

**Innovative and Successful Technical Experience in the Production of
Agricultural Statistics and Food Security of Ethiopia**

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**Contributing Paper Presented at a Seminar on a New Partnership to Strengthen
Agricultural and Rural Statistics in Africa for Poverty Reduction and Food
Security, Paris, France 16-17 September 2002**

**Addis Ababa, Ethiopia
August 25, 2002**

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Innovative and Successful Technical Experience in the Production of Agricultural Statistics and Food Security of Ethiopia

I. Background

Ethiopia is a big country located in the Horn of Africa. Currently, it has a population of about 67 million and it is predominantly rural (85% of the population) and depends on subsistence agriculture. The country follows a federal system of government with 11 federal states known as regional governments. The states are subdivided into zones and the zones into woredas. There are 70 zones and 540 woredas in the country. For administrative purposes, the rural parts of the woreda are subdivided into peasant associations and the urban parts into urban dwellers associations or kebeles.

Agriculture is the main economic sector which provides the necessary means of the livelihood for more than 85% of the Ethiopian population. Besides its contribution as the main income-generating sector for the majority of the rural population, it also serves as the main source of household food consumption. The issue of food security has continual national importance in Ethiopia. To achieve social and political stability, the government has to be able to maintain food security by issuing an appropriate agricultural policy. In this respect, reliable agricultural statistics data is one element that enters into this policy process to formulate, assess and evaluate the policy. Hence, policy formulation and analysis require large volume of statistical data /information.

The Central Statistical Authority (CSA) is the statistical arm of the Government of the Federal Democratic Republic of Ethiopia. As a result, the CSA has been conducting Annual Agricultural Sample Surveys since 1980/81 in an effort to provide data on the country's agriculture for policy makers and other data users. However, the resulting data from these surveys could not meet the demand for extensive needs of the data users, particularly, data on agriculture at lower administrative level (i.e. woreda level) and in general data on permanent crops, vegetables, root crops. In order to fill this gap and other pressing needs, there was a clarion call to conduct agricultural census in Ethiopia.

This paper consists of five sections. Section one presents background, while section two provides an overview of the first phase of the first ever Ethiopian Agricultural Sample Census (EASC) followed by the second phase of EASC with particular emphasis on the livestock census in agro-pastoral areas. The fourth section discusses the existing challenges in producing agricultural statistics data for poverty reduction or food security that facilitate computation of vulnerability or poverty indicators. Section five presents future consideration for the development of agricultural and food security statistics in Ethiopia.

II. The First Phase of the 2001/2002 Agricultural Sample Census

Land fragmentation, scattered small holders both in urban centers and rural areas, nomadic, and a few commercial farms characterize agriculture in Ethiopia. This nature of the Ethiopian agriculture has made the census a more difficult and huge task to cover all aspects of agriculture in the country. The CSA embarked upon the launching of the first phase of agricultural census after having completed the following preparatory activities.

2.1 Preparation of Census Project Document

A comprehensive census project document that included the objectives, work plan execution, manpower and budgetary requirements of the agricultural census was prepared and presented to the government and donor agencies. The document was revised and updated a number of times as dictated by various events such as salary changes, changes on price of goods and services...etc.

2.2 Preparation of Census Work Plan

A work plan expounding all the activities of the census was prepared. The work plan indicated that when, how and by whom each activity will be performed.

2.3 Designing and Preparation of Draft Census Documents

In 1998, the Agriculture Statistics Department (ASD) of the CSA prepared the first draft agricultural census questionnaires and data collection procedures, i.e. crop-cutting procedures, area measurement techniques, etc. based on the assessment made on various FAO and other relevant documents. Moreover, in this exercise draft data tabulation plan was also prepared.

2.4 Undertaking Census Pretests

In 1999, in three different National Regional States (Amhara, Oromiya and S.N.N.P.R) five pretests were carried out at different times by professional staff members of the Agricultural Statistics Department. During these pretests, the draft census questionnaires and crop-cutting procedures for permanent crops, vegetables and root crops were tested. Based on the findings of the various pretest exercises the necessary improvements were made on the census documents (the questionnaires, the enumerator's and supervisor's instruction manuals).

2.5 Establishment of Agricultural Census Task Force

The Central Statistical Authority has a strong belief that any survey or census should be demand driven, i.e. the scope and coverage of the study should fulfill the interest of the stakeholders. In order to have the necessary and required inputs and to satisfy most agricultural data users, the CSA organized a National Agricultural Census Task Force. The members of this task force were drawn from 16 different government and non-government organizations. This task force was entrusted with commenting and improving on the draft census questionnaires and tabulation plan. The committee performed its duties after having taken care of the interests of data users and looked into the proposals presented by other census technical committees.

2.6 Organization of National Agricultural Census Workshop to Revise the Agricultural Census Documents

In August 1999 a two-day national workshop in which major agricultural data users, where senior experts of government, non-government organizations and international agencies participated was held in Nazareth. This workshop resulted in the further improvement of the questionnaire and other data collection instruments and data collection methodologies.

2.7 Undertaking Pilot Agricultural Census

a. First Pilot Census

In Nov. 1999, a one-month training on the draft census questionnaires and procedures was given to 22 supervisors and 110 enumerators drawn from all the regional states. Then, from December 1999 to Feb. 2000, main season data on area under crops and other land uses, agricultural practices, production and other related agricultural data were collected. Based on the collected data, all stages of data processing procedures and programmes were also tested. The pilot census resulted in the improvement of the questionnaires, manuals, and crop cutting procedures. During the same year, another pilot exercise was undertaken in Ameya Wereda, West Shoa Zone, where the two sample design options, i.e. Systematic Random Sampling and Stratified Random Sampling were tested. In order to be able to decide and select one of the design option, from 20 Enumeration Areas, basic agricultural data were collected applying the two design options. After the fieldwork was completed, the two data sets collected during this exercise were independently processed and evaluated.

The findings of this pilot exercise envisaged the following major points:

- i) No significant difference of estimates using the two sampling options.

- ii) The stratified random sampling approach was found too complicated to use by our enumerators.
- iii) There were no significant differences in capturing rare items.

However, as a final refinement work a decision was made to conduct another pilot census in three woredas, Sasiga in Oromiya; Yem in S.N.N.P.R. and Kewet in Amhara Regional State in the following crop year.

b. Second Pilot Census to Further Refine the Census Documents and Methodology

From September 2000 to Jan. 2001, additional pilot census was carried-out in three different weredas, in which a refinement work on census documents and methodology was carried out. During these exercises, 25 Enumeration Areas in each wereda were selected and from 30 selected agricultural households in each enumeration area, data on crop area, agricultural practices, land uses, crop production, demographic characteristics and other related data were collected. After completing the fieldwork, based on standard procedures, the data was edited, coded, processed and evaluated. Based on the final findings all appropriate improvements were made on the census questionnaires, concepts and definitions, crop-cutting procedures and field area measurement techniques. This pilot census exercise helped to give the final shape to the census instruments, crop cutting procedures and field area measurement techniques.

2.8 Formation of Various Census Committees

To perform the activities stipulated in the work plan various committees were formed. The nature and magnitude of the census determined the number and kind of committees. The committees entrusted with the various preparatory activities are given below:

a. Census Technical Committee for Rural Sedentary Private Peasant Holding

Private peasant rural holders, as evidenced by annual agricultural sample survey results, run most of the agricultural activities and there by the production statistics of crop in Ethiopia. Based on the experience obtained from the annual agricultural sample surveys, and the experience gained from the findings of the pilot censuses, this committee has discharged its responsibility and finalized the census documents for the rural sedentary private peasant holdings

b. Technical Committee for Agricultural Census in Urban Centers

Although not on the scale of the private rural peasant holders, there are considerable agricultural activities that are going on in urban centers that has drawn the attention of many data users. No data have been collected on agriculture of the urban centers in Ethiopia before. However, in 1999/2000, one of the ASD staff members, for his MA degree fulfillment had carried out a sample agricultural survey in the urban centers of East Gojjam Zone. Some of the experiences gained from this study has served as a major input for defining concepts and definitions and improving the urban center census questionnaire formats. Finally, the committee, after making different assessments, came up with a final proposal on urban census questionnaires and other related documents.

c. Technical Committee On Census of Large and Medium Scale State and Commercial Farms

The prevailing free market conditions have created the opportunity for commercial farms to grow even though they are not as many as they should have been. There is a growing demand for data on commercial farms but recently, no exhaustive data of such type have been collected. The committee compiled a list of State Farms and the name and addresses of private investors on commercial farms from the Ethiopian Investment Authority and Regional Agricultural Bureaus and verified their operations in all the regions and reviewed on how data on these farms could be collected. As a result of this exercise, the committee has finalized the necessary census documents, which will be used for large and medium scale state and commercial farms.

d. Technical Committee On Census of Agro-Pastoral Areas

In Ethiopia there are a large population whose livelihood is dependent on animal husbandry especially in agro-pastoral areas where raising livestock is the only way of earning a living for thousands of pastorals. The need for data on livestock in this area has always been in the demand by data users but no data on livestock in pastoral areas have ever been collected. The committee made a series of field visits to the nomadic areas (Afar and Somalie Regional States) and discussed the issue of how and when to collect data in pastoral areas during the census with the relevant officials and agencies in the regions. Based on the discussion the committee came out with a proposal to undertake the agricultural (livestock) census in those two regions. Of course, this proposal still needs further investigation before finalizing the documents.

e. Technical Committee on Sample Design for Agricultural Sample Census

In a large and developing country like Ethiopia where 85% of the population is engaged in peasant agriculture, the land tenure system is fragmented, holdings are extremely small and the transport and communications systems are not developed, an agricultural census or complete enumeration is impossible. To be realistic, the only way out for a census is sample enumeration of a large scale nature. To achieve this goal, the committee deliberated on and explained several designs to determine the appropriate sample design that is suitable for the census. The committee presented a proposal on two sample design options. Both options were tested in two pilot censuses and based on the merits and demerits of the two options as indicated in the results of the pilot censuses a systematic random sampling design was selected.

As a result, a two stage stratified systematic sample design was utilized for the selection of ultimate sampling units. The primary sampling units were enumeration areas and the agricultural households were the secondary units. The coverage of the census was over 19% of enumeration areas (EAs) obtained from the cartographic map work of the 1994 population and housing census (i.e., 11,199 rural and 4,100 urban EAs totally 15,299 EAs). Hence, the census covered 25 EAs in each wereda (district) in the sedentary areas of the country. Within each EA 30 agricultural households were systematically selected from the fresh list of households prepared at the beginning of the fieldwork. As a result, the census covered 457,970 agricultural households and administered all types of census questionnaires.

Furthermore, all types of holdings both in rural and urban areas of the country are covered. The type of holdings include private peasant holding, state, co-operatives, commercial and institutional farms. The private peasant holdings were covered on a sample basis while the other holdings were covered on a complete census enumeration basis.

f. Committee on Procurement of Census Equipment and Supplies

In order to facilitate the supply of both field equipment and other logistics, in 1999, the CSA established a census procurement committee composed of five staff members from different departments and services of the Authority. This committee based on the feedback and items specification obtained from the subject matter department, methodology service, field operation department and data processing department had facilitated the procurement of vehicles, field equipments, computers and their accessories and other logistic materials.

g. Committee on Census Transport and Logistics

In April 2001, the transport and logistics committee, composed of seven senior CSA staff members was formed. This committee in close contact with the Procurement Committee, Field Operation Department, Natural Resources and Agriculture Statistics Department and the Printing Service Unit facilitated the arrangement, packing and distribution of census documents, field vehicles, field equipment and other logistical support to the 47 Statistical Branch Offices all over the country.

h. Census Publicity Committee

In February 2001 the publicity committee composed of five relevant CSA staff members was formed. The main objectives of the committee were to:

- Arrange bids, invite different professional artists to compete for posters, dramas and poems,
- Facilitate the preparation, production and printing of different census publicity materials such as posters, leaflets, budgets for field staff, documentary films and radio and TV drama, census poems and songs, ...etc.
- Through the prepared publicity materials, which explain the objectives and goals of the agricultural census to the public, government and non-government organizations, greater awareness was created and there by the census undertaking was be facilitated by their support and cooperation.

Accordingly, all the necessary census publicity materials have been prepared i.e. census leaflets and posters and documentary films, census poem, census radio and TV drama,... etc have been distributed to all the Statistical Branch Offices.

2.9 Updating the Selected Sample Census Enumeration Areas Maps

For the purpose of undertaking this sample census, about 12,000 enumeration areas were selected and their maps were updated for the census during April to May 2001. The updating of the maps and revision of descriptions of the enumeration areas was undertaken by the physical presence of enumerators, supervisors and the CSA cartography experts in the field (i.e. in each selected enumeration area). The updating took two months to be completed by deploying about 2000 regular CSA field staff. During this updating, fresh listing of the households in the enumeration areas was also carried out.

2.10 Finalization of the Preparation of the Census Instruction Manuals

After having prepared and improved the questionnaire and other procedures, the instruction manual for the enumerators, the supervisor, the editing coding manual and the computer edit specification were finalized.

2.11 Printing of the Census Documents

Starting from March 2001, census documents (questionnaire, manuals, publicity materials and others) have been printed and reproduced by the CSA printing unit. However, considering the large volume of printing work required, the printing activity has been also carried out by commercial printing press.

2.12 Issuance of Census Legislation

In June 2001, census legislation was issued to legalize the agricultural census and urge government and non-government organizations and the public to cooperate and assist in the execution of the census. The census legislation also indicated the confidentiality of the census data to be collected and that the respondents are obliged to give the necessary data when requested by the census enumerators.

2.13 Establishment of Census Commissions

Just after the issuance of the census legislation, Agricultural Census Commissions have been established at Central, Regional, Zonal, Woreda and Farmers' Association levels to organize, direct and assist in the execution of the census. These have played key role to win the support and cooperation of the public, government and non-government organizations for the smooth conduct of the census activities.

2.14 Recruitment of Census Field Staff

In June 2001, 12,573 enumerators and additional supervisors were recruited and hired on the basis of criteria set by the head office in the 47 branch statistical offices all over the country.

2.15 Training of Census Field Staff

a. Training of the Trainers

Training of the trainers, to the CSA professional and sub professional staff, some senior supervisors, administrators and other support staff and professional staff from the Federal Ministry of Agriculture, Livestock Marketing

Authority, Regional Agricultural Bureaus and Zonal Agricultural Departments of most of the regions was given in June 2001 for one month. The training included data collection method, objective measurement procedures and census management. The classroom session was reinforced by a series of field practices.

b. Training of the Enumerators and Field Supervisors

Training of the enumerators and field supervisors was given starting from the middle of July for 45 days in 47 training centers located in each branch statistical office. The classroom sessions were reinforced by a series of field practices. To overcome unforeseen problems, in each training center, 15% reserve enumerators were also given the complete training required to undertake the census.

2.16 Distribution of Census Documents, Field Equipments and Vehicles

Census documents, field equipment and motor vehicles were distributed to the 47 branch offices and bank accounts for transferring money were opened in all new branch statistical offices while, training of the enumerators and supervisors was underway.

2.17 Launching The Census Enumeration

a. Deployment of Field Staff

After completing the training of the field staff, the enumerators and field supervisors were dispatched to their respective woredas and their respective sample enumeration areas of assignment between 5-7 September, 2001. The actual census was launched on the 12th of September 2001 all over the country.

b. Undertaking Census Publicity Activities

Census publicity has been on air by public media to win the support and cooperation of the public, government and non-government organizations since the onset of the census.

c. Undertaking of Continuous Field Supervision

The Agricultural Sample Census fieldwork was designed to get a very close follow-up and supervision by the field supervisors and other technical personnel assigned at each Regional Branch census office. In addition to

this, from the head office almost all the management staff members went out to the different branch offices to closely supervise and assess the data collection activity and other related matters on several occasions. The supervisor-enumerator ratio was 1:5 and supervision was carried out at regular intervals.

d. Assignment of Coordinators And Desk Officers

In order to make both the field work at the branch statistical office and related activities at the head quarters level manageable and keep the execution of the census activities in a coordinated manner, the CSA assigned to the 47 branch statistical (census) offices four CSA management staff as coordinators and 10 senior experts as Desk officers and each officer was given the responsibility of coordinating the operation of 4-5 branch statistical offices. Both the coordinators and the desk officers serve as bridges between the Branch Offices and the Head office. At the end of every month, the four census coordinators compile progress reports of their respective Branch Statistical Offices through the desk officers. The compiled reports include progress of the field activities, financial status, logistics demand, manpower and administrative matters and problems encountered and solutions to solve the problems.

2.18 Completion Of Crop Production Forecast Survey

The first task of the 2001/2002 Ethiopian Agricultural Sample Census (EASC) was the undertaking of Crop Production Forecast survey, which was planned to take place in September 2001. The sample size of this survey is the sub sample of the EASC that covered 1,928 Enumeration Areas selected in all woredas in the country within the sedentary population. Based on the work plan, the data collection work was completed during the first week of October and all the filled-in forecast questionnaires reached the head office by mid October.

This exercise enabled the CSA to provide data on the expected crop production of the main season to the policy makers and to other data users. By doing so, the data gap was avoided which have been created if one waited for the census data to be processed. Hence, in about 45 days all the data processing activities, i.e. editing and coding, verification, data entry, data cleaning and tabulation have been accomplished. And the crop production forecast report was finalized and disseminated in December 2001.

2.19 Successful Completion of the First Phase EASC Fieldwork

A census in Ethiopian situation involves multiple surveys given the prevalence of two agricultural seasons, large volume of data to be collected and the traditional nature of agricultural holdings and practices. To foster a smooth conduct of the census, the fieldwork was carried-out over a period of over 9 months. This timing has enabled the enumerators to have manageable workload and capture the data as the events happen. As mentioned above, the census data collection activities that have started in September 2001 with the crop production forecast survey was followed by a series of data collection operations. These are:

- Data collection on demographic and economic characteristics of the rural population in October, 2001. (By interviewing holders).
- Data collection on area under crop, area under other land and farm management practices was completed during First week of January, 2002. (Objective area measurement).
- Data collection of yield on temporary crop (i.e. cereals, pulses oil seeds, root crops and vegetables) was completed on the last week of February 2002. (Performed crop-cutting exercises).
- Data collection on livestock and poultry census in the rural sedentary areas took place between the 9th and 17th of February, 2002. (By interviewing holders).
- The agricultural census in urban areas was handled independently and the data collection was launched on 1st March 2002 and was completed in a period of about eight days. (By interviewing holders).
- Data collection on other variables of interest like farm implements, storage facilities, extension packages and utilization of agricultural products was concluded during the first week of April, 2002. (By interviewing holders).
- Data collection of Belg Season crop area, production and farm management practices was carried out during March to May 2002. (Objective area measurement, but no crop cutting was performed).
- Data collection on commercial farms was completed in June,2002. (By interviewing holders/ managers of the farms)
- Data collection operation on yield of permanent crops whose cropping and harvesting season spans beyond May continued until the last week June, 2002. (Performed crop cutting exercises).

2.20 Recruitment Of Data Processing Staff

Since the census data are huge that have to come from over 11000 EAS, they demand a large number of data processing staff. To complete the data processing activities according to the work plan and disseminate the census results on time, CSA is using 160 editors and coders and 180 data encoders operating in two shifts. At the moment, about 75 percent of the census data that deal with area under crop and production, land use and farm

management practices of the main season are entered into the computers and data cleaning is underway.

III. The Second Phase of the Ethiopian Agricultural Sample Census

The second phase of EASC is the census in the agro-pastoral areas of both Somali and Afar Regional States. After carrying out thorough assessments on the methodology and approaches of the first ever livestock census in these two regions, the CSA came to a decision to conduct an Aerial Census in the Somalie Region and a conventional house-to-house survey in the Afar Region.

The appropriate aerial census time is the period when pasture and water are available. Evidently, pasture and water are available right after rainy season and this period is convenient to carry out the aerial census. Hence, after consulting the relevant institution, Meteorology Agency, the rainy season in most parts of the census area is from April to May, and therefore, the census is planned to be carried out starting from the end of April to mid June, 2003. Some ground truth work will be conducted to substantiate the aerial census results.

With regard to Afar Region, the opportune time for the livestock census would be the period between October and November 2002. Hence, the CSA has planned to undertake the livestock census during this period provided the existing draught will not persist and affect the region to a larger extent. Intensifying census publicity in the pastoral areas will have a great value in the success of the livestock census. The CSA has planned to educate and inform tribal leaders, farmers' association official, local leaders and other influential people through meeting and conferences. All the necessary arrangements has to be done ahead of the actual census work in order to make the holders psychologically ready prior to the field work. Hence, further retirement work has been planned and field visits to these areas by the committee members have already been started.

IV. Challenges In Producing Agricultural Data For Poverty Reduction and Food Security

Historically, data on agriculture have been collected to meet development needs related to land use and agricultural production. Even though this information has proved useful, today's data needs go beyond what is available in most countries. Countries involved in preparing and then implementing Poverty Reduction Strategies Paper (PRSP) not only need to make better use of existing data, but are also identifying where new investments are needed. In this respect, the overall results of existing

agricultural statistics data of many African Countries are far below the expectations of data users. The available agricultural data are often incomplete in terms of (a) the types of commodities covered, (b) the range of variables or data sets covered, (c) geographical coverage, and (d) unavailability of data at lower administrative levels. When it comes to data relating to the depletion of land resources and their environmental effects the situation is worse.

Given the role of agriculture in the economy, agriculture and Food Security Indicators are crucial in explaining chronic vulnerability towards hazard and disasters of particular area. Vulnerability can be defined as the probability or the risk of being in poverty or the risk of falling into deep poverty in the future. Data to be collected on the main economic indicators have been broadly identified as: land use, production, income and employment and food security. Indicators of food security consist of food availability (market prices and food shock), purchasing power and food consumption.

Even though the CSA's annual agricultural sample surveys (AgSS) or its first ever Ethiopian Agricultural Sample Census (EASC) have not been designed to address the dimensions of vulnerability, there are many variables that can be derived from these surveys and other surveys such as Welfare Monitoring Survey, Household Income Consumption and Expenditure Survey (HICES), Labor Force Survey, Market/ Price Survey ...etc. These might directly or indirectly help to compute vulnerability indicators. On the other hand, agriculture and food security, the question of how vulnerability indicators derived from standard surveys could be complemented/supplemented from other sources in a more coherent and cost effective manner is an issue worth considering.

Table 1. Estimated Total Area under Crop and Percentage Distribution of Area under Farm Inputs, 1999/2000

Total Area ('000 ha)	Area under in Percent			
	Improved seed	Fertilizer	Pesticide	Irrigation
9,133.65	3.6	38.8	5.0	0.9

Source: CSA, Agricultural Sample Survey, Volume III "Report on Farm Management Practices", Addis Ababa, September 2000.

To reduce vulnerability for rural people, expansion of irrigation is crucial because most of the shocks in rural areas are resulting from erratic and unreliable rainfall. As shown in Table 1 the area under irrigation in Ethiopia by private peasant holdings is not more that one percent. Although there is still a large proportion of cultivable land, actual per capita holding size has been declining over time (see Table 2). Land fragmentation has become a real problem in Ethiopia. As shown in Table 1, utilization of modern inputs by the

private peasant holdings is also limited that need to be considered by the policy makers. Only 39 percent of cultivated land by the private peasant holdings is fertilized, while the use of pesticides and improved seeds are not more than five percent.

Thus, in short term in agricultural output and thereby reduction in rural poverty can be achieved through intensification of the agriculture (the use of modern inputs such as fertilizer and improved seeds). However, in the long run the agriculture sector is likely to face diminishing return soon, which may render impossible to bring sustained reduction in rural poverty unless the

Table 2. Distribution of Households by Size of Land Holding

Size of holding	Average land holding per household			Percent of households
	1994/95	1997/98	1999/00	1999/00
< 0.10	0.05	0.05	0.05	11.11
0.1 – 0.50	0.30	0.30	0.29	29.50
0.51 – 1.00	0.74	0.74	0.74	23.86
1.01 – 2.00	1.41	1.41	1.41	22.89
2.01 – 5.00	2.87	2.83	2.82	11.71
5.01 – 10.00	6.24	6.37	6.37	0.82
10.01 and Above	13.44	20.53	23.78	0.10
Total Average	1.09	1.00	0.98	100.00

Source: CSA, Agricultural Sample Survey, Volume IV "Report on Land Utilization", Publications of various years.

proportion of labor force employed in agriculture is closely checked. As the capacity of agriculture is very limited in supporting livelihood of the rural population, creation of additional income earning opportunities (rural non-farm activities) is also important.

In the implementation of the National Food Security Program and other policies, which aimed at tackling disaster, require accurate and timely information on the incidence, prevalence, nature and causes of disaster if interventions have to be effective.

V. Issues for Future Consideration

The vulnerability profile to be produced will serve as information guide by which policy makers, planners, relief workers, donors and development practitioners are better informed about the nature, magnitude and the factors that make people vulnerable to all forms of shocks. The vulnerability profile is supposed to answer the following questions, which are pertinent for planning,

implementation and evaluation of the program. The data could be collected from households and community levels as well.

- Who are vulnerable to a particular hazard?
- Where do they live? Where are they located?
- When do they face these hazards most frequently?
- What is the nature/degree of the hazard they face?
- What are their coping strategies?
- What are the factors most highly associated with their vulnerability?
- What are the major sources of vulnerability?

The following points are worth considering in an effort towards articulating the data requirements for vulnerability analysis at national and sub national levels.

- a) There is no need for future strengthening and broadening the scope of existing HICE Survey and the Welfare Monitoring Surveys to accommodate more vulnerability indicators.
- b) The existing annual agricultural sample survey needs to be further reoriented to meet the data requirement for vulnerability analysis at least at zonal level.