FINAL TRIPARTITE EVALUATION

OF

PROJECT GCP/CPR/010/ITA
Preparations for an Agricultural Census in China

PROJECT GCP/CPR/020/ITA
Chinese Agricultural Census – Processing, Tabulation and Analysis of Census Results

and

PROJECT GCP/CPR/025/ITA
Chinese Agricultural Census – Processing, Tabulation and Analysis of Census Results, Module II

REPORT OF THE EVALUATION MISSION

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EXECUTIVE SUMMARY

i. The project under review represents a major technical cooperation by the Chinese Government, Italy (donor) and FAO, addressing the overall objective of realizing the first ever national agricultural census with modern methodologies as a basis for developing an accurate and timely statistical system for the food and agricultural sector. Its first phase, implemented during 1978-1993 (GCP/CPR/006/ITA with the donor contribution of US$ 5 million), helped establish the national Food and Agriculture Statistical Centre (FASC) in the National Bureau of Statistics (NBS), as well as the first six regional centres (RFASCs) and trained their staff as the basis for strengthening technical capacity for census and statistical methods and for developing appropriate census methodologies adapted to the needs of the country. The second phase, supported by GCP/CPR/010/ITA (US$ 5.4 million for 1993-96), focused on developing the census methodologies and technical capacity of the national and regional FASCs to carry out the agricultural census in 1997, including the creation of an expanded FASC network at national and provincial levels, as well as training of their staff and provincial statistical officers (totalling some 13,600). The third phase, with GCP/CPR/020-025/ITA (US$ 4.5 and US$ 0.9 million for 1997-2000), provided technical support to the census implementation, including data processing, tabulation and dissemination of the census results. The second and third phases provided for international expertise (15% of the budget), training (7%, mainly for fellowships and study tours) and a large equipment component (56%, mostly for 2,400 PCs).

ii. Under FAO execution and steered by the Advisory Committee (comprised of representatives of the Chinese Government, the donor and FAO), the project was implemented by the national FASC supported by the senior advisor (part-time) and international consultants, with technical backstopping by the FAO Statistics Division. The arrangements worked very well during the second and third phases and, in particular, the Advisory Committee played a critical role in facilitating a number of significant changes and adjustments in the implementation plan in response to emerging issues. These included the enlargement of project support to a larger number of RFASCs/PDCs, as well as greater efforts in dissemination of the census results, especially the creation of a sample database for analytical uses and the holding of an international technical seminar in 2000 to consider the census results and methodological validity.

iii. The project implementation has been marked by efficiency and dynamism, with timely adjustments to the training and technical requirements arising from policy changes in the national census programme, including the enlarged FASC network to cover all the provinces. In short, all the main planned outputs and results have been achieved, in some cases exceeding the plans:

a) the establishment of the FASCs and data centres with trained staff and essential equipment – an enlarged network of 32 FASCs (national, 22 RFASCs and 9 Provincial Data Centres), supplemented with 335 Data Input Sites (prefecture level), was successfully completed during 1993-96 (originally only 16 FASCs were envisaged). This served as the technical and institutional backbone for: (i) development and transfer of the essential statistical methodologies for the census; (ii) staff training of the provincial and local statisticians involved in the census (RFASC staff, ASs and ASAs); and (iii) technical and operational support to the census, including data processing, analysis and dissemination. In particular, the

FASC and RFASC staff (a total of some 350, of which 200 trained in phases two and three) provided the key technical expertise, including the training for the provincial and local staff. The project also supplied these centres with 2,100 PCs (half of the total mobilized for the census) and a number of data processing/analysis software programmes;

b) development of the census methodologies – the main outputs, involving several national and international workshops and two sets of pilot exercises, included: (i) census design and questionnaires specifically aimed to capture the rural and agricultural situation emerging after the series of policy reforms; (ii) methods and procedures for electronic data inputting and processing, including the innovative application of Optical Character Recognition (OCR) technique to inputting the questionnaires on individual holdings; and (iii) data analysis and dissemination techniques, including the Statistical Data Analysis package which facilitated the establishment of a sample database covering 1% of the data for 210 million individual holdings. In particular, the census design went beyond the normal scope of agricultural census, covering 687 data items on: (a) number, size and structure of agricultural holdings; (b) land utilization and distribution; (c) number, structure and migration of rural labour; (d) amount, structure and utilization of agricultural fixed assets; and (e) economic development of rural towns;

c) trained staff, especially the provincial and local statisticians – in addition to 200 RFASC staff, some 8,000 ASs and ASAs were trained (one third less than 13,000 originally planned but totalling some 12,000 under the project's three phases), as well as over 7 million field enumerators and supervisors. The training curricula for each level of staff were catered to their needs during and after the census (those for RFASC officers being most comprehensive and local, those for ASAs being more limited) – also training was carried out in a pyramid manner with the senior-level officers training the lower-level staff;

d) census implementation in 1997 – the census itself was organized and implemented with impressive efficiency by the Government through the National Agricultural Census Office (NACO), a special task force headed by the vice-premiere and supported by the NBC/FASC. The field enumeration was completed in January 1997, covering 214 million households, 350,000 non-household agricultural holdings, 740,000 administrative villages, 43,000 towns and townships, and 1.4 million non-agricultural town and township enterprises, followed by post census validations. The data inputting was completed within one year, with the first summary results issued;

e) processing, analysis and dissemination of the census results – since 1998, the project promoted and supported the NBS and FASCs in these tasks, especially in the widest possible dissemination of the census results in China and internationally. These included: (i) the Abstract and supplements with some 360 summary tables, published in English and Chinese, through CD-ROM and the Internet; (ii) the creation on the Internet of a sample database containing one percent of the individual holdings with query facility for the public; and (iii) organization of a series of seminars at national and provincial levels, culminating in the international technical seminar (September 2000). These efforts, which went much further than originally envisaged, also helped establish technical validity of the census methodologies and data.

iv. The project had considerable effects and impact on the use of census results and improving the national agricultural statistical system (see para. 4.5). The main examples include: (i) the use of some of the census results in the preparation of the next 5-year

development plans at national and provincial levels (especially the data relating to the agricultural land use and livestock, for which significant under- or over-reporting was shown in the current statistics); (ii) reconciliation and streamlining of the current statistics in line with the census data and methodologies, including revisions in sampling frames for future; (iii) widespread initiatives for improving the statistical information system at the national and provincial levels, including the use of advanced techniques for data analysis, such as GIS; and (iv) interest in greater use of improved statistics for analysis and planning work on agricultural and rural development issues.

v. The mission considers that the project has been highly relevant and effective with many positive lessons (see para.4.13). However, there are three important issues in terms of sustaining the significant results achieved so far (see paras. 4.8-4.10). These concern:

a) technical capacity of the FASC teams – some important gaps and weaknesses exist in their expertise among the centres and in such key subjects as statistical analysis techniques, data quality control and sample design, which are critical to ensuring effective contribution of FASCs to the use of census data and to future improvements in statistical systems, especially at the provincial level;
b) greater accessibility and use of the census results – further enhancement in making the results more accessible, through electronic means, to the wide range of users would be vital in making the best use of the census, especially in the provinces. In this respect, the absence of a sample database (1% of the individual holdings) at the provincial and local levels is a serious constraint;
c) future status of the FASC structure – while the structure played a critical role in developing and sharing the census and improved statistical methods among the core teams at the national and provincial levels, their future status is uncertain following the completion of the census work. In particular, their continued ability to work as a team in respective locations would be critical to sustaining effective use of the census results and further improvements in the agricultural statistics.

vi. In the light of the above, the mission recommends the following (see paras. 5.3-5.7):

a) additional priority support to consolidate the expertise of the FASC staff (in areas noted in para. v. above) and to strengthen their ability to disseminate the census results by completing the sample databases at the provincial level, including measures by:

- the NBS and FASC – to prepare, with FAO advice, if appropriate, specific proposals on these areas for possible external assistance;
- Italy (as possible donor), the Government and FAO - to review the possibility of such additional assistance at an early opportunity in 2001, including the possibility of earmarking the likely balance of resources under the third phase (GCP/CPR/020 and 025/ITA) for this purpose;
- the NBS - to make a clear commitment, to ensure the effectiveness of such additional support, that the FASC teams will continue to function as the core teams in the follow-up to the census at the national and provincial levels and that they will also continue to play a lead role in the consolidation and improvement of agricultural statistical systems;

b) support to improving statistical systems and use, for which the NBS should prepare, with FAO assistance, proposals for external assistance in: (i) reconciliation of the

census data and current statistics; (ii) development of integrated comprehensive databases for agriculture and rural sectors, especially at the provincial level; and (iii) training and demonstration in use of census data for analysis of priority policy issues;

c) support to improved rural and local development planning – beyond the agricultural census and statistics, the Government and FAO should explore possibilities for external assistance for strengthening the capacity of the provincial and local authorities in such development planning, possibly as a multi-donor support programme;

d) use of the Chinese expertise in agricultural census and statistics – given the high degree of expertise achieved by FASC and NBS staff, FAO should explore possibilities for identifying suitable opportunities for their participation in technical cooperation between China and other developing countries, especially Asian countries with economy in transition; and

e) in preparation for the next agricultural census, which is expected in 2007, the NBS may wish to begin a dialogue with FAO regarding the possible needs to refine the census methodologies.

CHAPTER 1 - INTRODUCTION

1.1 The tripartite technical cooperation between the Government of the People's Republic of China, the Government of Italy and FAO for strengthening the national capacity in the preparation of the first national agricultural census dates back to 1987 when the project GCP/CPR/006/ITA (Food and Agricultural Statistics Centre – China) was initiated with the donor funding of some US$ 5.0 million. The project was intended as a first step in training and building up of the necessary statistical expertise for preparing a programme of national agricultural census as a basis for developing a sound statistical information system adapted to the agricultural and rural situations emerging following the important policy reforms.

1.2 During 1987-92, the project assisted in establishing and strengthening the National Food and Agricultural Statistics Centre (FASC) in the National Bureau of Statistics (NBS) as the core technical unit for preparing for the anticipated first national agricultural census. The project, which focused on technical capacity building together with the provision of some 200 computers, was judged highly successful by the mid-term and terminal evaluations in establishing a group of statistical experts/trainers at the national FASC, initiating training of 181 Agricultural Statisticians (ASs at the provincial and local levels) and some 4,000 Agricultural Statistical Agents (ASAs at local level), and in developing research capacity for piloting census methodologies. In line with the evaluation recommendations, the donor, the Government and FAO agreed to continue, starting with a one-year extension of the project (for the period August 1992-July 1993), with a long-term programme to expand and intensify staff training, methodological development and to establish technical capacity to support the implementation of the census, including the establishment and expansion of a network of regional FASCs. In the light of the successful results of the project, the Government decided early in 1994 that the census should take place in 1997.

1.3 Since 1993 a series of three projects (GCP/CPR/010/ITA, GCP/CPR/020/ITA and GCP/CPR/025/ITA), with a total donor contribution of US$ 10.5 million, have been implemented to continue to support the strengthening and expansion of the FASC network and its capacity for intensive preparation for the census and for the processing and initial analysis of the census results. The agricultural census was successfully implemented in 1997 with the last two projects scheduled to terminate in December 2000. As has been planned in the project documents, it was decided to evaluate during November 2000 the results and impact of the three projects (GCP/CPR/010, 020, 025/ITA) as a whole. The terms of reference for the tripartite evaluation mission also invited the mission "to provide recommendations to the Government, FAO and the Donor on steps necessary to consolidate progress and ensure achievements of the objectives. Any further needs for external assistance will be identified." The terms of reference for the evaluation mission are contained in Annex 1.

1.4 Accordingly, the evaluation mission was fielded for a three-week visit to China from 26 October to 17 November. The mission members comprised:

i) Mr. Masakatsu Kato (FAO representative and team leader)
ii) Prof. Guido Fabiani (Italian Government representative)
iii) Mr. Feng Nailin (Chinese Government representative).

1.5 The mission was briefed in Rome and in Beijing, and spent a good part of its stay in China by visiting selected regional FASCs and the sites of their activities in four provinces, Harbin/Heilongjiang (30 October-2 November), Fuzhou/Fujian (2-5 November),

Jinan/Shandong (5-7 November), and Xián/Shaanxi (11-13 November). The itinerary and persons met by the mission are given respectively in Annexes 2 and 3, and Annex 4 contains summary notes on the mission's impressions of the four regional centres.

1.6 These visits to the regional FASCs gave the mission a good, if not complete, impression of the overall conditions of these centres, including their participation in the projects' activities, the results in their institution building efforts and the role they have been playing in the preparation and follow-up to the census. It also provided the mission with a glimpse of important differences in the economic and social environments among the provinces as well as the key challenges faced in agricultural and rural development. In each province the mission had discussions with the key FASC staff (including the directors of the provincial statistics offices, heads of the FASCs and their technical personnel) and their main counterparts in the census and statistical work (representatives of the departments of agriculture, planning, land administration/survey, forestry/fisheries as well as those from the local universities and research institutes engaged in policy analysis). The field visits also included centres' facilities and the data processing centres at prefecture level – in Heilongjiang and Fujian provinces, the mission had an opportunity to visit agricultural villages and farmers' households.

1.7 The mission debriefed in Beijing with the representatives of FASC, the Italian Embassy, and the FAO Representative on 10 November (prior to the departure of Mr. Fabiani but before the visit to Xi'an by Mr. Kato). Debriefing by the international mission members in Rome was held with the donor representative on 29 November and with the staff of the Statistics Division on 6 December. Finally, the draft final evaluation report was presented to the Project's (GCP/CPR/025/ITA) Advisory Committee session on 14 December 2000, at which a number of useful preliminary reactions by the members were given. This final report has taken them into account.

1.8 The mission team wishes to record its deep appreciation of the forthcoming cooperation and unfailing hospitality extended to the mission by the FASC and NBS staff, other Chinese officials and professional persons who spent their valuable time with the mission, as well as the Italian Embassy staff and the FAO Representative and his staff. It would like to thank the donor representative in Rome and the staff of the FAO Statistics Division for the support and cooperation given.

CHAPTER 2 – ASSESSMENT OF PROJECT OBJECTIVES AND DESIGN

2.1 The three projects (GCP/CPR/010/ITA, GCP/CPR/020/ITA and GCP/CPR/025/ITA) were formulated to support the national programme for the first agricultural census, then planned for 1997, especially in making the final preparations for the census in terms of building up the network of FASC structure, training of the remaining ASs and ASAs for the census work, and the finalization in methodology development, as well as in strengthening the capacity for processing and publishing the census data. However, given the large scope of anticipated need for external assistance (initially estimated at US$30 million), the projects had to be designed over a period in line with the funds that the donor could mobilize. Thus, the project GCP/CPR/010/ITA (second phase) was designed in 1993 for a period of 3 years and 5 months to assist in the preparation for the census, while the other two projects (third phase) were formulated in 1996 to support the technical and computer capacity for data processing, tabulation and initial analysis of the census results, although the actual implementation of the last project had to be deferred to early in 1998 due to some delay in the donor contribution.

A. Project Rationale and Justification

2.2 Clearly, the implementation of the first national agricultural census was a priority need of the Government, representing an essential requirement for developing a national statistical information system in support of development planning and policy analysis. Furthermore, in the case of China, the economy had been undergoing fundamental changes since 1980, particularly in the agricultural and rural sector with the introduction of the household responsibility system and other market-oriented reforms. In this context, one critical constraint was the lack of experience with modern agricultural census and statistical methodologies, including shortage in trained staff and computer facilities for data processing and analysis. Thus, the Government wished to access, through technical cooperation with FAO, appropriate technologies and practices for building its national capacity to plan and implement its first census. As has been stated by the evaluations in 1990 and 1991, the projects have been a relevant and valid response to the critical priority national requirement.

B. Project Objectives

2.3 Both the development and immediate objectives have been defined clearly with logical consistency:

- development objective – for all three projects, this has been defined as "to enable the Government to develop a system of accurate and timely statistics in the agricultural sector at national and local levels, starting with carrying out its first agricultural census, and to provide the Government with information allowing it to take appropriate decisions... "
- immediate objective – this was formulated somewhat differently between the second and third phase projects; "...training, pilot census and research activities in order to develop the methodological and technical capabilities to carry out the first agricultural census..." (second phase), and "...the establishment of the data centres followed by the training programme, the development of input and tabulation programmes for the census and the preliminary analysis of the census results. Once the framework of the census is ready, the objective will be to ensure that the census effort stays on course and to operate so that future censuses and the operation of the data centres will benefit from this experience."(third phase).

2.4 The immediate objective was defined differently for the projects but appropriately, reflecting the shifting emphasis in the respective stages. In particular, the objective statement for the third phase made more explicit the link between the development and immediate objectives, i.e. the direct results of the projects in capacity building through national and regional FASCs contributing not only to the first census but also to future censuses and sustained improvement in the agricultural statistical system. This was quite explicit in the statement of "Expected end of result situation and sustainability of project results": "As a result of this project, the data centres should be in a position to support census activities in accordance with the established timetable for census operations. It is expected that the data centres at FASC, at the RFASCs and the PDCs will continue to operate even after the completion of the census and become part of the permanent data processing and analysis structure of SSB (NBS) thus contributing to the implementation of China's rural agricultural statistical system...". However, this statement was not clearly delineated as one of the specific immediate objectives, which would have entailed inclusion of concrete measures for this purpose in the project design. Similarly, although a specific objective to " ensure the preparation of preliminary statistical and economic analyses at the sub-provincial level, on the results of the 1997 census" was included in the last project document, a greater emphasis on post-census activities, including analysis and dissemination of the census results would have been appropriate. It is appreciated,

nonetheless, that the preoccupation at the time of project formulation was with the satisfactory execution of the census.

C. Project Design

2.5 Within the given set of immediate objectives, the design was generally clear and coherent for each project. The main outputs and activities have been clearly targeted on: (i) staff training (both upgrading the core trainers of FASCs and training of ASs and ASAs); (ii) census methodology development; and (iii) institutional capacity building of the FASCs and Provincial Data Centres (PDCs), including the provision of data processing capacity. Further, both the relative emphasis and the targets of project outputs shifted from the preparation period, to the census implementation and to the post-census period. The following may be noted:

- training programmes – these were based on a comprehensive plan, targeting three groups: the FASC staff, especially the regional staff; the ASs and ASAs at the provincial and local levels; and field enumerators and supervisors. The programme for FASC staff, who were expected to become trainers and specialists in key subjects (agricultural census, data processing and statistical analysis), was mostly planned for 1993-94, involving fellowships and study tours, as well as workshops with the visiting specialist consultants. For the training by the FASC staff of ASs (some 3,000) and ASAs (some 10,600), 89 two-month courses and 177 one-month course were envisaged with concentration during 1994-95 and 1995-96, respectively;
- census methodology development – the plan largely focused on preparation of the methodology and programme for the census through a pilot census in 1995 (covering 600,000 holdings) with the aim of developing appropriate modules for different regions, testing them as well as for training and learning from the experience. For the second half of the period, greater attention was expected to methods for data processing, analysis and dissemination of the census results;
- institutional capacity building – originally 10 additional regional FASCs were planned to create a network of 16 RFASCs. However, during the implementation the plan was modified to increase the total number of RFASCs to 22, and to establish 9 PDCs and 330 Prefectural Data Input Centres to ensure efficient implementation of the census. Project support to these units envisaged, besides training of the staff, provision of essential equipment, including some 2,400 PCs;
- implementation timetable – the implementation schedule for 1993-1999 was quite tight in view of the fact that the projects were pursuing simultaneously institution building of FASCs and their staff's technical capacity development as well as methodological reparation, coupled with a programme of massive training of the field staff. The planning for the latter had to be adjusted as the network of data centres evolved in their number;
- resources - as noted above, the donor contribution was mobilized in sequence for each of the three projects, US$5.4 million (1993-96), US$4.2 million (1996-99) and US$0.9 million (1997-99), totalling US$10.5 million over a planned period of 6 years and 9 months. The planned allocation of combined resources was, inter-alia, 15% for personnel (senior project advisor and consultants), 7% for fellowships and training, and 48% for computers and other equipment. Most of the resources for training were allocated for 1993-96, while nearly two-thirds of those for computers and equipment were planned for 1996-99.

D. Implementation Arrangements

2.6 The arrangements for the first phase were continued under the second and third phases. These included (i) the implementation role of the NBS and FASC, (ii) the project support team comprising a part-time senior project advisor (20 man/months) supported by international

consultants (86 man/ months) and FAO technical backstopping, and (iii) the Advisory Committee (comprising NBS and Ministry of Agriculture, the donor and FAO) as a steering body to guide and supervise the project implementation process. Given the successful performance of these arrangements under the first phase, these arrangements were satisfactory, and as can be seen below, have in fact worked well, with the Advisory Committee providing a useful forum for major decisions during the implementation process.

E. Strengths and Weaknesses of the Project Design

2.7 Generally, the project approach and design were formulated clearly and have proved to be satisfactory. Its strengths include: (i) the process-oriented design, with flexibility in modifying details in response to emerging needs during the implementation, but guided by the clear strategy and objective and (ii) the Advisory Committee facilitating close monitoring and decision-making in the implementation process with the FAO technical unit (Statistics Division) serving as the secretariat. These features have been reinforced by strong commitment of the Government, steady support of the donor over the entire period, and very close collaboration among the three parties. The only important weakness one may note in retrospect would be that greater attention could have been given to post-census work, especially for additional training and other technical support for statistical analysis and development of ways facilitating an optimal accessibility of the census database.

CHAPTER 3 - ASSESSMENT OF PROJECT IMPLEMENTATION EFFICIENCY AND MANAGEMENT

A. Main Activities Implemented and Output Produced

3.1 The second phase was implemented largely in line with the schedule during August 1993 and December 1996. However, the third phase projects suffered some delays in implementation: GCP/CPR/020/ITA was amended to incorporate an unplanned activity, organization of an international technical seminar to review the methodologies and results of the census, in September 2000 (originally planned for 1999), and the implementation of project GCP/CPR/025/ITA had to be delayed by several months due to the resource availability of the donor. The latter meant also delays in delivery of computers to assist in the data analysis of the census, but it did not materially affect the progress under the project as the NBS could make alternative arrangements to meet the essential computer needs. Thus, the terminal date of the third phase was extended by one year to December 2000. Further, several unplanned work were undertaken at the suggestion of the Advisory Committee, including (i) the organization of an international census committee during January 1997 to monitor and verify the census implementation, (ii) enlargement in the scope of the post-enumeration survey planned for 1997, (iii) preparation of a one-percent sample database for households, and (iv) holding of an international technical seminar on the census (originally for October 1999 but delayed to September 2000).

3.2 The main implementation landmarks included: (i) consolidation of the 6 RFASCs established in phase one and creation of additional 16 RFASCs and 9 Provincial Data Centres (PDCs), including core staff training and equipping with computers during 1993-95; (ii) training of some 8,000 ASs and ASAs at the provincial and county levels during 1993-96; (iii) implementation of the second and third pilot censuses in 1995 and 1996, technical reviews (at national and international workshops) of the 95 pilot leading to substantial changes in the census questionnaire design; (iv) training and organizational

preparations for the census during 1996; (v) actual implementation of the census, data processing and data validation during 1997; (vi) census data analysis and preliminary tabulation of results, including their publication during 1997-98; and (vii) preparation of the census database and applications for analysis, including the publication and presentation of analytical papers at the international technical seminar, during 1999-2000. Sections below focuses on the main implementation activities and outputs planned under the three projects.

a) ***Establishment and Strengthening of the Network of FASCs***

3.3 Originally, a total of 16 Regional FASCs (RFASCs) was envisaged, with 10 more RFASCs to be added in the second phase. Early in the implementation, however, the importance of these centres' role in ensuring adequate capacity for training the provincial and local staff and for supporting data processing became clearer, and the network was further expanded to cover all the provinces by establishing six additional RFASCs (for a total of 22 RFASCs) as well as 9 Provincial Data Centres (PDCs). Under the third phase, this network was supplemented by the establishment of 335 data input sites at the prefecture level to ensure fuller data processing support to the census. The RFASC staff was recruited and building facilities were provided by provincial/local governments concerned - the project made a relatively minor direct contribution to their establishment (a total of US$100,000) but the provincial and local governments contributed some Yuan 330 million for this purpose. The staff (regional technical officers) of RFASCs were trained by the project (consultants and fellowships), assisted by the national FASC staff, and a substantial part of computers and other equipment was provided by the central and provincial governments. These centres provided the institutional structure for training of the ASs and ASAs at the provincial and local levels, for development, testing and dissemination of the census methodologies, and for organization of the census and related data processing capacity at the provincial level.

b) ***Training Activities***

3.4 While the basic training approach had been developed during the first phase, the National Agricultural Census Office (NACO), established in 1995 with the responsibility for the census implementation, increasingly provided the institutional framework for FASCs' training activities across the country. Thus, the training programme formed an integral part of the overall plan for the agricultural census, and followed a pyramid strategy whereby the core trainers were first established at the national (under the first phase) and regional FASCs (during the first and early in the second phases), who in turn trained the provincial ASs who trained the ASs and ASAs at the provincial and local levels. Furthermore, the training courses were standardized for each type of training for uniformity and efficiency, with the National FASC providing the main resource persons and training materials.

3.5 The training of the RFASC staff involved an intensive integrated programme of six months, covering the essential subjects, including methodologies and organization of agricultural censuses, data collection techniques, sample design and techniques, data processing, statistical and economic analysis of data, agricultural economics, and training techniques. The international consultants often served as resource persons for classroom lectures, exercises and case studies, supplemented by fellowships and study tours for many of the trainees. The ASs were trained through 45-day courses, mainly instructed by the RFASC staff, assisted by the national FASC staff and to some extent by the visiting international consultants. In terms of subjects, particular emphasis was placed on data processing, sample survey techniques and statistical analysis, covering both theories and

practical aspects useful for their role as trainers of ASAs. The training of the ASAs was largely based on the training materials prepared by the national FASC staff for the 25-day courses. These courses were offered at 23 training locations (originally 15 locations planned).

3.6 This intensive programme trained an impressive number of trainees: some 200 technical officers of national and regional FASCs, and 8,000 ASs and ASAs at the provincial level. During 1996, over 7 million field enumerators and supervisors were also trained. Following the census survey work in January 1997, training continued for RFASC staff and other provincial staff in data processing and analysis, computer programme packages, database management, data quality control, and sample surveys, as well as in economic accounts for agriculture and GIS, often with assistance of international consultants. Several fellowship training and studies were also undertaken on data presentation and dissemination methods during 1998-99.

3.7 However, there were some difficulties. Initially, fellowship training encountered language problems for some trainees – high costs of such training were also problem which was mitigated by arranging most of the fellowships later on to Italian universities and institutions which often agreed to waiver tuition payment. Similarly, some courses were reduced in length (e.g. those for ASs from planned two months to one and half months), especially later in the preparatory period, due to the need to increase the number of courses, and sometimes also due to the logistic difficulties for the FASC trainers. Broadly, however, the quality of training does not seem to have suffered seriously, and the training under the projects generally played a fundamental role in strengthening the FASCs to serve as technical backbone institutions for the census.

c) ***Methodology Development***

3.8 The planning and research work begun under the first phase continued, building on the experience of the 1991 census, including the improvements in the census design arising from the international consultation on the pilot exercise. This was a complex process involving on the one hand an attempt to ensure that the census design would capture the rural and agricultural reality and, on the other, the introduction and adaptation of modern census and statistical methods to the Chinese needs and capacity. During 1994-96, further development work involved (a) organization of an expert consultation (Rome in 1994) in preparation of the 1995 pilot census, covering questionnaire design, sample surveys and agricultural census, (b) conduct of the 1995 pilot exercise (covering one county in each of the 16 provinces), followed by an international seminar to review the pilot exercises (in 1995, Beijing), (c) implementation of the third pilot census to test the revised questionnaires and data collection methods in Guandong province and Beijing (in 1996). The iterative development process facilitated (a) improved use of different questionnaires for different information (household holdings, non-household holdings, non-agricultural households, township enterprises, etc), (b) assessing the advantages and disadvantages of complete versus sampling enumeration and different data quality systems, and (c) testing the feasibility of generating information needed by various users. Thus, the pilot operations served both as a training vehicle and methodological development and research.

3.9 It is worth noting here that the census developed in this manner had a scope much broader than the agricultural census conducted in many other countries, specifically designed to cover salient features of economic activities in the rural sector. Thus, it covered through six questionnaires (a) number, size and structure of agricultural holdings,

(b) land distribution and utilization (including cultivated land and garden plots, etc.), (c) number, structure and migration of rural labourers, (d) amount, structure and utilization of agricultural fixed assets, and (e) economic development of rural towns. The questionnaires included 38 sections and 687 data items. For information on cultivated land, which the pilot exercises had shown difficult to get good estimates through holdings registration or interviews, the census method used the updated results of the National Land Detailed Surveys.

3.10 The methodological work also included data processing strategy and arrangements, backstopped also by the FAO Computer Division. Computer hardware and software configurations were developed and tested, and the FASC and RFASC staff were trained in operating systems, programming languages, spreadsheets, word processing, databases, statistical software – later on, particular attention was given to methods essential for the planned census operations, especially data entry and processing. One particularly noteworthy innovation made by the FASC staff in this connection was the application of the Optical Character Recognition (OCR) technology, instead of the data entry by traditional key board methods (originally, it was planned to use the Blaise software), to cope with the large amount of data to be processed, with the NBS's computer centre producing the necessary software for this application. The approach in fact worked very well, with acceptable levels of errors and saving time and costs. Finally, another major work was the introduction of the Statistical Data Analysis (SDA) package developed by the University of Berkeley (USA) with a query facility to permit preparation of tailored tabulations without direct access to individual records. This software provided the critical technology for the development of the one-percent sample database at the national level.

d) ***Processing, Dissemination and Use of Census Data***

(i) Processing and Tabulation of the Census Statistics

3.11 As noted above, the agricultural census was implemented as a major national exercise, overseen by the NACO (led by the vice-premier of the central government) and involving all the administrative levels in the country. Several millions of officials were mobilized for the census, for field surveys, entering, computing and processing the exceptionally vast quantity of data**:** 214 million households, 350,000 non-household agricultural holdings, 740,000 administrative villages, 43,000 towns and townships, 1,400,000 non-agricultural town and township enterprises. Six different questionnaires were used for a total of 687 items with 210 GB processed data. Through excellent organization, the fieldwork was completed within one month, and data entry completed within twelve months (all except for the questionnaire covering the individual holdings was completed in nine months). All together, the Government mobilized some 4,000 computers and 600 OCR machines. In particular, under the project, an "International Census Committee" of eleven international experts was fielded in January 1997, which endorsed the operational validity of the census process in general.

3.12 The census data processing was organised at national, provincial and prefecture levels. The data entry was checked at all levels by manual and/or automated means – in particular, the validity of OCR data entry was examined through a nation wide sampling, involving some 47,000 sub-districts (0.8% of the total). Similarly, a post-enumeration survey was conducted in March 1997 to verify the census data on the individual holdings, covering some 40,000 rural households, which confirmed the reliability of the census data.

The census data entry and checking were completed by January 1998, an impressive achievement for such a complex and large exercise.

3.13 The census database tabulations were prepared during the first months of 1998, including: (a) 57 aggregate tables (about ten for each type of questionnaire) covering various items for the whole list of regions; (b) comprehensive tables produced at national, provincial, prefecture and county levels in 1,400 table formats provided by the "Data Tabulation Method of the First National Census of Agriculture". These tabulations were issued at the national and provincial levels in summary forms as part of a series of communiqués and bulletins by the NACO and NBS during 1998 (some 3,000 communiqués and 6,000 bulletins issued at national and provincial levels). In the meantime, a complete census database at the national level (data up to 210 GB) was completed in 1998 (at the NBS/FASC) and those for the provinces during 1999.

3.14 It is noteworthy that while the census provided a comprehensive picture of the prevailing rural structure for agricultural and other economic activities, some of the information proved to be controversial, primarily because the data showed large deviations from the current statistics. This was particularly the case for agricultural land and land use (which indicated an under-estimation of some 30 % in the current statistics) and for livestock numbers (with an over-estimation of some 20%). Given their important policy implications, the census data had to be verified through sample checks in various provinces before the census data were accepted. Through such verification processes, the census results' validity, both in terms of data and methodologies, became widely accepted, including the need to correct and improve the current statistics.

(ii) Dissemination and use of the census results

3.15 Considerable efforts have been made to disseminate the census results – this is also an area where the Advisory Committee has been deeply involved with a view to promoting wide publication and use of the census results. The Government delayed release of some of the data where the census results differed significantly from the current statistics, such as agricultural land and its use as well as livestock animals. In terms of computer-based dissemination, it was decided that this would cover macro data (tables and graphics), micro data (data files) and interactive queries (for producing tables).

3.16 Following the initial publications of manually-prepared tables, dissemination became increasingly computer-based, including the Internet and CD-ROM, all the major publications in both Chinese and English. These have included:

- release of manual tabulations of data (without information on agricultural land use and livestock numbers) at the press conference in FAO (February 1998);
- presentation of the draft of "Abstract of the First National Agricultural Census in China" containing 240 tables at the Press Conference in Beijing (December 1998);
- publication of the final version of the Abstract (December 1999), which included in addition to the data on agricultural land and livestock, 120 supplementary tables, main provincial results, and some geographical information using GIS technology as well as a methodological appendix. The preparation of the final version was assisted by FAO staff and international consultants, and was disseminated, in Chinese and English on CD-ROM and the Internet, among selected international organizations, national statistical offices, international libraries and journals;

- publication of a book entitled "Agricultural Census in China: a Success Story of International Cooperation" in Chinese, Italian and English.

3.17 In this context, one very important initiative under the projects has been the development of a one-percent sample database. This was strongly encouraged by the Advisory Committee in recognition of, and in response to, the demand for a facility for users to produce their own tables and to conduct statistical analysis, especially regarding data on individual holdings. The overall census database was too large for such an application by PCs, the sample database was designed to work with a one percent representative sample of the national data, i.e. 2.14 million households. The database, which is statistically significant and representative, was developed with the assistance of international consultants, using the SDA software in Window NT environment. The development was completed during the summer of 2000 and became available on the Internet website in September 2000. While the mission highly appreciates this initiative, it underlines the importance of ensuring a greater awareness of the public and its access to the sample database.

3.18 As part of the project aim to promote use and application of the census results for analytical studies by the key users, a campaign was carried out inviting analytical papers under 25 selected development themes by government officers and researchers at universities and research academies throughout the country during 1998-99. From over 2,500 research papers submitted to the FASC/NBS, some 150 were selected for review by a group of consultants to determine the best quality papers for awards. At the initiative of the Advisory Committee, it was decided (December 1998) to organize an international technical seminar as a forum to review these research papers and to discuss more broadly various methodological and substantive issues arising from the first agricultural census. Originally scheduled for October 1999, the seminar took place in September 2000 with 99 participants (statisticians, economists and policy analysts) from 17 countries, including representatives from several FAO Divisions – 39 invited papers and 70 contributed papers (including many of the research papers authored by the Chinese researchers) were considered. The discussions confirmed the technical validity and usefulness of the census and also highlighted critical issues to be addressed in further in order to improve the quality of agricultural statistics and their application to development policy analysis and planning (the topics included such issues as "New Picture of China's Agriculture Sector: Comparison of pre-census and post-census views" and "Use of Agricultural Census to improve the system of current statistics in China"). The proceedings have been widely published in a summary report as well as on CD-ROM and the Internet.

3.19 In summary, the efforts made in disseminating the census results have been impressive and exceeded the level initially envisaged. In particular, the development of the one-percent sample database is a very useful innovation and the international technical seminar served very well the purpose of disseminating the census results at the national and international levels and validating technically the main results and methodologies of the census. The increasing use of the CD-ROM and the Internet as the main electronic dissemination means also augurs well. However, these represent a first step in promoting effective and wide use of the census data as well as in improving the statistical information for the rural and agriculture sector. Although it is recognized that dissemination and use of the census results constitute a large effort of its own beyond the scope of the projects, much more remains to be done, especially at the provincial level.

e) ***Provision of Computers and Other Equipment***

3.20 One distinct feature of the projects was its supply of a very large quantity of equipment, which was a major input specifically requested by the Government. The main hardware provided was the PCs, totalling some 2,100 (736 under GCP/CPR/010/ITA, 1,020 under GCP/CPR/020/ITA, and 335 under GCP/CPR/025/ITA): in addition, some 40 servers and 14 laptop computers were delivered. The number of PCs supplied under the projects, although somewhat fewer than the originally planned 2,400, accounted for about a half of the total computers mobilized by the Government for the census. Some 90 printers, including 62 colour printers, as well as 28 photocopiers and 43 vehicles were provided, mostly in the second phase. The evaluation team did not make a specific review of these items – it did not have access to a complete inventory list. Regarding the PCs, the impression was that they had been deployed as planned throughout the FASC/PDC structure and had been used well. The mission was shown many PCs provided by the projects in all the locations it visited. Allowing that many of the PCs supplied earlier had become obsolete, as pointed out by the FASC staff, more recently delivered items appeared well-maintained and still used, but now mostly for training purposes. The mission received similar impressions on other equipment – in all the provinces visited, the mission was driven in the project-supplied cars, all well-maintained after several years with a good reputation among the drivers. As noted earlier, it was regrettable that the 335 PCs ordered under the last project was delayed due to procurement problems (actual delivery in December 1998), but they nevertheless contributed to the data processing during 1999 and 2000.

B. Project Management

3.21 The FASC management was generally dedicated and efficient both at national and regional levels. In particular, the national leadership at the FASC was very well-organized and effective, providing strong direction and coordination with the key national parties involved. At the provincial level, this appeared more variable. In most of the provinces visited, the evaluation team noted highly-dynamic management succeeding in establishing leadership role of regional centres in improving the statistical system within the regional environment as well as in building up technical expertise among highly-motivated young personnel.

3.22 The technical backstopping of the project was fully satisfactory. The FAO technical officers responsible for the project (in the fields of computer use, and especially statistics) have made once or twice yearly visits providing assistance to the FASCs and contributing to training activity and to methodological phases of the project. Their presence was very effective especially in: (i) work programme implementation; (ii) design of the census; (iii) data analysis, publication and dissemination. However, the mission notes with regret that there have been delays in financial reporting on the project budget in recent years due to the introduction of a new corporate financial management information system in FAO - for example, as a result the mission has not been able to have clear, up-to-date information on the project's budget and expenditure.

3.23 During the more than ten years' duration, the activity of the Senior Advisor guaranteed the continuity of the scientific and methodological formulation of the project and a high quality of descriptive statistical know-how, which were coherent with the needs for the preparation and realisation of the census. He also played an important role in organizing, selecting and orchestrating the inputs from a large number of consultants. While the majority of consultants as well as fellowship destinations were Italian (especially universities of Florence, Bologna and Naples and ISTAT), the arrangements seem to have

been generally satisfactory: the consultants appear to have provided relevant and quality services in general, and many worked several times, often providing continuity and synergy between consultancy work and fellowship training.

3.24 The Advisory Committee, as shown from the reports of the many meetings held both in China and in Italy, monitored closely and guided the implementation of the various phases of the project. The Committee steered the project implementation with a broader perspective of the rationale and objectives of the project, and it placed particular emphasis on: (i) complete analysis of the census results; (ii) prompt and wide accessibility and dissemination of the census results, including the establishment of the one percent sample database; and (iii) promoting the international seminar on census results (in September 2000). Thus, the Committee played an essential role in operational programming of project activities, compensating fully the absence of both a detailed long-term workplan and a resident international project team leader.

C. Government Support

3.25 Government support both at the national and provincial levels was effective and critical in the successful implementation of the projects. It provided the necessary policy and material support throughout all the phases, and played a decisive role in the organization of the census itself, especially through NACO. The Government mobilized millions of officials for the census as well as countless equipment, including over 4,000 computers, inclusive of those supplied by the projects. The total direct expenditures for the census is said to amount to some US$200 million – the provincial authorities also invested over 300 million yuan for the establishment of the RFASCs.

3.26 The NBS has also provided strong support to the work of the national and provincial FASCs in all the critical aspects of the project work, including training of the personnel at various levels, implementation and realisation of the two pilot censuses, methodological development, including the census design and processing, analysis and dissemination of the census data. It has been particularly important that it has taken steps for wider dissemination of the census results through electronic means, including the Internet and CD-ROM as well as by creating the one percent sample database. Its support has also been important in promoting initiatives for improving the statistical systems in line with the census, including the current statistics in cooperation with line ministries and departments. The NBS role will be decisive in future in sustaining the technical capacity of the FASCs and in ensuring the momentum in improving the statistical information system. In this respect, it is noted that the Ministry of Agriculture seems to have played a relatively passive role, and in future, greater cooperation with the Ministry would be desirable to ensure effective use of the census results.

D. Project Budget and Expenditure

3.27 The evaluation team had difficulties in obtaining a consolidated budget and expenditure information. The best estimates of project expenditures are shown in Table 1, together with the planned budgetary allocation. It shows that generally the expenditure followed very closely the planned budgetary allocation with very few deviations in terms of percentage distribution – only noteworthy changes were some savings achieved in the international personnel (US$ 160,000) and general operating expenses (US$ 200,000), which were reallocated mainly to official travel and the cost of Advisory Committee meetings. In terms of overall share in expenditure, equipment, especially non-expendable,

accounted for the largest amount, accounting for 56% - this was mostly for the 2,100 PCs. It is particularly striking that the share of expenditure for training (7%) has remained so modest, especially in comparison with that for equipment. This may be evidence of cost-effective design of the training component. In retrospect, however, more resources could have been used very usefully on training, particularly for further training in data analysis and dissemination aspects, particularly for the RFASCs. While time constraint would have been seen considerable for such an option under the implementation work pressure, it may have been feasible to devote more efforts to training of the RFASC staff during the last two years.

TABLE 1
Projects (GCP/CPR/010, 020, 025/ITA) – Budget and Expenditures
(in US$ 000)

	Planned (Project Document)	**Expenditures (as of 9/2000)**
Items		
1. Personnel	1,564 (15%)	1,406 (13%)
SPA	267	
Consultants	1,017	
Admin. Support	280	
2. Travel[1]	479 (5%)	811 (8%)
3. Contracts	-	3 (0.1%)
4. G.O.E.[2]	1,057 (10%)	865 (8%)
5. Training[3]	734 (7%)	693 (7%)
6. Equipment	5,804 (56%)	5,899 (56%)
Expendable[4]	811	367
Non-Expendable[5]	4,993	5,532
7. Sub-total	9,637 (92%)	9,677 (92%)
8. FAO Support Costs	881 (8%)	830 (8%)
9. Total Budget	**10,457 (100%)**	**10,507 (100%)**

[1] includes expenses for the Advisory Committee
[2] includes hospitality
[3] includes fellowships and study tours
[4] includes "office supplies"
[5] includes computers, printers, audio-visual equipment and vehicles

E. Project Monitoring, Reporting and Evaluation

3.28 Monitoring and reporting under the project has been largely quite satisfactory - implementation progress was routinely (generally annually) to the Advisory Committee, together with the proposed workplan for the following period. As noted above, the Committee monitored very systematically and in depth, introducing a number of important changes in the project implementation. For evaluation, however, the planned mid-term and final evaluations for the second and third phases were never implemented, except for this current final evaluation covering the second and third phases. The reason for this is not very clear: a possible explanation may be that the project's performance was judged satisfactory by the three parties, and given the close monitoring and review by the Advisory Committee, independent evaluations were not considered necessary – in fact, it would be doubtful if it would have been cost-effective to implement all the planned evaluations. In retrospect, however, it would have been useful to have implemented a terminal evaluation for the second phase, which would have provided an opportunity for considering adjustments in the implementation plans for the third phase, particularly in providing a greater emphasis on the need for strengthening the FASCs' capacity in the data analysis and dissemination of the census results. Furthermore, such an evaluation would have given an opportunity for keeping up-to-date the institutional memory of project implementation, including the details of project achievements and financial matters.

CHAPTER 4 - PROJECT RESULTS AND EFFECTIVENESS

A. Main Results

4.1 The effectiveness in realizing the planned results of the project is assessed in terms of three broad criteria derived from its immediate objectives during the second and third phases: (a) technical and institutional capacity established and used in the planning and execution of the agricultural census, (b) contribution of this capacity to the execution of the census itself, and (c) support given to the processing, dissemination and analysis of the census results in the post-census period. However, given that the project has represented only a part, as critical as it may have been, of the huge national efforts, it is difficult to make a clear attribution to the project on the overall success in undertaking the census, even in these selected areas. Thus, the assessment below should be seen as an attempt to gauge relative success in reaching the results set for the projects, rather than assessing the intrinsic contribution of the projects in isolation.

(a) ***Technical and Institutional Capacity Established***

4.2 As noted in the preceding chapter, the project made an impressive progress in this respect and has played an essential catalytic role in the preparation and execution of the census.

1) the establishment of the FASCs and data centres, with trained staff and essential equipment - the network of NFASC, 22 RFASCs, and 9 PDCs, supplemented with 335 Data Input Sites, served as the technical backbone for (i) development and transfer of the methodologies and procedures for the census, (ii) staff training of the statistical offices and other units involved at provincial, county and local levels, and (iii) operational and equipment support to the census. In particular, the number of the regional and provincial centres created nearly doubled the original target, and

the core staff of the NFASC and RFASCs (over 200 officers and agricultural statisticians) had developed sufficient expertise in key subjects to serve as some of the best trained specialists in NBS as well as trainers. These centres were equipped with advanced software packages for data handling and processing (many through the project) as well as with 2,100 PCs for the census data operations (nearly a half of the total required nationally). The FASC network structure provided the core for the National Agricultural Census Office (NACO), which managed and administered the census. However, the strength among the RFASCs seems to vary considerably.

2) development of methodologies - this is also an area where the projects' outputs and services played a very critical role in developing scientific methodologies for the census which reflect the international standards and which are adapted to the current requirements for planning and policy analysis under the new economic management system. These include: (i) the development of the census design and questionnaires which involved technical workshops (both national and international), several pilot-censuses and validation tests; (ii) methods and procedures for electronic data inputting and processing, including the innovative use of the OCR technique which shortened the time needed for mechanical data entry of handwritten returns; and (iii) the data analysis techniques, especially the introduction of the statistical data analysis package to assist in a user-friendly form of packaging the census information for dissemination and analytical uses. The validity of the census design and methodologies used has been largely established as the efficiency and usefulness of the data processing and analysis method introduced.

3) trained staff, especially the ASs and ASAs at the provincial and local statistical offices – although the number trained was about one-third less then the original target of 13,000, some 8,000 ASs and ASAs trained during the second and third phases (totalling to 12,000 for the entire project period) proved sufficient, serving as the technical core staff in the application of the methodologies and procedures for the census at various level, including for training of field enumerators and their supervisors. Further, the expertise they have developed in key statistical techniques (processing and analysis, sampling methods, quality control, etc.) has helped them play useful roles in strengthening the statistical systems in general. In some subject areas as well as among some RFASCs, nonetheless, there are some important gaps and weaknesses in the range of expertise developed to date.

(b) ***The Census Implementation***

4.3 As noted above, the census itself was implemented with impressive efficiency and organization, with field surveys and data inputting completed either on time or ahead of schedule. Not only the data handling process involved acceptable levels of errors, but the validity of the design and methodologies have been established through various technical checks, including the post-enumeration survey. The publication of summary results and initial analytical applications have also led to a wide recognition that the census has been an impressive success. While it is clearly impossible to imagine the smooth execution of the census exercise without the commitment and support given by the Government at all levels, it is also clear that the FASC structure provided the technical lead and support to this massive undertaking.

(c) ***Support to Processing, Analysis and Dissemination of the Census Results***

4.4 During the post-census period (since 1997), the project under the guidance of the Advisory Committee promoted and supported the analysis and dissemination of the census results, in many significant ways, beyond what had been envisaged in the original project workplan. These included additional consultancies, fellowship training and workshops and seminars:

1) Both at national and provincial levels, the highlights of census results have been disseminated, including abstracts, communiqués, and research papers, generally involving workshops and seminars. At the national level, the main results have been published in the Abstract and supplements, both in books, CD-ROM and Internet, all in Chinese and English.

2) In particular, the establishment on the Internet during 2000 of a sample database containing one percent of the farm households marks an important step, allowing analytical use of the data by wide audience. Similarly, the web site of NBS can be used for the analysis of the census data by all the interested users with a query facility through which tabulations and statistical computation can be requested but without giving direct access to the individual records and without any possibility of statistical disclosure. These are encouraging initiatives to be further pursued.

3) The international technical seminar held in September this year also facilitated dissemination at the international level. During 1998-99, the utility of the census information was tested through a large number of its application for data analyses and research work at provincial and national levels, many of these were presented at the international seminar. They are generally of satisfactory quality, taking into account: a) the data availability at the time of their preparation, and b) that (as mentioned above) no large training actions were programmed and implemented to analyse that peculiar kind of data. The international seminar in particular helped establish methodological validity of the census and bring to the fore some issues for future development of the agricultural statistical systems in China.

B. <u>Use of the Census Results and Emerging Major Effects and Impact</u>

4.5 The wide acceptance of the census data and methodologies has led to very significant applications and uses of the census results both at the national and provincial levels. These developments are broadly in line with the effects and impact envisaged in the project's longer-term development objective, including the following:

- application for the next (tenth) five-year development plan - the revised statistics and data emerging from the census, especially on the basic statistics, such as land use and structure of rural producers, are being used as the analytical base for development planning;
- reconciliation and streamlining of existing agricultural/rural statistics - the census results have been accepted as the basis for correcting and adjusting the discrepancies between its data and current statistics, including the correction of historical series, under-estimations (e.g. area cultivated by nearly 30%) and over-estimations (e.g. number of livestock by 10-20 %) in the current statistics. The process is ongoing throughout the country;

- future development of the national statistical and information systems on agriculture and rural sector - both the data and methodologies of the census have also been accepted as the sound basis for developing comprehensive statistical and information systems for the sector, and actions are being initiated for this purpose both at the national and provincial levels;
- analytical applications to key emerging development issues – beyond these developments within the statistics field, the census results have added impetus to interest in applying the census and statistical information to analysis of some key issues relating to policies and approaches for agriculture and rural development. These include such issues as those relating to the land-use and tenure, role of rural enterprises, environment and changes in rural labour force. Thus, a more dynamic interaction process is emerging between the census and statistical information system on the one hand, and their analytical and planning use on the other.

4.6 Project's impact on gender and sustainable development. The project has not yet had any direct impact on these aspects. However, it may be noted that: (a) the census data can be disaggregated by sex, allowing future analysis on gender-related issues, (b) training under the project covered a large number of women, some 20% of ASs and ASAs, and (c) the census information has already highlighted issues relating to the sustainability of certain types of agricultural land-use, leading to corrective measures in the development plans – for example, the census data showed that cultivation of environmentally fragile or marginal areas was 20-30 % more prevalent than estimated by the current statistics.

C. Sustainability of the Results Achieved and Related Issues

4.7 The project has achieved all the key expected results, including the catalytic role it played in the realization of the census. The census success, in particular, has opened up opportunities for improving the national statistical information system for the agriculture and rural sector broadly, perhaps to a greater degree than anticipated originally when the project was formulated. This is a very welcome development, which goes a long way towards meeting the expectations stated in the development objective of these projects. In this context, the issue of sustaining these results achieved so far has a paramount significance. There are some important concerns in ensuring the solidity of achievements to date.

4.8 Technical capacity of the FASC teams. While this has been strengthened significantly in general, the achievement has not been even between key subjects or among various FASCs. In terms of subjects, relative weakness exists in such areas as statistical analysis techniques (e.g. the Statistical Data Analysis package), data quality control, and sample designs. These are essential areas for the teams, especially those in provinces, to master in order to provide effective support to the on-going efforts to improve the current statistical systems, their utility and their application. Similarly, while they have acquired substantial expertise and experience in the design and organization of agricultural census, their skills are likely to be challenged in preparing future censuses, which may require further adaptation and innovation of the skills they have learned through the project.

4.9 Facilitating greater access and use of the census data. There is a growing demand among the policy makers, planners and researchers for access to the census data at desegregated levels – in future, the demand can be expected to expand, as time-series data become available. While both the NBS and provincial statistical offices have established their respective census databases in their computer centres, access to these databases

appears to be limited, and most users so far have relied on published summary tables. In particular, the lack of a sample database at the provincial level (similar to the one- percent sample database established at the national level) is considered to be a serious gap for analytical use at the provincial and local levels. These limitations are likely to constrain the use of the census data for planning and policy analysis, especially at the provincial and local levels. In this respect, it would be essential to ensure adequate technical capacity to facilitate effective dissemination and use of census results, together with adequate computer facilities, much of which provided under the project have become or are becoming obsolete. The problem appears more serious in the provincial centres.

4.10 The future of the FASC structure. The structure has served well for coordinated national efforts in developing core expertise for methodologies in agricultural statistics and census as well as for underpinning the massive technical training and organization of the first agricultural census. The successful outcome of the census also reinforced the FASC structure with high visibility and a sense of authority, enabling the FASCs to play a leading role in promoting improvements in the agricultural statistical information systems. However, with the completion of the first census, and in the absence of immediate follow-up external support to the project, the NBS no longer considers it appropriate to maintain the FASC structure, and the future status of national and provincial FASCs is being decided separately by respective authorities. This introduces an important element of uncertainty regarding how effectively the capacity of the existing FASC teams of experts may be used in future at national and provincial levels. For example, at the national level, the FASC team is expected to be split into two groups, one being transferred to the Agricultural Census Division of the Rural Survey Organization and the other to a new unit with primary responsibility for developing cooperation with NGOs. In the four provinces visited by the mission, a similar development is likely in two, while the FASCs are likely to continue as distinct units in the other two, perhaps with some changes in their functions (see Annex 4 on the mission's impressions of the four provincial centres). This raises important issues, such as (i) how to ensure sustainable use of the existing core expertise functioning as a team in future statistical work, (ii) how to sustain the cooperation and coordinated efforts achieved under the project among the NBS and provincial offices, and (iii) how to ensure, without the FASC structure, effective leadership to facilitate the optimal use of the capacity and coordination at national and provincial levels.

D. Project's Overall Cost-Effectiveness

4.11 This is always a complex and difficult issue to address, especially for a technical cooperation project like this one where it is not possible to apply a cost-benefit type of quantitative assessment. In this attempt, the assessment will focus largely on the considerations as to whether the project represented a "least-cost" approach, including efforts made in the design and implementation for making the "best use" of the resources available.

4.12 Broadly, the mission's assessment is positive in this respect – in fact, it can be argued that the project has been highly cost-effective. In support of this, the following can be noted:

- The overall project design – as an input into the national effort for preparing and implementing the census, the project design focused on providing those essential elements the Government lacked at home and needed most to obtain from abroad, i.e. introduction and adaptation of the appropriate knowledge and technologies from

international sources as well as developing the necessary national technical expertise, including staff training. The project's resources (US$ 10.5 million) were dedicated for these purposes, about a half for technical cooperation ("software") and half for selected equipment ("hardware"). The project resources were very well matched by much larger national resource mobilization (over US$ 200 million), buttressed by firm policy commitment. Furthermore, the resources were used for an integrated programme of action on several fronts, implemented over a period of seven years, allowing sufficient adaptation and national ownership.

- Effectiveness in achieving the technical outputs – as noted above, the achievements have been impressive, including (i) the network of 33 FASCs at the national and provincial levels with trained staff and facilities providing the technical and institutional backbone for the census work, (ii) development of sound and innovative methodologies for the census, providing the framework for future statistical development for the sector, (iii) a cadre of core well trained professional staff at the FASC units (some 200 officers) and regional statistical offices (8,000 ASs and ASAs). This stock of technical and institutional capabilities can be long lasting beyond the execution of one census.
- Training approach – this has been a critical element of the project strategy for building the necessary technical and institutional capacity in a relatively short time. Training was linked with the essential capacity to be developed and it has been pursued on a pyramid approach in which the core trainers were built to allow vertical fashion of training, the national FASC staff and RFASCs serving as trainers for the next layer of larger numbers of trainees. The curricula for various training courses were standardized, based on the core competency to be built through each training courses, and overseas training and international consultancies were selectively used for critical technical expertise. Although it is not possible to calculate the unit cost of various training, indications are that the training was approached in a highly cost-effective manner.
- Scope of project implementation – during the implementation process, care has been exercised to ensure maximum degrees of dissemination and interface between the census work and its potential uses. Dissemination through the Internet, use of CD-ROM and the development of the one percent sample database, as well as seminars and workshops represent the significant efforts made for this purpose.
- Finally, the effects and impact observed above point to a highly catalytic effect of the project, with significant implications for future development of agricultural statistical system in China.

E. Key Lessons

4.13 The project is rich in implications and lessons for technical cooperation for several reasons: First, it has been very successful in many respects; second its design and implementation arrangements have had some distinct features; and third, it has also been one of the largest executed by FAO (in general and under the FAO/Italy Cooperative Programme in particular), covering common elements of technical cooperation. The following may be cited as salient lessons, although they are not always new:

- Strong commitment by the recipient government – the Government of China, especially the NBS, performed like a text book case, providing strong ownership and leadership for the project, including devoted and high-quality national staff and resources. At the same time, the NBS leadership showed sufficient flexibility to concerns of the donor and FAO in some key aspects of the project work.

- Committed support by the donor over a sufficiently long-term period – a steady support over a total of 13 years to the Chinese Government's aim in strengthening its technical capacity for agricultural census and statistics has been an essential element of the project's success. In particular, this support included not only the provision of donor resources but also intensive involvement in the project implementation through the Advisory Committee.
- Focused and integrated strategy through a programme-oriented approach – the key results to be achieved were clearly defined and the key technical components (methodology development, training and institutional development) were coherently covered, reinforcing synergy among these components. Further, given uncertainties inherent in such a huge undertaking, the project was designed and implemented with sufficient flexibility to adjust to changing situations over the long period.
- Clear focus and priority to technical capacity building – the consistent emphasis on this aspect guided the project implementation, especially on ensuring adequate capacity in the core expertise build around the FASCs. The emphasis on strengthening the national FASC during the first five years was particularly important. While the project had a large component for PCs and other equipment, this focus on technical capacity was not compromised.
- Balanced training approach – as part of capacity building strategy, the training programme distinguished needs and approaches to different types of trainees, with training curricula well focused on the practical needs of various trainees' respective functions in the project. The greatest attention was given to the core FASC staff through a combination of short-term fellowships, study tours, and working with international consultants on practical issues with a view to their serving as trainers. This made it possible to follow the pyramid approach whereby more senior national staff were trained to train the lower level staff.
- Close cooperation for managing the project, especially through the Advisory Committee – throughout the project period, there has been very close collaboration between the NBS, donor and FAO based on a shared commitment to the project's success. In particular, the Advisory Committee played a critical part, facilitating frequent and in-depth monitoring and review of the project, including discussion and resolution of policy issues. The Committee helped build the common perceptions and a joint sense of ownership on the project. This Advisory Committee arrangement, with appropriate members, can be an effective steering body for a project like this one.
- Need for critical attention to the sustainability of project results – while the project has been successful in achieving the planned key results, greater attention could have been given to the use of the census and emerging statistical results. In fact, though some useful attempts were made to address this aspect during the last years, such efforts could have begun earlier.
- Importance of independent evaluation – linked to the above point is the fact that those implementing a project are essentially concerned with their narrower aim at hand, making it difficult for them to adequately consider longer-term issues. As noted above, an evaluation of this project towards the end of the second phase would have been very useful in reviewing wider aspects of the project's results, especially because the project managers were very preoccupied with the successful implementation of the census. For FAO, this should be seen as an important lesson.

CHAPTER 5 - CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

5.1 In the light of the foregoing findings, the evaluation mission reached the overall conclusions as follows:

a) The relevance of the project objectives and design – both the long-term and immediate objectives have been very relevant to the strategic needs of the country in establishing an improved national system of statistical information for the agriculture and rural sector through conducting the first national agricultural census. The project design has also been appropriate with focus on the national capacity development in the methodologies and technical/institutional capabilities at national and provincial levels, including a long-term commitment by the donor, the Government and FAO as well as a flexible, programme-oriented approach. In retrospect, however, the design could have given greater emphasis to strengthening FASC capacity in statistical analysis and application.

b) Implementation efficiency – this has been quite satisfactory in general, with all the main outputs produced on time with good quality, including the trained statistical staff and a network of institutions at national and provincial levels, the census and related statistical methodologies, support to and dissemination of the first national agricultural census results. The three parties worked efficiently, and in particular, the Government taking the ownership buttressed with strong policy commitment and resources mobilization. The project arrangements, including a part-time CTA, were effective, and the Advisory Committee in particular proved an effective mechanism for guiding the project implementation.

c) Effectiveness and results achieved – all the main immediate objectives have been satisfactorily achieved. These include in particular: (i) over 200 technical officers and agricultural statisticians trained in key subjects (mostly in national and regional FASCs), and serving as the core national experts and trainers; (ii) some 8,000 agricultural statisticians and agents trained in census and statistical methods in provincial and county statistical offices; (iii) agricultural census methodologies reflecting the international standards developed, pilot-tested, actually applied, and validated, thus proving a sound methodological base for future agricultural statistical development in China; (iv) the first national agricultural census results published and established in databases at national and provincial levels, including a sample database (one percent of individual holdings) for analytical use at the national level published on Internet; and (v) active application, both at national and provincial levels, of the census methodologies for re-alignments and improvements in the agricultural and rural statistics. In particular, it is noteworthy that the strategic significance of census results appears to have been well-recognized at the national and provincial levels, thus generating important effects and impact on the future development of statistical information and its use. These include, in particular, the application of the census results in the preparation of the tenth five-year development plan and in improving the statistical information systems, as well as growing interest and initiatives in adopting advanced statistical techniques like GIS and in applying the improved statistics for development planning and policy analysis. These welcome developments, to be sustainable, however, make it essential that a solid technical capacity exists in the statistical offices, especially that of the FASC teams, to provide effective support, including fuller accessibility and usability of the new statistical information to a wide range of users. In this respect, there are still some important gaps, as indicated below (see section e) below).

d) Critical factors that have affected the project effectiveness – the satisfactory performance is largely due to (i) the relevance and strategic importance of the project objectives in the context of rapidly evolving developments in agricultural and rural sector, which ensured the strong national policy support, (ii) appropriate design and strategy for implementation with built-in flexibility for learning and adaptation over a sufficiently long period, coupled with substantial donor support over the period, (iii) effective managerial and technical leadership for the project (NBS and FASC in particular), (iv) effective training of large number of

national staff in the context of coordinated institutional structure at national and provincial levels and (v) strong international technical inputs through FAO and project Advisory Committee.

e) Sustainability of the results and related issues – with the projects' very impressive achievements and effectiveness, the main issue now concerns that of sustaining the results so that a very considerable momentum begun for broad improvement in the agricultural statistical information systems in the country can be maintained towards realizing the projects' development objective. The mission highlights three areas, in particular:

- technical capacity of the FASC teams – some gaps and weaknesses both among the various centres and subject areas, particularly in such key subjects statistical analysis techniques (e.g. the Statistical Data Analysis package), data quality control and sample design, which are critical to ensuring effective contribution of FASCs to use of the census data and to future improvements in statistical systems. The provincial centres appear to needs greater attention in this regard;

- greater accessibility and use of the census results – while many steps have been taken already, further enhancement in the accessibility of the census database would facilitate its use by wider users for both improving the statistical system and application to policy and planning analysis. In particular, the provincial FASCs lack a sample database for analytical uses, like the one-percent database established at the national level, which represents a serious constraint to fuller use of the census results at the provincial and local levels; and

- future of the FASC structure – this has represented a central element of the national strategy for establishing an institutional capacity for the agricultural census work, and its validity and usefulness have been fully demonstrated. The existing uncertainty about their future status, especially at the provincial level, thus raises important issues on the institutional and technical sustainability in maintaining teams of well-trained specialists built up through the projects. Their ability to continue to work effectively as a team within an enabling institutional framework would be critical for ensuring their continued contribution to statistical improvements, including future census exercises.

B. Recommendations

5.2 As noted above, the mission sees both the need for a limited but priority follow-up action to consolidate the project's achievements and opportunities for substantial support to encourage improvements in improving the statistical systems and their use for development planning and analysis. Its recommendations are focused on salient aspects in these areas.

5.3 Additional priority support. The mission considers it essential that those important gaps in the results noted above be addressed at an early opportunity in 2001 so as to consolidate the project achievements and provide a solid basis for sustaining the very substantial progress made. In this respect, the following is recommended:

a) the Government, especially the NBS and national FASC, should review and take measures to provide:

(i) additional capacity building in selected subjects, particularly statistical analysis (including the use of the Statistical Data Analysis package), data quality control, and sample design. This would require further intensive training of the technical officers and agricultural statisticians, largely through in-country training with support of international consultancy. The training should aim at building a solid technical strength at the national level to serve as the resource centre, but the main target should be on the provincial staff; and

(ii) technical support, including related training, to facilitate greater access and use of the census database. The priority should be on facilitating the provincial offices in establishing their own sample databases for desegregated analysis as well as in opening the census databases themselves for wider users, if possible by placing them on Internet or a similar information network. Such support could also include case studies on selected priority topics, like land use and gender, to illustrate analytical use of the census data. The national FASC team can be expected to play a lead role in providing technical support, but further training of selected provincial staff would be required.

b) the NBS and national FASC should prepare specific proposals on the above as a basis for possible external technical assistance. FAO should assist and cooperate with the Chinese authorities in this process, if appropriate;

c) given its previous involvement, Italy is likely to be interested in ensuring the sustainability of the project's results – it is certainly entitled to be approached in the first instance as the possible donor. Thus, if appropriate, the Government, Italy and FAO should explore the possibility for additional assistance, including the key parameters, such as the timing and scope of the assistance;

d) in view of the uncertain future of the FASCs (delays will increase risks of provincial authorities taking decisions unfavourable to maintaining the existing FASC teams), urgent action is needed to ensure the effectiveness of such additional support. Thus, the Government and FAO should initiate consultation with the prospective donor as soon as possible early in 2001. In this connection, FAO and the Government should request Italy that any remaining funds under the projects (GCP/CPR/020-025/ITA) be reserved as a possible source of additional assistance;

e) in this connection, the mission understands that a substantial uncommitted balance (up to some US$ 400,000) is likely to remain under the projects (GCP/CPR/020-025/ITA), and it is strongly suggested that the Government and FAO request the donor's agreement to use these funds for expeditious financing of the additional assistance outlined above;

f) with a view to ensuring the full effectiveness of a possible assistance outlined above, the NBS and provincial statistical offices should make clear commitment that (i) the FASC teams will be able to function as the core technical team in facilitating effective use and dissemination of the census results (both database and application of methodologies) as well as in improving the quality of statistical information for agriculture and rural sector in their provinces, and (ii) national FASC or NBS will continue to play the lead role in this consolidation process, including coordination among the provincial FASCs.

5.4 Support to improving statistical systems and use. Beyond the immediate purpose of consolidating the project's results, the mission believes that good opportunities exist now to encourage and support efforts underway for broader improvements in the agricultural statistical systems. These areas include (i) reconciliation of the census data and current statistics, both at the national and provincial levels, (ii) development of integrated comprehensive databases for agriculture and rural sector, especially at the provincial level, (iii) application of advanced data analysis techniques like GIS, also at the provincial level, and (iv) training and demonstration of use of the census data for analysis of priority policy issues, particularly at the provincial level. It is recommended, therefore, that the NBS prepare, with FAO assistance, proposals regarding possible external assistance in these areas. This is likely to require substantial external support and should be prepared as a separate technical cooperation project, for which FAO should assist in exploring interest of potential donors. It would be highly preferable, if any of these items can be included in the package of support outlined in para. 5.3 above, particularly by Italy (preferable donor).

5.5 Support to improved rural and local development planning. Furthermore, the mission saw ample evidence in its visits to the provinces that there is considerable interest in and need for capacity building for rural and local development planning, for which the census is seen as providing a useful information base. In the context of the decentralization process and many policy issues stemming from rapid changes taking place in many rural areas, such capacity building, including strengthening the interface between statistical offices, agricultural and rural development planners and policy research institutions, would be a logical sequel to the strengthening of statistical systems. It is recommended that FAO explore, in consultation with the Chinese authorities, possibilities of technical cooperation in this area with potentially interested donors. Given the possible scale of such assistance, it may be appropriate to explore the possibilities of a multi-donor support programme.

5.6 Use of Chinese expertise. As noted above, the FASC staff, especially at the national level, have achieved a high level of expertise and practical experience in planning and conducting an agricultural census. Their experience would be particularly relevant to similar efforts in countries in transition, especially in the Asia Region, and the Chinese authorities are prepared to play a role in technical cooperation among developing countries (TCDC). It is thus recommended that FAO, especially the Statistics Division, make a concerted effort in facilitating TCDC cooperation between China and other interested countries in the field of agricultural census and statistics. This could include the use of selected Chinese individual specialists as part of FAO assistance.

5.7 Finally, the mission would suggest that given the next census would be expected in 2007 and the long period of time needed to prepare for its execution, the Government and NBS may wish to consider initiating soon plans for the next census, which presumably would be modified substantially from the first exercise. This may include discussion with FAO for possible technical assistance on a much more limited scale than that provided under the projects.

ANNEX I - TERMS OF REFERENCE

Final Tripartite Evaluation Mission by
Italy, FAO and China

of

PROJECT GCP/CPR/010/ITA
Preparations for an Agricultural Census in China,

PROJECT GCP/CPR/020/ITA
Chinese Agricultural Census - Processing, Tabulation and Analysis of Census Results
and
PROJECT GCP/CPR/025/ITA
Chinese Agricultural Census - Processing, Tabulation and Analysis of Census Results, Module II

DRAFT

1. Background

1.1. Previous phases of these projects

Since 1987, the FAO-Italy Cooperative Programme assisted the Government of China to prepare and conduct its First National Agricultural Census and to organize a permanent rural-agricultural statistical system. Within this framework, support was ensured through the implementation of the following projects:

- Project GCP/CPR/006/ITA including a one-year extension (US$5,968,348, November 1987 to 1993).
- Second phase project GCP/CPR/010/ITA (US$5,395,000, August 1993 to December, 1998).
- The on-going project GCP/CPR/020/ITA (US$4,180,276 September1996 to June 2000)
- The complementary project GCP/CPR/025/ITA (US$880,422, May 1998 to June 2000).

The State Statistical Bureau of China (SSB now named National Bureau of Statistics NBS) and the Statistics Division (ESS) of FAO HQ were assigned, respectively, as the Government Implementing Agency and lead technical division for all the four projects.

During its operation from 1987 to 1993, project GCP/CPR/006/ITA contributed to establish the "Italy/FAO Food and Agricultural Statistics Centre"(FASC) in Beijing (China) and six Regional Food and Agricultural Statistics Centres (RFASCs), created in order to develop national and provincial agricultural statistical training and research capabilities in preparation for the agricultural census. Moreover, FASC prepared and organized a pilot agricultural census with complete enumeration of one county of approximately 100,000 households, in order to obtain experience in organizing and implementing a large-scale survey, to check the relevance of the census questionnaire, and to identify problems in the recruitment and training of enumerators. Finally, the project provided computers (4 mini and 205 micro); audio-visual and training equipment to establish class rooms in FASC and RFASCs. The final tripartite evaluation mission of project GCP/CPR/006/ITA considered this project successful in achieving its initial objectives and

suggested to continue to support the long-term goals providing further assistance in training and data processing strategies for the national agricultural census of China. Project GCP/CPR/010/ITA was then approved.

It has been decided to implement the final evaluation mission of GCP/CPR/010 ("Preparation for an Agricultural Census in China") jointly with the project GCP/CPR/020/ITA. Moreover, to complete the country's first national agricultural census, the complementary project GCP/CPE/025/ITA has been implemented.

Considering the connection between the projects, the present evaluation mission, for which this TOR is prepared, therefore, refers to the three projects 010, 020 and 025 whose objectives and results are briefly summarised as follows.

1.2. Project GCO/CPR/010/ITA

This project was designed to implement three main components: training activities, pilot censuses, data processing and research activities in order to develop the methodological and technical capabilities of FASC and RFASCs to implement the First Agricultural Census of China. The immediate objectives and outputs were:

a) to enlarge the capability of the existing six RFASCs and establish ten additional RFASCs to provide a more complete coverage of the country, thus strengthening the training and educational system;
b) to improve and update the training capability of the SSB, FASC and RFASCs in agricultural statistics, agricultural census techniques, data collection and processing and statistical analysis and organizing adequate specific training courses for the national staff;
c) to gain experiences and to identify problems in agriculture census field organization, to test processing of data and the adequacy of the information gathered for the needs of main users by conducting various pilot agricultural censuses;
d) to study methodological and technical solutions for data processing, data analysis and complex data tabulation of census results.

In relation to the first two objectives, 10 RFASCs were established in addition to the six already existing centres. The operative structure of the 16 RFASCs for training and research studies was set up and their implementation carried out. In addition, another 6 RFASCs and 9 Provincial Data Centres (PDCs) were established to ensure each Chinese "province" had either a RFASC or a PDC ready to participate in the 1997 Census. The planned training courses for agricultural statisticians and statistical agents were designed and implemented, also standardised teaching material; both written and videotaped were prepared. The training programme was organized in a top-down pyramidal programme in order to create e multiplier training effect over China. A fellowship programme was also implemented mainly with free assistance from ISTAT and the Department of Statistics of the University of Florence, Bologna Naples and Padova (Italy). Refresher courses and study tours to visit National Statistical Offices of different countries (Australia, Argentina, Brazil, France, Germany, Spain, etc.) and various International Statistical Organizations were also implemented.

As far as agricultural census field organization, 16 pilot census (one by each RFASC) were organised, followed by a nation-wide pilot census to define the final strategy for the implementation of the national census. An International Seminar on the Experiences on Agricultural Censuses was

organized in 1995 in Beijing (China) in order to discuss the different approaches and methodologies used by different countries in taking the agricultural census.

Moreover, the project conducted a lot of studies on specific hardware and software systems for data processing, data analysis and complex data tabulations, necessary for the success of the agricultural census.

Delivery and installation of computers, printers and audio-visual equipment was completed, including some 550 computers:

A detailed Programme for taking the First Agricultural Census of China, comprising questionnaires design, definition of the data collection strategy, instruction manual, training courses for supervisors and enumerators, organization of field enumeration, preparation of the publicity campaign, organization of data input, quality control of data and data processing, was prepared.

The major problem met by the project was the definition of the data processing strategy. Having tested different data processing packages, the Blaise software package was chosen as the processing software for the agricultural census and changes to improve it were made jointly by FAO, SSB and CBS Netherlands. But a few months before the beginning of the census the Chinese counterpart decided to use a different data processing strategy, already in use at the SSB Computer Centre.

1.3. Project GCP/CPR/020/ITA

In relation to the general objectives of the former phases, this project was designed with the aim to support the Chinese Government in preparing and actually carry out the processing, tabulation and analysis of census results. The study conducted as part of the second component of Project GCP/CPR/010/ITA had identified the technical and methodological solutions to be followed in processing, tabulating and analysing census results. This project covers the most important and urgent components of the census efforts in data processing to establish the necessary data centres, in tabulation programmes for the census and in preliminary analysis of census results. In order to meet this goal, this project carries the following objectives and activities:

a) provide technical assistance and equipment for the establishment of one data centre at FASC, thirty-one data centres at RFASCs and the PDCs, and a core of 335 data input sites to be created in each prefecture. (It should be noted that while the data centres will become part of the permanent data processing structure of NBS, the 335 input sites instead will cease to operate once data input is completed);

b) ensure that the data processing personnel have the required skills for a smooth, efficient management and operation of the data centres, organizing a series of tailored training courses, fellowships and study tours;

c) development of programmes for the input, validation, tabulation and processing of census data to be distributed to the RFASCs, the PDCs and the input sites;

d) ensure, through support missions of international experts, the census activities and that all data processing activities required during the 1997 Agricultural Census run smoothly and efficiently;

e) ensure the preparation of preliminary statistical and economic analyses on the results of the 1997 Agricultural Census to inform the users about characteristics of the work done, the quality of data

obtained, the agricultural practice, structure and agro-economics characteristics of the different areas;

f) produce a post-census evaluation report to benefit coming censuses and the future operation of the RFASCs.

The Chinese National Agricultural Census Office, formulated the final programme of the Agricultural Census in which the census methodology, questionnaires, items and rules for implementation were standardised and demarcated, the census covered over 214 million households, 740 000 administrative villages, 43 000 townships and towns, and 1.4 million townships and town enterprises. It was conducted under supervision of the State Council and the People's Governments at various levels. In the country as a whole, 7.24 million census staff members were specially trained through 140 000 training courses. 1.65 billion RMB Yuan (US$194 million) were spent for the census implementation from Chinese national sources. To ensure broad public support for the census, more than 90 000 TV publicity programmes and 1.76 million radio programmes were broadcast and 1.08 million publicity articles were issued and 36 million publicity posters were put up all over the country.

During the collection of data an International Committee, established by the project, visited the fieldwork, in order to check the adequacy of the work carried out in comparison with the international standards. A Post Enumeration Survey was organized to verify the quality of data collected under the guidance and supervision of international experts.

As the census data take up about 210Gb of storage capacity, this precludes the processing of data on most PCs and, in any case, the time to generate tables and to carried out analysis with such a database is too lengthy. Therefore, it was decided to prepare a (1%) sample of individual data collected in the Agricultural Census, to conduct rapid analysis of the census data. Such a sample data set is now available and the project is studying the problem of confidentiality and the risk of statistical disclosure.

Finally, it was decided to organize, in May/June 1999, in Beijing, an International Seminar on China Agricultural Census Results to discuss the methodologies used for taking the Agricultural Census and, above all, on the analysis of the results obtained. However, due to some delay in preparing the tables and the need for assessing the quality of census data, especially on animal husbandry and agricultural land, most of the papers to be presented at the seminar by potential authors cannot be started before next month of October 1999, it was decided to hold the international seminar in April 2000. Therefore, the NTD of project is extended to June 2000.

1.4. Project GCP/CPR/025/ITA

This project is thus the fourth of Italian funded projects assisting China to complete the country's first national agricultural census, and, is complementary to project GCP/CPR/020/ITA, running concurrently with it and covering less urgent components related to census operation. The project focus mainly on data input and validation, and on the flow of data between different data centres and FASC.

More specifically, this project has the following four immediate objectives:

- to provide 335 input sites in each prefecture with the software, the hardware and the equipment necessary to support census operation;

- to ensure that selected personnel have the required skills to manage the data centres by organising a set of tailored training courses for a total of about 5,000 trainees, as well as conduct several study tours;
- to ensure all data processing operations run smoothly;
- to assist in the preparation of preliminary statistical and economic analyses of the 1997 Census results at the sub-provincial level, and produce preliminary census reports.

All the activities planned have been implemented: 335 Personal Computers (PCs) as well as the equipment for the experiments in the use of Geographic Information System (GIS) to improve the analysis of Census Data were purchased and delivered. A Sample of Individual Data for rapid analysis was prepared as well.

Various consultancy missions and fellowships have been undertaken in support of the Post Enumeration Survey Analysis and GIS experiments. The consultants also conducted training courses and seminars to NBS, FASC and RFASCs officials on the design of sample surveys and data quality control on the use of GIS and its capability of territorial analysis of agricultural census data.

This project is now organising a study visit, of two-weeks, on the analysis of census data for 5 high-level officials. These officials will visit Statistics Offices in three European countries, i.e. France, Switzerland and Italy, to study methods of data presentation and dissemination. The participants of these study visits will also present and discuss the main findings of the Chinese agricultural census. Other project activities will essentially be devoted to the implementation of the Geographical Information System (GIS) for all the provinces of China. Activities to co-ordinate the organisation of the International Seminar that will be implemented by project GCP/CPR/020/ITA is also foreseen.

2. Purpose of the Evaluation

The evaluation is intended, as the project draws to a close, to provide an assessment of the overall activities carried out and on the project results, on what can be expected to be the impact on beneficiaries and to provide recommendations to the Government, FAO and the donor on further steps necessary to consolidate progress and ensure achievement of objectives. Any further needs for external assistance will be identified.

3. Scope of the Evaluation

The Tripartite evaluation mission will review the activities undertaken over the last years and the overall results of project implementation to date in order to:

- Assess the relevance of the projects to development priorities and needs;

- Examine the projects effectiveness in reaching their immediate objectives, especially those dealing with technical and institutional strengthening of national and regional training programmes and technical assistance for the preparation of the First National Agricultural Census, for data quality control and for the tabulations and analysis of data collected using also G.I.S. techniques;

- Assess efficiency in the implementation and management of the project;

- Assess project results, including a full and systematic assessment of outputs produced to date and their impact on beneficiaries;

- Identify main factors which have limited or have promoted the efforts to obtain the projects expected outputs, objectives and results;

- Formulate eventual recommendations on any further need for external assistance.

The mission should pay special attention to the following aspects:

- Assess the adequacy of the project management in planning and executing project activities, including work plan formulation and co-ordination;

- Examine the efficiency in implementing activities as well as the volume and quality of outputs;

- Review achievements of the project, in particular the extent to which national and regional food and agricultural statistics centres (FASC and RFASCs): a) have acquired the capability to organize agricultural statistical surveys and to conduct analysis of data collected, also with G.I.S., b) have been strengthened and assess their capability to process data, c) have been asses the sustainable benefits and programmes of agricultural statistical surveys and analyses that are likely to be institutionalised in China;

- Assess the cost-effectiveness of the project;

- Recommend action to Government to ensure follow-up and sustainability of project results;

- Identify, if appropriate, potential areas which might require further international action to assist the Government to fully utilize results achieved, aiming at full self-substainablity.

4. Composition of the mission

The Chinese Government, the Italian Government and FAO will each be represented by one person on the evaluation team. In selecting the personnel to carry out the evaluation, objectivity and independence as well as competence as an evaluator and in the technical fields related to agricultural statistics and agricultural census, will be the principal criteria.

mission members should be independent and thus have no previous direct involvement with the project either with regard to its formulation, implementation or backstopping.

The leader of the team will be determined jointly by the three parties. He/she will be responsible for ensuring that the report is completed within the period assigned to the evaluation team and in line with the format and methodologies practised by FAO. The team leader should have special competence in evaluation of technical cooperation projects and also should have experience in agricultural statistics training and in conducting and analysing agricultural statistical surveys and census.

The other team member should preferably be an expert in Agricultural and Development Economics, Institutional Building, Agricultural Censuses and Use of Census Data for Economic Analysis and Policy Design.

The Chinese Government's nominee should be a senior statistician/economist with experience in agricultural statistics.

5. Timetable and Itinerary of the Mission

The work of the evaluation mission is planned for about four weeks of which one week will be devoted to work in Rome at FAO HQ and three weeks (approx. 18.11.99 to 9.12.99) for a visit to projects in China.

The international members of the mission will be briefed and debriefed at FAO HQ in Rome, by the responsible FAO operations and technical officers. The nominee from the Italian Government may be briefed by the Ministry of Foreign Affairs in Rome and the Chinese Government's nominee may be briefed by the National Bureau of Statistics in Beijing (China).

All team members will assemble in the office of the FAO Representative in Beijing for a special briefing at the beginning of the mission visit in China. The team is expected to stay in China for three weeks and to review projects activities both in Beijing (at FASC) and in two or more RFASCs, as well as in other provincial sites, if necessary. The draft report should be completed before the departure of the mission from China so that the draft report or, at least, the major findings and recommendations could be discussed at a wrap-up meeting attended by representatives of the Chinese Government, Italian Government and FAO.

6. Consultations

The mission will maintain close liaison with FAO and the concerned relevant agencies of the Chinese Government, as well as with national and international FAO projects staff. The mission will maintain close liaison also with the FAO Representative and the representatives of the Italian Government in China.

Although the mission should be free to discuss with the authorities concerned anything relevant to its assignment, it is not authorised to make any commitments on behalf of the Government, the donor, or FAO.

7. Reporting

The mission is fully responsible for its independent report, which may not necessarily reflect the views of the Government, the donor or FAO. The report will be written in conformity with the headings shown in the Annex I **(the standard outline is attached).**

The mission report should be completed, as far as possible, in the field, so as to facilitate the discussion of the findings and recommendations with all concerned parties and wherever possible consensus achieved. In any event, a draft report should be prepared in the field and made available to the Chinese Government, the Italian Government and FAO Office.

The mission leader bears responsibility for finalization of the report in Rome, which will be submitted, to FAO within two weeks of mission completion. FAO will submit the report to the Chinese Government and the Italian Government together with its comments on the report. The

mission will also complete the FAO Project Evaluation Questionnaire shown in Annex I. The FAO representative in the mission will be responsible for submitting this evaluation summary sheet at FAO HQ during debriefing.

ANNEX II - MISSION ITINERARY

26 October	* Arrival Beijing; *Working Dinner with DG of the FASC
27 October	* Briefing with FAOR; *Briefing with the Italian Embassy; * Briefing with FASC; * Dinner with Deputy Commissioner of the National Bureau of Statistics
28 – 29 October	* free; * (28th) Working Dinner with DG, Rural Survey Organization, NBS
30 October	* Travel from Beijing to Herbin, Heilongjiang;* Briefing with the Regional Statistics Bureau and RFASC
31 October	* Discussion with RFASC staff; * Discussion with provincial government representatives; * Visit to Suihua Pref. Data Processing Centre
1 November	* Visit to Acheng City and rural households
2 November	* Travel to Fuzhou, Fujian
3 November	* Briefing with Fujian Provincial Bureau of Statistics; *Discussion with RFASC staff; *Discussion with the representatives of provincial government departments, university and academy of agricultural science
4 November	* Visit to the RFASC facilities; Visit to Fuqing County and rural households
5 November	* Travel to Jinan, Shandong
6 November	* Briefing with Provincial Statistic Bureau and RFASC; * Discussion with representatives of provincial departments, university and academy of agricultural science
7 November	* Visit to Chufu city and prefecture; *Travel to Beijing
8 November	* Visit to China Agricultural University and Chinese Academy Science; * Discussions at Ministry of Agriculture (international Cooperation Department and Department of Market Information)
9 November	* Discussion with FASC staff; * Preparation of interim debriefing paper
10 November	* Interim debriefing with representatives of FASC, Italian Embassy and FAOR (at FASC)
11 November	* Mr. Fabiani departs for Rome; * Mr. Kato travel to Xián, Shaanxi
12 November	* free in Xián
13 November	* briefing and discussion with RFASC and Provincial Statistical Bureau; *Visit to the RFASC facilities

14 November * Travel to Beijing; * Discussion with the FAOR

15-16 November *Discussion with FAOR staff (on FAO projects supporting training);
*Working Dinner with the Commissioner, NBS(16th)

17 November * Discussion with Mr. Feng; * Discussion with DG, Rural Survey Organization;
* Departure for Bangkok/Rome

ANNEX III - PERSONS MET BY THE MISSION

National Bureau of Statistics

Mr. Zhu Zhixin	Commissioner
Mr. Qiu Xiaohua	Deputy Commissioner
Mr. Zhu Xiangdong	Director-General, Rural Survey Organization (former DG of FASC)
Mr. Feng Nailin	Head of FASC (also Director-General, Department of International Cooperation)
Dr. Xu Zhiquan	Deputy Director-General, FASC
Ms. Zhai Yan	Deputy Director, China Development Centre for International Statistical Project (CDCIP)
Mr. Li Wenhai	Director, Division of Data Analysis, FASC
Mr. Lin Jingxing	Director, Division of Administration Affairs, FASC
Mr. Zhang Guohong	Director, Division of Project Development, CDCIP

Ministry of Agriculture

Mr. Tang Zhengping	Director-General, International Cooperation Department
Mr. Wang Jinbao	Deputy Division Director, International Coop. Dept.
Ms. Li	Director, Statistics Division, Department of Marketing Information

Provincial Officials

Heilongjiang

Mr. He Quanbin	Director-General, Heilongjiang Provincial Bureau of Statistics
Mr. Li Yutao	Deputy Director-General, Heilongjiang Provincial Bureau of Statistics
Mr. Sun Debin	Deputy Director-General, Heilongjiang Provincial Survey Team
Mr. He Yuting	Technical Officer, Harbin RFASC
Mr. Han Jin	Technical Officer, Harbin RFASC
Ms. Li Rong	Deputy Director, Rural Division, Provincial Planning Commission
Mr. Shen Xianwu	Deputy Director, Planning Division, Provincial Agriculture Division
Mr. Bao Yuxin	Deputy Director, Division of Land Registers, Provincial Land Administration
Mr. Yu Tao	Director, Planning Division, Provincial Bureau of Agriculture Mechanization
Ms. Xia Yongzhi	Vice Mayor of Suihua Prefecture
Mr. Zhao Yuexie	Director of Suihua Prefecture Statistical Office (PSO)
Mr. Wang Wenqing	Deputy Director of PSO, Suihua Prefecture
Mr. Wang Peixiang	Deputy Director of PSO, Suihua Prefecture
Mr. Zhao Yungui	Deputy Director of PSO, Suihua Prefecture
Mr. Xu Yanzhou	Head of Computer Station, PSO, Suihua Prefecture

Fujian

Mr. Gong Shoudong	Acting Director-General, Provincial Statistical Bureau (PSB)
Mr. Wu Ting	Deputy Director-General, PSB and Director, Fuzhou Regional FASC
Mr. Teng Tong Kuai	Director, Administrative Office, PSB (Former Deputy Director of Provincial Census Office)
Mr. Zhang Dafeng	Deputy Director of Regional FASC
Mr. Zeng Zhiqiang	Director of Computer Centre, PSB (Former Deputy Director of Provincial Census Office)
Ms. Hou Chaoying	Director of Agricultural Statistics Division, PSB (Former Deputy Director of Provincial Census Office)
Mr. Yan Youlin	Administrative Officer, Regional FASC
Mr. Shen Tianmin	Head of Computer Station, Putian Prefecture
Mr. Wu Jinlu	Technical Officer (census), Regional FASC
Mr. Ye Chunshan	Technical Officer (training), Regional FASC
Mr. Guo Weijian	Deputy Director, Division of Planning and Accounting, Department of Agriculture
Mr. Lai Wanyan	Section Chief, Division of Planning and Accounting, Department of Agriculture
Mr. Xu Yiliang	Director, Division of Planning and Accounting, Forestry Administration
Mr. Ye Xinfu	Associate Research Fellow, Rice and Wheat Research Institute, Provincial Academy of Agriculture Sciences
Mr. Hu Zongtan	Deputy Director, Division of Agriculture Economy, Provincial Development and Planning Commission
Mr. Ye Zheng	Director-General, Agricultural Machinery Administration
Mr. Zhang Xinyang	Director of Division, Administration of Rural Township Enterprises
Mr. Chen Sizeng	Deputy Director, Division of Planning, Marine Fishery Administration
Mr. Chen Wenqiang	Deputy Director, Division of Land Registration, Department of Land and Resources
Mr. Liao Wenxing	Former Director-General of Rural Survey Team
Mr. Lin Cijie	Deputy Director of Division, Rural Survey Team

Shandong

Mr. Zhang Yiguo	Director-General, Shandong PBS and Head of Regional FASC
Mr. Song Wenli	Deputy Head of Regional FASC
Dr. Wang Deqi	Professor, Business Management Department, Shandong Finance Institute, Jinan
Mr. Zheng Xinghe	Research Fellow, Shandong Academy of Science, Jinan
Mr. Siang Jinquang	Director, Rural Development Division, Provincial Planning Commission
Mr. Dong Guohai	Director, Land Registration Division, Land Resources Department

Shaanxi

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Ms. Wan Lixia	Deputy Director-General and Head of Regional FASC
Ms. Sung	Head, Agricultural Statistics Division, PBS
Mr. Jin Wei	Deputy Head, Regional FASC
Mr. Wang	Deputy Head, Agricultural Statistics Division, PBS

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Prof. Xin Xian	Associate Professor, College of Economics and Management, China Agricultural University
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ANNEX IV - PROVINCIAL NOTES

Heilongjiang Province

1. The Heilongjiang Province is located in the north-eastern region, and is the sixth largest province in China with 4.7% of the land area of the country. Cultivated land, usually very fertile and productive, accounts for 24.7% of the total land area of the province. With a relatively larger area of cultivated land (3.7 mu per person as compared with the national average of 1.5 mu), the province produces about 10% of the corn and 25% of the beans of the country. Employing 48.4% of the total labour force, the agriculture sector made up 13% of the GDP in the province, and the per capita GDP of Yuan 7660 is about 20% higher than the national average. At present, governments at all levels are promoting the production of green (healthy) food to suit the market and to increase the income from agriculture.

2. The regional FASC was established in 1992 as one of the first group of six regional FASCs. The centre has a staff of 8 persons (all of them young, with an average age of less than 35 years), with university or higher education and several years of experience in agricultural statistics. The project provided the overseas training of the staff of the centre (for a total of 10 persons).

- The regular budget from the provincial government (to cover salaries and operational expenses) has been on average Yuan 120,000 per year. In addition, the provincial statistical bureau invested a total of Yuan 4.8 million over the past 8 years to cover the construction of the building for training, the purchase and maintenance of equipment other than that provided by the project.
- Harbin RFASC started its training activity in 1993, involving 17 training workshops, for a total of 1,120 trainees, comprising 280 provincial and prefecture agricultural statisticians (including 40 from the neighbouring Liaoning Province and Jilin Province), and 840 agricultural statistical agents at and below county level. This meant coverage of 95% of the staff working in agriculture statistics at and above county level and 70% of those working at township level. Typically, contents of the courses for provincial and prefecture staff included agricultural census programme, data processing, statistical analysis, national account system, agriculture economy and survey sampling.
- A pilot census was carried out in a large state farm mainly engaged in grain production, for which the centre was awarded a prize.

3. The Census Activity:

- The focus of work shifted in early 1996 to the preparation of the full census under the overall direction of the provincial Vice-Governor. Some 130,000 enumerators and supervisors were mobilized, with a total expenditure of Yuan 35.5 million (representing the budget from the national government all the way down to county governments) in the province. The RFASC staff served as the core staff in various groups organized under the provincial census office.
- The enumeration was completed by January 1997. Census questionnaires were processed in 4 prefecture-level data processing centres (teams working in shifts with scanners and PCs), and the data processing was completed in June 1997.
- Dissemination - The first communique containing summary results of the census was announced in early 1998, followed by the publication of other bulletins and an abstract. The second step involved the publication of 164 analytical papers at seminars held at various levels. For in-depth analysis, research papers were prepared on 18 selected topics by 99 experts from other

government agencies, universities and research institutes. These papers were reviewed by senior provincial leaders, in some cases leading to follow-up studies on specific issues.

- Based on results from the census, reconciliation was made in the current agriculture statistics. For instance, the census reveals a 36% under-estimation of cultivated land and a 20% over-estimation of livestock.

4. Summary Assessment:

- Overall strength of RFASC - While technical capacity of the core staff has been strengthened, the institutional capacity seems to have suffered from relatively weak leadership of the centre and limited budgetary support from the provincial government. Furthermore, the staff felt that their role had been to carry out specific tasks requested by the NFASC under the project, rather than creating a role for the centre. Following the implementation of the census, the centre seems to have lost its function and reduced in status.
- Sustainability and future of RFASC - In view of the above, sustainability of the results achieved as well as of the centre itself, appears in doubt. For the moment, the intention seems to retain the centre with a new function for developing donor-supported projects for the Statistical Office, with uncertain plans for using the technical capacity of the staff.
- Priority needs identified for the future include: a) the development of a comprehensive statistics system for the agriculture sector, with stronger focus on improvement of sampling techniques based on the results of the census; b) further training of staff in analysis of census results for planning of the agriculture sector and the rural development.

Fujian Province

1. Fujian Province is one of the medium-sized provinces in China having 33 million inhabitants. The province is among the first eleven in the country in order of economic development intensity. The geographic position (facing Taiwan), attracting considerable investment from Taiwan in the last decade, has facilitated the province's dynamic development. Three, out of the nine cities, are in mountain areas; the other six are on the coast. The development in coastal areas is a strong attracting factor for the population of the internal cities. Agriculture accounts for only 16% of the provincial GDP, with 50% of the labour force - 70% of the total labour force is located in rural areas.

2. The Fuzhou RFASC was established in 1993 under the Fujian Provincial Statistical Bureau. Its authorized staff has been 20, organized into four sections; general survey, training, data processing, and administration. It is housed in a modern building built in 1996 with an investment of Yuan 14.5 million. Its main equipment include; 3 computers and 3 servers, 3 printers, 2 fast-reading Kings photo electric logger, 2 Toyota cars and 1 Toyota mini bus, 1 video camera with 2 projectors and 1 television.

- Training of agricultural statistics officers - over 1,500 trainees graduated through 20 training sessions. The subjects covered: general agricultural survey; data processing; statistical analysis; sampling techniques; agricultural economy; national economic accounting;
- Two pilot census - the first in 1995 on Youqi county (mountain and under-developed area) and the second in 1996 on the city of Jinjiang (coastal open district).

3. Census Activity:

- Intensive training and publicity activities - from June to December 1996, 3,200 training sessions were held for 157,600 personnel, together with various publicity campaigns at different levels;
- Census data processing – data quality control was the main focus during the first four months in 1997, followed by data processing during the rest of the year. The data entry error rates ranged between 0.22 and 0.58 per 1000, lower than the national average;
- Census data use and application – these included the publication of: three bulletins on the census in Fujian Province, "A Concise Data Handbook of Fujian First Agricultural Census"(November 1997), picture album on "Fijian agriculture across the century" and over 2,000 papers. To promote research using the census data, some 73 papers were prepared on various issues, with 4 of them winning prizes from the NACO. Similarly, the reconciliation of the current statistics with the census data has been substantially completed;
- Setting up of GIS system - the centre has taken strong initiative to apply GIS technology to facilitate easy access to the census data. The aim is to cover the county level data with this technology – the work is being pursued with priority, attracting interest of provincial policy makers at various levels.
- Further initiatives – the centre plans: (i) to build up a comprehensive data bank using the census data; (ii) to initiate research programmes in collaboration with prefecture, municipal and counties statistical bureau concerning topics, such as "Agriculture and Rural Statistics Method System Reform" and "Sampling Analysis" on various agricultural production systems. As noted earlier, the plan envisages extending GIS application from the county to township level data as well as conducting of a "small-scale mid-term census".

4. Summary Assessment:

a. The centre's technical capacity has grown significantly under the project, and it has been led by a strong and dynamic management with a clear perspective of future activities;

b. After the census, it has continued to play an important role in the province, mainly in improving the statistical system, the data analysis and application of GIS. The centre is well-appreciated and supported by the PSB, which intends to keep the centre as a separate unit to facilitate and organise improvements in the statistical system;

c. The centre's priority needs are identified as: (i) further strengthening of the staff in critical areas, such as more advanced data analysis techniques, like GIS, sampling design, mid-term census methodologies, social and economic analysis for local development; (ii) technical support for ensuring the sound development of a comprehensive database for the sector; and (iii) development of closer working relations with the main users to facilitate effective use of statistics for policy planning and analysis.

Shandong Province

1. Shandong Province is one of the largest agricultural provinces in China, with 74% of its population (85 million) being agricultural and accounting for 6% of the total national areas under cultivation. While areas near the coast have begun rapid development in recent years, much of the province is yet to benefit from the economic prosperity. The GDP per capita was Yuan 8,673 in 1996 and agriculture's share in the provincial GDP was 16%. Main agricultural products included grains (wheat, corn), oil seeds and vegetables.

2. The Regional FASC (RFASC) was established in 1994 during the second phase within the Provincial Bureau of Statistics (PBS). It has provided the focal point in the preparation of

methodology and training of the staff for the census, working closely with the Rural Survey Unit (staff of 7, with main responsibility for the current statistics). The Centre has been led directly by the Director-General of the PBS who also served as the Director of the Centre.

- Its staffing numbered some 20 (authorized by the province, several being part-time staff), present staff being 15, including the Director. At its establishment, it was supported with Yuan 11.1 million (6 million from the province and the balance from the PBS) for its new building and initial facilities - the building now includes substantial training facilities with a dormitory for 125 persons. Its annual budget from the province has been about Yuan 300,000, mostly for staff salary. A major source of additional income seems to have been from its training services to provincial entities, including NGOs.
- Seven of the staff have been trained in FASC's programmes, including overseas fellowships, and the others in Jinan. The centre's staff seem to have developed expertise and training capacity in key areas of statistics and census (design, processing and analysis) as well as in agricultural accounting and economics.
- Prior to the census, the centre provided three courses for 110 statistical personnel at the prefectural level (24 women), in agricultural census, data processing, statistical analysis, national accounts, sample surveys and agricultural economics. Similarly, four courses were given in agricultural census, data processing and statistical analysis for a total of 166 staff at the county level (46 women). For the organization of the census itself, training during 1996 included some 500 personnel at prefectural and county level (82 women) and 620,000 enumerators and supervisors. After the census, training covered statistical analysis, involving 60 statistical personnel at the prefecture level and 40 at the county level.
- Two pilot census operations were carried out, first in 1995 in one county (covering 16,000 hhs) as part of the national exercise and the second in 1996 in another county to test the revised census questionnaire. These helped improve the methodologies, procedures and organization for the real exercise.
- The centre received from the project 14 PCs, a server and 2 vehicles - altogether, the province appears to have acquired 335 PCs for the census.

5. For the census implementation, the centre was part of the provincial Office of Agricultural Census which was in charge of the exercise under a vice-governor. Direct cost for the census in the province was estimated at Yuan 140 million, the largest share born by the townships. The survey itself lasted 10 days, covering inter-alia some 18.3 million hhs, and involved a series of field survey checks - a post-enumeration survey was conducted in March 1997, covering 4,000 hhs in 16 counties. The data were processed at county/prefecture levels, assisted by the PBS's computer centre and with close cooperation between RFASC and the Rural Survey Unit. The data entry error rates ranged between 0.9 and 0.25 per 1000, lower than the national average.

- the census results were published widely during 1997 and 1998, i.e. communiqués, the abstract and tables and bulletins. RFASC also promoted the use of the census data by key users (government agencies, universities and research institutions) during 1998 and 1999, providing training in data analysis and organizing concurs for good analysis (296 papers submitted) and research use (25 papers) of the data. Six of these papers were submitted to the international seminar organized by the project. The census database was completed in 1999 and maintained in the PBS's computer centre as was one percent of the provincial sample database. Neither is yet on the internet for public access - so far external users have relied on hard copies.
- both the census data and methodology have been widely accepted as the valid statistical approach and the provincial government has allocated funds for priority follow-up actions. Action involving the RFASC, Rural Survey Unit and government agencies has been under way, particularly for the reconciliation of the current statistics with the census (major discrepancies in

cultivated land area, number of livestock and machinaries) and revised sample survey frames. The census has also led to common interest among the provincial agencies (including the Planning Commission), academics and researchers in further application of the new database for policy issues, such as land use, production systems of different types producers, the role of the rural enterprises and changes in agricultural labour force.

- the priority areas in the centre's future work include: (a) the completion of the data reconciliation and revised sampling frames; (b) development of an integrated database for agriculture and rural sector (on the basis of the census methodology) to be accessible on the internet; and (c) introduction of the GIS technology.

4. Summary Assessment:

a. Overall strength of RFASC - clearly, the centre's technical capacity has been substantially strengthened under the project, with higher visibility for its role. Following the census, it has continued to play a major part in improving the statistical system, including training of the provincial staff in data analysis and application. It has also retained the core staff of substantial size, with a relevant workplaces for the future.

b. Sustainability and future of RFASC - in terms of technical capacity and management leadership, the centre seems to have good potential for sustaining its capacity. The PBS intends to keep the centre as a separate unit to facilitate organized improvements in the statistical system. However, some factors may emerge as potential constraints. These include: (i) the level of provincial resources for the centre (currently inadequate for operational purposes, so far made up by other incomes like training activities, with a possible threat of down-sizing of the public sector staff); (ii) the adequacy of technical capacity of the staff for leading more complex tasks for "reforming" the statistical system (e.g. sample design work, more in-depth analytical techniques); and (iii) the issue of continued policy support to carry out the "statistical reform".

c. Priority needs identified - the centre identified: (i) further strengthening of the staff in critical areas, such as more advanced data analysis techniques, like GIS, and sampling design; (ii) technical support for ensuring the sound development of a comprehensive database for the sector; and (iii) development of closer working relations with the main users to facilitate effective use of statistics for policy planning and analysis.

<u>Shaanxi Province</u>

1. The Province is located in the North-western region, one of the poorer areas of the country, suffering from a largely arid/semi-arid climate and remoteness from the rapidly developing coastal belt. Its GDP per capita of Yuan 4,100 (in 1999) represents two-thirds of the national average. During the last decade, the economy has been growing very rapidly in and around the provincial capital of Xi'an. Agriculture remains important, accounting for 18% of the GDP and 58% of the labour force. Main crops are wheat and maize, with livestock and fruits/horticulture also important in some areas. Cultivation in the central plains near the capital is relatively intensive (average holding of 7 mou), many areas with irrigation, while in the northern and southern areas, agriculture is extensive (20-30 mous). Rural poverty remains an important problem and much hope is placed on the Government policy to promote the development of the Western provinces.

2. The Regional FASC was established in 1992 as one of the first six RFASCs during the project's first phase, and played the major role in methodology development and training of the

provincial staff in preparation for the census. Two other units in the provincial Statistic Office are active in agriculture/rural sector, the Agricultural Statistics Division (8 persons) and Rural Survey Division (35).

- Its basic staffing has been 10 (as it is now) - during the census preparatory period, several additional persons were supported by national funding sources. The provincial budgetary allocations have been about Yuan 100,000 per year, covering only the base salaries of the staff, with no resources for operational purpose. The RFASC has not had any internal structure with units for specific functions. The Centre was provided with a building, equipped with several offices as well as training rooms and dormitory facilities.
- Three of the staff has fellowship training (3 months) in statistical processing and analysis and agricultural economics, and a total of some 20 provincial statistical staff, including all of the RFASC staff, received in-country training arranged by the National FASC.
- The Centre also trained a total of 460 provincial staff (Agricultural Statisticians) as well as prefecture/county level staff (Agricultural Statistical Agents).
- Two pilot censuses were carried out in 1994 (at the initiative of the RFASC to test enumeration methods) and in 1995 (as part of the national exercise).
- Some 50 PCs and 3 vehicles were received from the project, and many of the PCs are still used for training purpose.

3. The agricultural census was implemented as in other provinces in January 1997 and its data processed in line with the national guidelines during the year. The census is acknowledged as a major achievement for the Provincial Statistics Office - according to the Director, it had established a basis for developing an improved statistical system and enhanced the status of the office in the province. However, for the actual implementation of the census itself and subsequent processes, the leading role appears to have been played by the Agricultural Statistics Division, RFASC's presence being largely overshadowed by the Division. In addition, the following may be noted.

- dissemination of the census results followed largely the national pattern, involving the publication of census abstract as well as reports with full results, communiqués and bulletins. A large number of analytical and research reports were prepared using the census at provincial (15), prefectural (48) and county (209) levels. In the second half of 1999, the entire provincial database (but only summaries for prefectural and county level data) has been computerized and maintained in the computer centre of the Provincial Statistics Office - while other agencies can access the computerized database by requesting, they have been largely using the documents.
- as in other provinces, the census data have been accepted as the valid basis for agricultural statistics, and have been applied to the preparation of the next development plan for the agriculture and rural sector. Similarly, the current statistics are being reconciled and adjusted under the leadership of the Agricultural Statistics Division. In particular, the major discrepancies in the current data were in land cultivated (40% under-estimation) and livestock numbers (20-30% over-estimation) - the Division carried out sample surveys to convince the other departments concerned. It is hoped that the revised data will provide a solid basis for planning for the Western region's development programme.
- in terms of future follow-up actions, it is planned to continue with the adjustment of the current statistics (back to 1978 for the base years of past development plans). Similarly, work in adjusting the definitions and sample survey methods used for the current statistics is to continue.

4. Summary assessment:

a. overall strength of RFASC - while technical capacity of the core staff has been strengthened, the institutional capacity seems to have suffered from relatively weak leadership of the Centre

and limited budgetary support from the provincial government. Furthermore, the staff felt that their role had been to carry out specific tasks requested by the NFASC under the project, rather than creating a role for the Centre. Following the implementation of the census, the Centre seems to have lost its function and reduced in status. Similarly, during the recent years the Centre staff has been increasingly engaged in tasks unrelated to the census follow-up, albeit within the Statistics Office, in order to earn sufficient income.

b. sustainability and future of RFASC - in view of the above, sustainability of the results achieved as well as of the Centre itself appears in doubt. For the moment, the intention seems to retain the Centre with a new function for developing donor-supported projects for the Statistical Office, using the skills and experience (language and international liaison), with uncertain plans for using the technical capacity of the staff.

c. priority needs identified - these include (i) consolidation and development of improved statistical database for the sector, including future time-series, (ii) development of a sample database (1%) from the census for analytical application, and (iii) further strengthening of the staff in selected areas, particularly for in-depth mastering of sampling design and control techniques, GIS technology and building interface between statistics and the revised agricultural accounting system introduced in 1993. For the longer term, the importance of strengthening skills in policy analysis and planning was underscored as well as the desirability to strengthen team work between statistical work and policy analysis.