and analysis;
- recommend optimal strategies for improving the collection and analysis of farmers' income data.

10. He pointed out that since the ultimate objective was to enable the region to meet the Millennium Development Goal of halving the number of the world's malnourished by 2015, the Expert Consultation would focus on procedures and analyses related to formulation, monitoring and evaluation of relevant policies.

FARMER INCOME DATA FOR DECISION MAKING

(Item 4 of the Agenda)

Methodologies for Collection of Farmers' Income Data

11. Five papers from Thailand, Indonesia, the Philippines, CABIG and Eurostat on existing methodologies for collection of farmer income data were presented in this agenda sub-item.

The Farmer Income Statistics Survey in Thailand

12. In STAT-INCOME-4, Ms Sudjai Chongvorakitwatana, Senior Economist of the Division of Farm Households Socio-economic Research, Bureau of Agricultural Economic Research, presented the features of the process on how farmer income statistics were generated in Thailand.

13. She pointed out that farm income data was collected through the Socio-economic and Labour Force Household Survey usually conducted every two years as a data support in the monitoring and assessment of the attainment of goals of the National Economic and Social Development Plan. The survey uses a two-stage stratified sampling design with farming activities as the stratification variable, the villages as the primary sampling unit (PSU) and the households as the secondary sampling unit (SSU). A total of 3 000 villages representing 4.41 percent of all villages are proportionally allocated to the seven strata (agricultural activities). In a sample village, the household is a qualified respondent if they reside in the village for over 6 months and engage in farming activities (not necessarily within the village). Eight households are drawn in a sample village: four are used as the samples while the other 4 serve as possible substitute samples. The survey collects a wide variety of information on various income sources of the farmer as well as the possible determinants/correlates of such incomes.

14. She indicated that the growing cost of survey operations had resulted in requests for budget increases in every survey round. The major users of the data were policy-makers, especially in the agriculture sector, wishing to formulate options that could raise farmer income and improve their well-being. Ms Chongvorakitwatana indicated that farm household income averaged around US\$3 600 a year.

15. She added that two steps were being considered to improve the collection of socio-economic and labour force data in the future. First, the use optical scanning technology in digitizing the data to improve efficiency in data processing. Second, the conduct of a major survey every two years and a minor survey (i.e., with a reduced sample size) in-between for updating purposes.

16. When asked about techniques to encourage farmers to participate in the surveys, she clarified that some farmers were paid for their time. The experts noted that increases in budget for socio-economic surveys were difficult to pursue due to budget allocation priorities within the countries. They agreed that requests for budgetary increases could be facilitated when the decision-makers were convinced on the importance of the data produced from the survey. The experts also noted the growing importance of off-farm income, which in Thailand averaged at around two-thirds of the total farm income. It was noted that non-farm income was a way of hedging against seasonal income and vulnerable harvests as well as a result of national programmes promoting diversification of income sources. The Chair agreed that measurement of non-farm income was an important issue and even raised the issue of what aspects of farmers'

income should really be measured, which would depend on the intended end use of the data. Regarding optical scanning, some experts mentioned negative experiences due to poor scanning quality. In some countries, the technique resulted in double work as scanned survey data was often unclear.

Methodology of Data Collection in Farm Income Surveys: Indonesia's Experience

17. Mr Ardief Achmad, Director of Agriculture Statistics, BPS-Statistics Indonesia, presented STAT-INCOME-5 describing the Indonesian experience in generating farm income data. He highlighted the need for farmer income data since a big proportion of income at national and regional levels came from agriculture. The 2004 Farm Income Survey (SPP04), a part of the Agricultural Census of 2003, was the latest exercise undertaken by Indonesia.

18. Covering 1.42 percent (or 357 770 farms) of the total agricultural households, the survey used a two-stage probability proportional-to-size sample design with census blocks within the villages as the primary sampling units and the agricultural households as the secondary sampling units. Data collection through a face-to-face interview was completed in one month. According to Mr Achmad, farm household income was less than US\$1 000 a year in Indonesia as compared to US\$4 626 of income per household in the whole country. Non-farm income for the agricultural household was estimated at about 30.54 percent of the total income.

19. He cited limited budget, trained enumerators and other skilled personnel as the main constraints for the undertaking of farm income surveys in Indonesia. He noted that a country like Indonesia required around 9 000 enumerators for the Farm Income Survey and 200 000 enumerators for the Agricultural Census. He added that before the economic crisis in 1997, the survey was undertaken every three years but frequency became a problem thereafter. The above constraints were compounded by the large number of small farm households (over 25 million, averaging 0.3 ha) and the geographic barrier posed by farms located in remote islands of the Indonesian archipelago. In the latter, survey costs rose sharply and data quality suffered, leading to the replacement of samples.

20. The Experts agreed that data collection in remote areas was an issue in several Asian countries. The difficulty in accessing remote areas easily contributed to high survey costs, forcing a significant reduction in sample sizes and affecting therefore precision. One Expert suggested the used of localized sampling in such areas, reducing sample size and survey frequency.

Data System for Farm Income in the Philippines, from Collection to Use: Strengths and Weaknesses

21. In STAT-INCOME-6, Ms Maura S. Lizarondo, Assistant Director, Bureau of Agricultural Statistics (BAS), Department of Agriculture in the Philippines discussed how her bureau collected farmer income data. She identified two sources of data: the Costs and Returns Survey (CRS) and the Integrated Farm Household Survey (IFHS). The CRS (targeting specific producers of commodities) was planned to be conducted every five years for the benchmark with annual updating. However, budget and logistics problems restricted the planned frequency due to the large number of crops, fish species and animals commonly produced throughout the country. The IFHS, in turn, was intended for implementation every two years, but since 1988 there have been only three surveys conducted so far, the last one in 2003.

22. She pointed out that the IFHS covered all provinces (domain) and farm households were selected using a two-stage sampling design. It aimed to produce detailed information on the dynamics in which the farmers generated income. CRS intended to collect the financial structure of producing certain agricultural commodities and not total farm income. The samples were selected purposively to capture different segments of the producing population for certain crops. She added that the large volume of commodities, the highly volatile crop production cycle and the increasing cost of survey operations yielded many constraints in the implementation of the two surveys and in the collection of farm income data. The farm household income was found to be at around US\$2 125 in 2002-2003, with off-farm and non-farm income accounting for 36 percent of the total.

23. Ms Lizarondo said that a recent review on CRS and the IFHS had raised questions such as: What else can these statistical inquiries offer as statistics and indicators of farmers' welfare through time? What statistical data can be appropriately updated to indicate farmers' welfare? What other types of data presentation can be made out of the survey data? Is there a way to streamline the surveys to make them more affordable and frequent? She added that an in-depth analysis of the recent rounds of the CRS and the IFHS was necessary to learn some insights on how to improve the data systems, including the possibility of integrating them. Strategies were being identified in generating data for the various demands given the available data.

24. In the ensuing discussion, some Experts argued that while integration of surveys might potentially conserve the limited resources, data quality could suffer because of the possible response burden it could create on the respondents. The issue of whether to measure farmer income in the context of household welfare or a market-oriented entity was raised. It was clarified that the goal of the consultation was more directed towards the generation of income in a household welfare context.

Ideas and Suggestions from CABIG on Farmers' Income Data

25. In STAT-INCOME-7, Mr Jo Cadilhon, Marketing Officer, FAO RAP, Bangkok, put forward some ideas of the Commercialization and Agribusiness Interest Group (CABIG). He noted that the main interest of the group was the dynamics that happened beyond the farm-gate and how these impacted on producers' management practices.

26. He suggested considering the collection of data on various employment sources among rural households to provide information on the extent of off-farm activities. He said that information on the different production outlets, different prices involved and marketing arrangements, and the nature of the buyers were also needed. In the surveys, he suggested to consider stratification by farming systems and cited the EU network of farm income statistics (see next presentation) as a useful model.

27. Although agreeing in principle on the usefulness of beyond-farm data, the Experts recognized that the generation of such information would be very difficult and costly in Asia. They were of the view that data collection systems in developing countries, unlike in Europe, were already heavily burdened with budget constraints. With regards to information related to the type of marketing contracts, the Experts indicated that it might be more appropriate for large commercial farmers than for the mostly subsistence farmers in Asia.

Farmer Income Data for Decision Making in the EU

28. Mr James Whitworth, Head of the International Statistical Cooperation of the Statistical Office of the European Communities (Eurostat), presented, in STAT-INCOME-8, the flow of farmer income data in the EU. Mr Whitworth said that Eurostat did not collect but compiled all the data provided annually by all member states. He noted that the special character of the European Commission on the right to propose legislation and monitor compliance with the law facilitated Eurostat work. Legislation on farmer income data generation compelled all member countries to submit data for the Eurostat to compile.

29. He explained that farmer income data came from three different sources: Farm Accountancy Data Network (FADN); Economic Accounts for Agriculture (EAA); and Income of the Agricultural Household Sector (IAHS). FADN used a uniform questionnaire that collected data on crop areas, livestock inventory, labour force, and other physical and structural information on the farm. In addition, economic and financial data were also collected. The EAA was intended to analyse the production process and primary income generated by it. The IAHS monitored year-on-year changes in total income of agricultural households at the aggregate level in the member states. It also monitored the changing composition of income.

30. Mr Whitworth informed the Experts that before the FADN, member states conducted surveys based on farm accounts, and as such, had already established their own sampling plans. The technical sophistication of such plans, however, varied among member states. He recognized that while the participation of farmers in account keeping was voluntary, the number of participants was gradually increasing.

31. In the subsequent discussion, Mr Whitworth clarified that the Eurostat defined the output (statistics) while member states decided how to collect the data. However, countries used a standardized format of reporting to facilitate compilation of Europe-wide data. The Experts noted the degree of sophistication and efficiency of the EU agricultural statistics. However, they also noted that, unlike in Asia and the Pacific, EU countries were more homogeneous, facilitating farm data collection and standardization. Furthermore, EU farmers might be also more willing to supply or kept accounting data since they benefited from EU subsidies. When asked about data quality from new EU member states, Mr Whitworth clarified that it was addressed during membership negotiations and by appropriate training.

Review of Possible Integration of Surveys to Obtain Farmers' Income Data

32. Farmers' income data can be generated from available surveys and other data sources. In this agenda sub-item, two papers from Australia and India discussed how information from surveys can be integrated to generate farmers' income data.

Monitoring Farm Financial Performance through Surveys

33. In STAT-INCOME-9, Mr Vince O'Donnell, Manager of Commodity Outlook, Australian Bureau of Agricultural and Resource Economics (ABARE), Department of Agriculture, Fisheries and Forestry, presented the surveys that Australia used in monitoring the financial performance of farms. He said that ABARE and the Australian Bureau of Statistics (ABS) collaborated in the collection of agricultural statistics, with the industry providing up to 50 percent of the funding for some data collection activities undertaken by the former. He informed the Experts that surveys were conducted every year for the cropping, beef, sheep and dairy industries and less

frequently for other industries. He said that ABS was the principal organization responsible for statistics in Australia. In addition to the agricultural census conducted every five years after the population census, ABS also conducted an annual commodity survey. Both these ABS surveys were focused primarily on production.

34. Mr O'Donnell explained that ABARE's surveys collected an integrated schedule of financial, physical and socio-economic variables. Most ABARE surveys target commercial farms with agricultural operations of more than AU\$40 000. Commercial farms account for the largest proportion of Australia's farm output. The main purpose of the ABARE farm surveys was primarily as input into policy analysis by government and industry to support decision making. The resulting research database also supports economic understanding of the rural sector and assists in measuring productivity.

35. He said that a list of the entire population of farms served as a base for sampling the population. Surveys were either regular (broadacre industries, dairy industry) or occasional (forestry, winegrowers, fisheries, and other industries). The Australian Taxation Office's business register, through the ABS, provided the frame for agricultural survey (formerly from the census). The frame is matched to the agricultural census which includes identifiers, industry classification, indicator of size, and geographic classification. He explained that agriculturally, Australia was divided in three broad zones: pastoral (5 000 'commercial' farms), wheat-sheep (54 000 'commercial' farms) and high-rainfall (57 000 'commercial' farms) zones.

36. The sampling plan is developed with the aim of estimating means, changes and distributions at various levels. The rotation scheme of dropping around 25 percent of the sample and maintaining the other 75 percent for the next round produces a panel data and allows time series analysis to be done. Stratification initially involves a three-way classification: state, ABARE region and industry. Farm size is also included in the classification. Non-response has not been a major issue but there are at least two reserve selections made for each primary selection to ensure the sample remains representative.

37. Mr O'Donnell noted that sample weights were generated for each sample farm and constrained to sum to population totals of key variables (supplied by ABS). Key variables included the population count, number of livestock and areas sown to key crops.

38. He informed that new developments in farm income surveys included the use of geospatial data, which linked geographical and other scientific data with financial performance. He noted that online databases (Agsurf-programme) were also available and could be used to view estimates (average per farm) for variables collected in the survey. He added that ABARE survey data could also provide support in the analysis of the relationship between productivity growth and environmental protection, climate change, water allocations, and access to new technologies (e.g., GMO).

39. Responding to the Experts, Mr O'Donnell clarified that the survey data was collected through a mixture of face-to-face and telephone (relatively simple and straightforward data) interviews. The decision of which method to use depended on the complexity of the data to be collected. For many interviews data were entered directly onto computers. He noted that data-consistency checking started from the field. Information from the farm was cross-checked with those from other sources, e.g., accounts and marketing outlets. Following that, data were subject to intensive electronic probing. Non-response rate was noted to be low particularly for farms being interviewed in subsequent years. He said that individual farmers could get online access to survey results and compare their data to the average within their regions.

40. The Experts noted that support for data collection in Australia came not only from the public sector but also from the contribution of the private sector who found utility in the data. They believed that this could be an approach to the budgetary constraints in developing countries, which affected the regular collection of farmers' income data. They said that a more intensive advocacy campaign was yet to be done to encourage potential beneficiaries of the data to contribute in funding to data collection.

41. The Experts praised Australia's approach to provide information back to the farmers. They noted that the inability of some institutions to put farmer income data into the mainstream of data collection could be contributing to the difficulty in collecting farmer income data. Weak data could be explained by the lack of awareness among the farmers on their potential benefits from using the data. The Experts agreed that the challenge was on the identification of appropriate venues to disseminate the information to the different users including the data providers themselves.

42. The Experts noted the growing use of geospatial tools and satellite images in the collection and cross-checking of farm data. They also noted that these tools were becoming less expensive and its applications improving. The experts agreed that it would be worthy to explore the utilization of satellite technology in the improvement of collection and dissemination of farmer income data.

Developing Appropriate Survey Methodologies to Obtain Reliable Income Data of Farmers: Challenges and Plausible Ways and Means

43. In STAT-INCOME-10, Mr Gurucharan Manna, Deputy Director General, National Sample Survey Organisation, Survey Design and Research Division of the Ministry of Statistics and Programme Implementation of the Government of India, presented the challenges and plausible solutions in the generation of farmer income data. He said that income data was a valuable input in the understanding of farmers' conditions, but difficult to collect and often under-reported. He suggested the use of consumer expenditure or the integration of consumption and savings data as proxies for farmer income.

44. To illustrate his point, Mr Manna described a pilot survey conducted in 1983-1984 that adopted a stratified two-stage design with villages as the primary sampling unit (PSU) in rural areas and urban blocks as the PSU in urban areas. The households served as the ultimate sampling units. In each PSU, the sample households were equally divided into three groups: Set 1 was enumerated with income data only; Set 2 with consumption and savings data; and Set 3 with income, consumption and savings data. When compared household income with consumption plus savings, averages were found to be similar in urban areas, but very dissimilar in rural areas. The average farm household income was 30 percent lower (Set 3) or more (Sets 1 and 2) than the average of consumption plus savings, suggesting under-reporting of income.

45. Mr Manna explained that a Situation Assessment Survey (SAS) was later conducted in 2003, covering all Indian farm households. The survey collected data on land possession, assets, access to modern technology and income, among others. A stratified two-stage design was used and data was collected in two visits to reduce the problem of memory recall. The survey covered 51 770 households from 6 638 villages. A farmer was defined as one who possessed some land and was engaged in agricultural activity on any part of the land in the last 365 days. Average household monthly income (2 115 rupees) was found to be about 76 percent of average household monthly consumption expenditure. The extent of divergence between the two

estimates varied across states, with 13 out of 18 major states reporting income lower than consumption. Although other non-farm income such as remittances was not included, it was deemed as negligible source of discrepancies.

46. To address under-reporting in income, Mr Manna put forward several suggestions, including use of a sampling frame mixing a list frame (LF) and an area frame (AF), with LF ideally for large farms; use of appropriate stratification before sampling of households/farms; organization of the questionnaire into manageable blocks; collection of data in successive visits to minimize memory bias; estimation of a correction factor for income based on data on income, consumption and savings collected from a from a sub-sample of households; and creation of public awareness among the respondents about the utility of income data.

47. The Experts noted the problems associated with under-reported income and agreed on the need for a study in the subject. It was further noted that one possible reason for income to be lower than consumption was that some components of income might not be thoroughly accounted for. The Expert pointed out that in household income measurement, under-reporting was usually encountered because of the difficulty in collecting information on non-cash income and expenditures. Some Experts noted that the framework in the Living Standards Measurement Study (LSMS) could be considered since it provided a systematic procedure of imputing non-cash income and expenditures.

PROCESSING AND ANALYSIS OF FARMER INCOME DATA

(Item 5 of the Agenda)

48. Once the farmer income data is collected, processing and analysis does not easily follow. A tedious procedure of evaluation and validation are done before the data becomes available for the intended use. Four papers from the USA, Korea and FAO on methodologies for processing and strategies for imputation and analysis were presented were presented in this agenda item.

Methodologies for Processing and Analysis

Processing and Analysis of USDA's ARMS Survey

49. Mr David Banker, Agricultural Economist, Economic Research Service (ERS) of the US Department of Agriculture (USDA) presented, in STAT-INCOME-11, a summary of current methods used in the processing and analysis of farm business and farm operator household data for US farm operations collected in the Agricultural Resource Management Survey (ARMS). He described ARMS as an annual survey collecting data from farm operators on the farm business, the farm operation, commodity production practices, and characteristics of the farm operator and the operator's household. The survey is conducted in three phases: Phase I is a screening survey used to identify farms that are in scope; Phase II collects data on production practices and costs for targeted crops; Phase III obtains information on the farm business, the operator's household and production practices and costs for targeted livestock operations.

50. He said that while the Phase III survey used both list and area frames the list frame is predominant, accounting for nearly all samples in recent years. The target population was all farms (excluding institutional farms) in the 48 contiguous states (Alaska and Hawaii excluded) defined as those that sold or normally would have sold at least US\$1 000 of agricultural production in the survey year. Samples are selected to provide estimates at the national, regional, and state level for 15 core states (those with the highest agricultural cash receipts). Within each state, farms in the list frame are stratified by size and type while area frame samples within each

state (which are segments of land), are stratified by land use characteristics. Reporting units in the area frame are farm operations with farming activity within the selected land segments.

51. Mr Banker explained that ARMS data was collected by the National Agricultural Statistics Service (NASS) and subject to extensive editing and analysis by both NASS and ERS personnel. Post-processing by NASS includes survey weight adjustments for outliers, unit non-response, coverage of production levels of major commodities and farm numbers, as well as item imputation for non-response. ERS provides additional data editing, analysis, item imputation, and variable creation.

He said that at NASS, editing was first done manually on paper questionnaires and then electronically on individual reports as well as at the macro level. SAS computing procedures checked for errors in coding, physical relationships (such as yield limits), and simple economic relationships between interrelated questionnaire cells.

52. Mr. Banker noted that the NASS imputation procedure involved the identification of “donors” (records with non-zero data) which were placed in imputation groups based on locality, farm type and value of sales. After excluding extreme values, un-weighted means were computed for each group to replace missing item values. He explained that after receipt of the raw survey file from NASS, ERS further reviewed and edited the data before creating a research database. He also noted that ERS added several hundred variables in the research database that were typically calculated from combinations of various survey items.

53. During the subsequent discussion, the Experts praised the systematic approach for data review, imputation and analysis of the USDA. Mr Banker explained to the Experts that for ARMS Phase III, a survey report outlier was identified by its weighted total expenses relative to total weighted expenses at the national level and/or regional level. Following identification, outliers were reviewed for potential adjustment by an official USDA board comprised of NASS and ERS personnel. For targeted crops (selected on rotating basis), field level crop production practice and cost information were obtained in Phase II. Field to farm expansion factors (weights) then provided crop production practice and cost information at the farm level. The same farms were then contacted again in Phase III to obtain farm business and operator household information. For targeted livestock commodities, all production practice and whole farm/farm household data were obtained in Phase III.

Strategies for Overcoming Data Limitations

Optimal Strategies to Improve Collection and Analysis of Farmers’ Income Data

54. In STAT-INCOME-12, Mr Kyeong-Duk Kim, Chief of International Rural Development, Korea Rural Economic Institute, presented statistical data collection, analysis and dissemination in the agriculture sector with information technology (IT). He explained that there were two censuses conducted every five years: one on population and housing, and another on agriculture. The censuses served as the frame for the Survey of Integrated Farm Household Economy conducted every year, which covered about 33 000 households (4%). The survey panel was partially replaced every year mainly due to drop outs. Every 5 years, new samples were drawn. Provincial (state) level data on production and cost by commodity, and supply and demand situation were collected. Mr Kim said that farm income accounted for about one-third of the total farm household income which averaged just above US\$30 000 a year. He added that the average farm size in Korea was relatively small at 1.4 ha.

55. When asked about further details on income data collection, Mr Kim explained that income data was collected/generated in two stages. First, the questionnaire was provided ahead of time so the farmer could familiarize with the kind of data to be collected. When face-to-face interview was done, it was shorter and mainly devoted to minimal data probing and to educating farmers on proper book-keeping techniques. Hand-held computers were also used in data collection. The second stage consisted of data input into an internet-based system already containing information of costs and prices. Mr Kim said that statistics on income and other household data was disseminated online. There, farmers had access to information on prices, production and weather, both current and forecast, among others, to facilitate their decision-making processes. He added that this was an effective way to encourage farmers to provide reliable information. In return for cooperating in data collection, the farmers benefited in terms of information and government protection in terms of tariff levied on imported agricultural commodities. He said that the National Statistics Office was responsible for data collection while other agencies such as the Agricultural Outlook Center were in-charge of data utilization and dissemination.

56. The Experts asked about coverage of internet in Korea. Mr Kim informed that internet coverage in the country was very advanced, with ADSL internet connection available even in remote areas either at individual farm or community level. He said that extension services were provided to educate farmers in internet usage but acknowledged problems with old farmers unwilling to learn the technology. When asked about its possible applicability in other Asian countries, Mr Kim said it was plausible since the size of Korean farms was also very small. Although the initial implementation cost could be high, he said that in countries like Thailand, rice farmers could be persuaded to contribute financially since the information would help them to plan their marketing strategies. Mr Kim also stressed the use of increasingly inexpensive satellite technology. The Experts agreed that the use of information technology could also contribute to the efficient generation for farmer income data.

Generation of Farmers' Income Data

57. Mr Erniel Barrios from the School of Statistics, University of the Philippines and FAO Consultant, introduced, in STAT-INCOME-13, three methods that could be used in generating farmers' income from existing data. The methods were proposed to fill in data gaps in years when surveys to collect farmer income data were not undertaken.

58. The first method integrates data coming from multi-purpose household surveys such as the LSMS as well as from production surveys. During years where the LSMS is conducted (frequency of data collection vary from 2 to 5 years across developing countries), farmers' income can be estimated over sub-domain. For non-LSMS years, a linear regression model can be estimated with panel data, involving income data from LSMS as the dependant variable and yield/production, area harvested, irrigated area, etc., from the production survey, as the independent variables (see below). Farmers' income for non-LSMS years can be predicted from the model.

$$y_{it} = \beta_0 + \beta_1 x_{it} + u_i + \varepsilon_{it}$$

Where y_{it} = income for domain/group i at time t
 x_{it} = auxiliary variable for domain/group i at time t
 u_i = random effect for domain/group i
 ε_{it} = random error for domain/group i at time t

59. The second method is based on a quasi experimental design usually adopted in impact evaluation surveys. The survey usually considers the whole area where the project was implemented as the domain. Sample areas are drawn in two-stages. In the first stage, sample areas/villages are selected while in the second stage sample farming households (about 10-20) are drawn from each sample area. The respondents are selected so that they provide the indicators or at least some proxy variables of the project impact.

60. The third method collects community-level data that are needed to monitor progress in rural programmes. Data collection is a combination of administrative reports, focused group discussions and key informants interview. Data is used in the identification of the kind of development intervention package to foster development in the communities.

61. Mr Barrios illustrated the three methods using data from the Philippines. He clarified that the methods were applied on different instances and different data sets, therefore comparisons were unnecessary. Income data estimates from the quasi experimental design and rapid assessment methods were comparable to those generated from a probability sample (i.e., LSMS). For the linear model, production, harvest area and yield of different crops/livestock as well as growth in regional GDP were considered as independent variables. However, only rice and corn yields (the two most important agricultural commodities in the country) were significant. The adjusted coefficient of determination was a reasonable 63 percent while the mean-absolute-prediction error (MAPE) was only 7 percent.

62. He said that by using these methods, the generation of income data could be inexpensive while producing reasonable estimates at a regular frequency. He added that in the absence of a data collection activity aimed at estimating farmer income, existing data coming from different sources could be combined to come up with reasonable estimates. He pointed out that if the goal was to focus on specific farmers' segment, sampling design might deviate away from the usual probability sampling and consider a purposive sampling or even a rapid assessment strategy that uses a combination of the different data collection strategies.

63. The Experts praised the presentation and agreed on the need for suitable methods for generating farm income data in years where there were no farmer income surveys due to budgetary or other constraints. However, they questioned the fact that the income function as shown in the first method was excluding prices. Mr Barrios indicated that price and other variables were accounted for by the inclusion of a random component into the model, which was estimated a priori. Some experts suggested the inclusion of non-farm variables as regressors of income. It was clarified that LSMS samples used sampling rates ranging from 1-5 percent among developing countries.

Appropriate Strategies for Imputation and Analysis

Rural Income Generating Activities (RIGA) Study: Income Aggregate Methodology, Issues and Considerations

64. In STAT-INCOME-14, Ms Katia Covarrubias, Economist/Consultant, Agricultural Development Service, FAO, presented the Rural Income Generating Activities (RIGA) project implemented by FAO. She indicated that the RIGA project aimed at measuring and characterizing rural income generating activities in developing countries. The project has worked with selected surveys from Africa (Ghana, Madagascar, Malawi and Nigeria), Asia (Bangladesh, Indonesia, Nepal, Pakistan, Thailand and Viet Nam), Latin America (Ecuador, Guatemala,

Nicaragua and Panama) and Eastern Europe (Albania, Bosnia-Herzegovina and Bulgaria). It also helps to fill research gaps, build platform or protocol for future data collection, construction and analysis, and to contribute to rural development policy.

65. Ms Covarrubias pointed out that the processing of cross-country data varied according to methodology (although many used the LSMS framework), reference period, concepts and definitions, which caused problems in the comparison of income statistics across countries and over time. In order to achieve consistency and comparability, some standard definitions were adopted by the RIGA project. With regard to imputation, she indicated that the presence of outliers in cross-country data was common. The project defined an outlier to be +/- 3 standard deviations cutoff from the median value of a relevant population subgroup (e.g., crop type if checking crop sales income). She said that the project was exploring alternate approaches to deal with other extreme values.

66. In aggregating cross-country data on shares of various income sources to total income, Ms Covarrubias mentioned that the project encountered the problem of whether to use mean of shares or shares of means. The *mean of shares* reflected more accurately the household-level diversification strategy, regardless of the magnitude of income; while the *share of means* reflected the importance of a given income source in the aggregate income of rural households in general or any given group of households. If the distribution of the shares of a given source of income was constant over the income distribution, the two measures gave similar results. If however, for example, those households with the highest share of crop income were also the households with the highest quantity of crop income, then the share of agricultural income in total income (over a given group of households) using the share of means would be greater than the value using mean of shares.

67. The Experts praised the efforts made by FAO in measuring and characterizing rural income in developing countries. They recognized the need for more consistency in the collection of farm income and other socio-economic data across Asia-Pacific countries. The Experts felt that in survey design construction, the following issues should be properly planned: reference periods and survey frequency; units of measurements and equivalence tables; data validation (consistency in reporting across data modules); geographic referencing information (to possibly link the survey data to census data); consistency across surveys and over time (with consideration to the local context). With regards to imputation, it was suggested that bootstrap methods could be considered in dealing with extreme values.

68. In the ensuing discussion, the Experts recognized that collecting data on farm income was a complex process requiring large resources. Thus initiatives to develop optimal sampling design were required as it provided a framework that could be used to optimize cost-efficiency balance. List frames commonly obtained from censuses could be augmented with area frames. The choice and application of stratification variables (e.g., farm size, access, etc.) could certainly enhance efficiency of farmer income data. Rotation of samples and the use of model-based methods could also contribute both in enhancing efficiency and data quality. Spatial-temporal dimensions in survey designs might also be considered. The Experts pointed out that data collection methods could be a mixture of different strategies (e.g., face-to-face interview, telephone interview, mail, etc.), the choice dependant on the complexity of the information needed and level of comprehension of the respondents. The use of technology was envisioned to facilitate data collection as well. The choice of a reference period could contribute to the issues on memory recall.

RECOMMENDATIONS OF OPTIMAL STRATEGIES FOR IMPROVING THE COLLECTION AND ANALYSIS OF FARMERS' INCOME DATA

(Item 6 of the Agenda)

69. After thorough discussions on the experiences among different countries, the Experts discussed STAT-INCOME-15 which contained some possible recommendations. The Experts put forward some recommendations on the areas of framework where the review of the data systems could be based on, data collection strategies, integration/compilation of data from different sources, processing and analysis, and dissemination.

70. **Budgetary Considerations.** Budgetary constraints were cited often as a common issue in the collection of farmers' income data among developing countries. These can influence sampling design, accuracy of the data, frequency and timing of data collection, and the survey instruments that can be used. With rising cost of survey operations, Experts considered worthy exploring other sources of funding outside the framework of public spending. Users of farmer income and other socio-economic data might be persuaded to contribute in funding to the collection of such data. The Experts recommended that FAO increase awareness among national governments (through meetings and other relevant channels) on the use of farmer income data and the need for setting aside funds for data collection, analysis and dissemination. They also recommended that, when appropriate, countries look for funding of data collection, analysis and dissemination beyond the framework of public spending.

71. **Information Requirements and Definitions.** The Experts noted that households (including farm households) tended to be burdened with various surveys and that the socio-economic information collected was often inconsistent across Asia-Pacific countries. The Experts recommended that efforts should be made to define the core data requirements that provide consistency and comparability between collections across countries and over time. The Experts also recommended that FAO develop guidelines on the conduct of farm income related surveys, including imputation methods. These actions would facilitate the formulation of national and regional policies and initiatives such as the FAO RIGA project.

72. **Framework for Measuring Income.** The Experts agreed that the complexity in concepts related to farmer income called for an appropriate framework where measurements could be based on. The Experts recommended that accounting frameworks like the Living Standards Measurement Study (LSMS) and the System of National Accounts (SNA) should be considered when measuring farm household incomes.

73. **Under-reporting.** The Experts recommended that a pilot study be undertaken across countries to assess the extent of under-reporting of farm income data, e.g. by comparing income data with consumption and savings data. Case studies could be used to estimate correction factors to adjust under-reported data on income.

74. **Accessibility.** Quality problems with farm income data is often related to difficulty in reaching respondents in areas of difficult access (e.g. remote areas or zones with security problems). The Experts recommended that FAO explore the possibility of conducting a study or a workshop to identify methods that can efficiently be used to collect farm income data from areas where access is difficult.

75. **Public Awareness and Feedback.** The Experts recognized the need for increased public awareness on the usefulness of the results from farm income data. In particular, the need was felt

for greater efforts of feedback to the farmers as to how data provided by them were utilized. They noted that it could present a tangible benefit on them and motivate cooperation and provision of truthful information in future surveys. The Experts recommended that efforts should be made to improve the accessibility to and feedback of information to all stakeholders, including farmers, as a way of incentive to provide reliable information.

76. **Information Technology.** The Experts noted the growing use of information technology (e.g., satellite images, internet, hand-held computers, automated checking and imputation, etc.) in the collection, analysis and dissemination of farm income and other socio-economic data. The use of IT was enhancing the collection, analysis and dissemination of this data. They noted, however, that the use of IT varied significantly among countries. The Experts recommended that a review be undertaken on the use of IT in farm income surveys from collection to analysis and dissemination of data, assessing its potential applications in Asia-Pacific countries.

ADOPTION OF THE REPORT

(Item 7 of the Agenda)

77. The Experts reviewed in detail the content of the draft report as contained in STAT-INCOME-16 and, with minor revisions, approved the report in principle.

CLOSING OF THE EXPERT CONSULTATION

(Item 8 of the Agenda)

78. The Chairperson congratulated the participants on their excellent contributions to the discussions and to the development of recommendations and suggestions concerning the collection and analysis of farmers' income statistics. He wished all participants to return home safely and conduct household income/expenditure analyses in the future, sharing their experiences with other countries in the region and disseminating reliable and timely data with as few data gaps as possible.

79. Mr Castano praised the active participation of the Experts and the level of the contributions made during the discussions. He agreed that the Expert Consultation had been successful and that many ideas and issues had been reviewed and that relevant and important recommendations had been made. He wished the Experts happy holidays and a fruitful 2008. The Expert Consultation was officially closed.

Agenda and Timetable

Tuesday, 11 December 2007

- 08:30 – 08:50 hrs. **Registration**
- 08:50 – 09:15 hrs. **Opening Session**
- Opening Address by Dr He Changchui, FAO Assistant Director-General and Regional Representative for Asia and the Pacific
 - Introduction of the Participants
 - Photograph
- Break**
- 10:00 – 10:15 hrs. – Election of Officers
- Adoption of the Agenda and Timetable
- Background for the Expert Consultation and Objectives (Mr J. Castano, FAO)
- Farmer Income Data for Decision Making**
- 10:15 – 12:30 hrs. **Existing methodologies for collection of farmers’ income data**
- “The Farmer Income Statistics Survey in Thailand” (Ms Sudjai Chongvorakitwatana, Thailand).
 - “Methodology of Data Collection in Farm Income Surveys: Indonesia’s Experience” (Mr Ardief Achmad, Indonesia).
- 12:30 – 14:00 hrs. **Lunch**
- 14:00 – 15:00 hrs. **Existing methodologies for collection of farmers’ income data (cont’d)**
- “Data System for Farm Income in the Philippines, from Collection to Use: Strengths and Weaknesses” (Ms Maura S. Lizarondo, the Philippines).
- Break**
- 15:15 – 15:30 hrs. – “Ideas and Suggestions from CABIG on Farmers’ Income Data” (Mr Jo Cadilhon, FAO).
- 15:30 – 16:30 hrs. – “Farmer Income data for Decision-making in the EU” (Mr James Whitworth, Eurostat).
- 16:30 – 18:30 hrs. [Drafting Committee Meeting]
- 18:30 – 20:30 hrs. **Dinner**

Wednesday, 12 December 2007

08:30 – 09:30 hrs. **Review of possible integration of surveys to obtain farmers’ income data**

- “Monitoring farm financial performance through surveys”
(Mr Vince O’Donnell, Australia).

Break

09:45 – 11:00 hrs. – “Developing Appropriate Survey Methodologies to Obtain Reliable Income Data of Farmers: Challenges and Plausible Ways and Means” (Mr Gurucharan Manna, India).

12:30 – 14:00 hrs. **Lunch**

14:00 – 15:00 hrs. – Summary Discussion on Farm Income Data for Decision Making

Break

Processing and Analysis of Farmer Income Data

15:15 – 16:30 hrs. **Methodologies for processing and analysis**

- “Processing and Analysis of USDA’s ARMS Survey”
(Mr David Banker, USA)

16:30 – 18:30 hrs. [Drafting Committee Meeting]

Thursday, 13 December 2007

08:30 – 09:30 hrs. **Appropriate strategies for overcoming data limitations**

- “Optimal Strategies to Improve Collection and Analysis of Farmers’ Income Data” (Mr Kyeong-Duk Kim, Korea)

Break

09:45 – 11:00 hrs. – “Generation of Farmers’ Income Data”
(Mr Erniel Barrios, the Philippines)

11:00 – 12:30 hrs. – Discussion on appropriate strategies for overcoming data limitations.

12:30 – 14:00 hrs. **Lunch**

14:00 – 15:00 hrs. **Appropriate strategies for imputation and analysis**

- “Rural Income Generating Activities (RIGA) Study: Income Aggregate Methodology, Issues and Considerations”
(Ms Katia Covarrubias, FAO).

Break

15:15 – 16:00 hrs. – Discussion

16:00 – 19:00 hrs [Chairperson meeting to prepare and discuss first draft report]

Friday, 14 December 2007

- 08:30 – 11:30 hrs. **Roundtable: Recommendations of Optimal Strategies for Improving the Collection and Analysis of Farmers' Income Data**
 – Moderator: Mr Erniel Barrios (Philippines)
- 11:30 – 14:00 hrs [Chairperson meeting to finalize draft report]
- 12:00 – 14:00 hrs. **Lunch**
- 14:00 – 14:45 hrs. Circulation of the Draft Report
- Break**
- 15:00 – 15:45 hrs. **Adoption of the Report**
- 15:45 – 16:15 hrs. **Closing of the Expert Consultation**

List of Documents

<u>Doc. No.</u>	<u>Agenda Item</u>	<u>Title of Documents</u>
STAT-INCOME-1	2	Provisional Agenda
STAT-INCOME-2	2	Provisional Timetable
STAT-INCOME-3	3	Background of the Expert Consultation and of its Objectives
STAT-INCOME-4	4	The Farmer Income Statistics Survey in Thailand
STAT-INCOME-5	4	Methodology of Data Collection in Farm Income Surveys: Indonesia's Experience
STAT-INCOME-6	4	Data System for Farm Income in the Philippines, from Collection to Use: Strengths and Weaknesses
STAT-INCOME-7	4	Ideas and Suggestions from CABIG on Farmers' Income Data
STAT-INCOME-8	4	Farmer Income Data for Decision Making in the EU
STAT-INCOME-9	4	Monitoring Farm Financial Performance through Surveys
STAT-INCOME-10	4	Developing Appropriate Survey Methodologies to Obtain Reliable Income Data of Farmers: Challenges and Plausible Ways and Means
STAT-INCOME-11	5	Processing and Analysis of USDA's ARMS Survey
STAT-INCOME-12	5	Optimal Strategies to Improve Collection and Analysis of Farmers' Income Data
STAT-INCOME-13	5	Generation of Farmers' Income Data
STAT-INCOME-14	5	Rural Income Generating Activities (RIGA) Study: Income Aggregate Methodology, Issues and Considerations
STAT-INCOME-15	6	Roundtable: Recommendations of Optimal Strategies for Improving the Collection and Analysis of Farmers' Income Data
STAT-INCOME-16	7	Adoption of the Report

OPENING ADDRESS

He Changchui
FAO Assistant Director-General and
Regional Representative for Asia and the Pacific

Distinguished participants,
Colleagues from FAO,
Ladies and gentlemen,

On behalf of the Director-General of FAO and on my own behalf, I welcome you all to this Expert Consultation on *Farmers' Income Statistics*. I am pleased to have this opportunity to greet and meet colleagues from ministries, universities and statistics agencies in the region. I would also like to thank the experts from Eurostat and the USDA, as well as FAO colleagues from headquarters for joining this consultation at the FAO Regional Office for Asia and the Pacific in Bangkok.

As most of you are aware, the Expert Consultation is one of the mechanisms we have in FAO for focused discussions on specific issues of special interest. In addition, FAO benefits from the expertise, knowledge and intellectual inputs from selected experts, and your conclusions feedback into the Organization's definition of policies and programmes. Regional expert consultations are usually convened as a follow-up to discussions held during sessions of the Asia and Pacific Commission on Agricultural Statistics (APCAS). At the 2006 APCAS session held in Phuket, Thailand, a Handbook on Rural Household, Livelihood and Well-being jointly published by Eurostat, the OECD, UNECE and FAO was presented. In the roundtable discussion that followed the presentation, participants recognized the serious weaknesses faced in rural household income and expenditure statistics and the obstacles that these weaknesses present to devising suitable agricultural policies and in assessing their effectiveness.

This of course is no surprise especially to this group of eminent experts. Farm income data is notoriously difficult to obtain for several reasons. Firstly, farm income is hard to assess as it involves the collection of a great deal of income and expenditure data on on-farm activities, seasonal off-farm earnings, unrecorded expenditures, credits and debts, etc. Secondly, by its very nature, farm income data cannot be collected through census surveys but requires specialized and tedious farm-by-farm sample surveys instead. Thirdly, farmers are usually reluctant to disclose income-related information. Fourthly, income from farm processing as well as from rural agro-industry and farm cooperative activities is often overlooked.

In your capacity as experts in the field of farmers' income statistics, you have the opportunity to provide FAO and its member countries with guidance towards the improvement of farmers' income statistics in the Asia-Pacific region. Over the next four days you will share experiences by reviewing methodologies for collection of farmers' income data and identifying their weaknesses and strengths. You will also be discussing the processing of this data and identifying appropriate strategies for imputation and analysis. You will then formulate some recommendations and strategies for improving the collection and analysis of farmers' income data.

Ladies and gentlemen,

You are well aware that one of FAO's main priority areas is to combat hunger and monitor progress in achieving the Millennium Development Goal number one, Target two, aimed at halving hunger by 2015. FAO makes recommendations or gives advice to decision-makers on international, regional and national issues relating to food and agricultural developments. It is FAO's firm belief that decisions on policy, strategy and programmes for food security and sustainable agriculture development should be supported by timely and reliable statistics and information.

The Asia-Pacific region hosts 61 percent of the world population, predominantly living in rural areas. Agriculture is the main source of livelihood for the majority of the world's rural people. Of the developing world's 5.5 billion people, 3 billion — nearly half of humanity — live in rural areas. Of these rural inhabitants, an estimated 2.5 billion are engaged in agriculture, and 1.5 billion are smallholders. In South Asia, for example, 40 percent of the rural population lived on less than US\$1 a day in 2002.

Progress reported in poverty alleviation is due largely to the key role played by rural areas. Recent reports have shown that the decline in the \$1-a-day poverty rate in developing countries — from 28 percent in 1993 to 22 percent in 2002 — has been mainly the result of falling rural poverty rates (from 37 percent to 29 percent) while the urban poverty rate remained nearly constant (at 13 percent). More than 80 percent of the decline in rural poverty is attributable to better conditions in rural areas rather than to out-migration of the poor. This is an important outcome since the majority of the poor are projected to continue to live in rural areas until 2040. Thus, monitoring farm income and food production in the Asia-Pacific countries is crucial in the context of poverty alleviation.

Underestimation of farm income and gaps in data distorts or blurs the vision of policy makers in governments and international development organizations, and handicaps national and international financial systems such as the World Bank and Asian Development Bank, in the optimal allocation of resources to agriculture and rural development. Your discussions this week can shed further light and correct perceived distortions. Reliable information on farm income also enables better monitoring of the effect of policies addressing rural poverty.

Given that significant amounts of resources have been, and will be committed in the future, to rural development programmes that require continual monitoring and evaluation, the impact of improper or ineffective policies can have costly implications. In order to promote efficient use of these resources, FAO is taking the initiative to develop guidelines and caveats for countries and agencies which collect, analyse and disseminate agricultural sector data. As a knowledge organization, FAO recognizes the need for continuous learning and adaptation to emerging requirements. A primary objective of this Expert Consultation is thus to learn from you and — in doing so — strengthen FAO's technical assistance and capacity building activities for the further development of statistical analysis programmes in the member countries.

Ladies and gentlemen,

I believe that at the end of the consultation, ways and means will be formulated for national statistical organizations in the region to improve the collection of farmers' income statistics, taking into consideration individual countries' capabilities and limitations. It should also be possible to identify potential national or regional technical development assistance that would

provide relief to identified national and regional level constraints in the generation and exchange of useful statistics on farm income. As a result, government, FAO and its development partners will be in a better position to address incomplete and missing data using various types of analyses for decision-making.

Let me reiterate that you have been invited and have come to participate in this Expert Consultation in your personal capacity and not as official representative of your governments. The opinions and views you express during this meeting are, therefore, your own professional ones. They do not, and should not, necessarily reflect any position of your organizations or country. Consequently, during your deliberations of the various agenda items, I encourage you to exchange ideas frankly. Your constructive views, I am certain, will contribute immensely to the achievement of the objectives we have set for this Expert Consultation. The results of this Expert Consultation, I furthermore understand, will be reported at the 22nd Session of APCAS to be held in Malaysia in June next year.

I wish you all a very fruitful meeting and a very pleasant stay in Thailand, the land of smiles.

Thank you.

List of Experts and Observers

AUSTRALIA

Vince O'DONNELL

Manager
Commodity Outlook
Australian Bureau of Agricultural and
Resource Economics (ABARE)
Canberra, ACT 2601
Tel : (61-2) 6272 2255
Fax : (61-2) 6272 2104
Email : vodonnell@abare.gov.au

INDIA

Gurucharan MANNA

Deputy Director General
National Sample Survey Organisation
(NSSO)
Ministry of Statistics and Programme
Implementation
Government of India
Kolkata
Tel : (91-33) 25770460
Fax : (91-33) 25776439
Email : mannagcm@yahoo.com

INDONESIA

Ardief ACHMAD

Director
Agricultural Statistics BPS-Statistics
Indonesia
Jln. Dr. Sutomo No. 6-8
Jakarta 10710
Tel/Fax : (6221) 3857048
Email : ardief@mailhost.bps.go.id

KOREA

Kyeong-Duk KIM

Senior Research Fellow
Chief of International Rural Development
Korea Rural Economic Institute (KREI)
Seoul 130-710
Tel : (82-2) 16-718-4240
Fax : (82-2) 960-0163
Email: kdkim@krei.re.kr or
kydkim@paran.com

PHILIPPINES

Maura S. LIZARONDO (Ms)

Assistant Director
Bureau of Agricultural Statistics (BAS)
Department of Agriculture
Quezon City
Tel/Fax : (632) 371-2074
Email : maurabas@mozcom.com

THAILAND

Sudjai CHONGVORAKITWATANA (Ms)

Senior Economist
Division of Farm Households
Socio-economic Research
Bureau of Agricultural Economic Research
Office of Agricultural Economics
Bangkok
Tel/Fax : (662) 579-2982/7564
Email : sudjai@oae.go.th

AGENCIES

James WHITWORTH

Head
International Statistical Cooperation
Statistical Office of the European
Communities (Eurostat)
European Commission
L-2920 Luxembourg
Tel/Fax : (352) 4301-36857/32769
Email : james.whitworth@ec.europa.eu

David BANKER

Agricultural Economist
Economic Research Service
US Department of Agriculture
USA
Tel : (202) 694-5559
Fax : (202) 694-5600
Email : dbanker@ers.usda.gov

OBSERVERS

Edi ABDURACHMAN

Director
Centre of Agriculture Data & Information
Ministry of Agriculture
Jakarta 12550, **Indonesia**
Tel/Fax : (62-21) 7816384/385
Email : edi@deptan.go.id

Leli NURYATI (Ms)

Head
Horticulture & Estate Crops Sub Division
Centre of Agriculture Data & Information
Ministry of Agriculture
Jakarta 12550, **Indonesia**
Tel : (62-21) 7816384
Fax : (62-21) 7816385
Email : leli@deptan.go.id

Pattarawadee SINGKASELIT (Ms)

Statistician
Household Economic Statistics Group
Economic and Social Statistics Bureau
National Statistical Office (NSO)
Bangkok 10100, **Thailand**
Tel : (662) 281-0333 Ext. 1208
Fax : (662) 281-8617
Email : pattarawadee@nso.go.th

Wimonrat CHIRADA (Ms)

Economist
Division of Farm Households
Socio-Economic Research
Bureau of Agricultural Economics
Bangkok, **Thailand**
Tel/Fax : (662) 579-2982/7564

FAO

Jairo CASTANO

Senior Statistician
FAO Regional Office for Asia and the Pacific
39 Phra Atit Road
Bangkok 10200, **Thailand**
Tel : (66-2) 697-4250
Fax : (66-2) 697-4445
Email : Jairo.Castano@fao.org

Katia COVARRUBIAS (Ms)

Economist/Consultant
Agricultural Development Service (ESAE)
Food and Agriculture Organization of the
United Nations
Viale delle Terme di Caracalla
00100 Rome, **Italy**
Tel : (39-6) 570-55012
Fax : (39-6) 570-55522
Email : Katia.Covarrubias@fao.org

Jo CADILHON

Marketing Officer (Quality Improvement)
FAO Regional Office for Asia and the Pacific
39 Phra Atit Road
Bangkok 10200, **Thailand**
Tel : (66-2) 697-4281
Fax : (66-2) 697-4445
Email : Jo.Cadilhon@fao.org

Erniel BARRIOS

Consultant
FAO Regional Office for Asia and the Pacific
39 Phra Atit Road
Bangkok 10200, **Thailand**

Truchai SODSOON (Ms)

Translation Assistant
FAO Regional Office for Asia and the Pacific
39 Phra Atit Road
Bangkok 10200, **Thailand**
Tel : (662) 697-4127
Fax : (662) 697-4445
Email : Truchai.Sodsoon@fao.org