UNDP SOMALIA

UNITED NATIONS DEVELOPMENT PROGRAMME
SOMALIA

Somalia Watching Brief

Medium Term Plan for Statistical Data Collection and Capacity Building for Somalia

June 2004

This report was prepared by the Statistical Mission comprising Madan Sardana (Team Leader), Gosse Hommes and Parmeet Singh under coordination of KNS Nair, Programme Manager, Somalia Watching Brief Programme. Comments and suggestions may be forwarded to KNS Nair, at kns.nair@undp.org

CONTENTS

Abbreviations and Acronyms

COP	Census of Population
CPI	Consumer Price Index
CPI	Consumer Price Index
CV	Coefficient of Variation
DIMU	Data and Information and Management Unit
DSRS	Dual Sample Registration System
EASTC	Eastern Africa Statistical Training Centre
EC	Economic Census
EU	European Union
FAO	Food and Agriculture Organization
FEWS-NET	Famine Early Warning Systems
FGD	Focus Group Discussion
FSAU	Food Security Assessment Unit
GDDS	General Data Dissemination System
GDP	Gross Domestic Product
GNP	Gross National Product
HDR	Human Development Report
HS	Humanized System
ICLS	International Organisation of Labour Statisticians
ICP	International Comparison Project
ICRC	International Committee of the Red Cross
IFRC	International Federation of Red Cross
ILO	International Labour Organization
IPC	International Programmes Centre
ISAE	Institute of Statistics and Applied Economics
ISCO	International Standard Classification of Occupation
ISIC	International Standard Industrial Classification
LFS	Labour Force Survey
LICUS	Low Income Countries Under Stress
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
NGO	Non-Government Organisation
NSO	National Statistical Officer / National Statistical Office
NSSO	National Sample Survey Organisation
OIC	Officer-in-Charge
PAPFAM	Pan Arab Project for Family Health
PMAS	Poverty Monitoring and Analysis Unit
PMATU	Poverty Monitoring and Analysis Technical Unit
PPI	Producer Price Index
PPP	Purchasing Power Parity
PSU	Primary Stage Sampling Unit
SACB	Somalia Aid Coordination Body
SE	Sampling Error or Standard Error
SES	Socio-Economic Survey
SNA	System of National Accounts
SRS	Simple Random Sampling
SS	Settlement Survey
SSU	Second Stage Sampling Unit

SWB	World Bank/UNDP Somalia Watching Brief Programme
SWG	Statistical Working Group
TCG	Technical Coordination Group
TNG	Transitional National Government
UNDOS	United Nations Development Office for Somalia
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Development Fund for Women
USAID	United States Agency for International Development
WDI	World Development Indicators
WFP	World Food Programme

Executive Summary

The World Bank/UNDP Somalia Watching Brief Programme (SWB) recruited a Programme Mission Team, comprising Messers Madan G. Sardana (Team Leader), Parmeet Singh, and Gosse Hommes from 16 November 2003 to 29 January 2004.

The main objective of the Mission was:

1. to review the ongoing efforts to collect and compile statistics pertaining to Somalia
2. to formulate a medium-term plan to strengthen the statistical data collection and analysis and for statistical capacity building.

Accordingly, the workplan of the Mission was mainly

- to review data collection activities for Somalia by various UN agencies based in Nairobi;
- to review institutional arrangements, and data collection activities by NGOs and administrative organisations in Somalia;
- to contribute in formulating a plan for statistical data collection and capacity building of statistical institutions in Somalia by identifying specific Medium-term interventions.

Due to security reasons, the field visit to Somalia for the Mission was restricted to a short mission into Puntland during which useful meetings were arranged with the Ministers of Planning and Statistics, Commerce and Industry, Local Government and Rural Development, the Governor, Central Bank of Puntland, various statistical offices and units in different Ministries, and offices of the UN agencies. The Mission was, however, able to hold detailed discussions in Nairobi with a number of Somali professionals including the Director General of the Ministry of Planning and Coordination, Transitional National Government (TNG), Mogadishu, to learn of existing statistical activities.

Overall, the Mission has been successful in meeting its objectives. As per the terms of reference, each of the seven stipulated components has been implemented. The Mission would, however, like to acknowledge that some specific sub-components have been inadequately addressed. There are various reasons for thissuch as operational constraints, which curtailed the Mission's field visit only to the Puntland State of Somalia, and lack of adequate information on some methodological aspects, which the Mission attempted to obtain from interlocutors, but was not successful. It is noteworthy that much of this information was neither available to the interlocutors.
The Mission has formulated some recommendations as well as some suggestions, which are summarized in Chapter 7 of this Report. The Mission feels that the recommendations are valid and appropriate for all three Somalia Administrations in spite of the fact that it was not possible to hold discussions with the statistical staff of the Somaliland Administration, or the relevant personnel in the south/central regions of the country. The Mission thus improvised, to a large extent, by referring to available statistical publications and holding detailed discussions with some of the Somali professionals based in Nairobi, the Programme Coordinator and staff of Somalia Watching Brief programme.

The Mission's overall objective in the recommendations has been to assist the three Somalia Administrations, UNDP in general and the World Bank / UNDP Somalia Watching Brief Programme in particular, the UN agencies and other donor agencies involved in work relating to Somalia in understanding the problems in statistical capacity building in Somalia. The Mission also aimed to suggest possible solutions to overcome these problems and pave the way for the development of statistical services in Somalia Administrations which would serve in providing reliable statistical information for development planning and for policy purposes. The salient recommendations are briefly mentioned below.

Keeping in mind the limited existing statistical capability in the Somalia Administrations and the fact that a large scale expansion of statistical activities within the Somalia Administrations may not be possible in the near future, the Mission has identified a minimum list of statistics to meet the needs of planning and for policy purposes of the Somalia Administrations during the Medium-tem extending over a period of five years. The minimum list is based on the framework of the International Monetary Fund (IMF) General Data Dissemination System (GDDS) and as such can be expanded gradually to serve the needs of the proposed national government as and when it is established in Somalia.

Currently, in Somalia, well-designed sample surveys appear to be the right strategy to fill the data gaps on important socio-economic aspects at least for the Medium-term of five years. In a situation like Somalia with prolonged conflict conditions, there are two options for designing a survey programme. The first is to restrict the survey operation to only peaceful areas and use recognised efficient sampling procedures. The second is to compromise with some of the statistical principles and carry out the survey programme covering the largest possible part of the country. The first procedure is likely to result in diluting the utility of the survey programme, while the second may be seen more as a practical approach in implementing a survey programme in a situation like Somalia. The Mission has recommended that the second approach which has been adopted in the Socio-Economic Survey (SES) 2002 and Reproductive Health Survey (RHS) 2002-2003 may continue to be used at least during the Medium-tem.

The Mission has recommended an integrated programme of sample surveys which includes Dual Sample Registration Scheme for vital events, Estimation of Livestock Products, Estimation of Crop Production, and Sample Surveys of both the formal and informal sectors of different branches of non-agricultural economy of Somalia. The Mission has also provided a general framework as the sampling strategy for undertaking the above-mentioned integrated programme of sample surveys. The field resources in terms of the field enumerators and supervisors for each of the proposed sample survey have also been worked out.

The Mission has recommended that the proposed integrated programme of sample surveys may be operated in close cooperation and association of all the main players (donors, UN agencies, and international NGOs) and with Somali participation. For example, the Surveys for Estimation of Crop Production and Estimation of Livestock Production be operated in close cooperation and association with the concerned international agencies-FAO, FSAU, and FEWS. The Mission feels that the existing Statistical Working Group of UN agencies, backstopped by UNDP, would be the right forum for devising appropriate mechanism to achieve the desired cooperation and association amongst the agencies and the Somalia Administration.

Considering the fact that the proposed five-year schedule of household-based socio-demographic surveys and enterprise-based surveys of informal sectors of non-agricultural economy would provide the requisite data for a detailed analysis of poverty and employment in the informal sector once in five years, the Mission has recommended a strategy which would provide summary information on these two important aspects of development planning during the years when the detailed data is notavailable from comprehensive surveys on the subjects.

The Mission has recommended that the problem of sampling nomadic households may be handled by operating a dual frame. The first frame, which will become available with the completion of the Settlement Survey for 2004, will comprise the list of main settlements, satellite settlements of each main settlement, and water points. The second frame should be attempted to cover those nomads who choose to stop at any place other than a main

settlement, or a satellite settlement, or a water point. The preparation of second frame needs more time and much more familiarity with the actual field conditions, both of which were not possible for reasons beyond the control of the Mission.

The Mission has highlighted some ideas for devising the second frame for sampling of nomadic households and recommended that for this the World Bank/UNDP Somalia Watching Brief Programme may consider engaging the services of a survey statistician.. Pending that the Mission has suggested that like the SES 2002 and RHS 2002-2003, Somalia may be eliminated from any survey proposal recommended as a part of the work programme for the Medium-term.
The Mission has recommended that the three Somalia Administrations should continue to use a common methodology and procedures with regard to the collection of data, statistical analysis of collected data and report writing of each of the surveys in the integrated programme proposed for the Medium-term. The Mission has advised steps required to ensure that this works well.

The Mission has also advised on using an appropriate strategy to build/strengthen the administrative channels of data collection by the Somalia Administrations on some of the important aspects like foreign trade statistics, price collection and CPI, computation of estimates of GDP, adapting International Standard Classification of all Economic Activities, International Standard Classification of Occupation, Harmonised System for trade classification, and Central Product Classification, and data pertaining to education and health facilities.

The Mission has attempted to assess the existing capacity and capability of the statistical staff of the Somalia Administrations and recommended several training programmes for the statistical staff at different levels-professional, intermediate, and lower as also study visits for upgrading the capability of the statistical staff of the Somalia Administrations so that they may progressively take over the responsibilities of organising and managing statistical data collection programmes.

The Mission feels that the Somalia Administrations would need guidance and support in the initial stages to implement the work programme recommended by the Mission. The Mission is of the view that in this regard the World Bank/UNDP Somalia Watching Brief programme is the right forum to provide any opportunity for guidance and necessary support to the Somalia Administrations.

The Mission also feels that for a more effective effort in coordinating the statistical activities to reduce duplication and ensuring use of commonly accepted statistical standards for the purpose, the scope and coverage of the UN inter-agency working group on statistics needs to be enlarged and appropriately linked to the Somalia Aid Coordination Body. The Mission has thus proposed a revised set of terms of reference for the working group on statistics for consideration by UNDP.

Greater efforts need to be made to involve Somalia in the ongoing global initiatives (PARIS 21, UN Statistical Commission, Economic Commission for Africa, and African Development Bank) in the production and dissemination of statistical data and national statistical capacity building.

1 Introduction

1.1 Background

1. Somalia currently lacks a central government. As such, the functions of a central government are either not being performed, or else are being undertaken by inter-government agencies, such as the various agencies of the UN, and by international non-government organisations; or else to a limited extent, by the three Somalia Administrations which have emerged. Development and management of the national statistical system is one such function. Without a National Statistical Office (NSO) the statistical data on Somalia is instead currently being collected and disseminated by a diverse number of international agencies and the three Somalia Administrations. Without the overall supervision of an NSO duplication of data collection is possible; and the quality of data obtained could be compromised due to lack of consistency and harmonization of procedures.

1.2 Mission Composition, Terms of Reference and Activities

2. The overall objective of the Mission was to prepare an action plan to strengthen the statistical data collection and analysis in Somalia for the Medium-term extending over a period of five years. The broad objectives mentioned in the Terms of Reference (TORs)[1] for the consultancy were:

1. review the ongoing efforts to collect and compile statistics;
2. assess the critical data needs and gaps with special reference to gender, human rights, and poverty analysis;
3. suggest a framework to strengthen the ongoing efforts in data collection and expand the scope and coverage to address critical data needs and gaps;
4. assess the capacity building needs of functional administrations for statistical data collection, processing, analysis and dissemination;
5. examine how Somalia could benefit from the international initiatives in the production and dissemination of statistical data and national statistical capacity building;
6. formulate a plan for statistical data collection and capacity building of statistical institutions in Somalia identifying specific short-term and Medium-term interventions.

3. In consultation with Dr. KNS Nair, UNDP Programme Coordinator, Somalia Watching Brief and Poverty Reduction and Economic Recovery Programmes, the Mission drew up a workplan[2] for the consultancy, which consisted of the following activities:

1. briefing on general background;
2. preparation of Mission Work Plan;
3. review of data collection activities by UN agencies stationed in Nairobi;
4. review of institutional arrangements, data collection activities and data actually collected by NGOs and administrative organizations in Somalia;
5. evaluating activities (framework, capacity and capability, international initiatives);
6. Formulating a plan for statistical data collection and capacity building of statistical institutions in Somalia identifying specific short-term and Medium-term interventions;
7. Formulating a plan for statistical capacity building of functional statistical institutions (disaggregated regionally and by relevant line-ministries and institutions);

[1] Annex 1 - TORs
[2] Annex 2 - Workplan

8. Consultation with the Statistical Working Group; and
9. Finalisation of report.

4. For the review activities the Mission consulted many UN Agencies, NGOs and other Organisations in Nairobi: These include UNDP, FSAU, FEWS-NET; UNICEF; FAO; UNESCO; UNFPA; WFP; WHO; UNIFEM; UN-OCHA, ILO, ICRC, IFRC, SACB, Centre for Research and Dialogue (CRD) Somalia, EU, and USAID. A list of persons met by the Mission can be seen in Appendix 3. The documents that were reviewed by the Mission during the consultancy are listed in Appendix 4.

5. During the Consultancy the Mission undertook a field visit to Puntland, where it visited the Puntland Ministries of: Planning and Statistics; Finance; Agriculture, Livestock and Environment; Commerce and Industry; Health; Education; Local Government and Rural Development. Moreover, it visited Bosasso Port Authorities; Puntland Development Research Centre (PDRC); Puntland Livestock Producers Association (PULPA); Puntland State Agency for Water, Energy and Natural Resources (PSAWEN); Central Bank; Accountant General Office. Finally, it met with: UNICEF; FSAU and DIAKONIA in Garowe.

1.3 Report

6. This report is structured as follows. In Chapter 2 a review of the conditions in Somalia in the context of data collection as also issues relating to statistical infrastructure with particular reference to the Medium-term period of five years are discussed. Chapter 3 delineates the outline of a general system of statistics for Somalia for the medium-term period of five years. In Chapter 4 the Mission proposes an integrated programme of sample surveys to be planned and implemented during the Medium-term. The scope, periodicity and an outline of the sampling strategy recommended for each of the above as also issues concerning processing of survey data are discussed in detail in this chapter. Chapter 5 discusses the various aspects of capacity and capability building for the Somali Administrations. Chapter 6 presents an action plan for the Medium-term highlighting the work programme and time-bound targets. Finally, Chapter 7 presents the findings and lists the recommendations of the Mission.

1.4 Acknowledgements

7. The Mission wishes to express their gratitude and appreciation for the cooperation extended to them by everyone with whom they met. Dr. K.N.S. Nair, who managed and supervised the consultancy, was most helpful. He extended his full cooperation and guided the Mission on different issues dealt with, without which it would not have been possible for the Mission to complete the assigned task. The staff members working with him, Ms. Mariam Alwi, Mr. Richard Ng'etich and Ms. Helen Gatakaa were patiently responsive to all queries and clarifications relating to some of the statistical activities under the World Bank / UNDP Somalia Watching Brief Programme and to requests for procurement of documents / publications needed by the Mission. The indulgence of everyone, and the hospitality extended to the Mission, are gratefully and sincerely acknowledged.

2 Ongoing Efforts to Collect and Compile Statistics for Somalia

2.1 Introduction

7. This chapter will set the stage for the rest of the report. First, it reviews the ongoing efforts to collect and compile statistics for Somalia. Based on numerous interviews, a review of documentation and an enquiry among major producers of data, the chapter enumerates the major sources of statistical data on Somalia. Second, out of the various discussions with the stakeholders certain issues recurred, of which the Mission wishes to discuss in depth the following two: the perceived lack of quality of data on Somalia and the importance of coordination among data collection agencies. Finally, it became apparent to the Mission that for any future statistical system to be viable, certain preconditions will need to be fulfilled with regards to what the Mission, for lack of a better term, will call 'statistical infrastructure'. Following this initial conceptual discussion, the next chapter will address data needs and gaps, on the basis of which the outline of a core system of statistics for Somalia for the Medium-term can be delineated.

2.2 Background

8. Somalia currently lacks a central government and has had no National Statistical Office since the outbreak of the civil war. Much of the constraints in data collection, reviewed later in this chapter, can be attributed to this void in governance of the country since the early 1990s and the resulting insecurity in large areas of the country; as well as the absence of agencies like the World Bank, the IMF and the African Development, which retain a vested interest in ensuring that their respective member states do maintain national statistical systems as per prescribed, structured, harmonised and integrated frameworks, implemented with the required disciplinary rigor.

9. Under normal circumstances the NSO of any country both collects data and coordinates the national statistical system. Without an NSO, the statistical data on Somalia is currently being collected and disseminated by a diverse number of UN agencies and NGOs, majority of which are based in Kenya, and Somali administrations. The data that these international agencies have sought is essentially, though not exclusively, on socio-demographic parameters. This is to facilitate such agencies to implement their policies, programmes and projects as per their mandates, particularly in the emergency situation that has prevailed in Somalia over much of the last decade.

10. Much of the data that the international agencies currently have meets their immediate data needs. They are now beginning to extend the scope of their data needsto the Medium-term- most of their needs in the Medium-term concentrate on the socio-demographic data on population, education, health and poverty. So the statistical system for Somalia as envisaged by the Mission, even for the Medium-term, continues to emphasise the socio-demographic sector. The Mission has had to take this into account in elaborating the statistical system it would like to propose for the Medium-term; and to that extent the proposals on the development of the statistical system for Somalia in the Medium-term remain lopsided.

11. Without the overall supervision and coordination of an NSO many a time there is the danger of an overlap in the statistical data collected; while the quality of data obtained may be compromised by the lack of consistency and harmonisation in data collection procedures. Statistical data collection on Somalia therefore needs to be coordinated and undertaken in the context of an integrated national statistical system. The diverse data collection initiatives

need to be seen to be contributing to the evolution of a national statistical system for Somalia, to be taken over by a central statistical agency, when such an agency is re-established. Since 'quality of data' is one of the important issues to be discussed in the Mission report, the Mission would like to comment on what this term implies. Though the words "quality of data" are commonly used in dialogue concerning statistical systems and/or services, there is no precise definition and a measure for quality of data. IMF has taken the initiative to develop 'the data Quality Reference Site' with a view to stimulating dialogue and developing a common understanding of data quality. It is almost universally accepted that it is a multidimensional concept embracing, in general, both the relevance of information to user's needs and characteristics of the information such as accuracy, timeliness, accessibility, relevance, interpretability and coherence that affect how it can be used. The Mission supports the above views and would like to state, in what follows, the most logical available understanding of the above mentioned six dimensions of quality of data/information.

1. **Accuracy**: It is a well-defined concept and provides a measure of degree to which the statistical information correctly describes the phenomena it was designed to measure. It is usually characterised in terms of error in statistical estimates and is traditionally decomposed into bias (systematic error) and variance (random error) components. It is also described in terms of the major sources of error that particularly cause inaccuracy (e.g., coverage, sampling, non-response, response). It is measured by 'mean square error', which is sampling variance plus square of bias.

2. **Timeliness**: This refers to the delay between 'the end of the reference period' to which the statistical information pertains and the date on which the information is available. It is typically involved in a trade-off against accuracy and also influences relevance.

3. **Accessibility**: It refers to the ease with which the statistical information can be obtained from the agency responsible for dissemination of the information. This includes the ease with which the availability of information can be ascertained, as well as the suitability of the information or medium through which the statistical information can be accessed. The price to be paid for the information is also an aspect of accessibility for users.

4. **Relevance**: This reflects the degree to which it meets the real needs of the users. It is concerned with whether the available information sheds light on issues of importance to the users. The producer's hard task is to weigh and balance the conflicting needs of current and potential users to devise a programme that satisfies most important needs within the given resource constraints.

5. **Interpretability**: This reflects the availability of supplementary information metadata essential to interpret and use the information appropriately. This covers the underlying concepts, definitions and classifications used, the methodology adopted in data collection and processing and providing measures of accuracy of the statistical information.

6. **Coherence**: This deals with the degree to which it can be successfully brought together with other relevant statistical information within a broad analytic framework and over time. The use of standardised statistical standards comprising concepts, definitions and classifications and procedures and methods of collection and processing of data, specification of the target population, all contribute to promote coherence.

The Mission would like to note that the above stated dimensions are overlapping and interrelated. There is, however, no effective procedure or technique yet available for bringing together all these characteristics of quality into a single indicator.

2.3 Data Collection from the Point of View of Producers and Users of Data on Somalia

12. The consultations that the Mission has had with various stakeholders have focused on their respective data collection operations as well as on their role as data users, including the specific aspects of 'data quality' mainly comprising standards and accessibility, consistency, accuracy, relevance and timeliness', in accordance with the Mission's TOR. These aspects are referred to by the Mission, for brevity and sake of convenience, as 'quality assessment'. Of course, such an assessment could only be done where enough details were available. Often, however, this was not so, leaving the Mission no other option than a simple enumeration of data sources, in accordance with the information received.

13. The overall emphasis of the Mission's interaction has been on establishing the status quo of the respective agencies with regards to data production and data use; and plans on data collection and use for the Medium-term. The Mission has sought to ascertain the reaction of the respective agencies with regards to the Mission's ideas to enhance quality aspects of data collection, especially within the UN agencies, by strengthening, and where relevant by setting up, a supporting arrangement, referred to as statistical infrastructure, which would under-pin the data collecting initiatives of the various international agencies, NGOs and Somali Administrations, through a coordinated endeavour. Such an arrangement the Mission feels would enable to define adverse data collection environment, which have mainly constrained the quality of data collected. One of the possibilities that the Mission has examined, and on which it has specifically sought to ascertain the reaction of the agencies the Mission has consulted with, is to bring these *coordinating* activities under the umbrella of a more invigorated/re-activated Statistical Working Group. On both these propositions, the reaction of the agencies consulted has been by and large positive. These ideas are further elaborated on in this chapter.

14. UNDP clearly holds a central position in the collection of statistical data on Somalia. Amongst many efforts a Settlement Level Survey (1995 – 1998) and Socio-Economic Survey 2002, both undertaken by UNDP, deserve special mention. Under the Watching Brief monitoring mechanism of the World Bank, UNDP has a threefold function of data collection: supporting coordination of data collection by the other international agencies, NGO's and Somali Administrations and its dissemination and strengthening the capacity of Somali Administrations to collect, compile statistical data and to establish a socio-economic database.

15. The Socio-Economic Survey 2002 undertaken by the World Bank/UNDP Somalia Watching Brief Programme with the support and participation of functional Somali Administrations and international partners is the first of its kind in over two decades in Somalia. The survey covered: (i) demographic and housing; (ii) employment and income; (iii) basic services; (iv) communication; (v) participation of women; and (vi) environmental concerns. Based on a well-designed survey of about 3,600 households, it has compiled baseline demographic and socio-economic data at a household level to address some of the

critical needs and gaps and to establish a socio-economic database for better policy formulation and planning.

16. The Mission obtained a copy of the preliminary draft of the technical report on the survey under preparation. When finalised, this report would enable users to enable assess all the parameters which were combined to determine 'quality of data'. These two reportscan serve as a very valuable guide and model for the Planning and Statistics Departments of the three Somali Administrations for statistical analysis of survey data and preparation of survey reports.

17. To undertake the review, the Mission met with the following UN agencies either involved in data collection or in their capacity as data users: FSAU / FEWS-NET; UNICEF; FAO; UNESCO; UNFPA; WFP; WHO; UNIFEM; UN-OCHA, ILO. The Mission also met with ICRC; IFRC; SACB, EU and USAID. To get a well-corroborated enumeration of data sources the Mission has attempted to obtain feedback on data collection initiatives of UN agencies in the last five years. A simple questionnaire was circulated amongst the agencies prominently involved in data collection. However, only four of the agencies, UNFPA, UNICEF, FSAU and UNIFEM responded. Therefore, the listing and the Mission's impressions given below are largely based on personal interviews. Any errors, omissions or misrepresentations are due to the limited and partial exposure the Mission has had to the data collection activities. The Mission has summarised its findings in the form of a table, presented in Annex 2.1.

18. The Mission explicitly acknowledges that to meticulously ascertain, verify and quantify the quality of individual data collection efforts, it would first have to establish standards for assessing quality, followed by a review of methodology and data collection implementation procedures and an assessment of use of statistical standards (comprising standard concepts and definitions, procedures and methods of data collection, classifications, and processing of data). The Mission simply had no time, nor the required documentation, to undertake such an evaluation of the many data collection activities undertaken by the various international agencies, NGOs and the Somali Administrations. The publications on data and data sources that the Mission has reviewed do not adequately detail the various facets of data collection to help ascertain the quality of data rigorously. Indeed the Mission doubts whether much of this detail has even been articulated as part of the institutional memory to facilitate quality appraisal. However, quality assessment needs to be undertaken more rigorously then as a perception. The Mission recommends that this be undertaken as a specific exercise. Instead of attempting to outline all discussions with individual agencies, the Mission wishes to discuss briefly some noteworthy issues.

19. FSAU is one of the most important data collection agencies. , Discussions clarified to the Mission that FSAU collects data primarily for its own use, i.e. for assessing food security. FSAU collects a substantial amount of data for this, often with national coverage. For this it has a field staff of 22 food monitors and 8 nutrition monitors. Currently FSAU is undertaking data collection through household surveys to collect data, for nutrition surveillance – a monthly survey and on socio-economic parameters – through sentinel sites – also a monthly survey and assessment of crop yields; and on institution based health statistics. These activities constitute a comprehensive on-going programme of data collection and although FSAU undertakes data collection essentially for its 'in-house' applications, the wider dissemination of the data collected is nonetheless also undertaken through a well-developed web site. Data for nutrition surveillance is collected under the aegis of an inter agency working group and the Mission noted this as a successful instance of interagency coordination.

20. To shift the perspective from data collection to use of collected data, the Mission singled out the ILO project. The Mission's main objective for this meeting was to understand the project's needs for data and its perception on the quality of data that it has been able to

obtain. The Mission noted that the project's main interest was to obtain data on price levels, wage levels and on principle characteristics of the labour force to establish a profile of the labour force. It was noted that the information currently available on the labour market was inadequate, for example to facilitate an analysis of the currently confounding situation in parts of Somalia of high unemployment and relatively high wage levels. Similarly, as far as the information on the profile of the labour force is concerned, ILO was keen to secure data on skills and educational/vocational training characteristics of the labour force to help for example analyse the situation in some regions which had prevalent high rates of unemployment and yet a large number of jobs for the main stream artisans being undertaken by migrant labour from a neighbouring country. The need for *simplicity* in data collection was emphasised along with the prerequisite of quality. In this latter context the Mission noted, as it has noted in similar meetings that it has had with other agencies, that there was need to foster within UN agencies institutional arrangements to facilitate coordination of data from all the various sources. Such coordination it was felt would enhance the quality of data available.

Data collection on Somalia is not the exclusive domain of international agencies. Somali Administrations are also active in this respect, albeit often under the guidance of international agencies. This section will comment on some of these indigenous data collection efforts with special reference to the Somali Administration of Puntland.Refer to Annex 2.2 for more interesting observations made during this visit. Unfortunately, the Mission has had no interaction with the Administration of Somaliland and was unable to visit the Transitional National Government (TNG) in Mogadishu. REPETITION

21. To get an impression of the data collected by the Somali administrations refer to the 'Fact and Figures of Puntland 2003' and 'Somaliland in Figures 2003' publications. Both these reports (drawn up with support of the World Bank/UNDP SomaliaWatching Brief) present an overview of the current data collection activities. TNG has also started some data collection activities but, in view of the political and security problems of Central and Southern Somalia, has not been as successful as the other two administrations.

2.4 Concern of Data Quality

22. The consensus among both producers and users of data with whom the Mission has interacted seems to be that data collection is fragmented and incomplete. Important data is often missing, a prime example being a complete demographic profile of Somalia. In the cases where data is available, it is often only available for some regions of Somalia. In other cases the level of aggregation is too high, or important breakdowns are missing. Also, the frequency of data collection is often irregular, making it difficult to assemble time-series. All these deficiencies contribute to undermining the quality of data. This does not imply that individual efforts in data collection may not be of good quality. Nor does it imply that all existing data is necessarily unreliable. In this connection the Mission was happy to note that when the World Bank/UNDP Somalia Watching Brief programme provided estimates of GDP, it stressed that it was a “rough and ready best” possible estimate with limitations

23. The Mission realises that the above issues may be on account of the present situation in Somalia since the civil war Nevertheless a more coordinating effort on the part of international agencies and Somalia Administrations might have improved the quality and coverage of data.

2.5 The Importance of Coordination among Data Producers and Users

24. The subsequent sections of this report elaborate what a future system of statistics for Somalia may look like provided that the political situation in the country returns to normal. Given that such a return appears not to be imminent, whatever system and infrastructure can be established will need to be substantially supported and coordinated by the international agencies, some of which have been reviewed above. The Mission has during its consultations with these agencies been briefed on aspects of coordination, which is already in place, especially between the agencies within the UN system. There are some examples of successful coordination. The Mission wishes to mention one of them here: the coordination of the collection of nutrition data by the Working Group on Nutrition.

25. The Mission feels, however, that such instances of coordination, successful as they may be, pertainto *specific instances* of data collection initiatives. They do not address the need for coordination at the overall level of a national statistical system as envisaged by the Mission. Coordination thus addresses *inter alia* the issues of quality and data gaps from the perspective of a national statistical system. which are not in place because the requisite institutional arrangement for coordination needs to be invigorated/re-activated.

26. In stipulating the need for coordination it must be noted that such coordination should in no way compromise the flexibility and the autonomy which the concerned agencies wish to retainto be able to undertake data collection in pursuit of their respective mandates, policies, priorities and data needs. The Mission recognises the significance of this premise and has taken it into account in the proposals that the Mission has made on coordination.

2.6 Statistical Working Group

The Mission feels it would be erroneous to stipulate that the need for the indicated coordination had not been anticipated. As early as 1996, the United Nations Development Office for Somalia (UNDOS) had in fact established an inter-agency Statistical Working Group (SWG) to promote a common approach in data collecting activities of the international agencies concerned. In the brief period of interaction with the stakeholders the Mission has noted that despite some instances of coordination, the SWG had earned some success to its credit, the notable one being providing estimates of population based on validated arguments for Somalia. Before this effort of SWG, agencies were using different estimates of population for Somalia. The SWG organised, with support from the EC and USAID, two Missions (Fowler, US Bureau of Census) and Vaidyanathan (UNFPA) to review the population statistics of Somalia and to provide estimates of the population. The estimates provided by Vaidyanathan (which took into account Fowler's estimates) or its derivatives are now being used by international development partners working in Somalia. However, the SWG ceased to exist when UNDOS' term expired in 1999 as a UNDP project. During 1999 to 2002, there was no formal mechanism available for coordinating statistical activities. In 2003, UNDP took steps to set up a UN inter agency working group on statistics with limited membership and scope which is yet to be operational. All this is a repetition

27. The objectives of the Statistical Working Group, as originally stipulated, still bear relevance, with a modification of nuance. This is required to refocus the objectives more pertinently in the current day context of the Statistical Working Group, embracing all data collection initiatives of the international agencies, especially those in the UN system. Given this proviso, the Statistical Working Group is the institutional entity to secure the required coordination. However, the Statistical Working Group also needs to be reactivated *with* greater vigour then hitherto has been the case. The Mission recommends that this be done in context of the need to develop the statistical infrastructure and thereafter maintain and enhance its application, and oversee the implementation of an integrated national statistical system and a workplan focusing on the core priorities for the Medium-term. This should provide the Statistical Working Group with a solid programme of work to secure its stipulated

aims of a common agreed set of data collected using common methodology with arrangements for sharing such information amongst all the stakeholders. Revised terms of reference for the Statistical Working Group, are detailed in Annex 2.3.

2.7 Technical Coordinating Group on Statistics

28. Equally important to coordination among the international agencies is coordination between the three Somali Administrations. To achieve this the Technical Coordinating Group on Statistics (TCG) has been recently set up by UNDP under the direction of its Development Planning Unit. The group includes the Director Generals of the Ministries of Planning in the Somali Administrations. This is indeed a very positive step that UNDP has taken in facilitating the transition of the National Statistical System to Somalia. The group can systematise the participation of the statistical offices of the Somali Administrations in data collection initiatives of the international agencies, while enabling these administrations to harmonise their respective work plans with those of the international agencies and hopefully help the administrations to establish tangible plans for development of capability that the administrations need to acquire to become more viable data collecting centres in their own right. The group is already quite active. Annex 5.1 gives the 'Aide Memoir' drawn up by the group after a recent meeting in Dubai.

29. Looking a little further in the future but still within the time frame of the Medium-term, there remains the need to initiate consultations within each Somali Administration and between the three administrations on coordination or even integration of the national statistical systems as they are evolving in them. The focal point for these discussions needs to be the role of the Ministries of Planning and Statistics - and the appropriate legislative framework, which would underpin that role. Depending on whether coordination or integration are the objectives, the legal framework would need to be so structured as to provide for it, with the role of the Ministry of Planning and Statistics appropriately defined to facilitate it. Here too the Technical Coordinating Group on Statistics needs to address this issue. The Mission did not have sufficient time to be able to pursue this matter during its respective meetings with ministries and other government agencies.

2.8 Pre-conditions for Statistical Development

30. To ensure consistency in the quality, especially when data on similar parameters is collected by diverse agencies and institutions, as is the case in Somalia currently, it is essential that collection is undertaken based on common or consistent 'infrastructure' of frames and registers and sampling strategy, in as far as sample surveys are concerned, and generally in the adaptation of statistical standards, methodology, nomenclatures, classifications and definitions, implementation procedures in collection of data and data processing regime. The term *statistical infrastructure* has been adopted as a term for collective reference to these instruments. This term is not yet universally accepted but that does not preclude its use till a more appropriate term is identified. Whatever the term adopted, the denotation is clear enough: **it refers to the diverse prerequisites essential for data collection of diverse types**. The more consistent they are applied in data collection initiatives, the more consistent will the data that is collected be. Another consideration, apart from one of consistency, is the cost effectiveness of applying such instruments especially registers and frames in data collection; as opposed to setting up such frames and registers each time a data collection initiative is to be mounted, especially by diverse institutions engaged in data collection.

31. This section will elaborate further on the components of statistical infrastructure referred to above that need to and could be established, even in the prevailing data collection environment of Somalia, to address the issue of quality. The Mission feels while such infrastructure is especially an essential prerequisite to facilitate implementation of household and enterprise surveys it bears relevance in other aspects of data collection too. The application of this infrastructure in data collection would enhance the quality of data collected; and go a long way in meeting "the challenges to consistent data collection" noted in the Somalia Human Development Report 2001. Application of such infrastructure would not in any way compromise the scope and content and the flexibility in scheduling of such surveys, which the respective international agencies and or the Somali Administrations and even the local authorities may intend to implement. Hitherto, however, many of the surveys have been undertaken without the benefit of such coherently developed infrastructure.

2.8.1 Statistical Standards

32. Apart from frames and registers, various components of statistical standards viz; basic concepts and definitions, procedures/methods of data collection, classification, and processing of data also constitute important components of the statistical infrastructure.

2.8.2 Implementation Arrangements

33. In conventional situations where a NSO exists, the frames and registers are usually established by deploying the respective capability of such organisations in the field. In Somalia's case the Mission is not proposing that such a capability be established, but that the capability as it exists in the Somali Administrations and international agencies and NGOs be coordinated and deployed to secure a comprehensive coverage of the frames in a systematically phased manner over a period of time, say three to four years. The settlement survey and the field capability that is established to undertake it will be a very useful starting point so long as there is an appropriate institutional focus to locate the management of the frames. At such a focal point it will, however, be necessary to also locate the appropriate expertise and arrangement for coordinating the partners; so that the registers and frames could be compiled and updated, and appropriate access to them, as and when required, facilitated. The SWG and TCG are the appropriate forums to devise ways and means to implement this suggestion.

2.9 Data Processing: storage and dissemination

2.9.1 Introduction

34. Data processing arrangements are also a part of the statistical infrastructure and if aptly conceived and established do go a long way in enhancing the quality of data as well as cost efficiency in processing it for user applications. Such arrangements pertain first and foremost to the handling of frames and registers mentioned earlier, and to the processing of surveys based on them. But encompassed within such a regime are also issues such as the statistical analysis of survey results, the management of administrative data sources such as trade data, the production of maps and the dissemination of statistics using either traditional flat text based publication format or a more modern web page hosted environment. Results may be disseminated using map-based representation as well. The issues related to storage

and dissemination will be discussed in this section. Issues related to survey processing and statistical analysis are discussed in a later chapter.

35. As has become clear, earlier data collection activities for Somalia are considerably hampered by the lack of a national statistical agency. The decentralised data collection regime with on the one hand the three Somali Administrations and on the other hand the international agencies will also set the parameters of data processing. Each international agency involved in data collection processes, analyses, stores and disseminates its own collected data subject to its own project needs. When discussing data collection activities of the various UN agencies the Mission wishes to make the distinction between data collected for internal use and data that is made available for general use. The Mission will abstain from a discussion of the former category of activities. Each agency has its own well-established procedures for data capture, processing, analysis and storage which – the Mission has no doubt – serves the agency in question quite well. As for the latter category, the issue of *sharing* the final results – after capture, processing and analysis have taken place – is a pertinent issue for the Mission. Given the demand for data on Somalia it is important to find an optimal way in which this 'sharing' can take place. This sharing of data could be implemented by setting up a central database in which all data meant for general use is systematically collected. UNDP's Data and Information Management Unit (DIMU) has attempted this in a limited way in the past. However, DIMU is generally seen as not having been very successful at this attempt of centralisation of data. The Mission will address the issue of a central database as well as an alternative 'decentralised' solution later in this section.

36. The Ministries of Planning of the Somali Administrations also collect and process data, albeit in a limited way at present. In this case the issues of data capture, processing, analysis and storage are relevant for the Mission. There are currently serious constrains in capacity and capability with regard to these issues which will be addressed in Chapter 4. Moreover, the Mission finds it important that the issues of data capture, processing, analysis and storage for the three Administrations are addressed in a coordinated way. This has already been agreed upon in the framework of the TCG set up by the three Somali administrations in 2002. Subsequently, a start has been made with a number of issues explicitly mentioned in the 'Aide Memoir' drawn up during the inception of the TCG, among which the following are relevant for this section on data processing:

- establishment of a database for macroeconomic statistics and socio-economic data;
- improved capacity of the administrations to collect and compile statistical data through appropriate and adequate training and technical assistance;
- capacity to process and analyse statistical data using popular statistical software packages;
- capacity to utilize Geographical Information System for planning and policy analysis.

The Mission finds this an important and laudable development, which it wishes to fully endorse. The contents of the sections on data processing of this report must be seen as a further elaboration of these issues.

2.9.2 Data storage: general issues

Central to any data processing regime is the issue of data storage. Data compiled from various sources – frames, registers, surveys, administrative sources – need to be systematically stored in central repositories, even before being processed. It must always be possible to retrieve the original data pertaining to a certain period, on a particular subject in an efficient manner. Moreover, there needs to be a clear separation between the original data and the calculations and transformations performed on the data. Ideally, the latter is

also stored, allowing for maximal transparency, hence benefiting the quality of published indicators. Finally, the results of these procedures need to be stored in a user friendly format which simplifies retrieval, for presentation, e.g. regional, historical (as time-series) or by any other category

37. Ultimately, any Statistical Office will need to set up a solid database infrastructure to cope with the large amounts of data that flows in on a regular basis. There are various possibilities for this (Oracle, Informix, SQL Server, Interbase, etc.). However, these databases pre-suppose the availability of highly skilled personnel, which may make implementation in the short run difficult. Short of opting for a dedicated database platform, there is for the Medium-term the possibility of resorting to general-purpose office software, like Access and Excel. Using Excel for data storage and subsequent processing is certainly an option. This is what is currently being done by the Somali Administrations, as far as the Mission has been able to observe. In principle, current Excel practices serve the purpose of the Administrations quite well. For the short-term the choice for Excel as data storage medium for the Somali Administrations is certainly a rational one, given the constraints on capacity and capability. However, the Mission wishes to make the observation that data integrity cannot be guaranteed in a spreadsheet, as the basic storage units are cells, and not records. It is, therefore, recommended to make in the Medium-term a gradual transition to Access, at least for some data sources to be identified below.

38. When using Access for data storage a clear separation must be kept between data, and the procedures performed on the data. Ideally, one would store basic data in a 'back-end' Access database and the user forms, queries, reports, macro's and Visual Basic code, which together form the 'processing' part, in another 'front-end' database, linked to the back-end. In a later stage one could then implement the back-end in any other database format (e.g. Oracle) with little effort, while keeping the front-end (the user interface) the same.

39. Data of various kinds need not all be stored in a single database. It makes sense to seek a database solution best suited for the needs of a particular type of data. Anticipating the discussion in Chapter 3 on the minimum set of data on Somalia that ought to be collected, the Mission proposes to single out the following major types of data for special treatment: national accounts data; production and price indices; trade data as and when available. Special solutions will be discussed in the next three subsections. As was emphasised it is important that the Somali Administrations make such a transition jointly under the aegis of TCG, sharing applications and participating jointly in training. This will make the transition to a national statistical agency easier,.

2.9.3 National Accounts data

40. In Chapter 3 the Mission will propose a simple approach to the calculation of Gross Domestic Product (GDP) for Somalia within the context of a framework of national accounts. Such calculations can - and in the case of Somalia where no framework of National Accounts exists should - be done in Excel. However, experience in other countries shows that the use of Excel for national accounting purposes is likely to run into all sorts of inherent limitations once a certain stage of development has been reached, leading to solutions that are difficult to adapt and maintain. An additional handicap for Somalia is that the developed national accounts framework must be applicable in each of the three administrations, allowing each administration to adapt it to fit its own circumstances. However, the zonal frameworks must be amendable to aggregation to a national level in an easy manner, once a national government is elected. Apart from Excel, few computer tools exist that fulfil all the requirements posed by an evolving and growing system of national accounts. One such package is briefly reviewed in Annex 2.4.

2.9.4 Production and price data

41. Chapter 3 will discuss the merits of establishing a monthly system of production and price indices for Somalia. The amount of data collected for such a system can become substantial. For example, price quotations collected for a number of products P for T weeks for a number of markets N in a geographical area A will add up to a number of data items that will be proportionate to the product of these factors P.T.N.A, a number that can quickly grow to be very large. Storage in Excel is possible (calculating indices then becomes easy to implement), and is currently being done by the Somali Administrations, but storage in a database is recommended. It is a relatively simple matter to develop a robust Access application for storing price quotations along the dimensions week, market and commodity. Data-entry can proceed via a simple user interface. A simple procedure (a macro based on queries) can then calculate the suitable monthly *Laspeyres* indexes, based on a fixed set of weights also stored in the database. Similarly, a system for production data can easily be made. These systems can be developed and tested by UNDP / Watching Brief, and then implemented in all three Ministries of Planning. Staff of these Ministries need basic knowledge of Access in order to use these applications. The advantage of this approach is that the three separate zonal databases can be linked easily to come up with national indices. Moreover, query-based procedures for systematic imputation of missing data are easy to implement in Access, whereas it is difficult to do this in Excel.

2.9.5 Trade data

42. Data processing of trade data is invariably a highly specialist area in statistical offices. The amount of data involved is usually substantial. Moreover, trade data collection normally is not done in the statistical office, but in the customs office(s) and the issue of coordination the various data flows by the statistical office is important. There are a number of special software solutions for trade data of which the Mission would like to mention only one: the ASYCUDA system, which is used in many developing countries all over the world (see Annex 2.4).

43. The current collection of trade data in Somalia is in such an elementary state that a system like ASYCUDA would currently be completely inappropriate. However, the Mission recommends that trade data is treated separately in the framework of a database solution with a philosophy at least consonant with ASYCUDA from the very outset of development. That will make a future transition to such a system smoother and easier to implement. For the Medium-term any computer solution that attempts to systematically monitor trade data is a vast improvement over the existing situation. Such a solution should proceed in conjunction with the introduction of a commodity classification that is agreed upon by all three zones.

48. Again, just as in the case for production and price data, such a trade data management system could be set up as a robust Access application with the assistance of UNDP for all three zones with the immediate benefits that zonal trade statistics can be aggregated easy to national levels and various checking procedures be implemented (such as a macro editing technique based on unit values, assuming that both trade quantities and values are recorded, as will be recommended in Chapter 3)

2.9.6 A Socio-economic database

49. One of the recurring issues that came to the attention of the Mission was the desirability of establishing a 'central database' where the various bits and pieces of information collected on Somalia could be systematically stored and then made available to all interested stakeholders. The Watching Brief project establishes a baseline socio-economic database to

support policy formulation, planning and monitoring (Socio-Economic Survey 2002, Report No. 1, Somalia Watching Brief 2003, p.2). As was already mentioned DIMU made an attempt to create such a database but was unsuccessful. In what follows, is the Mission's wishes to evaluate this idea of establishing a single database for common use. The pros and cons of such a solution are explored in Annex 2.5.

2.9.7 Statistical Processing software

50. Producing valid statistics means that collected information is statistically analysed and processed. There are a number of statistical analysis tools available in Excel, and as entry-level package this may be useful. But any statistical organisation will have to use at least one dedicated statistical package. Since many agencies (including UNDP) already use SPSS, this seems to be the obvious choice (although there are other options, such as SAS or STATA). This selected package will have to be introduced to the three administrations, preferably in conjunction with the training in statistics.

51. There are other specialised forms of statistical processing, not part of SPSS. An important example is seasonal adjustment for which there are specialised software packages, such as DEMETRA, developed by Eurostat. The Mission does not foresee this to be an important issue for the Medium-term.

2.9.8 Data Dissemination and Data Sharing

52. The issue of data dissemination has already been touched upon in the above discussion of a central socio-economic database. Here, the Mission would like to discuss an idea that it also encountered during its interactions with the various UN agencies: that of an 'interlinked network' between agencies involved in data collection allowing 'data sharing', as an alternative for a publicly accessible centralised database as discussed above. Each agency (the Somali Administrations included) would avail data that it collects - and that it finds suitable for general use - on their website, thus maintaining custody of their data, instead of sending it to the location where the central database is stored. Ownership of data is thus unambiguous, encouraging agencies to ensure that the data is kept up-to-date. All these individual websites can then be brought together on the UN Somalia website. UNDP's DIMU – which currently maintains this central website and which has substantial website designing expertise - can facilitate this 'data sharing' by maintaining websites for agencies which do not have the resources to maintain their own website. The Mission finds such a 'centralised' data dissemination approach very useful, since this would make the various data that is being collected by the Somali Administrations and by the international agencies directly accessible to anyone with an Internet connection. The Mission would only like to note that this approach does not really warrant the epitaph 'central database', at least when the term is used in the conventional sense.

3 Towards a System of Statistics for Somalia

3.1 Introduction

53. The second major activity according to the Mission's TOR is to assess critical data needs and gaps for the major categories of data for Somalia: demographic and population, reproductive health, economic, social, environmental and thematic issues such as gender and human rights. Moreover the Mission's work is to support the MDG monitoring and lay the foundation to meet critical data needed to undertake poverty assessment, poverty profile and poverty mapping and preparation of a PRSP in due course. In the previous chapter, a review of the ongoing efforts to collect and compile statistics has been provided. To assess to what extent there are data needs and gaps a suitable framework must be developed to place into perspective the ongoing data collection efforts. Such an exercise will highlight the areas of statistics where data collection takes place insufficiently or where data collection has not begun. Moreover, such a framework can be a foundation on which a future national statistical system for Somalia can be formed. While this may not take place in the immediate future, the framework can serve as a foundation on which the current three Somali Administrations can build up their statistical systems in a mutually consistent and coordinated way. The delineation of such a framework will be the main aim of this chapter.

54. As indicated in the TOR, the Mission used the GDDS developed by the IMF for this framework. The next section will introduce this system in general terms. Subsequently, a detailed analysis will be made of the various categories of statistical data that the GDDS defines. Special care will be taken to focus this analysis to the Somali context as much as possible, taking into account the findings of the previous chapter. The proposed analytical system will be the point of departure for the next chapter where a framework for data collection will be developed to strengthen the ongoing efforts in data collection and expand their scope and coverage to address the critical data needs and gaps identified in this chapter.

55. IMF's GDDS highlights a structured process through which IMF member countries commit voluntarily to improving the quality of the data produced and disseminated by their statistical systems over the long run to meet the needs of macroeconomic analysis. Somalia is not a member country of the IMF, nor is it currently in a position to initiate the GDDS process, such as having a National Statistical Office, a Ministry of Finance, a Central Bank, a Customs Organisation, a Central Tax Authority, etc. This implies that parts of the GDDS framework will have serious limitations, notably the financial sector, and to a lesser degree the fiscal and external sectors. But the Mission feels GDDS can still provide a suitable framework for evaluating the data needs for Somalia and to set priorities for new data collection activities. The Mission considers the framework to be valuable as a unifying factor even in this early stage of statistical development, when there obviously will be substantial areas of GDDS with a limited scope for implementation in Somalia. Using the GDDS system right from the outset of the development of a statistical system will facilitate close monitoring of the system. Moreover, in the long run, when Somalia has a national government and seeks to connect with international organisations and forums, it will have a comparative advantage if it can show that its system of statistics conform to GDDS.

56. The aim of this Chapter is to extract from the GDDS framework a 'minimum list of statistics for the Medium-term'. This list contains a detailed enumeration of the various types of statistics that should be collected, in the absence of a national government, progressively by the Administrations of Somaliland, Puntland and the TNG. To provide the necessary detail, the Mission will use as a main source the indicators from the Human Development Report for Somalia (Somalia HDR 2001), which can be found in Annex 3.3. For reference, two other sets of international indicators have been consulted: the 48 indicators of the

Millennium Development Goals (MDG), and (selected) World Development Indicators (WDI). These indicators are highlighted in Annex 3.2 and 3.4 respectively. The minimal list itself is given in Annex 3.9. The Mission will elaborate in Chapter 4 an integrated programme of surveys, which will form the backbone for data collection and the administrative channels on which the minimal system can be based. Next to surveys, administrative records maintained by the Somali Administrations will form a second important source of data for the minimal system. But some data for the minimal list will have to come, at least for the Medium-term, from the international agencies currently involved in data collection, as reviewed in Chapter 2, although the aim should be to let the Somali Administrations progressively become more involved in this as well. This pertains especially to data on nutrition, health and education and poverty.

3.2 General Data Dissemination System (GDDS)

57. According to the *Guide to the General Data Dissemination System* (Statistics Department, IMF, 2001) the GDDS framework is built around the following four dimensions:

a. *Data characteristics.* This includes coverage, periodicity, and timeliness. It provides for the dissemination of reliable, comprehensive, and timely economic, financial, and socio-demographic data essential to the transparency of macroeconomic performance and policy.
b. *Quality.* Users of statistics must have information to allow them to assess quality according to their own needs. GDDS, therefore, recommends the dissemination of documentation on methodology and sources used in preparing statistics.
c. *Integrity.* For users to have confidence in statistics, they must first have confidence in the objectivity and professionalism of the agency producing the statistics. Transparency of practices and procedures is a key factor in creating this confidence. The GDDS, therefore, recommends the dissemination of the terms and conditions under which the statistics are produced.
d. *Access by the public.* Dissemination of official statistics is an essential feature of statistics as a public good, and, therefore, ready and equal access by the public are principal requirements.

58. All of these dimensions are relevant for the Somalia context. First, the data characteristics given in the IMF Guide, suitably detailed, can serve as reference points for a future National System of Statistics for Somalia. It should be noted that GDDS does not prescribe to what extent the collected data should be disaggregated, e.g. regionally or by social group. This is an important country-specific issue that should be carefully evaluated for the Somali data collection activities. Second, all newly proposed data collection activities as well as all ongoing efforts by international agencies ought to have the quality aspect firmly built in. Various measures to facilitate this are proposed by the Mission, both in terms of what the Mission has labelled 'statistical infrastructure' and in terms of capacity and capability building. Third, as for the integrity aspect, the Mission's emphasis is especially on coordination between the various agencies currently involved in data collection and between the three Somali Administrations. It should become transparent to all stakeholders what methods have been applied to arrive at a particular body of data on Somalia. There should be suitable venues for sharing information both on data and on 'meta data', i.e. information on the characteristics of a particular set of data. Finally, the issue of data access and dissemination will be repeatedly touched upon in this report. Since data collection is at the moment rather fragmented over many agencies – this was the main message of the previous chapter – much can be gained by coordinated sharing of information between the agencies.

59. For the case of Somalia there are several additional issues that are important when contemplating a system of statistics for the Medium-term. The Somali Administrations will have to select what are priority items from the list given the capacity and capability constraints of their own staff, the development goals for the Medium-term and the presence of a large number of stakeholders playing a continuing dominant role in the area of data collection in the Medium-term. The issue of priority is implicitly addressed by the Mission by focusing on the 'minimal' list: all items in this list have priority over items in GDDS but not in the minimal list.

60. This last paragraph also touches upon a second important issue: custodianship of data. Who will be the principle agent of data collection and where will decisions on methods, implementation procedures and data processing be taken? On the one hand there are the stakeholders identified in the last chapter, among them a number of well equipped, capable international agencies with financial resources at their disposal: FAO, FSAU, FEWS, UNDP, UNICEF, UNESCO, WHO. On the other hand there are the Somali Administrations, for which the situation is quite the opposite, having few resources, in both funding and qualified manpower. This situation will imply that decisions on data collection and custodianship of data will naturally fall into the hands of the stakeholders. Though such a situation of division of labour between stakeholders and Somali Administrations may be the only option for the Medium-term, care must be taken to set up coordinating mechanisms to insure optimal sharing of data among the stakeholders and the Somali Administrations. The issues of coordination and information sharing are deemed to be of central importance by the Mission and form a recurring theme throughout the Report.

61. The GDDS framework covers the following sectors:

1. *Real sector.* National accounts, production index, price index, labour markets
2. *Fiscal sector.* Central government operations, central government aggregates, central government debt
3. *Financial sector.* Depository corporations survey, broad money and credit aggregates, interest rates, stock market
4. *External sector.* Balance of payments, external debt and debt service schedule, international reserves, merchandise trade
5. *Socio-demographic data.* Population, education, health, poverty

62. As was reviewed in Chapter 2, the coverage of data collected on the first four sectors listed above is rather sparse. The pressing need for data, as far as the status quo is concerned, has essentially emanated from the international agencies, UN and NGOs. The data that these international agencies have sought is essentially, though not exclusively, on socio-demographic parameters. So the statistical system for Somalia as envisaged by the Mission, even for the Medium-term, continues to emphasise the socio-demographic sector. The Mission has considered this when proposing the statistical system for Somalia for the Medium-term

63. The following sections discuss each of the main categories, drawing from the GDDS guide where necessary. For each of the major data categories, relevance for Somalia will be indicated . If relevant, it will be evaluated to what extent data collection is already taking place. Gaps in data collection will be noted and it will be evaluated whether a remedy can be set into action in the Medium-term, i.e. within the coming five years. An overview of GDDS, taken from the GDDS Guide and simplified somewhat, is presented in Annex 3.1. The proposed 'minimal list' can be found in Annex 3.9.

3.3 Real sector

3.3.1 Introduction

64. The most important statistics in this respect is Gross Domestic Product (GDP). This is an important indicator in its own right, figuring in many lists of development indicators. A systematic statistical derivation of GDP can only be presented within the framework of national accounts, which will be discussed in the next section. The Mission finds the establishment of a system of national accounts – currently completely lacking - to be essential for a Somali system of statistics for the Medium-term. To anticipate such a development, the Mission will indicate how GDP can be derived on the basis of data collected within the framework of the integrated programme of surveys presented in Chapter 4.

65. The GDDS also encompasses production and price indexes within the real sector. Such sets of indices are an essential complement to National Accounts allowing time-series of macro-economic aggregates such as GDP to be deflated and extrapolated. Currently, hardly any production data is maintained and price collection takes place to a limited extent, but better than the pre-war situation. The Mission finds it important to have a consistent and complete system of price and production indices in the Medium-term, considering capacity and capability constraints of the Somali Administrations.

66. Finally, GDDS encompasses labour data collection. The Mission finds this an important area of statistics, which most stakeholders find interesting. A number of development indicators pertainto this area of statistics. In this data category some data such as child labour force participation, disaggregated by gender and geographical areas, is available, but many important gaps that need to be filled on a priority basis also exist.

3.3.2 National Accounts

67. National accounts are a comprehensive and systematic, quantitative description of economic phenomena, including production, consumption, saving, investment, the exchange of goods and services, the making of transfer payments, in a country, related to a certain period of time, usually a year or a quarter. The objectives of the national accounts are:

a. The presentation of an overall picture of the economic performance of the country.
b. The design and computation of summary indicators for measuring performance, compared with previous periods and with other countries.
c. The provision of data for monitoring and forecasting the effects of socio-economic policies.

A note on national accounts aggregates is given in Annex 3.5 for reference.

68. The core indicators for national accounts aggregates that GDDS recommends are GDP at nominal and real (price adjusted) levels on a yearly basis. GDDS also encourages the production and dissemination of indicators on gross national income, capital formation, and saving. Breakdowns of GDP by either major expenditure category, by productive sector (industry), or both are encouraged. The main reference work for national accounts is the System of National Accounts 1993 (New York: a publication of the Commission of the European Communities, International Monetary Fund, Organization for Economic Cooperation and Development, United Nations, and the World Bank, 1993), abbreviated as SNA'93.

69. As was stated earlier, GDP is an essential statistic for a number of important indicators needed for Somalia. To the best of the Mission's knowledge, so far only UNDP has tried to derive GDP from available data sources for the recent post-war period following the expenditure approach (which is the right approach under the prevailing conditions), although the Mission was unable to obtain a detailed report on this derivation. The Mission finds it important that this work is continued and expanded; taking into account the integrated programme of surveys that is proposed in Chapter 4.

70. As is explained in Annex 3.5 setting up a system of classifications for Somalia is one of the priority concerns when creating a national statistical system for Somalia. This pertains first and foremost to a classification of activities, which is essential for the elaboration of the framework of national accounts and for the system of production indices. One of the first activities to be undertaken for any further work on national accounts must be to specify a detailed activity classification for Somalia, which must subsequently be used for all statistical activities, e.g. the Establishment and Enterprise Surveys proposed in Chapter 4. For agriculture this will include the production of the principle crops maize and sorghum. For livestock the major herd types may be introduced. Given the relatively minor importance of manufacturing this sector need not be overly detailed. But it should provide for the incorporation of the various important food-processing activities, to give just one example. Pending further work on this, the Mission will use the highest aggregation level of ISIC (Appropriate disaggregating will need to be introduced for selected categories to reflect realities), which is given below:

A. Agriculture (including livestock, estimates for which are required at disaggregated level for Somalia): maize and sorghum as major crops, cowpeas, fruits and vegetables as minor crops. Cattle, sheep, goat and camel as major herds
B. Fishing
C. Mining and quarrying
D. Manufacturing: food processing and other important sectors
E. Electricity and water supply
F. Construction
G. Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods
H. Hotels and restaurants
I. Transport, storage and communications
J. Financial intermediation
K. Real estate, renting and business services
L. Public Administration and defence
M. Education
N. Health and social work
O,P,Q. Other community, social and personal service activities

71. Next to an activity classification, it is also important to set up a standard product classification for Somalia that can be used for all subsequent coding where products are involved. This pertains for example to coding for private and government consumption expenditures, consumer prices, inputs and outputs for enterprise units, imports and exports. Only when sectoral data for these major economic transactions are coded systematically and consistently can a systematic derivation of GDP in a national accounts framework take place. The Mission recommends setting up a product classification according to activities, so that e.g. the activity of sorghum production yields a single product 'sorghum'. Similarly, the activity of food processing yields a single product 'processed food'. This product can then be further detailed in e.g. 'processed fish' and ' processed meat'. Note that it is not necessary to subdivide the activity into 'fish processing' and 'meat processing'; activity and product classifications must be consistent, not (necessarily) symmetric.

72. Given Somali classifications for activities, the best approach for the systematic derivation of GDP is the so-called production approach, except for the service sectors (in the above list from sector G onwards). For each activity data on inputs and principle output is collected. The difference between output and inputs constitutes value added for the activity. More details on derivation of estimates of GDP are given Annex. 3.6.

73. Alternatively, GDP can be estimated following the expenditure approach, as the sum of final consumption expenditures (consisting mainly of household expenditures and government expenditures), gross investment and exports minus the value of imports. UNDP follows this approach.. Data on household consumption can be derived from the Socio-economic Survey and gross investment for Somalia will in all likelihood be rather small, but could be estimated with some precision. Thus, if some reasonable estimates for government expenditure (which presently is too small) and for exports and imports can be found (this issue will be addressed below), then the value of GDP can also be estimated following the expenditure approach. This can serve as a useful approximation until the production approach becomes operational following the implementation of the integrated survey programme delineated in later chapters. For some sectors such as public Administration and defence this is the only approach possible.

74. Finally, GDP can be estimated following the income approach, combining data on wages and other income, taxes and gross operating surplus. This approach is normally used for most of the branches of the service sectors.

75. Other important macro-economic indicators next to GDP are: Gross National Product (GNP), private consumption, gross domestic investment and gross domestic savings. Moreover, it is important to make the purchasing power parity (PPP) correction, making GDP internationally comparable. For this correction the Mission would like to refer to the International Comparison Project (ICP). Details of these correction procedures can be found in the Handbook of ICP (United Nations, Series F, No. 62, 1992).

76. To guide the planning for a future design of a simple framework for national accounts, the Mission will put forward a simple approach to calculating GDP for Somalia, using either the currently available data or the data that may become available in the Medium-term. In outline, this involves enumerating for each of the major sectors the available or potential data sources for principle output and for the major inputs. Following the production approach sectoral value added can then be derived, on the basis of which GDP can be calculated. This derivation can be found in Annex 3.6.

3.3.3 Production indices

77. The GDDS framework for the real sector includes production indices. The Mission finds it important that in the Medium-term a start is made with the collection of production data on the basis of which a simple production volume index can be calculated. To begin with, this could be a yearly/quarterly index. Some remarks on such an index for Somalia are given in Annex 3.7.

3.3.4 Price indices

78. The GDDS recommends that a consumer price index (CPI) be compiled on a monthly basis. The CPI is typically measured by a *Laspeyres* index of the prices of a fixed set of goods and services items, often referred to as a “fixed basket,” whose weights are the item shares in the expenditure aggregate for a given period. The Somali Administrations have started with the systematic collection of prices for CPI (the Mission was able to consult a methodological manual for the derivation of CPI and a check list for field officers). The

Mission finds the collection of price data and the consequent calculation of CPI to be very important, both for the sake of policy formulation and development planning and for the derivation of GDP as was indicated earlier. Therefore, the ongoing activities need to be further strengthened into in the Medium-term.

79. There are several important issues that need to be taken into account for a system of price indices. The first one concerns the items for which prices should be collected. The sectoral division that was used in the previous section should form a basis for this. However, prices are collected not for sectors but for well-defined commodities, so in this respect it is important to carefully decide on an appropriate product classification. This was discussed earlier. Another question concerns the data collection mechanism that needs to be set up. How many observations are needed on which commodities? Which markets in which districts need to be sampled? Obviously considerations of available resources and costing play a critical role in this respect. The Mission finds it important that the three Somali Administrations set up a data collection system that is based on a sound common methodology on which there is consensus.

80. GDDS also encourages the production and dissemination of a monthly producer price index (PPI). In the opinion of the Mission, PPI is no priority statistics for Somalia in the Medium-term.

3.3.5 Labour market data

81. GDDS recommends the annual compilation and dissemination of employment, unemployment, and wages/earnings indicators. The recommendations of the ILO provide concepts and definitions of the labour force and within that framework provide definitions and classifications of employment, unemployment and wage statistics. ILO's concepts, definitions, and classifications are consistent with the *SNA'93*.

82. Chapter 4 will spell out in detail how – once every five years – the proposed Labour Force Survey (LFS) will yield information on the labour force. This survey will also supply data on employment / unemployment rates, distinguished by what is called "usual status", "weekly status" and "daily status". Finally, LFS will yield data on employment by occupational status and by industry, allowing linkage with the national accounts. All these LFS data will have breakdowns by sex, urban / rural, marital status, educational attainment and region. Labour force summary information for the years in between two LFS' can be based on a thin sample in the proposed annual rounds of the Integrated Sample Survey Programme delineated in Chapter 4.

83. Employment in the formal sector of non-agricultural economy can be obtained separately for each major branch of activity (the sectors identified earlier in this chapter) by the proposed annual Establishment Surveys. For the informal sector similar data can be obtained from the five yearly Enterprise Surveys.

84. Wage data comprise direct wages and salaries for time worked or work done, while earnings data (in cash and in kind) are broader, also covering remuneration for time not worked, bonuses, gratuities, and housing and family allowances paid by the employer to the employee. This information can be obtained for the formal sector from the annual Establishment Surveys. For the informal sector similar data can be obtained from the five yearly Enterprise Surveys. This information will need to be supplemented by data directly collected by the Ministries of Labour through administrative channels, e.g. on wages for rural labour.

3.4 Fiscal sector

85. Any discussion of the fiscal sector for Somalia will seem rather impractical at least in the near foreseen future, with no national government in place, and large sections of the country still in a state of near anarchy. However, the aim of the Mission was not to work within the political constraints currently in operation, but to see what statistical development is possible in the Medium-term and in what direction it should proceed to develop a sound national statistical system to cater to the needs for development planning and for policy purposes. More perhaps than for other sectors, the assumption of the current section is that Somalia will obtain a stable national government that is able to enforce a uniform fiscal regime nation wide.

86. Although both Administrations of Somaliland and Puntland have made a good start with the set-up of a system of data collection on revenues and expenditures it is apparent to the Mission that additional work needs to be done in this area. Formal methods of budgetary analysis will need to be set up in accordance with international guidelines. Moreover, the relevant international (functional) classifications will have to be introduced. This work will require additional support to the Somali Administrations.

87. GDDS also recommend the publication of data on central government debt, including the liabilities (in the form of securities, loans, and deposits) of all institutional units that are part of central government. This would also include total official development assistance received. This part of GDDS is currently not very relevant. However, it will become relevant once a national government is in place.

3.5 Financial sector

88. Monetary and financial statistics are a prominent and somewhat special part of the macroeconomic statistical system of a country. According to the GDDS Guide m*onetary statistics* consist of a comprehensive set of stock and flow data on the financial and non-financial assets and liabilities of an economy's financial corporations sector. *Financial statistics* consist of a comprehensive set of stock and flow data on the financial assets and liabilities of all sectors of the economy. Flow of funds data, presented in a matrix form showing the financial transactions among all sub-sectors of an economy.

89. The remarks on relevance of the fiscal sector of the previous section also apply to the financial sector. If a system of financial statistics is to be established for Somalia it must first have the requisite institutions, in this case first and foremost a Central Bank. Also, there must be a regulated financial system backed by the necessary legislation. Moreover, there ought to be a national currency. Finally, the country must be interwoven in the international financial system. For the Medium-term these assumptions will in all likelihood not be met. Therefore, this part of GDDS will not be very important for Somalia in the Medium-term.

90. The absence of formal financial markets does not mean that there are no financial markets in Somalia. There is an important system of informal, unregulated financial intermediation *(xawaalada)* to handle the large flow of remittances. Little is known about these remittances, even though they are of crucial importance to the Somali economy. Also, there are currently a number of different currencies in circulation, and the money supply is largely in the hands of private entrepreneurs. Moreover, the US Dollar plays an important role in the Somali economy. The Mission feels that all these observations warrant a further rigorous study of the financial sector of Somalia and how to compile the relevant GDDS indicators.

3.6 External sector

91. Trade is important for Somalia. According to the Somalia HDR 2001 most Somali households are involved in some form of commerce that is ultimately linked to the import-export trade. The collapse of agricultural production, manufacturing and public employment during the war has made trade an increasingly vital part of the economy. Part of this trade is caused by the weakness of Somalia's own productive sectors. Somalia runs a chronic trade deficit (Somalia HDR, 2001), which is largely financed by the external remittances.. An important development for the Somali economy is the increasing importance of trans-shipment and trans-border trade, for example to Kenya, and the emergence of an *"entrepot"* economy. Part of this trade is illicit, and reliable data are hard to obtain.

92. The objective of the GDDS framework for the external sector is – according to the GDDS Guide - the production and dissemination of comprehensive data on the main aggregates and balancing items of the balance of payments. The balance of payments is a statistical statement that systematically summarizes, for a specific time period, the economic transactions of an economy with the rest of the world. Transactions, for the most part between residents and non-residents, consist of those involving goods, services, and income; those involving financial claims on, and liabilities to, the rest of the world; and those (such as gifts) classified as transfers. The GDDS prescribes that current, capital, and financial transactions be distinguished. The components recommended for dissemination within the current account include (a) imports and exports of goods and services; (b) income transactions, i.e., income receipts and payments, both with respect to compensation of employees and investment income, with the latter including income from direct investment, portfolio investment, and other investment; and (c) receipts and payments with respect to current transfers. The capital account should include capital transfers, as relevant, and the financial account should separately identify transactions with respect to direct investment, portfolio investment, financial derivatives, other investment, and reserves. The GDDS framework also includes data on outstanding external debt and on international reserves. Finally, it recommends that spot exchange rates be available to the public on a daily basis.

93. Trade data are published by the Somali Administrations. Puntland distinguishes for its imports between: sugar, rice, flour, cement, construction material and diesel and for its exports between: camel, cattle, goats / sheep and hides / skins (Facts and Figures in Puntland 2003). Somaliland has import data for: sugar, rice, wheat flour, wheat coconut oil, pasta, dates, biscuits, cloth, car spares, cigarettes, soap, building materials and fuel. Its exports list is the same as for Puntland (Somaliland in Figures 2003). What the Mission found striking is that only data on traded quantities are regularly published. During its consultations with the Ministry of Finance in Puntland, the Mission learnt that trade values are known (although estimated on the basis of prices collected from the market) as are the values of import duties based on them. However, these figures are not published. The Mission would like to recommend that the Somali Administrations start publishing trade values as well. Moreover, it recommends introducing a more detailed commodity classification, consistent with Harmonised System (HS) of commodities. Composite items such as "construction materials" or "building materials" ought to be broken to homogeneous commodities in accordance with the commodity classification adopted for Somalia. Also the unspecified 'other' category may be subdivided into some of the more important commodity groups according to the classifications introduced in the national accounts framework. The Mission further noted that data on exchange rates are collected by the Somali Administrations.

3.7 Socio-demographic data

3.7.1 Introduction

94. Whereas the categories of GDDS mentioned so far are well defined, the socio-demographic component of the GDDS is concerned with the production and dissemination of a broad range of information within each data category, rather than a specific set of indicators. As is explained in the GDDS manual, the term 'indicator' often designates a statistic that has been derived from a set of data in order to measure a specific phenomenon. For example, GDP per capita, requires an estimate of gross domestic product and an estimate of total population. Gross domestic product is derived from a comprehensive system of national accounts, and current population estimates require a complete set of demographic information, including births, deaths, and net migration. Thus a single indicator may depend upon a large body of statistical information. The same information can be used to produce many other important indicators as well, such as life expectancy at birth, the total fertility rate, and infant and child mortality rates. The GDDS is more concerned with the underlying body of statistical data than with the production of the many individual indicators. As became evident in the previous chapter, the list of indicators currently compiled for Somalia is already impressive, and this list will only grow in the future. Evaluating these indicators individually is outside the scope of this Mission. Suffice it to note that indicators must be clear, relevant, economic, adequate and able to be monitored (the so called CREAM model). But the aim of the Mission is to identify the various data sources used for the construction of the indicators, and to see how these can be integrated within a statistical framework. Doing this will certainly benefit the quality of the various indicators as well.

95. The GDDS includes four categories of socio-demographic data: population, education, health, and poverty. All these categories of indicators are important for Somalia. Whereas in the previous GDDS categories data collection activities by the international agencies reviewed in Chapter 2 are incidental at most (with some important exceptions, such as Socio-economic Survey 2002), in the socio-demographic category they assume prime importance. These agencies collect most of the data on demographic parameters; health, education and poverty, although the Somali Administrations are also involved. In all likelihood, this situation will remain largely unchanged in the Medium-term.

3.7.2 Population

96. The population size is an important statistic, both in its own right, as for the fact that it figures in the denominator of the numerous "per capita" indicators. Estimating the current population of Somalia with any degree of accuracy is difficult, due to the movements of nomadic people and IDP's both within Somalia and across its borders and due to economic migration as well as the conflict situation. At the end of 1997, a careful review of UNDP/UNFPA of all previous population estimates concluded that in 1995 the total population of Somalia was probably 5.52 million, giving a projected population of 6.38 million in 2001 (HDR 2001, p.57). The recently published Socio-economic Survey 2002 by the Somalia Watching Brief project gives a figure of 6.8 million (Report No.1, p.xii). Estimating the regional breakdown of populations or the breakdown by socio-economic groups is particularly problematic given internal displacement, migrations, and returnees.

97. Demographic statistics are mainly concerned with describing the size and composition of the population. Data is usually obtained from a complete enumeration of the population, supplemented in years between censuses by information on births, deaths, and migration collected through registries of vital statistics or through the use of surveys and from information derived from other administrative records. Both of these approaches are

problematic for Somalia. The Mission has found that, according to the opinion of stakeholders, the undertaking of a census in Somalia is operationally still not possible. Thus, to obtain population statistics for Somalia, recourse must be sought to sample surveys. The Mission will address this issue further in Chapter 4.

98. Among the population data needed are: population size with breakdown by urban – rural / nomadic, age group , sex and region (down to the main village level or *Laanta* in urban areas); growth rate in population, birth rate, infant mortality rate, under-five mortality rate, maternal mortality ratio, live expectancy at birth. The principle sources of data according to the action plan proposed in Chapter 6 are the Settlement Level Survey and the Dual Sample Registration System (elaborated in Chapter 4).

3.7.3 Education

99. Education statistics are produced and disseminated by Ministries of Education and by UN agencies such as UNESCO and UNICEF, which carry out primary school censuses. The education sector comprises all levels of the formal education system: primary, secondary, and tertiary, along with vocational training. Data on the levels other than primary are important, but hardly available for Somalia.

100. The main educational indicators (based on the tables in HDR as presented in Annex 3.3) are: adult literacy rate; youth literacy rate; primary age group enrolment ratio; enrolled children of primary school age who are attending school; children reaching grade 5; secondary enrolment ratio; tertiary enrolment ratio; tertiary students in science; combined gross enrolment ratio. Disaggregation by age, sex, grade or level of education, and type of educational programme, region is strongly recommended.

101. Data on which these indicators are based should be collected both through administrative channels under the aegis of the Ministries of Education as well as from well planned surveys, important surveys in this respect are the Primary School Survey by UNESCO, MICS conducted by UNICEF and the Socio-economic Survey of UNDP / Watching Brief.

3.7.4 Health

102. As was the case for education statistics, much health data are collected by the international agencies, principle among them are UNICEF, WHO and IFRC. The GDDS Guide differentiates for both education and health statistics between input measures, service delivery measures and output measures. Inputs to the health system include both the financial resources used by the public health system and the number and capacity of facilities and the personnel employed in providing services. A complete system of health accounts would also record private expenditures, but in practice these data are difficult to obtain. Service delivery measures should record the type of service provided and characteristics of the population served. Among the most important categories of preventative services provided are immunizations, mother and child health outpatient care, and reproductive health services. Other services, such as sewerage, solid waste management, water supply, and sanitary protection of the food supply, may not be considered part of the formal health care system, but all have important effects on public health. Outcome measures record the incidence of disease and causes of death.

103. The main health indicators (based on the tables in Somalia HDR as presented in Annex 3.3) are: maternal mortality rate, infant mortality rate, child mortality (under five years) rate, infants with low birth weight; children 1-5 immunized against all childhood diseases; One year olds immunized against all childhood diseases; One year olds fully immunized

against polio; One year olds fully immunized against TB; One year olds fully immunized against Measles; Oral dehydration therapy use; Pregnant women with anaemia; Female genital mutilation; Tuberculosis; Total cholera cases; Total malaria cases; Total leprosy cases; Fatality due to measles; prevalence of HIV/AIDS; Doctors per 100,000; Nurses per 100,000. Disaggregation of health data by age, sex, and location is recommended.

104. Data on which these indicators are based should be collected both through administrative channels under the aegis of the zonal Ministries of Health (as part of the Health Information System, HIS) as well as from well planned surveys. Important surveys in this respect are (see Annex 3.3): MICS and Child Protection Surveys of UNICEF, EPI and Polio Coverage Surveys of WHO, the Gender and Reproductive Health Survey by UNDP / UNFPA and the Socio-economic Survey 2002 of UNDP / Watching Brief. Other data include indicators on water and sanitation.

3.7.5 Poverty

105. Data on poverty for Somalia are clearly of central importance. Following the analysis of poverty given in the GDDS Guide, poverty is a complex phenomenon and cannot be measured along a single dimension. Money-metric methods, based on the income or consumption of households or individuals are commonly used. However, many statistics discussed in other categories, such as educational attainment, health status, and employment status, are useful for diagnosing poverty, especially when they are collected at a sufficiently disaggregated level. The measurement of poverty requires micro-level data. These data are commonly produced through household surveys. Consumption is often seen as a better measure of welfare than income. Consumption by individuals, accompanied by information on the characteristics of the household and of individual household members, is the preferred basis for assessing money-metric poverty. Access measures, which record the availability of public services, and use of these services, may be derived from household surveys or from the administrative records of service providers. They are most useful when recorded on a sufficiently small scale to provide some indication of the distribution and use of services. Mapping and geographic information systems, which record the proximity of people to service facilities, can be a useful means of recording access information.

106. In poverty analysis in an economy like Somalia it is important to undertake a detailed analysis of the employment and unemployment situation, at least once in five years. It is also important to get a reliable indication about the employment in the formal and informal sectors separately for the non-agricultural economy.

107. The Mission would like to refer for the poverty part of the proposed system to the work currently done on PMAS / PMATU (the following documentation was consulted by the Mission: "Outline of activities for PMATU/PMAS Establishment"; " Poverty Monitoring And Analysis System for Somalia"; "Addressing data needs on poverty in Somalia"). The Mission has taken the list of core indicators for this monitoring system which it has reproduced in Annex 3.8 as the minimal list for this part of the system. A discussion of this list and of the framework out of which it emerged can be found in the mentioned documents.

108. The Mission would also like to refer to the data on food security collected by FSAU and FEWS and the various nutritional surveys carried out by FSAU and UNICEF. The nutritional (or related) indicators in the Somalia HDR 2001 are: Daily per capita supply of calories; Food aid; Food aid in cereals; Percentage of under-five children who are severely or moderately undernourished.

109. Also important in the poverty category are the various "access" measures. HDR 2001 mentions: percentage of population without access to safe water; percentage of population

without access to health services; percentage of population without access to sanitation; population below income poverty line of US $1 per day (PPP). Preliminary estimates of poverty and other access variables are given in SES 2002. Also mentioned in HDR 2001 are the following "access to information" indicators: Access to Televisions; Access to Radios; Access to Telephone lines; Access to Public telephones; Access to Cellular mobile subscribers; Access to People connected to the internet

3.8 Data not in the GDDS

110. The recommended socio-economic components of the previous section do not represent the full range of statistics that are relevant for monitoring social and developmental policies, nor do they reflect the full range of data gathering activities that official agencies may be engaged in. The GDDS does not, for example, include categories for housing, criminal justice, or scientific and cultural activities. Nor does it include environmental statistics at the present time. The Mission wants to list in the following paragraphs the some important indicators for Somalia that fall outside the GDDS framework.

111. Somalia HDR 2001 mentions as environmental indicators: Land area; Population density; Area of rangeland; Area of arable land; Area of forest and woodland; Area of unclassified land; Production of fuel wood; Annual internal renewable water resources; Annual fresh water withdrawals; Average annual rate of deforestation. These are important indicators, and need to be added to the minimal list.

112. From a human rights perspective statistics on the judicial system is important, as are statistics on internally displaced persons, victims as a result of war, disaster, repression and discrimination of minority group, and refugees. Although not strictly part of regular statistical data, good information on the number and geographical spread of landmines is also very important for Somalia where landmines pose a serious personal and economic threat (Somalia HDR 2001, p.64).

113. Separate statistics are also needed to address gender issues. This amounts to a large extent to obtain data on education and health broken for women and girls. The HDR 2001 explicitly publicises: Female life expectancy at birth; Female literacy rate; Female adult literacy rate; Female primary age group enrolment ratio; Female primary gross enrolment ratio; Female secondary age group enrolment ratio; Female tertiary students. These items can be added to the minimal list. The SES 2002 is a good example for this.

114. Data on Housing can also be very useful for development planning. The SocSES 2002 included some tables on this topic: type of dwelling and houses by number of rooms, for both urban and rural.

115. Finally, to conclude, the Mission would like to mention some miscellaneous categories of data that may be included in the minimal list: infrastructure (e.g. roads), rainfall, energy use.

4 Work Programme for the Medium-term

4.1 *Introduction*

116. In Chapter 3, the Mission discussed a minimum list of statistics, recommended for the Medium-term plan. This chapter spells out howthis can be achieved. It would be seen from Annex. 3.9 giving the minimum list with the main sources for various items of statistical data that majority of them would be generated through sample surveys and the administrative channels. This chapter provides all the relevant details of the sampling strategy including the appropriate sampling frame for each proposed sample survey.

4.1.1 Collection of Statistical Data

117. In broad terms, statistical data to meet the needs of any country developing or developed can be collected by using either one or more than one of the following procedures in combination: (i) census, (ii) survey, and (iii) administrative channels. Furthermore, the censuses are generally classified as (a) Population Census, (b) Economic Census, (c) Agriculture Census, and (d) Livestock Census. Surveys are likewise classified broadly as sample surveys using probability based methods of selection and Focus Group Discussion (FGD)/community level data collection. The administrative channels are the channels of operations through the administrative set up where statistical data flow as a by-product of administrative activities.

118. In what follows, the Mission presents its views in the form of broad work programme for each of the above mentioned procedures of data collection.

4.1.2 Censuses

119. The Mission is very clear that in the Medium-term plan it may not be possible to undertake census on any of the subjects mentioned above. This activity will have to wait until a National Statistical Office (NSO) is formed and is operational. After a functioning NSO is established the preparatory work for a census may take about two years. The preparatory work will include items like updating listings of *Laantas* in the urban areas, main settlements, satellite settlements, and water points in the rural areas; cartography work; devising methodology for enumeration of nomadic population; preparing census schedules and instruction manuals for field and supervisory staff; location of field and supervisory staff and their training; arrangements for processing and dissemination of census data. The Mission would like to record for information that there are definite advantages in combining the operations of population census and economic census as also of agriculture census and livestock census. As and when the NSO of Somalia is charged with that responsibility, it could examine the experience of some of the developing countries, which have done so with success.

120. In the absence of a reliable census-based estimate of population count and its characteristics, UNDOS in 1994 took steps to devise a unique alternative methodology for estimating the population at micro level through a settlement survey. The survey operations were carried out spread over the period 1995-98 covering the entire Somalia. These data were aggregated to provide estimates at the district, regional, and national level. Further, the listings and data collected have been well documented and served as the population-based frame for the Socio-Economic Survey 2002.

121. The preparations for the next round of settlement survey are underway and it is proposed to undertake the survey operation at one go during 2004 covering all the urban

areas, main settlements, satellite settlements and water points in the rural area. In addition to collecting some basic details relating to all the urban areas, main settlements, satellite settlements and water points in the rural area, it is proposed to canvass separate survey schedules to enumerate all the non-agricultural enterprises. The following set of schedules are being pre-tested both in the urban areas and rural areas (main settlement, satellite settlement, and water points). **It may be noted that hereafter the words rural area whenever used would imply main settlement, satellite settlement, and water points taken together.**

a. Enterprise-listing schedule (one for urban areas and the other for rural areas) drafted by the Mission.
b. An address slip for the large establishments also drafted by the Mission.
c. A schedule to collect data mainly for poverty mapping from the community and through focus group discussions (FGD)

122. The results of the pre-test indicated that it was feasible to collect the above details. However, taking into account other developments it was decided that the Settlement Survey (SS) 2004 would primarily deal with the needs for poverty mapping and no data would be collected from individual households/enterprise but it would be community-based data collection. Broadly the objectives are: provide a complete and comprehensive list of settlements (main and satellite) and water points with their respective population estimates and GPS coordinates; provide information on the levels of poverty and main sources of income for households in the settlement to facilitate poverty mapping; provide information on the provision and access to public goods and services, such as health facilities schools, sanitation facilities and others; and enumerate various characteristics of the settlement including number of shops (grocery, general provision), tea shops, restaurants, and hotels/guest houses. The proposed SS will also be done in two phases. In the first phase all areas except the three major cities of Mogadishu, Hargeisa, and Bossaso will be covered. The three major cities will be covered in the second phase. The first phase will begin with areas in Somalia other than Somaliland, and Puntland followed by areas in Somaliland and Puntland. **In what follows the SS 2004 whenever referred may be taken as the programme just stated.**

4.1.3 Sample Surveys

123. The Mission would like to recommend the following programme of sample surveys to be planned and implemented during the Medium-term plan:

- Sample Registration Scheme for vital events
- Survey on Estimation of Crop Production
- Survey on Estimation of Livestock Production
- Household based Socio-Demographic Surveys
- Sample Surveys of Non-agriculture Sectors
- Community Level Data Collection and FGD

124. The scope, periodicity and an outline of the sampling strategy recommended for each of the above are discussed in what follows.

4.2 Sample Registration Scheme for Vital Events

125. Until such time that statutory civil registration system for recording vital events comes into operation and starts providing reliable estimates of birth and death rates on a current and continuous basis in Somalia, it is necessary to devise an alternate strategy for measuring short-term changes in growth of population for projecting its future trends and also for meeting the needs of development planning and for policy purposes. Various alternate methods based on the application of sampling techniques have been tried and tested in many developing countries. Such methods include single and multi-round retrospective surveys and the dual record system. Vaidyanathan, K.E. in his Mission report (Report of the UNFPA Consultant on Population Statistics: 18 August-08 October 1997) also recommended that since there is no administrative structure in Somalia to initiate and sustain a civil registration system, steps may be taken to install a Sentinel Reporting System for Somalia to provide data on vital statistics at the micro-level of small areas.

126. Several developing countries, where the statutory civil registration is not functioning satisfactorily to provide reliable estimates of birth and death rates have opted to devise and operate a sample registration scheme with dual recording system. Essentially the dual sample registration system (DSRS) consists of continuous enumeration of births and deaths in a sample of settlements/urban blocks by a resident part-time field enumerator, and an independent six-monthly retrospective survey by a full-time supervisor. The data obtained through these two sources are matched. The unmatched and partially matched events are re-verified in the field to get an unduplicated count of correct events. The advantage of this procedure, in addition to elimination of errors of duplication, is that it leads to a quantitative assessment of the sources of distortion in the two sets of records making it a self-evaluating technique.

4.2.1 Basic structure of the System

127. The main components of DSRS are:

a. Base-line survey of the sample units to obtain usual resident population of the same sample areas;
b. Continuous (longitudinal) enumeration of vital events pertaining to usual resident population by the field enumerator;
c. An independent half-yearly survey for recording births and deaths, which occurred during the half-year under reference and up-dating the house-list and households schedule by the supervisor;
d. Matching of events recorded during continuous enumeration and those listed in course of half-yearly survey;
e. Field verification of unmatched and partially matched events.

128. **Baseline survey.** The base-line survey will be carried out prior to the start of continuous enumeration. This will involve preparation of a **notional** map of the area to be surveyed, house listing, listing of households and filling-in of a household schedule. The supervisor will prepare a notional map with the help of the field enumerator showing important landmarks and location of the houses covered by the sample unit. The field enumerator will then prepare a list of houses/households covered by the sample in a form to be prescribed for this purpose and fill-in a prescribed household schedule wherein he will record the residential status and demographic particulars of each individual residing in the household viz., name, sex, age, marital status and relation to head of households, etc. The inmates of public institutions like hotels, inns, schools and hospitals will be excluded, but households living permanently

within the compound of such institutions will be covered. A list of pregnant women in a prescribed form will also be prepared at the time of the base line survey.

129. **Continuous enumeration.** The field enumerator will maintain a Birth Record in a prescribed form and a Death Record also in a prescribed form in respect of his/her area of operation. The field **enumerator** will be expected to record all births and deaths occurring within the sample unit, as well as those of the usual residents occurring outside the sample unit. The events to visitors occurring within the sample unit are also listed, but these are not taken into account while calculating rates. Thus the events to be enumerated by the field enumerator are those pertaining to: (i) usual residents inside the sample unit; (ii) usual residents outside the sample unit; (iii) immigrants present; (iv) immigrants absent; and (v) visitors inside the sample unit.

130. For ensuring complete netting, the field enumerator will use different means to get information of the occurrence of vital events in the sample unit. The enumerator will take the help of the settlement headman, settlement priest, midwife and such other functionaries and contact these informants at frequent intervals and collect information about the occurrence of births and deaths. On being informed about the occurrence of an event, the enumerator will visit the concerned households and record the prescribed particulars. The enumerator will also keep intouch with other socially important persons and visit local or nearby hospitals, nursing homes, burial grounds, at frequent intervals to keep him/her informed about the occurrence of events. The list of pregnant women that he will maintain will help him in netting of all the births. Despite all these efforts, the field enumerator may fail to have information about some of the events. Therefore, the enumerator will be required to visit all the households once in each quarter in rural areas and once a month in urban areas so as to ensure that all the events have been recorded.

131. **Half-yearly survey.** A half-yearly survey will be carried out independently in each sample unit by a full-time supervisor to be located in each region of Somalia. The supervisor will visit households in the sample unit and record the particulars of births and deaths in prescribed forms respectively pertaining to usual residents and to visitors (only those occurring within the sample unit), which had occurred during the half-yearly period (January-June or July-December) under reference. Simultaneously, the supervisor will update the 'house-list', the 'households schedule' and 'list of pregnant women' by making suitable entries. In carrying out this survey he/she will not have access to the birth and death records of the field enumerator, which will be withdrawn from the field before the supervisor is deputed for the half-yearly survey.

132. **Matching.** On completion of the half-yearly survey, the prescribed forms filled-in by the supervisors will be compared with the prescribed forms filled-in by the field enumerators. This will be done at the regional headquarters. Each entry in the field enumerator and supervisor's record will be matched item by item and events will be classified as fully matched, partially matched and unmatched. The items which will be considered for matching are location of the households and events, which will comprise name of the head of household, house-number, name of the mother (for birth) and name of the deceased, residential status, sex and month of occurrence.

133. **Field verification of unmatched and partially matched events.** Every unmatched or partially matched event will be verified by a visit to the concerned households. The supervisor and the field enumerator will do this jointly.

4.2.2 Sample design

134. The Mission recommends that a *uni /two-* stage stratified sample design may be adopted for DSRS. Each of the 18 regions in Somalia will be a stratum. The fieldwork will be carried out both in the urban and rural areas. Since Mogadishu in Central and Southern Somalia, Bossaso in Puntland, and Hargeysa in Somaliland taken together account for *about ….*

135. …..percent of the urban population of Somalia, these three towns will be selected with probability one. The other towns in each region will form the primary stage-sampling unit (PSU) and *Laanta/Xaafaddor* will be the second stage-sampling unit (SSU). All households within a selected *Laanta/Xaafaddor* will be covered under the survey. In the rural areas of a region, the main settlements will be the PSU. All households in each selected main settlement and all households in all the satellite settlements of the selected main settlement will be covered under the survey. The sample of PSUs, both in the urban and rural areas will be selected as a simple random sample (SRS) without replacement and the SSUs in case of urban areas will also be selected as a SRS without replacement.

136. **Sample size and its allocation.** For want of basic information like variation between PSUs and between SSUs and the co-efficient of variation (CV) of key study variables, number of births, and number of deaths, the Mission has taken advantage of the sample size being used in the Sample Registration Scheme in some other countries, and would like to recommend a total sample size of 200 basic enumeration areas (*Laanta/Xaafaddor* in case of urban areas and main settlements in case of rural areas). The sample will be allocated amongst the 18 regions of Somalia in proportion to their population. Within a region the sample will be allocated between urban and rural areas in proportion to their population.

137. **Estimation procedure.** Estimates of total number of births, deaths and population for both rural and urban areas will be obtained using unbiased method of estimation. The estimates of birth and death rates will be obtained as the ratios of the estimated births and deaths to the estimated population respectively.

4.2.3 Field Organisation

138. The Mission proposes that DSRS may be implemented mainly through the Directorates of Statistics of the three Administrations of Somaliland, Puntland, and Central and Southern Somalia.

139. For continuous enumeration, there will be a field enumerator for each sample unit, will be a resident teacher, community health worker, or a trained birth attended employed on a part-time basis, who may be paid a suitable amount of honorarium for this purpose. For supervision and conduct of half-yearly surveys, there will be full-time supervisors at the regional headquarters. One supervisor should be able to supervise the work in a set 10 to 12 sample units for conducting half-yearly surveys. The Directorates of the Administrations should provide at their headquarters a complement of staff necessary for planning and organising various field operations, training of the field staff, effecting proper supervision and control, ensuring regular flow of returns from the field, forwarding of various returns to the respective Directorate of Statistics for undertaking data processing and dissemination of results.

4.2.4 Training of Field and Supervisory Staff

140. Each field enumerator will be given the necessary training before starting the field work. This will be followed by periodic trainings which in the initial stages may be arranged on a half-yearly basis and later on as an annual exercise. In addition, each field enumerator will also be

provided with a manual of instructions for day-to-day consultation in order to sort out any difficulties in the course of work. Likewise, each supervisor will also be given necessary training with a view to enabling him/her to carry out the supervision work and conduct the half-yearly surveys properly and efficiently. He/she will also be provided with a manual of instructions for this purpose.

141. Periodic review of the quality of work being done by the part-time enumerators will be necessary. In the initial stages it may be undertaken on a half-yearly basis along with the refresher-training programme. Later on, once the scheme starts operating satisfactorily, such a review may be organised on an annual basis. The Mission would like to mention that one of the members of the Mission team is of the opinion that at the initial stages the scheme of sample registration of vital events was not a successful exercise in Kenya. However, the scheme of sample registration of vital events is providing useful results in several countries of the world, where civil registration system for recording vital events is not operating satisfactorily.

4.3 *Economic Activity Concept as Per SNA 1993*

142. Before discussing the details relating to various sample surveys, the Mission would like to state the concept of economic activity and other relevant details as per SNA 1993.The first important concept relates to 'economic activity'. According to the production boundary proposed in the revised SNA 1993, all production of goods, including primary and secondary products, whether intended for the market or for own consumption is included in the economic activity. However, in case of services, only those delivered to other economic units, whether paid for money or not, and for those for which the factors of production have been remunerated are included in the economic activity. Thus this definition of economic activity not only includes primary production for own consumption but also secondary production for own consumption. The Mission is happy to note that the SES 2002 used this definition of economic activity.

143. The SNA also distinguishes economic activities undertaken by government, corporations, quasi-corporate enterprises, and non-profit institutions from those undertaken by household private unincorporated enterprises. The concept of enterprise basically relates to entrepreneurship and means a legal entity, which owns and manages the business assets, enters into business contracts, receives and disposes off business income and is responsible for business liabilities. Enterprise thus may be a corporation, company, cooperative partnership, or individual ownership.

144. For purpose of any data collection programme, it is generally convenient to consider two broad categories, 'households sector' and 'non-households sector', because the procedures and methods involved in data collection are different.

4.4 *Survey on Estimation of Crop Production*

145. For estimating crop production the approach, which is generally accepted, comprises for each important crop estimate the area under the crop and estimate yield rate and multiply the two estimates to get the estimate of production of that crop. The above approach works only in countries where the land has undergone cadastral surveying or the country opts to make provision in the survey methodology to measure the area under the crop of selected sample holdings and further for estimating yield rate scientifically planned programme of crop cutting experiments is undertaken.

146. The Mission noted (Somalia HDR 2001, Page 69) that under a UNDP/ Danish Government supported programme, 1,700 farms in Gabiley district have been surveyed between 1998 and 2001. The Mission understands that there does not appear to be any possibility of undertaking this work in the remaining districts during the plan extending over a period of next five years. intoConsidering the magnitude of work involved in actually measuring the area under any crop of selected sample holdings as also the associated cost involved, it may be rather difficult to locate resources in terms of trained manpower.

147. In view of the above the Mission deliberated on the issue of devising an alternate sampling strategy for the purpose. One such study was carried out by Longacre Agricultural Development Centre Limited, London in five countries of Benin, Central African Republic, Kenya, Niger and Zimbabwe of Africa. A report was published in 1998 entitled "Evaluation of Crop-cut Methods and Farmer Reports for Estimating Crop Production: Results of a Methodological Study in Five African Countries" by Verma .V, Merchant. T, and Scott C. The study conducted in 1987 was limited to main crop in each country viz., millet in Niger and maize in all others. The purpose of the study was to compare the accuracy of the two methods for estimating agricultural production; (i) the random placement and harvest of crop cut squares, and (ii) farmer's own statement of production. Both methods were tested in about 100 plots in each country using essentially a two-stage sample design. The total harvest was then weighed for each plot. In comparing the two methods with the actual weight of production the following results were obtained: crop cut method gave an over estimate of 14 to 38 percent in each country. The farmer's statement produced insignificant error of minus eight to plus seven percent in each country. The study concluded that in certain circumstances the less costly and less burdensome method of questioning the farmer provides more precise results than the crop cut method. The study ends with a hope that further research may be done in order to define the limits in which the results may be generalised.

148. The salient results of the above study were presented at the 53rd session of the International Statistical Institute held in 1989 in Paris and the same are published in Scot et.al (1989).

149. In the existing situation in Somalia, the above methodology of questioning the farmer about his own production of crop may suit the needs in the Medium-term plan. The Mission is convinced, seeing that for the SES 2002 almost all the sample households cooperated and were able to provide detailed data on socio-economic aspects including household income and production. Data pertaining to area under crops, production, quantity retained for household consumption, quantity and value of sale, cost of inputs for each of the five major crops grown during Gu and Deyr seasons were collected from each selected sample household. Likewise, for livestock products, the number of animals owned by type of animals, the number sold in the previous month and prices received, the number slaughtered and consumed at home were collected from each household. For milk and milk products, and hides and skins data on quantity produced, sold and consumed at home along with the value for the previous week were also collected

4.4.1 Tentative Sampling Strategy

150. During meetings with FSAU and FAO and by studying the available material including the Somalia HDR 2001, it is understood that maize and sorghum are the two most important crops of Somalia. The Mission would, therefore, like to recommend that to start with this programme of estimating crop production in Somalia may cover only these two crops. Later on, as the programme progresses, it can be extended to other crops like cowpeas, rice and etc.

151. The Mission has examined the time-series data on estimates of production of maize and sorghum crops for the period 1995 to 2002 maintained by FSAU and found that eight regions comprising Bakol, Bay, Gedo, Hiran, Lower Juba, Lower Shabelle, Middle Juba and Middle Shabelle, all in southern Somalia, accounted for over 94% - of maize production in Somalia in each of the years of the above said period, while in case of sorghum these eight regions accounted for 100% of the production in Deyr season in all the years and over two thirds of the production in Gu season during different years of the period. In view of the above the Mission further recommends that sample surveys for estimation of production of maize and sorghum crops may be restricted to the above-mentioned eight regions. Both these crops are grown in both the crop seasons. Thus the surveys on crop production should cover both the crops and the surveys should be carried out in both the seasons as independent operations. The Mission would like to note that though the samples for estimation of maize and sorghum are interrelated but the proposed survey methodology has in-built property of providing unbiased independent estimates of total production of each of the two crops.

152. It is proposed that a stratified two-stage sample design may be adopted for the survey in each of the two seasons. Each of the eight regions mentioned above will form a stratum. A main settlement/a satellite settlement will be the PSU and a household growing at least one of the maize and sorghum crops during the season as the SSU. It is suggested that a simple schedule may be devised to collect data on the production of maize and sorghum by interviewing the head of the household or the main person in the household responsible for growing either or both of the two crops under study.

4.4.2 Sample Size

153. Again the Mission has no choice but to make use of the experience of similar work in other countries. Owing to paucity of the time, the Mission was not able to locate and reference to get an idea of the CV of yield of such crops in any other country in Africa. Based on the experience of one of the members of the Mission team of similar work in some of the other countries, the Mission has assumed the CV will not exceed 50% Fixing the level of precision desired at the national level as 5%percent, it is easy to derive the sample size with SRS required for estimating the total production of these crops with a 95% percentlevel of confidence will be 400. Since it is proposed to adopt a stratified two-stage sampling design, the size of the sample may be taken as 600 assuming that the design effect will be of the order of 1.5

4.4.3 Allocation of Sample

154. The sample size of 600 households will be allocated to the eight regions in proportion to the average production of maize plus sorghum taken together (based on FSAU) in the seasons under study during the period 1995 – 2002. Further, in the absence of any reliable information about variations between PSUs and between SSUs within PSUs for Somalia, it is recommended that a sample of 12 households may be taken from each selected main settlement. With this the number of sample PSUs will be 50.

4.4.4 Selection of households

155. A house-to-house survey will be undertaken in each selected PSU listing all the *households in each house???*. At the time of listing it will be ascertained whether the households had grown neither of the crops (code 1); only maize crop (code 2); only sorghum crop (code 3); and both maize and sorghum crops (code 4). From those returning answers as code 2, code 3, and code 4, two lists will be prepared, one for those who had grown maize (code 2 and code 4), and those who had grown sorghum (code 3 and code 4). From

each list a SRS of six households will be selected. In case any household gets selected in both the samples, the households will be interviewed for collection of data pertaining to both the crops.

4.4.5 Collaboration with International Agencies

156. The proposed survey would need to be operated in collaboration and association with the concerned international agencies-FAO, FSAU, and FEWS. The Statistical Working Group would be the right forum for devising appropriate mechanism to achieve the desired cooperation and association amongst the agencies and the Zonal Administration of Central and Southern Somalia.

4.5 Survey on Estimation of Livestock Production

157. The Mission is also of the view that for the estimation of livestock production the methodology of questioning the owners of livestock about their own production of livestock, which was being adopted by some of the countries, may suit the needs of Somalia in the Medium-term plan.

4.5.1 Tentative Sampling Strategy

158. During the meetings with FSAU, FEWS, the staff of the Ministry of Agriculture and Livestock, Puntland Zonal Administration and by studying the available material, it is understood that the available information pertaining to livestock population which can be used in designing the proposed sample survey for estimation of livestock products dates back to 1974. In spite of best efforts even involving informally discussing the issue with some of the leading livestock experts from Somalia working in International Livestock Research Institute, PACE as also free lance consultants based in Nairobi, it has been impossible to identify a more recent database pertaining to distribution of livestock population over the 18 regions of Somalia. All the later estimates appear to be mere trend projections assuming constant growth rate. Further, while the Mission understands that the urban households in Somalia have income generated from the livestock industry, almost all of the livestock population is being raised and reared in the rural and nomadic areas of Somalia. Thus the Mission would like to recommend that the proposed sample survey on estimation of livestock products might, at least in the initial stages, be carried out in rural areas of Somalia. The Mission also recognises that poultry products constitute a minor element in the total livestock economy of Somalia. The Mission, therefore, recommends that poultry products may, at least in the initial stages, be excluded in the survey.

4.5.2 Sampling of Nomadic Households

159. Since the nomadic population constitutes a significant share of the total population of Somalia, there is a genuine demand to provide separate estimates/tabulations relating to different social and economic aspects. Statistically there are two options to meet this demand. The first is to address this in the design by forming a separate stratum for the nomadic households. In view of their frequent displacements and different locations in the rural and nomadic areas it is difficult to develop a suitable separate frame for sampling of nomads. At any point of time, some of them may be in main settlements, some in satellite settlements, and some on and near about water points, and some any where else of their choice where they can find a good patch of pasture. While it is possible to locate them in a main settlement, any satellite settlement, and any water point, it would be extremely

cumbersome, if not impossible, to prepare a comprehensive and complete listing of them in other parts of rural areas. The second procedure, which is also statistically sound, is to address this problem through a dual frame. The first frame, which will become available with the completion of SS 2004, will comprise the list of main settlements, satellite settlements of each main settlement, and water points. The second frame should be attempted to cover those nomads who choose to halt at any place other than a main settlement, or a satellite settlement, or a water point.

160. The preparation of the second frame needs more time and much more familiarity with the actual field conditions, both of which were not possible for reasons beyond the control of the Mission. On the basis of the discussion the Mission had with Dr. Nair and other staff members working with him, one possibility, which deserves consideration, is to make use of the services and the business records of some 250 veterinary assistants who provide medical facilities to the livestock in Somalia. The Mission recommends that the World Bank/UNDP Watching Brief Project for Somalia may consider engaging the services of a survey statistician to intoconsider this issue to devise appropriate procedures for sampling of nomadic households outside the main settlement, satellite settlement and water points. Pending that the Mission has kept that part of the universe outside any survey proposal recommended as a part of the work programme for the Medium-term.
.

4.5.3 Tentative Sampling design

161. The Mission has noted that as per the 1989 data (for which the details of the methodology were not readily available for reference and review by the Mission) that North – Western zone, Central zone, North-Eastern zone, Southern zone and Jubba valley zone accounted for 29, 15, 29, 12 and 15 percent of the total livestock of 42 million in Somalia. Thus there is significant difference between the regions with regard to livestock population, which provides an indication that there may be significant differences between the regions with regard to their contribution to the livestock economy of Somalia.

162. Keeping in view the above, the Mission recommends that a stratified two/three-stage sampling design may be adopted for the survey on estimation of livestock products. Each of the 18 regions will form a stratum. Furthermore, each region, which will have two sub-strata, one comprising the main settlements along with their satellite settlements and the other sub-stratum, will cover the water points. A main settlement along with all its satellite settlements and each water point will be the PSU and a household involved in livestock production as the SSU. For recording milk production, the animal (cattle, goat, and camel) will be the third and ultimate stage of sampling.

163. For a survey of this nature, it is very clear to the Mission that it is much more important to estimate livestock numbers and the number of animals in milk more precisely than the productivity per household/animal. Thus the selection of SSU (households) or the ultimate unit of sampling (animal), a complete house-to-house survey will be undertaken in each selected PSU to identify households involved in production of livestock. For this purpose, a simple listing schedule may be devised. The information proposed to be collected at the time of listing of households comprises, whether the household's economy is pastoral, agro-pastoral, and cultivation only (also called riverine), the total number of livestock and whether the household has or not at least one animal in milk.

4.5.4 Sample Size

164. In this case as well, the Mission has no choice but to make use of the experience of similar work in other countries. Owing to paucity of time, the Mission has not been able to locate any reference to get an idea of the CV of livestock products in any other country in Africa. Based on the experience of one of the members of the Mission team of similar type of work in some other countries, the Mission has assumed that the CV, in general, will not exceed 70 percent. Fixing the level of precision desired at the national level as 5 percent, it is easy to derive that the sample size with SRS required for estimating the total livestock production with a 95 percent level of confidence will be 784 households or say 800. Further, since water points are being treated as a separate sub-stratum it is suggested that the sample size may be increased to 1,000 households. Since it is proposed to adopt a stratified two/three-stage sampling design, the size of the sample may be taken as 1,500 assuming that the design effect will be of the order of 1.5 REPETITION

4.5.5 Allocation of Sample

165. The sample size of 1,500 will be allocated to the 18 regions in proportion to their respective livestock population during 1989. Further, in the absence of any reliable information about variation between PSUs and between SSUs within PSUs for Somalia, it is recommended that a sample of 12 households, may be taken from each selected PSU and with this the number of sample PSUs will be 125. The allocation of sample between the two substrata within a region will be in proportion to their population as per the Settlement SS 2004.

4.5.6 Selection of households

166. A house-to-house survey will be undertaken in each selected main settlement along with all its satellite settlements listing all the households in each house. At the time of listing it will be ascertained whether the household undertakes any activity relating to livestock production. For those households retaining answer “yes”, answers to the following questions will be begged: (i) the category of households in terms of pastorals (code 1), agro-pastoral (code 2), and cultivation only (code 3); (ii) the total livestock population possessed; and (iii) has the household at least one animal in milk (yes or no). The list of households will be re-arranged first by category of households as pastorals, agro-pastorals, and cultivation only and thereafter in each category arrange the households in descending order of number of livestock. From this re-arranged list a circular systematic sample of 12 households will be selected with a random start for recording production of meat, and sale of animals of different species. From this re-arranged list a further list will be prepared of those households with at least one animal in milk (without changing the arrangement already made) and from this list a sample of four households will again be selected as a circular systematic sample with a random start. This procedure of implicit stratification will provide a representative sample of each category of households (pastoral, agro-pastoral, and cultivation only) and each size category of households in proportion to their respective numbers in the selected PSU.

167. In case of water points, the procedure of selection of the households will be the same as described above for the main settlement and satellite settlement with the condition that in case the number of households near about a water point is less than 12, all of them will be selected in the sample.

4.5.7 Reference Period

168. Like households income and expenditure survey, choice of an appropriate reference period is a tricky issue in case of a survey on estimation of livestock products. The longer the period better it is to reduce SE, but the recall lapse increases with increase in the length of the reference period. A balance is, therefore, to be struck between the two taking also into account the order of variability in the key variables under study. In case of livestock products, milk is an item, which depicts the highest order of variability even for the same animal from one day to the other. This will have to be considered very carefully when the survey design is finally reviewed before working out the final field resources requirement. The Mission would like to recommend that two different reference period for the same item may be tried at least in the first year to provide the requisite data to finalize the reference period in future years of survey work on the subject. For sale and purchase of animals at the households level last one week and last fortnight may be tried and for recording milk yield of each animal in each selected household the reference period to be tried may be last two days and last one week.

4.5.8 Sub-rounds

169. Several of the study variables in a sample survey on a subject like this and even for that matter most of the household-based sample surveys are subject to seasonal variation. The most cost-effective and operationally feasible procedure to take note of the effect of seasonality is to rotate the sample of households over the period of one year. Further, for effective control and from the point of view of operational convenience, it is generally considered desirable to divide the survey period of one year into a number of sub-rounds, may be four each of three months' duration. There is also another hidden advantage of organising the field work in the form of sub-rounds, especially in situations where one fears that on account of some unavoidable reasons like security considerations the field work may have to be suspended or even abandoned before completion. In the event of any such unfortunate situation the data already collected for some of the rounds can be subjected to appropriate statistical analysis for providing valid answers to the questions which were posed at the time of planning and designing the survey. The fieldwork is, therefore, split into sub-rounds, generally four in number each being three months' long. Furthermore, in a large-scale sample survey of this kind it is beneficial to provide for inter-penetrating sub-samples to make the task of computation of SE fairly easy. A minimum of two inter-penetrating samples will be required to meet the needs of computation of SE. Thus the number of PSUs to be selected from each stratum will need to be a multiple of eight.

170. In the survey on estimation of livestock products the four sub-rounds should correspond to rainfall seasons April-June, and October-December, and short dry season July-September, and long dry season January –March.

4.5.9 Key Data Items

171. Current size of the herd, broken down by species (goats, sheep, camel, cattle, and others) and by sex; animals by species and by sex slaughtered for home consumption, paid as 'Zakat' (alms), lost, eaten by predatory animals, given as gift, and sold. For the sold animals price received by species and by sex. Households grazing pattern (for nomadic households)—how many weeks ago you moved to present location; how many translocations from one place to another during the last one year, and some idea about the location in terms of regions. Number of female goats, camels and cattle broken down by in lactation, and dry and the quantity of milk on each of the previous two days, of which the quantity consumed by the households, quantity paid as wages in kind, and quantity sold with

the price received. Details (number, wages in cash and kind, period for which engaged) of hired labour for herding.

4.5.10 Collaboration with International Agencies

172. Like the Survey on Estimation of Crop Production, in this case as well the survey would need to be operated in close cooperation and association with the concerned international agencies-FAO, FSAU, and FEWS. In this case also the Statistical Working Group would be the right forum for devising appropriate mechanism to achieve the desired cooperation and association amongst the agencies and the Zonal Administration of Central and Southern Somalia.

4.6 Household-based Sample Surveys

173. The Mission has already emphasised the important role household-based sample surveys will play in the collection of demographic, social, and socio-economic data to meet the needs for planning development programmes, poverty monitoring and analysis system (PMAS), empowerment of women, monitoring of human rights and for policy purposes. As a matter of fact the Mission has already argued out that household-based sample surveys will be the backbone of the statistical system and services in Somalia. A general framework for developing a programme of household-based sample surveys is outlined in what follows.

4.6.1 Scope of the Sample Survey

174. As the name implies the household-based sample survey should cover only households. The Mission has noted that an appropriate definition of a household was used in the Socio-Economic Survey (SES) 2002. However, it may be advisable for sake of clarity to restate the exact definition of a household as recommended by ILO. A household may be either: (a) a one person household, i.e., a person who makes provision for his own food and other essentials of living without combining with any other person; or (b) a multi-person household, i.e., a group of two or more persons who make some common provision for food and other essentials of living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent. They may be related or unrelated persons or a combination of both. The general multi-person household relates to the existence of common housekeeping arrangements.

175. With the above definition, the household-based sample surveys may exclude institutional population living in barracks of military and paramilitary forces, correctional and penal institutions, religious institutions, dormitories, hostels, hospitals and the like. Although persons living in hotels, boarding houses and camps are not generally regarded as institutional population, from operational convenience point of view such population is generally excluded from household-based sample surveys. Households of foreign nationals may also be outside the scope of such sample surveys.

4.6.2 General Sampling Strategy

176. For a sample survey on any of the subjects relating to demographic, social, and socio-economic aspects, it would be essential not only to provide national estimates of acceptable precision but also estimates for Somaliland, Puntland, and Central and Southern Somalia as also with urban- rural break-down. The Mission would once again like to state that rural areas here implies, main settlements, satellite settlements, and the water points.

The Mission has noted that no standard definition of urban areas has been developed and adopted for Somalia. The district capitals and capital towns of the regions, 74 in number, are treated as urban areas for all intends and purposes. According to latest available estimates of population (SES 2002), 34% percentof the population lives in urban areas.

177. In general, a stratified two/three-stage sampling design is adopted for households based surveys on demographic, social, and socio-economic subjects. The Mission would recommend that the same might be taken as the starting point. Each of the three zones of Somaliland, Puntland, and Central and Southern Somalia may be treated as first level of strata and urban and rural areas as the second level of strata. Thus there will be six strata, one relating to urban areas and the other relating to rural area of Somaliland, Puntland, and Central and Southern Somalia.

178. The Mission has noted that Mogadishu in Central and Southern Somalia, Bossaso in Puntland, and Hargeysa in Somaliland taken together account for about 60% percent of the urban population of Somalia. It is, therefore, proposed to select these three towns with probability one. The remaining towns in each of the three zones will constitute an urban stratum for the purpose of the survey. Towns in the urban stratum will constitute the primary stage-sampling unit (PSU). The Mission hopes that the proposed SS 2004 will be able to provide fairly reliable estimates of each town in terms of population and further each town would have been delineated into smaller segments called *Laanta/Xaafaddor*. A *Laanta/Xaafaddor* will be the PSU in each of three towns of Mogadishu, Bossaso, and Hargeysa, while in the other towns a *Laanta/Xaafaddor* will be the second stage unit of sampling (SSU).

179. The proposed SS 2004 will also delineate rural areas in each of the three zones into main settlements (which provide for most of the social services and marketing) , the satellite settlements, and the water points. The Mission understands that the main settlements are more or less permanent locations, while the satellite settlements come up and are some time abandoned with the movements of nomads. Further, the Mission also hopes that the proposed SS 2004 will be able to provide a fairly good measure of the size of each main settlement, each satellite settlement, and each water point in terms of the population. It is proposed to treat a main settlement as also a water point as a PSU, while each satellite settlement attached to a main settlement will constitute a SSU. A household will be the unit of sampling at the ultimate stage (second or third stage unit of sampling as the case may be) both in urban areas and rural areas.

4.6.3 Sample Size

180. The most difficult task involved in the designing of a sample survey is the determination of sample size. The size of the sample can be determined by taking into account the available financial and manpower resources or by taking into account the expected or pre-defined level of reliability in the estimates. However, the practical approach is to start with the determination of the sample size taking into account the expected level of reliability and if the budget becomes a constraint, asses the precision that can be achieved under those financial constraints.

181. A household-based sample survey will cover a large number of items of interest and the sampling error associated with a given sample size will vary from item to item. The practical solution lies in calculating the sample size required for estimating with the requisite precision a few major items of interest and take the largest of the size requirement as the sample size for the survey. For determining the sample size required for estimating with the requisite precision the population mean or population total or any other parameter of any

character under study, it is necessary to have an idea about the variability measured in terms of the coefficient of variation (CV). UNDP Somalia has conducted a SES in 2002. The Mission has attempted to work out the CV of three important items, household consumer expenditure, household expenditure on food, and household income based on household level data collected under the said survey. The computed CVs for Somalia worked out to be 90, 73, and 98 percent for the above three items of information. The Mission has also made use of the experience of some 55 countries, including 14 in Africa, documented in the publication entitled “Household Income and Expenditure Surveys: A Technical Study" brought out by United Nations Statistics Office under the National Household Survey Capability Programme in 1989. Taking into account these details the Mission has attempted in Annex. 4.1 to determine the sample size for conducting a household-based sample survey on a subject related to demographic, social, socio-economic aspect. The assumptions made and the procedure adopted in determining the sample size is also detailed in Annex. 4.1.

182. It would be seen from Annex. 4.1 That in the initial stages of this regular programme of conducting household-based surveys it would be desirable to take a sample of some 3,200 households. With this sample size, it is expected to obtain national estimates for key variables with standard error (SE) not exceeding 5% under the assumptions that CV for the major items under study will not exceed 100% and the design effect of the two/three-stage sample design will be of the order of two. One could expect to gain some precision with the proposed stratification and the implicit stratification in the selection of sample households at the ultimate stage of sampling, but it is difficult to assess the likely gain in the absence of any reliable information being available about the variability amongst the strata means and between households within strata.

183. It is interesting to note that the SES 2002 had taken a sample of about the same size (3,600). The Mission is happy to note that further to the technical report of SES 2002 under preparation the SE of some of the key study variables would be computed and published for the benefit of the users.

184. The Mission does realize that the results of these household-based sample surveys when used in formulating development programmes, in PMAS, and for decision making in the government are very likely to generate a demand to obtain more reliable information not only at the national level but also at disaggregated level for the zones and with rural-urban breakdown. To meet such demands the size of the sample would need to be gradually increased. For achieving a precision of the order of three percent SE at the national level, other assumptions remaining same, the sample size will need to be increased to 9,000 households. In a Federal set of the Government in a country generally a large scale survey programme of this kind is funded mainly out of the budget of the Central Government and gradually the zones can make their contribution to meet the increased cost of the survey operation on account of the increase in the sample size primarily done to meet the requirements of zones to get more reliable estimates for their use in formulating the development programmes, in PAMS as also for policy purposes in the government.

4.6.4 Allocation of Sample

185. The sample PSUs for the urban areas may be allocated to the three Zones in proportion to their urban population. Likewise, for the rural areas, the sample of PSUs may be allocated to the three Zones in proportion to their rural population.

186. In the first instance, the urban sample decided for any of the three zones will be allocated between the town (Mogadishu in case of Central and Southern Somalia, Bossaso in case of Puntland, and Hargeysa in case of Somaliland) selected with probability one and the urban stratum comprising the remaining towns in proportion to their respective

population. The number of PSUs allocated to the urban stratum of a zone will determine the number of towns to be selected for the sample survey.

187. In each Zone the rural areas will be divided into two sub-strata, one comprising the main settlements along with their satellite settlements, and the other comprising the water points. The rural sample in each Zone will be allocated to the two sub-strata in proportion to their population as per Settlement SS 2004. Further, the sample allocation for the sub-stratum comprising main settlements and satellite settlements will be allocated to the two parts (main settlements, and satellite settlements) in proportion to their population as per SS 2004.

188. Having determined the overall size of the sample households, the next task is to determine its allocation between PSUs and within PSUs. This again requires information pertaining to the variation between PSU means and variation within PSUs and the associated cost components per PSU, per SSUs and per household. In the absence of such information, the Mission is left with no other choice but to make use of experience of household-based surveys in some other countries including India as also the strategy adopted in the SES, 2002 in Somalia. On the basis of all this put together the Mission is of the view that the number of households per *Laanta/ Xaafaddor*, per main settlement, per satellite settlement, and per water points may be taken as 12. With this the number of *Laanta/ Xaafaddor* in case of urban areas and number of main settlements, number of satellite settlements, and water point to be selected can be worked out. It may be added that in case the total number of households in any settlement or a satellite settlement or a water point is 12 or less, all the households will be surveyed.

4.6.5 Sub-rounds

189. The strategy already described in Sub-Section 4.5.8 of dividing the survey period into sub-rounds is equally applicable in household-based sample surveys and should be an integral part of the sampling strategy to increase its efficiency.

4.6.6 Selection of PSUs/SSUs

190. The Mission understands that by and large the *Laantas/Xaafaddor* delineated in the urban areas will be of the same size and as such the sample of *Laantas/Xaafaddor* may be selected as a simple random sample (SRS). On the other hand for the selection of the sample of towns there is a definite advantage in selecting the sample with probability proportional to size (PPS) with replacement, the size measure being the estimate of the population of the town to be generated on the basis of the proposed SS 2004. Likewise, the sample of main settlements as also the water points may also be selected as a PPS sample with replacement since the main settlements and water points may be varying in size. However, the satellite settlements may be selected as a SRS.

4.6.7 Selection of Households

191. For selection of sample of households both in the urban areas and rural areas, a house-to-house survey will be undertaken to list the households in selected *Laantas/Xaafaddor*, the sample of main settlements, and the sample of satellites. Information on a few characteristics of the households like the size, means of livelihood may be collected to select a better representative sample of households and thereby increase the

efficiency of the sampling design. It is proposed that for the urban areas the following four livelihood classes may be considered -(i) self-employed, (ii) regular wage/salaried employee, (iii) casual labour, and (iv) others. For the rural areas it is proposed that the following five means of livelihood classes may be considered -(a) self-employed in crop husbandry, (b) self-employed in animal husbandry, (c) self-employed in non-agriculture, (d) rural labour, and (c) others. The means of livelihood will be determined on the basis of household's major source of income. For selecting the sample of households, the list of households will be rearranged according to the class of livelihood and within each class in descending order of size of households. From this rearranged list a sample of 12 households will be selected as a circular systematic sample. A form each for listing the households in the urban areas and rural areas has been devised by the Mission and a copy each of the same is reproduced in Annex. 4.2 and Annex. 4.3 respectively.

192. The above procedure of selection of sample, which is also termed as implicit stratification, provides samples of different socio-economic groups in proportion to their number in the population. This is a powerful statistical tool of enhancing the efficiency of the sampling design at a very nominal cost of collecting some relevant basic information at the time of listing of households. The Mission has not been able to see any instance of this powerful statistical tool being used in the on-going programmes like the Multiple Indicator Cluster Survey (MICS) and the SES 2002.

4.6.8 Sub-division of Large-size Main Settlements

193. On examining the size of the main settlements measured in terms of population content, the Mission has found in some cases the size to be more than 1,500. In order to contain the cost of listing and for controlling the work load of listing of households, it is proposed that the large settlements (with population exceeding 1,500) may be sub-divided into a suitable number of sub- settlements having more or less equal population content and one of them may be selected at random for the listing of households and selection of sample of households following the procedure indicated below:

Population of Settlement	**No. of Sub-settlements Formed**
Up to 1,500	None
1,501 to 2,500	Two
2,501 to 3,500	Three
3,501 to 4,501	Four, and so on

For this purpose the data recorder will prepare a notional map of the main settlement and with the assistance of settlement headman, or an elderly person or any other knowledgeable person sub-divide it into the requisite number of sub-settlements of approximately the same size measured in terms of the population count. The approximate location of each of the sub-settlements will be marked on the notional map. The sub-settlements will be numbered in a serpentine order starting from, say, the northwest and proceeding southward. One of the sub-settlements will be selected at random for the survey work.

4.6.9 Estimation Procedure

194. Once the details of sampling design have been finalised, it would be necessary to devise the estimation procedure for estimating population total, population mean, and

population ratios of the study variables. In order to provide unbiased estimates it would be necessary to work out the appropriate weights (also called multipliers or inflation factors). Using Horvitz-Thompson estimators (1952) to get unbiased estimates of the population parameters of the study variables, these weights are simply the inverse of the probability of inclusion of the sampling unit (households or individual member as the case may be). It may also be mentioned that in order to get asymptotically unbiased estimate in case of a population parameter like a ratio, it is appropriate to use the ratio of the unbiased estimator of the numerator divided by unbiased estimator of the denominator as the estimate for the population parameter.

4.6.10 Estimation of Sampling Error

195. In a large-scale sample survey involving estimates of a large number of study variables, it is advantageous to devise simple and straightforward procedure for computing the sampling error. Mahalanobis technique (1946, 1964) based on interpenetrating sub-samples (also called Balanced Repeated Replication) is the most practical and time saving procedure for estimating sampling errors (also called standard error). In brief, the technique involves, as a first step, dividing the sample into k sub-samples of equal size at the PSU level. With these k sub-samples, k independent estimates of say, Y are obtained following the prescribed procedure of estimation. Let $\hat{Y}_1$, $\hat{Y}_2$, $\hat{Y}_3$,--------, $\hat{Y}_k$ be the k estimates, Then, $\hat{Y} = \frac{1}{k}\sum_{i=1}^{k}\hat{Y}_i$ and the sampling error (SE) is simply the standard deviation of these k estimates divided by $\sqrt{k}$.

The simplest form of Mahalanobis technique is to take k = 2, i.e. divide the sample into two sub-halves. With this, $\hat{Y} = (\hat{Y}_1 + \hat{Y}_2)/2$ and it is easy to show that $SE(\hat{Y}) = \left|\hat{Y}_1 - \hat{Y}_2\right|/2$. The Mission understands that this procedure should be used for computing the SE of the key variables in case of SES 2002.

4.7 *Informal Sector*

196. Like several other developing countries of the world most of the economic activities in Somalia are informal in nature. There are several definitions of the informal sector cited in the literature. From statistical data collection point of view in Somalia it appears more logical to take advantage of the Resolution in this regard adopted at the Fifteenth International Conference of Labour Statisticians (ICLS), 1993. The sum and substance of the statistical definition of the informal sector based on the above mentioned Resolution is very well presented in a paper entitled "Statistical definition of the informal sector-International standards and national practices" by Relf Hussmans, and Farahad Mehran published in the 1999 International Statistical Institute Session Proceedings.

197. The international definition of the informal sector adopted at the Fifteenth ICLS, 1993, which was subsequently included in the revised System of National Accounts, 1993 is reproduced below: "Production units in the informal sector were defined by the 15th ICLS as a subset of unincorporated enterprises owned by households, i.e. as a subset of production units which are not constituted as separate legal entities independently of the households or households members who own them, and for which no complete sets of accounts (including balance sheets of assets and liabilities) are available which would permit a clear distinction of the production activities of the enterprises from the other activities of their owners and the identification of any flows of income and capital between the enterprise and the owners.

Regarding the production units in question, the term “enterprise” was used in a broad sense. It covers not only units that employ hired labour, but also production units that are owned and operated by single individuals working on their own-account as self-employed persons, either alone or with the help of unpaid family members. The activities may be undertaken inside or outside the business owner’s home; they may be carried out in identifiable premises or without fixed location.

198. With a view to distinguishing informal sector enterprises from other unincorporated enterprises owned by households, the 15th ICLS recommended to use one or more of the following three criteria: (i) non- registration of the enterprise; (ii) small size in terms of employment; and (iii) non-registration of the employees of the enterprise. The first criterion refers to non-registration under specific forms of national legislation, such as factories or commercial acts, tax or social security laws, professional groups' regulatory acts, or similar acts, laws or regulations established by national legislative bodies, as distinct from non-registration under regulations enacted by local authorities for the purpose of obtaining a trade license or a permit to operate a business. The second criterion can be formulated in terms of the number of employees employed by the enterprise on a continuous basis, the number of all employees (including those employed on an occasional basis), or the total number of persons engaged during a specific reference period (including the entrepreneur, business partners and contributing family workers in addition to the employees). Recognising that the size limit for informal sector enterprises might have to vary between countries and between branches of economic activity, the 15th ICLS did not specify any precise cut-off point. In the case of enterprises composed of more than one establishment, it was recommended to consider them as informal if none of their establishments exceeded the size limit. The third criterion refers to the conditions of employment in the informal sector regarding the employees' legal and social protection; it was defined in terms of the absence of employment or apprenticeship contracts which commit the employer to pay relevant taxes and social security contributions on behalf of the employees or which make the employment relationships subject to standard labour legislation. According to this criterion, an enterprise would be considered informal if none of its employees is registered.

201. In order to complement its definition of the informal sector, the 15th ICLS adopted a number of recommendations regarding the scope of informal sector surveys and the statistical treatment of particular situations at the borderline between the informal and the other sectors. These included two important issues, viz., (i) the exclusion from the informal sector of units which are exclusively engaged in the production of goods or services for own final consumption or own capital formation (e.g. construction of own houses) of households as per SNA 1968; and (ii) the exclusion of agricultural activities from the scope of the informal sector for practical reasons. While the Mission would like to advise to adopt the recommendation (ii) above relating to exclusion of agricultural activities from the scope of surveys of informal sector, the recommendation (i) above may be revised since the boundary of economic activity has been revised in the SNA 1993. According to the production boundary proposed in the revised SNA 1993, all production of goods, including primary and secondary products, whether intended for the market or for own consumption is included in the economic activity. However, in case of services, only those delivered to other economic units, whether paid for money or not, and for those for which the factors of production have been remunerated are included in the economic activity. Thus this definition of economic activity not only includes primary production for own consumption but also secondary production for own consumption. The Mission is happy to note that the SES 2002 used this definition of economic activity.

202. In view of the above and the prevailing situation in Somalia (lacking an institution for economic governance) the Mission felt that criterion (ii) relating to small size in terms of employment may be used in differentiating the formal and informal segments of the non-agricultural activities in Somalia. In this regard the Mission would like to note that the

experience of 58 countries of the world including 18 countries from Africa who have undertaken one or more of the sample surveys on informal sector have been documented in the ILO publication " Compendium of official statistics on employment in the informal sector. For ready reference the definition of informal sector used by African countries are reproduced in Annex. 4.4

203. The Mission would like to emphasise that the methodology for collection of statistical data, particularly to serve the needs of national accounts, labour force statistics and the study relating to welfare of the society for the formal segments and informal segments of non-agricultural economy are different. Thus formal and informal segments of non-agricultural economy deserve separate discussion from the point of view of collection of statistical data. For this purpose the first step is to take a decision about the cut-off point based on employment for each branch of economic activity as mentioned in the 15th ICLS. A sound statistical procedure pre-supposes the availability of size-distribution for employment for each branch of non-agricultural economy. At the request of the Mission, UNDP has decided to pre-test a small enterprise-listing schedule devised by the Mission along with the pilot testing for the SS 2004. A copy of each of the two enterprise-listing schedules, one for the urban areas and the other for rural areas and an address slip for large establishments devised by the Mission are given in Annex. 4.5 to 4.7 respectively. If the pilot study reveals the feasibility of collection of relevant data, the enterprise-listing schedule would constitute an integral part of the SS 2004. Once the results of this Survey become available and a more concrete dea about the likely field manpower available for undertaking the surveys on formal and informal segments of the non-agricultural economy for each of three zones of Somalia are known, the exercise for determining the cut-off point of employment for delineating the formal and informal segments of each branch of the non-agricultural economy may be taken up. If for some reasons there are delays in undertaking the above statistical exercise, the Mission would like to recommend adoption a rule of thumb: "five or less" or "ten or less" as the cut-off point for delineating formal and informal segments of each branch of non-agricultural economy. The Mission recommends that the definition, scope and extent of the informal sector as identified after the results of the pilot test of the SS 2004, should be discussed formally by the stakeholders under the aegis of the Statistical Working Group.

204. Once a decision on above lines has been taken, a Business Register would be developed to provide a frame for collection of statistical data relating to formal sector of the non-agricultural economy through surveys, which may be termed as Business Establishment Surveys. Before discussing the appropriate sampling strategy of Establishment Surveys and its compliment relating to informal sector called Enterprise Surveys, the Mission would like to mention about the details it has been able to gather and understand relating to SS 2004.

4.8 Statistics of the Non-Agriculture Sector

205. There are no official estimates available of the contribution of different sectors to the gross domestic product (GDP). However, the results of the Socio-Economic Survey (SES) undertaken in Somalia in 2002 provide some idea about the relative importance of different sectors of the economy measured in terms of proportion of labour force engaged in different sectors. These estimates indicate that agriculture accounts for 67% percent of the employment, while industry (including construction and utilities) and services account for 12% percent and 21% percent of employment respectively. Thus it appears reasonable to take manufacturing and domestic trading (hereafter referred to as trading) as more important components of non-agriculture economy in Somalia. Since the results of sample surveys undertaken in different sectors of the non-agriculture sector would primarily be used for compilation of national accounts, it is essential to tie up, as far as possible, the concepts and definitions with those proposed under the System of National Accounts (SNA)

4.8.1 Background Information

206. Somalia has not been a strong industrial country, mainly due to lack of capital and a trained industrial labour force. The small industrial base that existed in the 1980s was destroyed during the civil war. However, over the past four years there has been a small-scale revival in light industry (HDR Somalia 2001) producing basic consumer goods for local market including pasta, soap, bottled water, furniture, and roofing sheets. Thus manufacturing activity is likely to gain more and more importance in the economic activities in Somalia.

4.8.2 Household Sector

207. The household sector as defined covers all unincorporated enterprises owned and/or operated by households or members of households with the assistance of hired labour or own-account basis with the assistance of family labour. For the survey operations, the household sector can be divided into two distinct, homogenous and mutually exclusive sub-sectors--- establishment sub-sector and own-account sub-sector. An establishment may be taken as an unincorporated enterprise operated with the regular assistance of one or more paid employees. This definition of 'establishment' retains all the characteristics of the concept of 'establishment' used in the SNA as also the UN recommendations on Industrial Statistics with the additional criterion of regular employment of at least one paid employee, which is essential to distinguish it from units of the other sub-sector 'own-account' enterprises. The own-account sub-sector can thus be defined to comprise all economic activities carried out by households or individual members of households on own- account basis without the regular assistance of any paid employee but with the possible assistance of unpaid family workers. This type of dichotomy has many advantages like conforming to a standard definition of establishment; it distinguishes two conceptually distinct groups, one (establishment) where operational surplus is nett of compensation of employees and the other (own-account) with mixed incomes; and it provides an opportunity to separately treat the two sub-sectors for sampling and survey operations.

4.8.3 International Recommendations

208. The international recommendations for industrial statistics suggest that decennial or quinquennial? census may be undertaken to cover all establishments, including small-scale manufacturing carried out in household units, as well as similar activities undertaken outside households premises but have an established industrial premises. For instance, the recommendations for 1983 World Programme of Industrial Statistics (United Nations, Series M. No. 71, 1981) suggest that "Industrial activity in households usually of an artisan or handicraft nature, should be covered wherever it accounts for a significant proportion of the total output", and clarify that households engaged in industrial activities be covered through household surveys.

209. In the case of Somalia, with a predominantly rural base, it is not advisable to exclude industrial activity in households from the study of filling data gaps in the informal sector of non-agriculture economy, though no information about their contribution to the total output is available. The experience in India and some other countries like Indonesia, Bangladesh revealed that for designing an efficient enterprise survey one would like to have an idea about the distribution and areas of concentration of the enterprises. Such information is usually made available by undertaking an Economic Census (EC). An EC, if conducted along with the house-listing operations of Census of Population (COP) is not only economical, but also ensures better coverage and better quality of data. The Mission would

like to recommend that the anticipated Government of Somalia might consider this proposal at the time of planning the COP. The Mission would like to note here that the proposed SS 2004 includes for all intents and purposes a mini-type EC and would provide a good frame of non-agricultural enterprises to design efficient surveys of both the formal and informal segments of the non-agricultural economic activities in Somalia.

210. Non-agriculture activities are largely located in urban areas. In the rural areas these are generally undertaken as secondary activities, the primary activities being, normally, agricultural including livestock. Sometime these activities are merely in the nature of an extension of primary activities, insofar as these involve processing of primary products or sale of those products. Since Somalia has had no experience of organising large-scale sample surveys, the Mission recommends these surveys should cover only urban areas in the beginning. The scope and coverage of such surveys should gradually be enlarged to cover rural areas. The Mission has noted that in Somalia no standard definition of urban areas has been developed or adopted. The district capitals and capital towns of the regions, which number 74, are treated as urban areas for all intents and purposes.

4.9 Business Establishment Survey

211. On the basis of the agreed demarcation between the formal and informal segments of non-agricultural economic activities (please see paragraph 196), the list of enterprises to be generated by the SS 2004 will be accordingly **bifurcated**? into formal and informal segments for each of the branches like, manufacturing; electricity, gas and water supply; construction; wholesale and retail trade, repair of motor vehicles, motorcycles and personal and households goods; hotels and restaurants; transport, storage and communications; financial intermediation; real estate, renting and business activities; public administration and defence; education; health and social work; other community, social and personal service activities; private households with employed persons; and extra-territorial organisation and bodies. (Tabulation categories D to Q of International Standard Industrial Classification of all Economic Activities, Third Revision).

212. These lists pertaining to the formal segment of each branch of non-agricultural economy will be maintained in the form of a Register, generally called a Business Register. Accordingly, the Mission feels that surveys of formal segment of non-agricultural may be called Business Establishment Survey. The importance of each branch of non-agricultural economy, in general, is determined on the basis of value addition or number of workers engaged or both. In the absence of any reliable relevant information being available now or likely to be available in the immediate near future, the Mission is of the view that the 'number of workers engaged' may be considered in determining the importance of each branch of non-agricultural economy.

213. In view of the Mission the work relating to planning and organising of Establishment Surveys may be assigned to the Directorate of Statistics of each of the three administrations. The first decision to be taken is about the branches of non-agricultural economy to be covered by the Establishment Survey. In the absence of more details like the likely field resources to be available for this work, the Mission would like to recommend that as a starting point such surveys may cover only two branches viz., manufacturing; and wholesale and retail trade. As the work progresses, sectors like hotels and restaurants; transport and communication etc. may gradually be included in the programme of Establishment Surveys. For the remaining sectors, responsibility will need to be assigned to the concerned line Ministry and Department to collect requisite data through their own resources.

214. Like several other developing countries this should be an on-going activity taken annually and gradually its scope and coverage may be increased. In case the number of

units in the Register is not large it is proposed that all establishments may be covered on a census basis. However, if the number is too large to be managed as a census, the Mission suggests that the Register for each activity may be split into 'large' and 'others' taking number of workers as the guiding criterion. The 'large' units may be covered every year, while the remaining called 'others' may be covered in a cycle of two consecutive years, taking about 50 percent in the first year and the remaining 50 percent in the second year.

215. The data items to be covered in the Establishment Survey would depend upon the branch of non-agricultural economy being covered. Some guidelines in the form of a handbook/manual are available with the UN Statistics Division. However, some of the items like details of economic activity and operation; details of employment; compensation of employees; value of fixed assets; value of working capital will be common. Furthermore, for an Establishment Survey on manufacturing, items like quantity of raw materials consumed, value of fuels and other inputs by items; quantity and value of products and by-products manufactured by item; remuneration received for work done for other concerns and other receipts; inventories by type; and capacity utilised may also be included. In case of survey on trading, the additional list will comprise items like cost of goods and services purchased; stock, purchase and sales; purchase and sale price of a few important commodities traded.

4.10 Enterprise Surveys of Non-Agricultural Economy

216. In paragraph 197 the Mission has mentioned that Business Establishment Surveys will cover the formal segments of non-agricultural economy, while the informal segments of the non-agricultural economy will be covered by what are called by the Mission as Enterprise Surveys. Furthermore, in paragraph 206 the Mission has argued that in the initial stages of this programme of Enterprise Surveys priority may be given to manufacturing and trading activities. After gaining experience for a year this programme may be extended to cover transport, hotels and restaurants, education, and health services. The Mission has further advised in paragraph 203 that to start with the Enterprise Survey operation may be restricted only to urban areas. Gradually, the programme may be expanded to cover the rural areas. Thus in what follows the Mission presents the necessary supporting material for planning and organising an Enterprise Survey covering manufacturing and trading in the urban areas of Somalia.

4.10.1 Sampling Design

217. A stratified two-stage sampling design may be adopted for the survey on manufacturing and trading. Each of the 18 regions in Somalia may be taken as a stratum. Since Mogadishu in Central and Southern Somalia, Bossaso in Puntland, and Hargeysa in Somaliland taken together account for about 60% of the urban population of Somalia these are likely to cover the bulk of informal economic activities relating to manufacturing and trading in urban areas of Somalia. It is, therefore, proposed to select these three towns with probability one. The remaining towns in each of the 18 regions will constitute the primary stage-sampling unit (PSU). The *Laantas/Xaafaddor* in different towns will be taken as the second stage-sampling unit (SSU), while an enterprise engaged in manufacturing and/or trading activity will be taken as the ultimate stage of sampling. The three big towns of Mogadishu, Bossaso, and Hargeysa taken together may constitute a separate second level stratum, while the remaining towns in all the 18 regions together constitute the other second level stratum. It is further proposed that a sample of some 3,000 enterprises may be surveyed. This sample size has been proposed on the assumption that the coefficient of variation (CV) of key variables like value added is of the order of 100% and that estimates at the Zonal level and at the national level of the order of 4% and 2% respectively would meet the requirements for development planning and for policy purposes.

4.10.2 Allocation of Sample

218. The sample size of 3,000 enterprises may in the first instance be allocated between the two second level strata (one comprising the large three towns, and the other comprising the remaining 71 towns) in proportion to the number of manufacturing and trading enterprises combined in the list generated on the basis of the SS 2004. Having done that as a second step the sample allocated to second stratum comprising the 71 towns may be allocated to the 18 regions in proportion to number of manufacturing and trading enterprises taken together in the list generated on the basis of the SS 2004. Likewise, the sample allocated to the first stratum may be allocated to the three towns of Mogadishu, Bossaso, and Hargeysa Mogadishu, Bossaso, and Hargeysa in proportion to number of manufacturing and trading enterprises taken together in the list generated on the basis of the SS 2004. This procedure will provide a sample well spread (in proportion to the number of manufacturing and trading enterprises taken together) over the three major towns as also over the remaining areas of each of the 18 regions of Somalia.

219. Having determined the number of enterprises to be selected from each of the three large towns and for each of the 18 regions, a decision about the selection of the number of *Laantas/Xaafaddor* and the number of enterprises per *Laantas/Xaafaddor* will be taken. In the absence of any reliable information being available about the variation between PSUs and SSUs, the Mission has no alternative but to take advantage of the experience of some developing countries like India, Bangladesh, and the Philippines The Mission thus recommends that a sample of 12 enterprises may be selected within each *Laantas/Xaafaddor*. The next decision to be taken relates to the number of towns to be selected from each region and the number of *Laantas/Xaafaddor* to be selected from within each selected town. On considerations of efficiency of the design, it is proposed that from each selected town only two *Laantas/Xaafaddor* may be selected. This thus provides the number of towns, other than the three large towns, to be selected from each region.

4.10.3 Selection of *Laantas/Xaafaddor*

220. The next step to be taken is to prescribe the procedure of the selection of requisite number of the *Laantas/Xaafaddor* from all the selected towns including the three major towns. For this all the *Laantas/Xaafaddor* in each sample town may be arranged in descending order of number of manufacturing and trading enterprises taken together listed in the SS 2004 and from this rearranged list the requisite sample of number of *Laantas/Xaafaddor* is selected as a circular systemic sample with a random start. This procedure will provide in each selected town a representative sample of *Laantas/Xaafaddor* of different sizes, the size being measured in terms of number of manufacturing and trading enterprises taken together.

4.10.4 Selection of Enterprises

221. The last step involved in the sample selection involves the procedure of selection of enterprises in each selected *Laantas/Xaafaddor*. For this purpose a house (or building) to house listing will need to be undertaken and at the time of listing the first step would be to enquire whether the house (or building) is being used for (i) only residential purposes; (ii) residential cum entrepreneurial purposes; and (iii) only entrepreneurial activities. From houses in category (i) above it would be necessary to ascertain from each of the households in that house whether they operate any manufacturing and/or trading enterprises without any fixed premises. For those recording ‘yes’, the total number of workers usually engaged will need to be ascertained with further details of how many are paid workers. For houses in category (ii), it would be necessary to ascertain whether the entrepreneurial activity undertaken in that premises relates to manufacturing and/or trading and for those recording

'yes', the total number of workers usually engaged will need to be ascertained with further details of how many are paid workers. In addition to that from each household residing in that house the same question as for those households in house category (i) will be asked. For the last category of house viz., (iii) above it would be necessary to ascertain whether the entrepreneurial activity undertaken in that premises relates to manufacturing and/or trading and for those recording 'yes', the total number of workers usually engaged will need to be ascertained with further details of how many are paid workers. This listing procedure will provide for each selected *Laantas/Xaafaddor* three separate lists of enterprises: one engaged in only manufacturing activity, the other only trading activity and last for those involved in both the activities together. Furthermore, each of these lists will also contain information as to which of these are own-account enterprises (without engaging usually any paid worker, but may be some family unpaid workers) and which of these operate by usually engaging hired workers and also the information on the total number of workers available. A listing schedule may be devised to facilitate this task.

222. The above procedure will provide for each selected *Laantas/Xaafaddor*, separate lists of enterprises engaged mainly in manufacturing or mainly in trading and further each such list will have two sub-lists one of own-account enterprises, and the other sub-list containing enterprises operating with hired labour with additional information pertaining to the total number of workers. The last question to be decided is how many of the sample 12 enterprises to be selected from each sample of *Laantas/Xaafaddor* may be own-account enterprises and how many engage hired labour. Once again the answer to this question will be sought from the experience of countries like India which have been undertaking surveys on similar subjects for over 30 years. The answer is four own-account enterprises and eight enterprises working with at least one hired worker and this recommendation is mainly based on the consideration that the value added from an own-account enterprise is generally much less than those operating with at least one hired worker.

223. Having determined the allocation of the sample between own-account enterprises and enterprises operating with at least on hired worker the procedure of selection of these two types of enterprises within each selected *Laantas/Xaafaddor* need to be indicated. The list of enterprises operating with at least one hired worker already prepared for each selected *Laantas/Xaafaddor* may be arranged first as manufacturing enterprises followed by trading enterprises. Within such an arranged list by two categories (manufacturing and trading), the list may be further rearranged in descending order of the size measured in terms of total number of workers usually engaged in the operation of the activities of the enterprise. From this rearranged list a circular systematic sample of eight enterprises may be selected with a random start. This procedure of selection of enterprises will not only ensure representation of manufacturing and trading establishments in proportion to their respective numbers in the selected *Laantas/Xaafaddor* but also enterprises of different sizes will be represented in proportion to their respective numbers in the *Laantas/Xaafaddor*. A procedure on similar lines may be adopted for selection of a sample of four own-account enterprises within each selected *Laantas/Xaafaddor*.

4.10.5 Survey and Reference Periods

224. The Mission feels that it would be advisable to adopt some flexibility with regard to reference period. Some of the enterprises operating with hired labour may be maintaining regular accounts of their business activity and for such units in the sample 'a year' may be taken as the reference period. In case of enterprises operating with at least one hired worker not maintaining regular accounts of their business activity as also for own-account enterprises a moving reference period of one month (the last month preceding the interview) may be adopted with the understanding that the survey period (that is the duration of the field work) will be one year.

225. There are definite advantages of organising the field work in the form of sub-rounds, especially in situations where one fears that on account of some unavoidable reasons like security considerations the field work may have to be suspended or even abandoned before completion. In the event of any such unfortunate situation the data already collected for some of the rounds can be subjected to appropriate statistical analysis for providing valid answers to the questions which were posed at the time of planning and designing the survey. The field work is, therefore, split into sub-rounds, each generally four in number each being of three months' duration. Furthermore, in a large-scale sample survey of this kind it is beneficial to provide for inter-penetrating sub-samples to make the task of computation of sampling errors (SE) fairly easy. A minimum of two inter-penetrating samples will be required to meet the needs of computation of SE. Thus the number of *Laantas/Xaafaddor* to be selected from each town will need to be a multiple of eight.

4.10.6 Method of Inquiry

226. Keeping in view the fact that majority of the respondents may not be literate enough to respond to detailed questions about economic activities, inputs, outputs, compensation of employees etc., the Mission feels that there is perhaps no alternative to the method of collecting data by enquiry with the help of qualified and well trained field and supervisory staff.

4.10.7 Industrial and Occupational Classification

227. For the purpose of an enterprise survey it would be necessary to train and assist the statistical staff in the government and also the field and supervisory staff in introduction and adaptation of International Standard Industrial Classification (ISIC) and International Standard Classification of Occupation (ISCO) to suit the statistical needs in Somalia. The Mission would like to advise that as a good practice when these classifications are developed to suit the economic conditions obtaining in Somalia care may be taken to provide a table of concordance between the national classification and the International Classification to facilitate international comparison of statistical output generated for Somalia with other countries.

4.10.8 Data Items

228. As the main objective of the survey may be to provide adequate data for preparation of national accounts, the emphasis should be more on quantitative information. That suggests, necessarily, the use of a schedule rather than a questionnaire for collection of data. The under mentioned broad items of information may be considered for the survey on 'manufacturing' and 'trading':

229. Manufacturing

a. Details of Economic Activity and operation: main and other activities, type of ownership, age of enterprise, source of energy used, nature of operation (perennial, seasonal and casual), and number of days worked.
b. Value of Fixed Assets: type of asset and for each (i) value on the first day of reference period, (ii) value on the last day of reference period, (iii) additions, (iv) depletions, and
c. (v) Assets not owned.
d. Value of Working Capital: for each item (raw materials, stores, fuel, semi-finished goods, finished products and by-products, cash in hand and at bank, amount receivable, amount payable), the value on the first and last day of reference period.

e. Details of Employment: paid employees (managers, production workers, others), working owner and unpaid workers by gender.
f. Compensation of Employees: by type of employees and by salaries and wages, other benefits, employer's contribution to social security.
g. Total number of hours actually worked by quarter and by sex.
h. Quantity and value of raw materials consumed.
i. Value of fuels and other inputs by items.
j. Quantity and value of products and by-products manufactured by items.
k. Remuneration received for work done for other concerns and other receipts.
l. Inventories: by type (finished products, work in progress, material supplies, fuels etc., goods for resale and by value at the beginning and end of reference period.
m. Capacity utilised.

230. Trading

a. Details of Economic Activity and operation: main and other activities, type of ownership, age of enterprise, nature of operation, and number of days worked.
b. Details of Employment: paid employees (managers, production workers, others), working owner and unpaid workers by gender.
c. Compensation of Employees: by type of employees and by salaries and wages, other benefits, employer's contribution to social security.
d. Revenue by type (sale of goods, com and fee on account of transactions for others, interest income, value of trading goods consumed at home, other sources).
e. Cost by type (goods purchased, fuels and lubricants, interest expenses, cost of non-industrial services done by others, cost of industrial services done by others, indirect taxes paid, electricity purchased, other costs).
f. Value of Fixed Assets: type of asset and for each (i) value on the first day of reference period, (ii) value on the last day of reference period, (iii) additions, (iv) depletions, and (v) assets not owned.
g. Value of Working Capital: for each item capital locked, cash in hand and in bank, amount receivable, amount payable), the value on the first and last day of reference period.
h. Stock Purchase and Sale: opening stock at purchaser's price, value of cash and credit purchases, value of cash and credit sales, closing stock. Purchase and sale prices of four/ five common commodities.

4.11 *Data Processing Aspects of Surveys*

4.11.1 Introduction

231. Surveys are among the main instruments for data collection in any statistical office, and - in the absence of well-developed administrative channels – this will be even more important for Somalia. UNDP has conducted Settlement Surveys and a Socio-Economic Survey, and is currently in the process of mounting a new Settlement Survey. Other UN agencies are conducting a number of special purpose surveys as was reviewed in Chapter 2. An integrated programme of surveys for Somalia was presented earlier, supplying a large part of the necessary data to sustain the proposed minimum list of statistics of Chapter 3. Since surveys are the main instruments for obtaining demographic and basic social and economic data on Somalia it is important that there is data processing capacity to handle these surveys efficiently.

232. As will become clear from Chapter 6, which will present the action plan for the Medium-term, the Somali Administrations, supported by UNDP, will have an important role to

play in the execution of the integrated survey programme. An important part of the survey processing will need to be done at the zonal level, and for this to proceed in a mutually consistent manner it is very important to decide on a common approach to which all the Somali Administrations agree. This section will present in general terms such a common approach to survey processing. In Chapter 5, the Mission will address the issues of capacity and capability, which – as the Mission explicitly recognises – pose severe limits on what is feasible in the Medium-term. Cognisant to the fact that survey processing is an integral part of any survey strategy, this section is meant to be complementary to the discussion earlier of the various proposed surveys for Somalia.

4.11.2 Questionnaire design

233. Obviously, the first step in the organisation of any survey is the design of the questionnaire. This introduces the main structure that will be used for data capture, data storage and tabulations later on. A note on the computer aspects of questionnaire design can be found in Annex 4.8.

4.11.3 Sampling

234. Making a good sample plan is of central importance when conducting a survey. There are many sampling designs possible, depending on the type of units that are surveyed (households, establishments) and on the type of information needed and also on the available resources. Implementing whatever technique is selected is usually done on the computer. Sampling always involves a sampling frame, a list of all units (households, establishments) from which a sample is drawn. There are many possibilities for such frames. A business survey normally uses a business register for this, or – if not available – lists from the tax or other civil authorities, if available. The household survey for Somalia can draw its primary sampling units (PSU) from the list of main settlements / satellite settlements in the rural areas and *Laantas* in the urban areas drawn up on the basis of the survey.

235. Whatever frame is used, it must be stored in computer format in such a way that sampling can be done. Sampling can be done by specialised computer packages but it must be observed that one can advance by only using Excel. Frames can easily be stored in spreadsheet format (when stored in a database they can usually be exported to spreadsheet format).

236. Before a sample can be drawn from the frame, the sample size must be calculated using any of a number of possible formulas which sampling theory supplies. The procedures for this can usually be implemented in Excel.

4.11.4 Data capture, validation and storage

237. Once completed questionnaires have been manually checked, the contents have to be entered into computer format. This is usually a time consuming affair, which can be done by data-entry personnel who need not know a great deal about the subject matter. The interface presented to them therefore need to resemble as closely as possible what is seen on paper. Entering data into Excel sheets is therefore not recommended. When using a database like Access, special forms need to be developed for each new survey, which is a time consuming and specialist job. Therefore, the use of special survey processing software is highly recommended.

238. There are a number of packages available, which will be reviewed:: IMPS and its successor CSPro, BLAISE and SPSS Data Entry Builder. The first two packages can be obtained free of charge. For BLAISE a yearly license fee is necessary. It should be noted

that all these packages handle more aspects of survey processing than data capture and validation alone. These aspects are discussed in subsequent sections. These packages are further discussed in Annex 4.9.

239. All these software packages greatly improve the efficiency and reliability in which surveys can be processed. There is a price to pay, however: they are not easy to master for the novice. Given the constraints in capacity and capability in the Somali administration this is a serious issue. It is useful in this respect to differentiate between developing software for survey processing and using the developed software. Whereas the former requires special skills, e.g. familiarity with programming concepts and knowledge of a particular programming language, the latter does not. As is the case for questionnaire design and sampling strategy, the development of this software can be undertaken by one or a few experts for all three administrations. The final programme(s) can then be distributed to the three administrations for use.

4.11.5 Correcting for outliers and missing data

240. After being entered into the micro-data file, the data needs to be thoroughly *checked*. Among the most important checks are:

1. Some answers cannot be zero
2. Most answers cannot be negative
3. When the data from a previous survey for a particular unit are available, e.g. for a business survey, the answers for the current survey can be checked against the answers from the previous one.
4. Certain relationships between variables must be met. These relationships can be questionnaire related, e.g. when a particular total in one section must be equal to another question somewhere else, or they can be “substantive”, i.e. dictated by economics, such as accounting identities.
5. Certain ratios between questionnaire variables should be relatively stable, e.g. the wage rate (wages / employment in full-time equivalents)

A note on checking and imputation procedures is given in Annex 4.10.

4.11.6 Sample weights and sampling errors

241. Once the survey data have been captured, checked and cleaned, and after imputations for missing data have been made, the non-response rate for the survey can be calculated. On the basis of this rate and on the sample design parameters sample weights can be calculated, with which to convert ('blow up') the sample totals to population totals. One may also need to calculate so called post-stratification weights, with which to bring the sample proportions in demographic subgroups into agreement with the population proportion in the subgroups. Finally, it is important to indicate how reliable the estimates of a parameter based on a sample are. For this one may calculate a number of statistical measures, e.g. the sampling error.

242. The calculations mentioned in previous and the current sections are usually performed using specialised statistical software. The most important statistical packages for this are: STATA, SUDAAN, SAS and SPSS. These are well-known and widely used packages.

4.11.7 Tabulations and dissemination of results

243. The last stage of the processing of a survey consists of the tabulations, and the subsequent estimation of population parameters. This can be done in various ways: using the specialised survey software mentioned earlier (e.g. IMPS or BLAISE); using statistical software like SPSS; using a mainstream database platform, like SQL Server or Access. Whichever approach is selected, this work is not easy and requires special skills. Again, it is important to bear in mind the distinction made earlier between developing the tabulation programmes and using them. The former can be done centrally by one or a few experts in accordance with the tabulation plans drawn up earlier in the design stage. The latter can be done in the separate zones if the data is captured and processed there. Alternatively, the zonal data could be collected centrally, and the tabulation programme executed then, including a zonal breakdown if so desired.

244. Survey results can also be disseminated on maps. There is specialised Geographical Information Systems (GIS) software for this, in which UNDP's DIMU has built up substantial expertise over the years. Eventually, this expertise will also need to be transferred to the Somali Administrations. Indeed, the 'Aide Memoir' mentioned earlier recognises as one of the aims to strive for is to build up capacity in the Somali Administrations to utilise GIS for planning and policy analysis.

4.12 *REFERENCES*

1. Horvitz, D.G. and Thomson, D.J. (1952): A generalisation of sampling without replacement from a finite universe. JASA, 47, 663-685

2. Mahalanobis, P.C. (1946): Recent experiments in statistics in the Indian Statistical Institute, JRSS (A) 109,325-378

3. Mahalanobis, P.C. (1964): Recommendations for the preparation of sample survey reports. Statistical papers series C, No. 1, Rev. 2, United Nations, New York.

4. Scot, C., Merchant, T., and Verma, V. (1989): Experiments on the estimation of agricultural production in Africa. Bulletin of the International Statistical Institute, Vol. 53(2), 305-328

5 Capacity and Capability Building

245. At the outset the Mission would prefer to state how it views the concepts of capacity and capability building in the field of official statistics as it applies to conditions currently existing and likely to exist during the Medium-term period of five years in Somalia and consistent with the work programme for the Medium-term as proposed in Chapter 4.

246. On the basis of the discussions the Mission had with (1) Somali Administrations, (2) the concerned members of staff of other UN agencies who were or are involved in the collection of statistical data in Somalia, (3) members of staff of the World Bank/UNDP Somalia Watching Brief Programme (SWB) lead by Dr. KNS Nair in Nairobi and staff located in the field, and considering the assessment of the Mission during its field visit to Somalia, it has assessed the Human Resource required to implement the work programme for the Medium-term in an efficient and coordinated manner indicating the skills required to collect quality field data. In general, the impression the Mission gathered indicates hardly any possibility of significant expansion in this regard during the Medium-term period mainly on account of financial constraints and low salary scale to attract qualified statistical persons to join the government departments. The solution, therefore, lies in devising ways and means to (1) provide the needed training and / or on-the-job-training on different important components of the work programme for the Medium-term for all categories of existing staff – professional, intermediate and lower levels, (2) identifying a few NGOs in each of the three Zones who have proven experience of collecting quality statistical data under the existing field conditions in Somalia, and (3) each of the three Somalia Administrations choosing one or more of the NGOs in their respective Zones for assigning the task of collection of field data as per a time-table of activities in consultation with and under the support of the SWB and LICUS Programmes with explicit understanding that the entire task of planning, designing the survey programme, training of field staff, and overall supervision of field work will be undertaken by the statistical staff of the respective Somali Administrations The NGOs would be expected to provide the requisite field resources with the specified qualifications and experience.

5.1 Human Resource Required

247. Based on the average time spent in canvassing data pertaining to one household as documented in the Report on the Socio-Economic Survey 2002 and the experiences of some of the supervisory staff involved in statistical data collection under existing conditions in Somalia, the Mission is of the view that the contents of the questionnaires / schedules to be drafted for each of the proposed surveys should consider the fact that the maximum amount of time spent in collecting data from one sampling unit (household/establishment/enterprise) should not exceed 75 minutes. With that norm and taking into account the proposed survey period for each type of sample survey, the field resources required in terms of field enumerators and field supervisors have been computed. For this, the Mission has assumed (1) that for every four or five field enumerators one supervisor may be provided to have rationalised and effective supervision of the field work, (2) that one field enumerator will spend three days in establishing contact with the settlement/community elders or any other person who matters and undertaking a listing of households / enterprises and the selection of a sample of the required size according to the prescribed procedure in a settlement, and (3) a field enumerator will need about one day in moving from one PSU to another. The same norm of time has been assumed for the urban areas. These assumptions and norms indicate that a field enumerator may be able to give an output of 30 to 35 households / enterprises per month. The Mission has noted that the field resources reported to have been used in the Socio-Economic Survey 2002 support this norm.

248. In what follows the Mission has indicated the human resource requirements for each type of sample survey included in the work programme for the Medium-term. Following that the Human Resource requirement for data processing for all activities has also been assessed.

249. **DSRS for Vital Events:** This will be an on-going activity for which a field force of 200 part-time field enumerators (a resident teacher, a community health worker or a trained birth attendant) and about 20 full-time field supervisors (staff of the Office of the Director Generals of Planning and Statistics of the three Somali Administrations) will be required. In each of the three Offices of the Director Generals of Planning and Statistics one professional staff would need to be designated as Officer-In-Charge (OIC) for this important activity.

250. **Survey on Estimation of Crop Production***:* This survey will be carried out every year, in two separate rounds, one each during the Deyr and Gu crop seasons. In each round the field data would be collected from 600 households in the main settlements and satellite settlements of eight regions already mentioned in Section 5.3. Since the key data item to be collected relates to the total production of each of maize and sorghum crops based on the farmers' own assessment in their holdings, it would be most desirable to complete the task of data collection from the field in about a month. With this and the norm of 30 per enumerator month, the field enumerators required will be 20 for each season for a period of five weeks. This includes a provision for one week of training to the field staff before starting the fieldwork in each season. According to the norm of one supervisor for every four / five enumerators, four / five supervisors would be required for the work which will be carried out in the eight regions already identified. One professional staff of the Office of the Director General of Planning and Statistics in the Central and Southern Somalia Administration will need to be identified as the OIC for this work.

251. **Survey on Estimation of Livestock Production**: This survey will be carried out every year with a sample of some 1,500 households (spread over 125 PSUs) in the rural areas. This is a survey where time will be required to undertake listing of households in each selected PSU (a main village and all its satellite villages, and a water point). Furthermore, in addition to the data items relating to livestock numbers by species and by sex, output of livestock products, it is proposed to collect data on items relating to inputs for computing contribution of this sector to GDP, the usual norm will not work. The Mission feels that the fieldwork in one PSU would require about eight person-days. Providing at least one day for travel from one sample PSU to the next; the total field resources required will work out to about 1,125 person-days. This amounts to 45 person-months with a norm of 25 days of fieldwork per month. It is good practice to provide for leave reserves at 10% to make sure that the fieldwork is completed according to a planned schedule. With this field strength, the requirement for supervisory work amounts to 12 person-months. In this case also one professional staff of the Office of the Director General of Planning and Statistics in each of three Somali Administrations will need to be identified as the OIC.

252. **Business Establishment Survey:** This survey work will be undertaken every year. Since the size of the sample will be known only after the results of the Settlement SS 2004 are available and a final decision about the cut-off point is taken to define the formal sector of each of the branches of the non-agricultural economy, the task of assessing the field and supervisory resources required may be worked out by each of the three Director Generals of Planning and Statistics of the three Somali Administrations. The Mission feels that the norm of 30 sample units per field enumerator-month seems to be reasonable for this activity as well.

253. **Household-based Socio-Demographic Survey and Enterprise Surveys of the Informal Sector of the important branches of non-agricultural activities:** The Mission, in Chapter 6, recommendsthat these different types of surveys be organised as a five-year

cycle of annual round activity covering a specific subject plus summary information on household income and / or household expenditures as also summary information on employment and unemployment during the years in a five-year cycle. For each annual round the Mission has recommended a sample size of some 3,200 households or enterprises as the case may be and further the Mission has recommended earlier that the field work of such surveys should extend over a period of 12 months to enable rotating the sample over the 12 months period to take into account the effect of seasonality. On the basis of the recommended norm of 30 households / enterprises per enumerator month, a field force of 10 enumerators (including leave reserves) will be required for the entire period of 12 months. Accordingly, one supervisor would be required to undertake rationalised and effective supervision of the field work under the over-all guidance of an IOC to be designated for this work in each of the three Offices of the Director Generals of Planning and Statistics of the three Somali Administrations.

5.2 Capability Building

254. The Mission has seen the Aide Memoir of the Training Workshop on Poverty Monitoring and Analysis and Related Initiatives organised by UNDP for the three Somali Administrations at Dubai during 1-4 November 2002. A copy of the Aid Memoir is reproduced in Annex 5.1 for ready reference. The Mission has noted with interest that the Director Generals of Planning and Statistics of the three Somali Administrations have agreed to cooperate and work together to implement various statistical development programmes, which will help in bringing Somalia back on the world map of development statistics. The formation of a Technical Coordination Group (TCG) in the above meeting to facilitate implementation of statistical development programmes, in view of the Mission, is a step in the right direction to produce quality statistics required for planning, policy formulation and informed decision-making uniformly in all the three Somali Administrations. This step will ensure aggregation of all relevant statistics pertaining to each of the three Somali Administrations to provide valid and reliable statistics for Somalia.

255. Having assessed the human resource requirements for implementing the work programme for the Medium-term, the Mission would like to spell out some of the important technical issues which the statistical staff of the three Somali Administrations have to consider for implementing the proposed work programme.

256. The proposed work programme has been drafted on the premise that when implemented, it should enable the three Director Generals of Planning and Statistics to provide quality statistics (the Mission has already presented the ingredients of quality and the ways in which each component of quality should be assessed / measured) to meet the needs for development planning (with special reference to PMAS, empowerment of women and the monitoring of human rights) and for policy purposes of their respective Administrations. The bulk of the work programme depends upon sample surveys (household-based and establishment-based) as the instruments for collecting the needed data with prescribed norms of quality. To attain this in an efficient manner, the following drill in implementing the work programme is important.

5.3 Drill in Implementing the Survey Programme

257. The three Director Generals of Planning and Statistics have already agreed as per the Aide Memoir of November 2002 to use a common methodology and procedures with regard to the collection of data, statistical analysis of collected data and report writing of each of the surveys in the integrated programme.

258. For attaining (1) above, the Mission proposes the following steps:

a. The existing Technical Coordination Group (TCG), as per Aide Memoir of November 2002, should coordinate technical guidance on all aspects of the integrated programme of sample surveys with technical assistance wherever required from SWB.

b. The Chairmanship of the TCG and the secretarial assistance to the Committee should be by rotation among the three Director Generals as per Aide Memoir of November 2002.

c. For each survey programme, the TCG will progressively take appropriate steps to:
    i. finalise the sampling strategy;
    ii. draft the questionnaires / schedules;
    iii. prepare two manuals for the field staff, one for the supervisors and the other for the field enumerators giving besides an introduction, basic concepts and definitions, procedures for listing and data collection, selection of sample and a description of ways and means to control the non-sampling errors;
    iv. prepare a manual on scrutiny of field data by supervisory staff;
    v. prescribe specific points and checks for ensuring consistency and validation of data through computers;
    vi. draft a tabulation programme (i.e., table formats of output);
    vii. devise estimation procedures; and
    viii. specifying key variables and key tabulations for which the computation of the SE is required.

d. The TCG will also take progressively appropriate steps with regard to processing of data of different surveys, which would involve:
    i. preparation of a manual for data processing giving data entry formats;
    ii. prepare/prescribe software for data entry, verification and computer validation of data;
    iii. prepare/prescribe software for the production of the required tabulations; and
    iv. prepare/ prescribe software for computing the SE.

e. The TCG will arrange a training programme for the trainers from each of the three Somali Administrations at least one month before the start of the fieldwork. Each trainer will in turn assume responsibility of training of supervisory and field staff of the respective Administration.

f. The TCG will arrange to provide to each Director General:
    i. The tabulations relating to the Administration for which he/she is responsible; and
    ii. An outline of the draft report to be produced for each Somali Administration. The SWB may assume the responsibility of consolidating these reports.

5.4 Statistical Staff in the Zones

259. The Mission had requested each of the three Director Generals of Planning and Statistics to provide the details of the statistical staff available in the respective categories: professionals (mainly responsible for managing the programme / task assigned and providing technical guidance on all aspects to the staff), intermediate (getting the work programme implemented as per prescribed procedure), and lower-level (undertaking computations and record keeping of statistical data). However, the Director Generals of

Planning and Statistics of Puntland and TNG provided the requisite details and the same from Somaliland Administration could not be provided to the Mission by 30 January 2004.

260. Considering the work plan and noting that the professional staff of each of the three Somali Administrations does not possess the skills to undertake the various operations involved in the integrated survey programme, the Mission recommends that each of the three Somali Administrations identify the professional staff under their charge, one each to receive on-the-job-training in survey designing; field operations; and data processing.

261. Taking into account that the Indian National Sample Survey Organisation (NSSO) is (a) the largest survey organisation in the world with over 50 years of experience of conducting household-based sample surveys, enterprise-based sample surveys and establishment surveys round the year, and (b) handling the work spread over 35 states/union territories with different socio-economic conditions and of varying sizes, and (c) the United Nations Statistics Division constituted the Delhi Group to undertake further work to devise more detailed guidelines and sharpen the existing methodology for measuring informal employment as also employment in the informal sector, the Mission feels that there are definite advantages in arranging on-the-job-training on survey designing and field operations at the NSSO.

262. The Mission feels that each of these on-the-job-training programmes may extend over a period of six weeks. Furthermore, the Mission also feels that for three other surveys, (1) Dual Sampling Registration Scheme, (2) Surveys for Estimation of Crop Production, and (3) Surveys for Livestock Production, the professional level staff working in the concerned line ministries from each of the three Somali Administrations may be deputed for a brief on-the-job-training for a period of three weeks to another country, where such activities are ongoing. Again one of the choices for this could be the Office of the Registrar General of India for training on (1) above, while for the remaining, the Indian Agricultural Statistics Research Institute (a world renowned institute for agricultural statistics) would be the right choice, especially on consideration of the nomadic aspects of the population.

263. The Mission also feels that it is equally important to provide adequate training in statistical methodology and official statistics for the intermediate level (also called middle-level) staff in each of the three Somali Administrations. The Mission has considered various options for arranging this type of training. It would like to recommend that the intermediate–level staff from each of the three Somali Administrations should receive this type of training at either the Eastern Africa Statistical Training Centre (EASTC) in Dar-es-Salaam and /or the Institute of Statistics and Applied Economics (ISAE) in Kampala. EASTC offers a regular diploma course in statistics of 10 months' duration covering Statistical Theory and Methods, Applied Statistics, Mathematics, Statistical Computing, Economics, and Field Project. The Mission recommends that each of the three Somali Administrations may depute one or two intermediate level staff having required minimum prescribed qualifications for the training every year during the Medium-term plan.

264. Another option is the International Statistical Education Centre (ISEC) at Calcutta? in India, which since 1950 operates in collaboration with the International Statistical Institute. One of the regular training programmes offered by ISEC every year lasts for a period of 10 months with options to attend one or more of the modules – Statistical Theory and Methods (17 weeks at ISEC); Official Statistics (six weeks) in the Department of Statistics, Government of India; Advanced Statistical Methods and Economic Statistics (13 weeks at ISEC); and specialisation in any of the fields of choice of the candidate (seven weeks at ISEC). The Mission has noted that candidates from Somalia had received training at ISEC in the past.

265. The Mission also recommends that each of the three Somali Administrations may assess the training needs for lower-level statistical staff working not only in their Planning and Statistics Departments but also working in the statistical sections / units of the line ministries. Such staff may undergo training in elementary statistical methodology and elements of data processing. The initial training may be organised in-house utilising local expertise as is being carried out currently when Somali experts are seconded to the ministries of the Somali Administrations to undertake such training. For further training, the Mission feels that the EASTC in Dar-es-Salaam and ISAE at Kampala, as most appropriate institutions in the region. The EASTC offers a regular certificate course of 10 months' duration covering the topics mentioned for the diploma course but at elementary level. It also offers annually a six-week course on survey data processing. The EASTC also conducts short tailor-made country courses. There are two options for training of lower-level statistical staff depending upon the number of staff to be trained. In case the number is substantial the EASTC or ISAE could be requested to arrange one or more country courses for Somalia. Should the number be small there may be advantages in deputing the staff to undergo training at EASTC and/or ISAE.

266. The Mission also feels that there are definite advantages of organising a study tour of about two weeks for the three Director Generals of Planning and Statistics to see the functioning of the various Divisions of NSSO, Office of the Registrar General of India and Indian Agricultural Statistics Research Institute.

267. The Mission does realise that with limited statistical staff available with the Somali Administrations it may be difficult to depute intermediate and lower level statistical staff for training for a long period of, say, six months or so. To overcome this problem the Mission suggests that the Somali Administrations may want to consider appointing leave-reserve statistical staff, with the understanding that gradually such persons would be absorbed as regular staff when the statistical activities expand in the Department of Planning and Statistics, line ministries, and to lower levels like regions.

5.5 Data Processing

268. The Mission now wishes to address the capacity and capability implications of the various suggestions for data processing made in earlier for the three Somali Ministries of Planning. There are three issues involved: 1) procurement of hardware and generic software, 2) development of customised software, and 3) training of staff. These issues will be discussed in the following paragraphs. It must be noted that the Ministries of Planning, with the assistance of SWB, have already started with these. This section must, therefore, be seen as an elaboration of ongoing activities.

269. The first issue, procurement of hardware and generic software, is the easiest. The hardware market is so competitive and dynamic that specific recommendations by the Mission will be outdated quickly. Moreover, the Mission assumes that state-of-the-art equipment can be obtained at relatively low cost in Somalia or Kenya and that the logistics of getting this to the Ministries in Somalia can be worked out satisfactorily by UNDP / Watching Brief. Of course these computers must be connected to each other, and must have Internet access. Furthermore, the usual peripherals such as printers and scanners need to be included. In principle there should be a computer for each staff member involved in one or more of the various aspects of data processing in the Statistical Units of the Ministries of Planning. The Mission is happy to note that UNDP has already addressed this to a large extent.

270. The basic software packages that need to be included (next to the usual utilities such as compression software) according to the Mission are: Microsoft Office including Access and a statistical package, preferably SPSS.

271. The second issue involves the development of customised database software, for the various applications identified in this chapter: trade data, production and price data, national accounts data. Furthermore, if there is to be a centralized database this also demands some solid application building. All of these applications can be made in Access. Expertise in Visual Basic for Access is necessary, as well as a sound knowledge of design features of trade and price data systems. Roughly, the Mission estimates a development time of three person weeks for each of the major applications identified in this section, excluding training.

272. The third issue concerns training of staff of the Ministries of Planning - and of the staff of statistical units of the other line ministries - involved in data processing activities. The Mission wishes to distinguish three types of training: 1) basic training for all such staff members, 2) intermediate training for a smaller number of dedicated staff members involved in operating the various applications introduced, if possible in conjunction with training with regular statistics, and 3) advanced training for one or two expert staff members. Some pre-training testing of staff ought to be done in order to determine the level of each staff member. This will indicate at which training level the candidate should commence.

273. Training in basic computer skills should be given to all staff members involved in data processing. This training should include the basics of working with Windows, Word, Excel and PowerPoint. The emphasis should be practical, oriented around day-to-day tasks, such as: learning to operate a computer; typing, formatting and printing a Word document; sending an email with a Word or Excel document attached; entering some data in a spreadsheet; basic calculations in Excel, with special emphasis on basic statistical functions, such as the average and standard deviation; formatting and printing a spreadsheet. Such training typically would last for two weeks, given in two one-week modules, with a pause of at least a few weeks in between, to allow participants to practice. These time indications assume an ideal training situation, with no language interpretation needed. In practice these time indications will have to be inflated somewhat, to take into account the Somali field circumstances. This remark also pertains to the time indications given for the other training components. The Mission has noted that UNDP has already undertaken this either by seconding local experts to the ministries or by utilising institutional capacity locally available.

274. Intermediate level training should be given to staff members in charge of the various applications to be introduced to the statistical units of the ministries. This training would involve some more advanced topics in Excel (e.g. more details on formulas and functions, pivot tables, database functions in Excel such as sorting and filtering, an introduction to macro's) and an introduction to Access and SPSS, with emphasis on the practical use of these packages, mainly centred on data-entry, editing and production of standard output. Candidates for such training should be sufficiently proficient in the basic skills identified above. Again, duration of at least two weeks would be the minimum required for this training.

275. One or two staff members with proven computer skills, and at least intermediate level training in statistics can receive advanced level training. This involves a further introduction into Access (introduction to table design, queries, forms, reports and macro's, import of Excel tables) and SPSS (import of Excel and Access tables, definition of variables, introduction of categories, basic statistical procedures). Programming concepts may also be introduced at a very basic level, mainly to allow these staff members to understand the various applications introduced so that they are able to maintain these. Also for this training a minimum of two weeks will be required.

276. It would be cost effective to organise trainings centrally, with all three Ministries participating. Alternatively, basic training courses can be given on site, with intermediate and advanced level courses being given at a central location jointly. Local institutes, to the extent available, can conduct all training assuming they are able to thoroughly master the developed Access applications. Alternatively, technical staff of UNDP / Watching Brief involved in the development phase should be included in the training arrangements. The Technical Coordination Group should coordinate all training arrangements. There should be a significant time lag between trainings of different levels for a single participant, allowing for sufficient practice and consolidation of learned skills before moving on to a next level.

5.6 Survey Processing

277. An important decision to be made involves the choice of survey processing software. As far as the Mission is concerned the choice is between IMPS / CSPro and BLAISE. The advantages of IMPS / CSPro are that it is often used in developing countries and that it is free of charge. The advantage of BLAISE – in the view of the Mission – is that it is the better package. Disadvantages of BLAISE are a steeper learning curve, a yearly license fee of a few thousand dollars for the minimum package, and the difficulty of getting qualified BLAISE trainers and developers.

278. The Mission wishes to distinguish between three kinds of staff involved in survey processing activities: 1) data-entry staff, 2) data-entry supervisors with a working knowledge of the whole survey processing trajectory, and 3) developers able to develop, maintain, modify and update the survey processing software.

279. Data-entry staff can be trained on-site. Successful completion of the basic computer training identified in the previous section is mandatory. The duration of training is two days per survey data capture application. Training can be provided by intermediate or advanced level own staff.

280. Intermediate level training could be given by advanced level staff in-house, but preferably special-purpose courses of at least a week should be provided for all Ministries jointly, coordinated by the Technical Coordination Group, and with technical assistance of UNDP / Watching Brief experts. For each of the major surveys there should be at least two supervisors.

281. Advanced level training should be received at a recognised training centre. For IMPS / CSPro this would be one of the trainings offered by the International Programmes Centre (IPC) of the US Bureau of Census in Washington DC, USA, which offers short- and long-term technical assistance and training. Among the offered courses the Mission would like to mention: Building an Integrated Data Dissemination System (3 wks); Census and Survey Information Processing (CSPro & IMPS) (4 wks); Sampling & Statistical Methods (4 wks); Geographic Information Systems (6 wks); Edit and Tabulation Specifications (2 wks); Improving Data Quality (4 wks).

282. For BLAISE Central Bureau of Census, Netherlands offers training, as well as a number of dedicated BLAISE expert institutions, such as Wesstat in the US and NAMES in The Netherlands. Alternatively, BLAISE experts can come to Kenya or Somalia to organise local training sessions. Advanced level training must be at least two weeks, with a follow-up training of a week after several months.

283. Even staff members who have obtained advanced level training will probably not be able to develop full-blown applications in the beginning. Expert IMPS or BLAISE developers should be approached to deliver the needed support in the beginning. Possibly UNDP /

Watching Brief can train a survey processing expert, who can then offer helpdesk support to the three Ministries.

284. Next to survey processing software also a knowledge of the selected statistical package, most likely SPSS, is necessary to carry out tabulations (if not done in IMPS or BLAISE), to calculate standard errors, to calculate the sample size, the design effect and to carry out possible post-stratification. However, these exercises demand more knowledge of statistics then computer skills. And, as was observed earlier, one can come a long way simply with Excel.

6 Implementation of Work Programme

6.1 Introduction

285. In Chapter 2 it became clear that most data on Somalia are currently collected by international organisations, notably UN agencies. Data are collected through a variety of surveys and through various monitoring activities. These activities are mostly geared towards the establishment of a number of indicators, needed to implement the various aid efforts of the international community. The Ministries of Planning of Somaliland and Puntland and of the Transitional National Government (TNG) have begun with data collection as well, albeit under the guidance and support of World Bank/ UNDP Watching Brief for Somalia (SWB).

286. The aim of Chapter 3 was to draw up a statistical framework in which to place these various data collection activities. Various areas of statistics were identified where data collection is either insufficient, or missing entirely.

287. The Mission has spelled out its views with regard to the integrated survey programme for the Medium-term in Chapter 4. Methodological notes, which would help in undertaking the proposed programme, have also been provided in Chapter 4 and in the Annexes relating to that chapter. Based on the proposed work programme issues relating to capacity and capability building have been discussed in Chapter 5. In this chapter the Mission is presenting the way the proposed work programme may be implemented taking into account the relevant statistical activities of the UN Agencies, which are likely to continue during the Medium-term period.

6.2 Work Programme for the Medium-term

288. The work programme for the Medium-term to be undertaken by the three Somali Administration under the guidance and with the support, wherever necessary, of the SWB can be summarised to comprise as under:

A. Data Collection

1. Settlement Survey 2004 (preparatory work for which had been initiated before the Mission started its work on 17th November 2003)
2. An integrated sample survey programme comprising
   - 2.1 Dual Sample Registration Scheme (DSRS) for vital events
   - 2.2 Sample Survey for Estimation of Crop Production
   - 2.3 Sample Survey for Estimation of Livestock Production
   - 2.4 Establishment Survey of Formal Sector of the Non-Agricultural Economic Activities.
   - 2.5 Enterprise Surveys of Informal Sector of the Non-Agricultural Economic Activities.
   - 2.6 Household-based Socio-Demographic Surveys
3. A coordinated programme to be initiated/strengthened by the Planning and Statistics Departments and other line ministries through administrative channels on the following lines
   - 3.4. Foreign trade statistics
   - 3.5. Price collection and CPI
   - 3.6. Computation of estimates of GDP

3.7. On a priority basis develop work relating to adapting the International Standard Classification of all Economic Activities, International Standard Classification of Occupation, Harmonised System for trade classification, and Central Product Classification.

3.8. Develop and / or strengthen the official channels for collection of data pertaining to education and health facilities under the guidance and with the support of SWB.

B. Capacity Building

4. In Chapter 5 the Mission has recommended the efforts and programmes required for capacity building of statistical staff of the three Somali Administrations. Arrangements will have to be made for training of statistical staff at different levels- professional, intermediate, and lower of Planning and Statistics Departments and other line ministries on the lines indicated by the Mission.

5. Community level data collection and FGD mainly to meet some of the needs of PMAS, empowerment of women, monitoring of human rights and for policy purposes.

6.3 Implementation Time-Table

289. To draw up a time-table for the implementation of the work programme for the Medium-term period the Mission has taken the work programme detailed in Section 6.2 and also the two important surveys, MICS and the PAPFAM Survey. The Mission understands from UNFPA that some preliminary work relating to PAMFAM Health Survey would be undertaken during 2004 and the main survey operation may be carried out during 2005. Likewise, the next round of MICS might be undertaken in 2005/2006. The Mission hopes that a final decision in regard to these surveys will be undertaken in consultation with the Statistical Working Group.

290. The periodicity and some other relevant details of the individual components of the work program to be implemented by the three Somali Administrations under the guidance and with the support of the SWB.

291. Once completed and fully analysed the SS 2004 is expected to provide the outputs as stated in chapter 5. These can henceforth be maintained and updated by the Somali Administrations. The Director Generals of Planning and Statistics of the three Somali Administrations should jointly devise through the forum of TCG a coordinated work programme for this important activity till the next round of Settlement Survey is undertaken for Somalia as a whole.

292. The Dual Sample Registration Scheme will be an on-going programme, while sample surveys 2.2, 2.3, and 2.4 would be annual programmes. The survey programmes 2.5 and 2.6 may better be operated on the following lines with a five-year programme.

First Year: Socio-Economic Survey (Already carried out in 2002)
Second Year: Employment and Unemployment Survey
Third Year: Enterprise Survey of Informal Sector of Manufacturing and Trading
Fourth Year: Enterprise Survey of Informal Sector of Transport, Hotels and Restaurants, Educational and Health Services.
Fifth Year: Open; subject to be decided by the three Administrations jointly

293. The Mission has already noted that the household based sample survey will collect demographic, social, and socio-economic data to meet the needs for planning development programme, PMAS, empowerment of women, monitoring of human rights and for policy purposes. The Mission would like to note that Socio-Economic Survey (SES) and Employment and Unemployment Survey would provide detailed data for poverty analysis and analysis of employment and unemployment for the informal sector of economy (which are very relevant to any poverty related study) once in five years. For the years when Socio-Economic Survey and /or Employment and Unemployment Survey are not conducted, the PMAS will need to develop some suitable indicators. This is a very difficult task and generally results in not providing very reliable estimates. The Mission feels that instead of the above there is a possibility of providing summary information relating to household income and/or household consumption as also employment and unemployment on an annual basis by tagging in a small schedule to be canvassed along with the other subjects in the five-year programme stated above as per the following plan:

First Year:	No additional summary schedule relating to household income and/or household consumption and employment and unemployment (**hereafter referred to as summary schedule for poverty analysis**) since SES will provide comprehensive data.
Second Year:	Employment and Unemployment Survey plus a summary schedule on household income and/or household consumption **only.**
Third Year:	Enterprise Survey of Informal Sectors of Manufacturing and Trading plus a summary schedule for poverty analysis
Fourth Year:	Enterprise Survey of Informal Sectors of Transport, Hotels and Restaurants, Education and Health services plus a summary schedule for poverty
Fifth Year:	Open subject (to be decided) plus a summary schedule for poverty

294. The Mission proposes that as and when a summary schedule for poverty analysis is canvassed it would be based on a thin sample of four households selected independently in each of the PSUs selected, both in urban and rural areas for the main subject for that year of survey programme. The procedure of selection of the thin sample of four households within each PSU will be the same as proposed for the general household based sample survey on socio-demographic aspects.

6.3.1 Collaboration with the UN Agencies

295. The Mission would like to clarify that the above details of the implementation of the work programme do not imply that the UN agencies need not undertake any data collection. However, the Mission would like to advise that the Working Group on Statistics would be the right forum to coordinate such data collection. Furthermore, the Mission would also like to advise that the principle of comparative advantage may be followed in determining the arrangements for collaboration between the UN agencies and the three Somali Administrations in collection of statistical data for Somalia. The data collection through administrative channels should be carried out by Somali Administrations, while the various surveys outlined above, though ultimately to be carried out by Somali Administrations, may initially be undertaken by the UN agencies having mandate and resources but in close collaboration with the Somali Administrations.

7 Main Findings and Recommendations

7.1 Findings

296. Statistical data on Somalia is currently meagre. Most of data are being collected by UN agencies (also to a limited extend by the three Somali Administrations) to meet their planning and programming needs. In this regard the perception of overlap and duplication seems to be somewhat over stated (strictly speaking the scope, coverage and contents of most of such data are not identical). The gaps and fragmentation may also be attributed to some extent the prevailing conditions in Somalia. However, there is still considerable scope to support the coordination of data collection among the UN agencies as also Somali Administrations to improve the quality of data.

297. While some good quality data on some socio-economic aspects have become available through the Socio-Economic Survey 2002, there is hardly any reliable data available on several important aspects relating to the economy of Somalia and relevant data on vital events to work out the growth of the population. The Mission has identified a minimum list of statistics to meet the needs of planning and for policy purposes of Somali Administrations during the Medium-term extending over a period of five years.

298. To fill such data gaps, at least for the Medium-term of five years, well-designed surveys appear to be the right strategy, particularly in view of the prevailing situation in Somalia. The integrated programme of sample surveys recommended by the Mission include Dual Sample Registration Scheme for vital events, Estimation of Livestock Products, Estimation of Crop Production, Sample Surveys of both the formal and informal sectors of different branches of non-agricultural economy of Somalia. Along with these the Mission has advised an appropriate strategy to build/strengthened the administrative channels of data collection on some of the important aspects.

299. The Mission has also recommended several training programmes as also study visits for upgrading the capability of the statistical staff of the Somali Administrations so that they may progressively take over the responsibilities of organising and managing statistical data collection programmes.

300. The Mission feels that the Somali Administrations would need guidance and support in the initial stages to implement the work programme recommended by the Mission. The Mission is of the view that the World Bank/UNDP Somalia Watching Brief is the right forum to provide guidance and necessary support to the Somali Administrations in this regard.

301. The Mission also feels it has on the whole been successful in securing its objectives. As per the Mission's terms of reference each of the seven stipulated components have been implemented. That said, the Mission acknowledges that some specific sub-components have, however, been inadequately addressed or in certain instances not addressed at all. There are various reasons for this. Mainly, this is due to operational constraints, which curtailed the Mission's field visit only to Puntland, and lack of detail on other aspects, which they tried but did not succeed in obtaining from the interlocutors that the Mission had consulted with. Much of this detail was not readily available even to the interlocutors.

7.2 Recommendations

302. Based on its discussions and observations, the Mission has formulated some recommendations as well as some suggestions, which are summarised in this chapter. The Mission's overall objective in the recommendations has been to help the three Somali Administrations, UNDP in general but the World Bank / UNDP Somalia Watching Brief Project in particular, the UN agencies and other donor agencies involved in work relating to Somalia to help in understanding the problems in statistical capacity building in Somalia and possible ways and means to get over these and pave the way for development of statistical services in Somali Administrations which would serve in providing reliable statistical information for development planning and for policy purposes.

303. , The principle recommendations and suggestions are listed below. Relevant section/sub-section are cited in brackets at the end of each recommendation to relate it to the context. However, the Mission would like to observe that there is no alternative to reading the entire report for a thorough grasp of the current state of statistical services in Somalia, and the logic and arguments used in suggesting solutions.

304. The Mission's recommendations and suggestions are thus as here under.

Chapter 2

2.1 The statistical data collection on Somalia needs to be coordinated to avoid overlap and ensuring using commonly accepted statistical standards for the purpose. **(Section 2.2)**

2.2 Since the two reports on Socio-Economic Survey 2000 provide all the technical details to enable the users to judge and assess all the parameters which taken together determine ‘quality of data’, the Mission recommends that these may serve as a guide and model for the Somalia Administrations for statistical analysis of survey data and preparation of survey reports. **(Section 2.4)**

2.3 The Mission feels that for more effective effort in coordinating the statistical activities, the scope and coverage of the UN inter-agency working group on statistics needs to be enlarged and it should appropriately be linked to Somalia Aid Coordination Body. To achieve this the Mission has proposed a revised set of terms of reference of the working group on statistics for consideration of the UNDP. **(Section 2.7)**

2.4 The Mission has recommended introducing data storage and processing solutions based on Access for a number of data collection activities: prices, trade data and, possibly, national accounts. This will pave the way to establish a solid database infrastructure in the future national statistical office to cope with the large amounts of data that will be submitted regularly. (**Sub-Section 2.9.3, 2.9.4 and 2.9.5**)

2.5 The Mission has evaluated the idea of a 'central' socio-economic database. It recommends elaborating this idea in the direction of a set of inter-linked websites (of international agencies and Somali Administrations). In this respect DIMU already plays and could continue to play a leading role. (**Sub-Section 2.9.8**)

Chapter 3

3.1 Taking IMF's General Data Dissemination System (GDDS) as the base, the Mission has identified a 'minimum list of statistics' for the Medium-term, which, in the absence of a national government, should be collected progressively by the three Somali Administrations

under the guidance and with the support of the World Bank/UNDP Somalia Watching Brief Annex 3.9 of the Report gives not only the details of items but also the periodicity and sources of information. (**Section 3.2**)

3.2 The Mission recommends that the work initiated by the World Bank/UNDP Somalia Watching Brief on the estimation of GDP for Somalia using the expenditure method is continued and expanded within the formal framework of a system of national accounts for Somalia. The Mission has put forward a simple approach to the estimation of GDP following the production approach based on the integrated programme of surveys proposed by the Mission and which is to be supplemented by data collection activities through Somali administrative channels. It is recommended that this approach be gradually introduced once the survey results become available. (**Sub-section 3.3.2**)

3.3 It is recommended to begin working on a simple production volume index, and to further expand the ongoing activities on CPI. (**Sub-sections 3.3.3 and 3.3.4)**

3.4 The Mission has suggested to set up a system of labour statistics (employment, unemployment, wages), for which the data is sourced from the proposed integrated programme of surveys and from data collection activities through administrative channels, which need to be taken up in a well-planned manner. (**Sub-section 3.3.5**)

3.5 To develop suitable statistics for the government sector, the Mission has proposed to introduce formal methods of budgetary analysis in accordance with international guidelines. Gradually, the relevant international (functional) classifications will have to be introduced. (**Section 3.4**)

3.6 The Mission has proposed that a further study of the financial sector of Somalia is undertaken, after which it can be decided which of the GDDS indicators are relevant for Somalia. (**Section 3.5**)

3.7 The Mission has recommended that a start be made with the collection of trade values, next to trade quantities already being collected. This will enable a simple system of trade statistics to be developed which could be a starting point for a future balance-of-payments for Somalia. (**Section 3.6**)

3.8 For the socio-demographic part of the proposed statistical system the Mission based its choice of indicators on the currently collected data as presented in the Somali HDR. Indicators taken from the MDG and the World Development Indicators have supplemented this list and all the related data items are an integral part of the ‘minimum list of statistics’. (**Section 3.7**)

3.9 In data collection for the socio-demographic part the international agencies currently play an important role and this is likely to remain so for the Medium-term. The Mission finds it important that data collection activities on population, health, education and poverty are further strengthened by the Somali Administrations. (**Section 3.7**

Chapter 4

4.1 The output of the Settlement SS 2004 will provide a population-based frame as also an enterprise-based frame of non-agricultural economic activities. The Mission strongly recommends that all concerned agencies-Somali Administrations, the World Bank/UNDP Somalia Watching Brief Project, UN agencies, and other donors interested in undertaking either a household-based or enterprise/establishment-based sample survey should take advantage of this frame in designing the sampling design. **(Sub-section 4.1.2)**

4.2 The sample surveys recommended by the Mission to be planned and implemented during the Medium-term plan will broadly comprise: Sample Registration Scheme for Vital Events; Survey on Estimation of Crop Production; Survey on Estimation of Livestock Production; Households based Socio-Demographic Surveys; and Sample Surveys of Non-agriculture Sectors. **(Sub-section 4.1.3)**

4.3 The Mission has recommended the Sample Registration Scheme to operate as a dual registration sample registration system, which consists of continuous enumeration of births and deaths in a sample of 200 settlements/urban blocks by resident part-time field enumerators, and independent six-monthly retrospective survey by full-time supervisors. The advantage of this procedure, in addition to elimination of errors of duplication, is that it leads to a quantitative assessment of the sources of distortion in the two sets of records making it a self-evaluating technique. **(Section 4.2)**

4.4 In the existing situation in Somalia the Mission feels that the methodology questioning the farmer about his/her own production of crops, which had been tried in five countries of Benin, Central African Republic, Kenya, Niger, and Zimbabwe of Africa may suit the needs for estimating the production of two most important crops of maize and sorghum during the Medium-term plan. **(Section 4.4)**

4.5 The Mission recommends that sample surveys for estimation of production of maize and sorghum crops may be restricted to the eight regions comprising Bakol, Bay, Gedo, Hiran, Lower Juba, Lower Shabelle, Middle Juba and Middle Shabelle, all in southern Somalia, which account for about 95% of the production of each of these two crops in both the crop season, Deyr and Gu. The survey in each of the two crop seasons will be carried out in a sample of 400 households growing at least one of the two crops. **(Section 4.4)**

4.6 The Mission recommends that the survey for estimation of livestock production, which will be an annual exercise, may cover the entire country with a sample of 1,500 households. In order to take care of the seasonality in the production of livestock, the Mission recommends that the sample be rotated over the period of one year of field work, which may be undertaken in the form of four sub-rounds corresponding to rainfall seasons April-June, and October-December, and short dry season July-September, and long dry season January –March. **(Section 4.5)**

4.7 The Mission has recommended that the proposed integrated programme of sample surveys may be operated in close cooperation and association of all the main players (donors, UN agencies, and international NGOs) and with Somali participation. For example, the Survey for Estimation of Crop Production and Survey for Estimation of Livestock Production be operated in close cooperation and association with the concerned international agencies-FAO, FSAU, and FEWS. The Mission feels that the existing Statistical Working Group of UN agencies, backstopped by the UNDP, would be the right forum for devising appropriate mechanism to achieve the desired cooperation and association amongst the agencies and the Somali Administration. **(Section 4.4 and Section 4.5)**.

4.8 The Mission has recommended that the problem of sampling of nomadic households may be handled by operating a dual frame. The first frame, which will become available with the completion of Settlement SS 2004, will comprise the list of main settlements, satellite settlements of each main settlement, and water points. The second frame should be attempted to cover those nomads who choose to halt at any place other than a main settlement, or a satellite settlement, or a water point. The preparation of second frame needs more time and much more familiarity with the actual field conditions, both of which were not possible for reasons beyond the control of the Mission. **(Sub-section 4.5.2)**

4.9 The Mission has given some ideas for devising the second frame for sampling of nomadic households and recommended that for the World Bank/UNDP Somalia Watching Brief Project may consider engaging the services of a survey statistician to address this issue. Pending that the Mission has suggested that like the SES 2002, and RHS 2002-2003 this part of the universe may be kept outside any survey proposal recommended as a part of the work programme for the Medium-term. **(Sub-section 4.5.2)**

4.10 The Mission has recommended a general framework for developing a programme of house-hold based sample surveys for collection of demographic, social, and socio-economic data to meet the needs for planning development programmes, poverty monitoring and analysis system (PMAS), empowerment of women, monitoring of human rights and for policy purposes. **(Section 4.6)**

4.11 The Mission has recommended that for collection of statistical data in Somalia, the definitions of formal and informal sectors of the economy as recommended by the Fifteenth International Conference of Labour Statisticians (ICLS), 1993 may be adopted. **(Section 4.7)**

4.12 The Mission has recommended that based on the results of the Settlement SS 2004 an exercise may be taken up for determining the cut-off point of employment for delineating the formal and informal segments of each branch of the non-agricultural economy. **(Section 4.7)**

4.13 The Mission has recommended a general frame work as also the sampling strategy for undertaking sample surveys of different branches of the non-agricultural economy during the medium-tem plan primarily to provide the basic data for compiling GDP estimates as also for monitoring the employment in the formal and informal sectors. **(Section 4.8)**

4.14 The Mission recommends that based on the results of Settlement SS 2004 a Business Register of Establishments in the formal segment of different branches of the non-agricultural economy be developed. **(Section 4.9)**

4.15 The Mission has recommended that a survey of establishments in the formal segment of each branch of non-agricultural economy may be undertaken annually. **(Section 4.9)**

4.16 The Mission has recommended a general framework as also the sampling strategy for undertaking sample surveys of different branches of the informal segments of the non-agricultural economy during the Medium-term plan. **(Section 4.10)**

Chapter 5

5.1 The Mission suggests that to enlist the full and willing cooperation of the respondents in household/enterprise/establishment-based sample surveys it is desirable that while drafting the contents of the questionnaire/schedule due care should be taken to ensure that the time required to collect data from one sampling unit may not exceed 75 minutes. **(Section 5.1)**

5.2The Mission recommends that for effective and rationalised supervision the field resource requirements may provide for one supervisor for every four/five field enumerators. **(Section 5.1)**

5.3 The Mission has suggested the field resources in terms of the field enumerators and supervisors for each of the proposed sample surveys—Dual sample registration scheme; Survey on estimation of crop production; Survey on estimation of livestock production; Business establishment survey; and Household-based socio-demographic survey and enterprise survey of the informal sector of important branches of non-agricultural activities.**(Section 5.1)**

5.4 The Mission has recommended that the three Somali Administrations should continue to use a common methodology and procedures with regard to the collection of data, statistical analysis of collected data and report writing of each of the surveys in the integrated programme proposed for the Medium-term. The Mission has advised steps required to ensure that this works well. **(Section 5.3)**

5.5 The Mission has assessed the training requirements for the statistical staff at different levels-professional, intermediate, and lower of the three Somali Administrations to upgrade their statistical skills so as to equip them to gradually take over (i) the planning and organisation of data collection, processing of data and writing of survey reports, and (ii) the statistical work in the line ministries to manage efficiently the collection, compilation and dissemination of statistical data collected through administrative channels. **(Sections 5.4 to 5.6)**

5.6 For the professional level staff the Mission has recommended that for each of the three Somali Administrations, one staff member each, who is at least a graduate may receive on-the-job training in survey designing; field operations; and data processing for a period of about six-weeks. Further, the Mission has recommended that while the training in survey designing and data processing may be arranged at the Indian National Sample Survey Organisation, for the training in data processing the staff may be deputed to International Programmes Centre of the US Bureau of Census. The Mission also recommends that one professional level staff from each of the three Somali Administrations may receive on-the-job training for a period of three weeks at the Office of the Registrar General of India on Dual Sample Registration System and Indian Agricultural Statistics Research Institute on Surveys of livestock products and crop production. **(Sections 5.4 and 5.6)**

5.7 The Mission has recommended that one or two intermediate-level staff from each of the three Somali Administrations possessing required minimum prescribed qualifications may be deputed to either the Institute of Statistics and Applied Economics (ISAE) in Kampala or the Eastern Africa Statistical Training Centre (EASTC) at Dar-es-Salaam or the International Statistical Education Centre at Calcutta? (India) to undergo a regular training programme in statistical methodology and official statistics every year during the Medium-term plan. **(Section 5.4)**

5.8 The services of EASTC and/or ISAE may be utilised for arranging training in elementary statistical methodology and elements of data processing for lower-level staff of the three Somali Administrations. **(Section 5.4)**

5.9 The Mission also recommends feels that a study tour of about two weeks may be arranged for the three Director Generals of Planning and Statistics to see the functioning of the various Divisions of the NSSO, Office of the Registrar General of India and the Indian Agricultural Statistics Research Institute. **(Section 5.4)**

5.10 The Mission recommends that training in basic computer skills (working with Widows, Word, Excel, and PowerPoint) should be provided locally to all staff members in data processing of the three Somali Administrations. **(Section 5.5)**

5.11 Intermediate level training in computers should be provided locally to supervisory staff of the line ministries of the Somali Administrations. This training should involve more advanced topics in Excel and introduction to Access and SPSS with emphasis on the practical use of these packages. **(Section 5.5)**

Chapter 6

6.1 The Mission recommends that the three Somali Administrations under the guidance and with the support of the World Bank/UNDP Somalia Watching Brief, wherever necessary, may undertake the work programme for the Medium-term. The programme, in brief, comprises settlement SS 2004; an integrated survey programme involving DSRS, estimation of crop and livestock production, establishment survey of formal sector of the non-agricultural economic activities, and enterprise survey of informal sector of the non-agricultural economic activities; household-based socio-demographic surveys; a coordinated programme to be initiated/strengthened by the Planning and Statistics Departments and other line ministries through administrative channels on items like foreign trade statistics, price collection and CPI, computation of estimates of GDP, develop work relating to adapting the International Standard Classification of all Economic Activities, International Standard Classification of Occupation, Harmonised System for trade classification, and Central Product Classification, data pertaining to education and health facilities, and arrangements for training of statistical staff at different levels- professional, intermediate, and lower of Planning and Statistics Departments and other line ministries. (**Section 6.2)**

6.2 The Mission has recommended a programme of statistical capacity building for the three Somali Administrations by identifying training programmes as also study visits for different categories of staff so as to enable them to gradually take over the responsibility of managing the work programme recommended for the Medium-term. **(Section 6.2)**

6.3 The Mission has recommended a timetable for implementing the work programme taking note of the two important sample surveys of MICS and the PAPFAM Health Survey proposed to be conducted by UNICEF and UNFPA **(Section 6.3)**

6.4 The Mission has recommended a five-year schedule of household-based socio-demographic surveys and enterprise-based surveys of informal sectors of different branches of non-agricultural economy. **(Section 6.3)**

6.5 Keeping in view the fact that the five-year schedule of household-based socio-demographic surveys and enterprise-based surveys of informal sectors of non-agricultural economy would provide the requisite data for detailed analysis of poverty and employment in the informal sector once in five year, the Mission has recommended a strategy which would provide summary information on these two important aspects of development planning during the years when the detailed data is not available from comprehensive surveys on the subjects.**(Section 6.3)**

8 Annexes

Annex 2.1

Data Collected by UN Agencies

Agency	Data	Type	Source / Coverage	Frequency	Availability
UNDP / Watching Brief	Socio-economic	survey	Socio-economic survey		2002
UNDP / Watching Brief	Demographic	survey	Settlement level survey		1995-1998, 2004
UNDP / Watching Brief	Population, Economic, Finance, Trade, Education, Health	Administrative data	Somaliland, Puntland, TNG		2003
UNDP / DIMU	Water		Structural Water Database		
FSAU, FEWS	Market prices (30)	monitoring	36 markets	Weekly	> 1998
FSAU	Crop production	monitoring	District/Regional	Gu, Deyr	> 1982 (1998-1993 excluded)
FSAU, WFP, CARE, ICRC, UNICEF	Early warning indicators	monitoring	District (24)	Monthly	> 1998
FSAU	Food aid	monitoring	District/Regional		> 1998
FSAU	Household baseline profile	monitoring	Food economy zones (22)	Monthly	> 1998
FSAU,UNICEF	Nutrition, Health, Socio-economic	survey	Nutrition survey	Monthly	> 1998
FSAU	Socio-economic, Demographic	monitoring	Sentinel sites	pilot	
FSAU, UNICEF, WHO	Health, Nutrition, Demographic	monitoring	Health Information System	Monthly	
FSAU, FEWS-NET	Rainfall	monitoring	10 stations, satellite imagery		
FSAU, FAO	Vegetation (NDV Index)	monitoring	Satellite images	Every 10 days	> 1981
UNICEF	Social	survey	Child protection survey		
UNICEF	HIV/AIDS	survey	HIV/Aids KAP survey		2003, 2004
UNICEF	Water	monitoring	Water sources		
UNICEF, WHO	Health	survey	EPI + Polio coverage survey	Yearly	
UNICEF	Social, Health	survey	MICS		2000, 2005
UNICEF, UNESCO	Education	survey	Primary school survey	Yearly	> 1997
FAO	Water, Land	monitoring	Water & Land Management System		
UNESCO	Vocational / Technical schools	monitoring			
UNFPA, UNDP	Gender, Health	Survey	Gender and Reproductive Health Survey		
UNFPA	Family planning	Monitoring	MCH, Hospitals		
WFP	Nutrition	Survey	School Feeding survey	pilot	
WFP	Gender	Survey	Gender baseline survey	planned	
WHO	Demographic		Settlement / District		2000, 2001
WHO	Health		Regional		2000, 2001

Annex 2.2

Some Observations on the State of Statistics in Puntland

1. During its visit to the Ministry of Planning and Statistics of the Administration of Puntland the Mission met with the Minister of Planning to discuss issues pertaining to the status quo on data collection, immediate data needs and constraints of capacity. The Mission finds these discussions sufficiently interesting to summarise them in this Annex.

2. The Ministry of Planning and Statistics currently has a very modest programme of data collection and the Minister emphasised the need for more data on population and housing, livestock, agriculture and fishing output, education and other social statistics. The Mission was also briefed on the first issue of a statistical abstract "Facts and Figures on Puntland" which has been published by the Ministry.

3. The discussions focussed on the need to enhance capacity within the Ministry for collecting and analysing statistics. The Minister indicated the need for the Ministry to acquire additional computing equipment as well as documentation on statistics to establish a library on statistics within the Ministry. That apart from the mainstream of discussions on capacity building focussed on the need for acquisition of skills through training.

4. The Minister initiated the discussion on training needs in context of the lack of skills and consequential limits on the output of data. The Mission discussed the options, which could be looked into to meet the training needs of the Ministry both at the sub professional and professional levels of expertise. Of priority was training in basic statistical methods and procedures for the sub professional and clerical cadres involved in statistical work within the Ministry. The Mission briefed the Minister on the contribution that the Eastern Africa Statistical Training Centre (EASTC) in Dar-es-Salaam, Tanzania could make in this respect. The Minister indicated keen interest in this possibility.

5. As far as the professional cadres are concerned, once again the Mission briefed the Minister of the various options both within the sub region and outside, which could be availed. The Minister indicated a preference for the first phase of such training to restrict participation in training courses of relatively shorter duration, say of two to three month each, before extending the scope of such training in phase two to courses of longer duration of a year and above. Mention was made of possibilities of acquiring such training within the region, say at the Institute of Statistics and Applied Economics at Makerere University, Kampala, Uganda or at various options say within India, Europe and North America. It was noted that such training could also be linked to an exchange programme for professional level officers to acquire hands-on experience in the central statistical organisations of countries like Uganda, Kenya, Botswana etc., within the region and maybe even outside in countries such as India.

6. The Mission also raised the possibility of involving external expertise through periodic visits of one to two weeks duration each time over a period of eight to twelve months which could help the Ministry, even on basis of its current disposition of manpower resources, to first elaborate a work plan which aims to deliver outputs a little more sophisticated then what is being delivered at the moment, and subsequently to oversee the implementation of this work plan. Given the nature of the expertise to be brought in, the Mission feels this is cost effectively best availed from within the sub region.

7. Finally the Mission attempted to seek an indication from the Minister of Planning and Statistics on the possible format of the structure of the statistical service as he sees it evolving in Puntland. The Minister indicated a preference for statistical units emerging within the line ministries on a stand-alone basis. This preference was expressed rather tentatively and understandably so; and the Mission would have liked to have pursued the matter further with the Minister, in context of the pros and cons of the development of statistical services in the Government of Puntland in the indicated direction. The Mission would have liked to pose to the Minister the implication of this development on a possible legal framework and provisions in it for coordination of the statistical system; and also reviewed with the Minister the alternative option of the Ministry of Planning and Statistics out posting to the line ministries the manpower resources required to implement their respective work plans under the guidance and oversight of the Ministry of Planning. Unfortunately there was no time to discuss this with the Minister. No doubt this is an important subject in context of evolution of a national statistical system and needs to be discussed in depth in a more appropriately structured forum possibly under the aegis of the Technical Coordinating Group on Statistics with other regions also participating.

8. During its field visit to Puntland the Mission visited the Training and Statistical Unit of the Ministry of Finance of Puntland located in Bosasso. The Mission reviewed the scope of data collection, which is currently undertaken by the Unit. This review was undertaken in context of the content of the Unit's annual publication detailing statistics collected by it. The Mission feels that the data collection as undertaken at the moment by the Unit is essentially simplistic and focussed on revenue statistics. This scope could be extended both in terms of the finesse of data on revenue currently being compiled, as well as in scope by incorporating details on expenditure, analysed by functional and economic categories.

9. The Ministry of Planning and Statistics and the Ministry of Finance are major players in statistical matters in Puntland as elsewhere. In addition, the Mission has also consulted respectively with the Ministries of Agriculture and Livestock, Commerce and Industry, Interior and Security, Health, Local Government and Rural Development and Education. Also, other then the ministries mentioned above the Mission met with the Central Bank, Puntland Development and Research Centre (PDRC) and Puntland State Agency for Water, Energy and Natural Resources.

10. As in the cases of the Ministry of Planning and Statistics and the Ministry of Finance the Mission in each of the other meetings endeavoured to seek a briefing from the respective ministries and government agencies on the status quo of data collected by them, data gaps and constraints in meeting data needs with specific reference to the inadequacy of skills – specially at the basic levels of functionaries. By and large all these institutions are like the Ministries of Planning and Statistics and Finance, sincerely striving but with a struggle, to implement rather basic programmes of data collection. They have severe constraints of skills as it is with the given manpower, but they could also do with a further build-up of manpower resources to increase capacity. The issue of lack of skills and the need for a comprehensive training arrangement to bolster the capacity of statistical services in Puntland government has been reviewed above in context of the Ministry of Planning and Statistics and the Ministry of Finance, and similar considerations hold for these other institutions too. The need for training has also been reviewed in Chapter 5 on "Capacity and Capability".

11. The Mission additionally as in the case of the Ministry of Planning and Statistics and the Ministry of Finance also feels that the output of each of these units could be enhanced too both in terms of quality and quantum, even with the given manpower resources, with a little more

guidance and oversight in developing work plans and then implementing them. In a *normal* situation this guidance and oversight would come from the central statistical agency off the country. But given the circumstances prevailing in Somalia this role needs to be performed by UNDP and other international agencies operating in concert under the aegis of the Statistical Working Group and/or the Technical Coordinating Group on Statistics. This is a more immediate need.

12. The Mission during its consultations at the Ministry of Local Government and Rural Development was briefed on two surveys, one on "Demographic and Animal Statistics" and the other on "Fishing". The Mission was also given copies of the questionnaires for these two surveys. The Mission feels given an interface with UNDP, the finesse and focus of these two instruments could be very usefully enhanced, to the advantage of the ultimate output of data. This is just one example, and there are many other similar instances, when even the current initiatives on data collection by the Somali Administrations with their current resource disposition, could go much further then they do in securing data of better quality, with inputs and expertise provided by UNDP and/or any other international agency.

13. The Mission had the occasion to consult with the UNICEF office in Bosasso during its field visit to the administration of Puntland. The Mission discussed with the field office its perception on the initiatives on data collection that UNICEF had undertaken in the last few years and noted above. The field office felt that while the success of the initiatives mentioned had been assured by the provision of expertise and skills in implementation of the initiatives by UNICEF, such success could not be anticipated if these initiatives were to be replicated indigenously. For that the office feels there is an urgent need for extensive enhancement of skills especially in very basic level of statistical methods and procedures amongst the functionaries of the indigenous institutions, which would need to be involved in such data collection. This aspect of capability building is discussed further in this report in Chapter 5 on capacity and capability.

Annex 2.3

A Proposal for an Enhanced Role for the Statistical Working Group

1. As was argued in the main report, statistical data collection on Somalia needs to be coordinated and undertaken in context of an integrated national statistical system The diverse data collection initiatives need to be seen to be contributing to the evolution of a national statistical system for Somalia, to be taken over by a central statistical agency, when ever such an agency is re-established.

2. The existing Statistical Working Group of the UN agencies, back stopped by UNDP, is the appropriate agency to facilitate the enhanced coordination required, with participation in the Statistical Working Group extended to the relevant non UN agencies and NGOs, as associate members, as and when appropriate.

3. Given the location of the secretariat for the Statistical Working Group in UNDOS and now in UNDP, which the Mission feels is certainly an appropriate locus for it, there is need to supplement the capacity of the Development Planning Unit in UNDP to be able to service the Statistical Working Group more effectively then has been possible hitherto. That may indeed be the reason why the aims and objectives of the Statistical Working Group have not been attained more fully hitherto.

4. As far as the Statistical Working Group is concerned the Mission feels one of the required steps to take to improve its effectiveness is to take on board a full-time secretary based in the Development Planning Unit of UNDP, who would service, mobilise, and further activate the Statistical Working Group on basis of a programme of work noted earlier. It has been noted earlier that the Mission doubts whether much of the detail on methodology and procedures pertaining to specific data collection initiatives has ever been systematically articulated as part of institutional memory on data collection of the particular agencies concerned. The secretary of the Statistical Working Group could facilitate the agencies concerned in establishing such a memory bank, ultimately, whenever the time comes, to be passed on to the central statistical organisation of Somalia. Additionally the secretary too could take on board the backstopping of the Technical Coordinating Group on Statistics, which comprises of the statistical heads of the Somali administrations and has recently been set up by UNDP. This coordinating group is reviewed next in this report. Both these aspects of the proposed terms of reference for the suggested secretary of the Statistical Working Group would facilitate the transition of the National Statistical System to Somalia, whenever it takes place.

5. The secretary would need to have, first and foremost the intellectual acumen to serve such an institution, with proven leadership qualities and a fair spread of expertise. Technical expertise by itself need not, however, be the dominating criterion and additional provision could be made for supplementing the expertise through short-term consultancies. The resource implications of this recommendation are relatively marginal in context of the overall effort on data collection by international agencies. It would yield substantial gains in achieving the overall aims of the Statistical Working Group to obtain common agreed set of data, through use of common methodology and provide a forum for sharing such information with other members of the Statistical Working Group. UNDP's capacity to coordinate the data processing, data storage and

data dissemination requirements would need to be supplemented as well. The Mission feels that while the resource implications of such coordination focused on the Statistical Working Group may be marginal, it may be a good idea to fund it on a cost-sharing basis. This will enhance the perception of ownership amongst the contributing agencies and ensure participation in the work of the Statistical Working Group and implementation of the coordination efforts initiated by it. The Mission feels the appointment of a secretary to the Statistical Working Group should be initially tried out over a period of 12 to 18 months and if found successful, on an evaluation, extended thereafter for a further duration.

6. The Statistical Working Group thus restructured, should strive to:

(1) Set up a forum to exchange information and coordinate the collection and dissemination of statistical data on Somalia.

(2) Put together a three-five year plan as well as an annual work programme for data collection on Somalia, integrating data collection initiatives of the respective members of the working group.

(3) Monitor the implementation of the annual work programme.

2) Ensure standards of quality in collection of data through consistent application of “Statistical Infrastructure” such as population frames and registers of households and enterprises, methodology, standards, nomenclatures, classifications and definitions and data processing regime.

(1) Fund and oversee the development and maintenance of statistical infrastructure on an on-going basis.

(2) Engage in consultations with the Technical Working Committee on Statistics of the Director Generals of planning in the three administrations of Somaliland, Puntland and the Transitional National Government.

(3) Develop and backstop the work programmes of the administration on data collection, including implementation of their respective training programmes.

(4) Establish arrangements for data storage and dissemination through a network of coordinated / interlinked databases.

(5) Establish an adequately manned and equipped “Secretariat” for the Statistical Working Group, to be located within the Development Planning Unit of UNDP.

Annex 2.4

A Note on Integrated Accounting Software (IAS'96) and ASYCUDA

1. This Annex contains some remarks on specialised software that may be of future interest to the Somali administrations.

2. The Mission would like to draw attention to a special computer programme for National Accounts compilation, IAS'96, developed by the Institute of Social Studies in The Netherlands. It offers a unique and unified solution for the computerisation of the System of National Accounts. The elegance of the system is found in the concept of n-dimensional data sets. The user is completely free to define any data set, of any (reasonable) number of dimensions. This means that instead of being stored across different Excel worksheets all the data is stored in a single data set. The user can exercise total control over the structure of the accounting system to be implemented. Each of the dimensions is defined by means of hierarchical classification systems such as, for instance, ISIC and CPC, which again are completely user-modifiable, allowing for the introduction of Somali versions of these classifications. The capabilities of IAS'96 allow it to closely mirror the 1993 SNA where the representation of the accounts is concerned. IAS'96 supports the implementation of reconciliation strategies through a powerful approach of Rule-based editing. This allows the National Accountant to perform such tasks as reclassification, grossing up, rounding, apportionment or pro-rating of data, and (final) balancing by means of the RAS method implemented across multi-dimensions. Rules are saved and can be re-used within and between data sets. Therefore, it is fully possible to specify a baseline balancing strategy and apply it from year to year. IAS'96 has been developed especially for National Accounts departments in developing countries, where capacity – both in terms of data processing skills and in knowledge of National Accounting - is scarce. The program can also be used as a pedagogical tool to learn about SNA'93. It must be stressed that a tool such as IAS'96 is only useful once a conceptual accounting framework has been set up and tested for Somalia, which - in the initial exploratory phase - is no doubt easiest done in Excel.

3. UNCTAD has developed ASYCUDA (Automated SYstem for CUstoms DAta) to bring about a better management of Government finances through an institutional strengthening of Customs Administrations. Today over 70 countries are involved in the programme. The system uses all international standards for trade data under the conventions and recommendations of such bodies as the World Customs Organisation and the International Standards Organisation. Since the system also supports simplified and harmonised Customs procedures as designed by the Kyoto Convention, and other international instruments, ASYCUDA has become a catalyst for modernisation of Customs Administrations as a whole. ASYCUDA is based in the working Customs environment to process and control import and export consignments. ASYCUDA is a computerised customs management system which covers most foreign trade procedures normally followed in countries.

Annex 2.5

The Viability of a Central Socio-economic Database

1. This Annex explores the idea mentioned by the Watching Brief project to "establish a baseline socio-economic database to support policy formulation, planning and monitoring" (Socio-Economic Survey 2002, Report No. 1, Somalia Watching Brief 2003, p.2). Obviously such a single database should not collect data indiscriminately. A few distinctions made earlier should be borne in mind in this respect. First, there is the distinction between data collected by the UN agencies and data collected by the Somali administrations. Second, as far as data collected by UN agencies is concerned there is the distinction made earlier between data collected for own internal use and data collected for general use. Third, it was suggested above that for some bodies of data such as price data and trade data separate databases should be developed for unprocessed primary data. Only after being processed and converted into derived indicators such as a monthly indicator as CPI or an import or export index could such data be amenable to incorporation into a common database. This would imply that a common database contains a set of compiled indicators based on data collected by, primarily but not exclusively, the UN agencies for general use. The choice of indicators in such a database would be dictated by the policy planning needs of international agencies and Somali administrations. Important driving forces in this respect would be the indicators needed for monitoring the Millennium Development Goals and the PMAS.

2. Storing a variety of different indicators having different units in a single database will demand a special design of the database. One general approach is to use a highly normalised database with separate dimensions for such parameters as region (or district, or both), year (or any other time dimension), sex and the urban / rural / nomadic distinction. Each such dimension is structured according to a hierarchical classification, e.g. for zones, regions and districts. Each indicator must then be specified according to these dimensions. Of course that will often not be possible. To accommodate this there could be introduced for each dimension an 'unspecified' item (e.g. sex unspecified, district unspecified etc.). This design would allow the entry of any indicator in the database at any level of the hierarchy of the classification involved. Standard queries can then be used to extract any view of the data desired, e.g. a time-series view, or a breakdown by geographical area, or by sex, or by any combination of these. One can envisage a user-friendly interface allowing such queries to be build-up in an intuitive way. Such an interface can be easily linked to a web page, allowing for access via Internet. Also, such a database can be linked up with GIS software to allow for map-based representations of the selected output. The principle presupposition of this design is that all data are classified according to a consistent set of classifications. In practice, this may not be the case. Different agencies may use different classifications, which may be incompatible with each other.

3. Will such a centralised database have a chance of success? The Mission has noted earlier that DIMU has in fact undertaken such a venture in the past, without much success. Also, the present Health Information System (HIS), which is a data storage system for health data, has not been a resounding success, according to the information the Mission has received, although the Mission has not been able to corroborate this, because it was unable to review HIS. Are all efforts to centralising data storage for data collected on Somalia bound to be unsuccessful? The Mission would like to draw attention to the case of Tanzania where the National Bureau of Statistics (NBS), in collaboration with 17 ministries and other Government Institutions and supported by UNDP and UNICEF, has established a socio-economic database for Tanzania,

TSED. Which has been designed using Microsoft Access and programming done using Microsoft Visual Basics? It has further been integrated with Microsoft Office and contains customised wizards to generate 3 types of presentations dynamically linked to the database - maps, tables and graphs. A cut down version of ArcView (Map objects) has been embedded into the database, and this helps to generate the Maps. The current first release of the database contains a limited amount of 67 indicators, out of the agreed core list of approximately 330. These 67 indicators are in line with the poverty monitoring indicators identified in the PRSP for Tanzania.

4. Of course Tanzania has a central government that is able to enforce cooperation and information sharing between the different line ministries and other agencies, which is not the case for Somalia. The absence of a national statistical agency in Somalia and the ensuing decentralization of data collection over three Somali administrations and a large number of international agencies will make the constitution of a central database a difficult affair, as the experience of DIMU indeed shows. An alternative to such a centralised database is reviewed in the main text of the Report.

Annex 3.1

GDDS Framework: Core Indicators and Encouraged Extensions			
Data categories	**Core indicators**	**Core indicators**	**Encouraged extension(s)**
1. Real sector			
1.1 National accounts	1.1.1 GDP (nominal and real)	x	
	1.1.2 Gross national income		x
	1.1.3 Household consumption		x
	1.1.4 Capital formation		x
	1.1.5 Saving		x
1.2 Production index/ indices	1.2.1 Manufacturing or industrial indices	x	
	1.2.2 Primary commodity, agricultural, or other indices, as relevant		x
1.3 Price indices	1.3.1 Consumer price index	x	
	1.3.2.Producer price index		x
1.4 Labor market indicators	1.4.1 Employment, unemployment	x	
	1.4.2 Wages/earnings	x	
2. Fiscal sector			
2.1 Central government aggregates	2.1.1 Revenue, expenditure, balance, and financing with breakdowns (debt holder, instrument, currency), as relevant	x	
	2.1.2 Interest payments		x
2.2 Central government debt	2.2.1 Domestic debt and foreign debt, as relevant, with appropriate breakdowns (currency, maturity, debt holder, instrument), as relevant	x	
	2.2.2 Government guaranteed debt		x
3. Financial sector			
3.1 Broad money and credit aggregates	3.1.1 Net external position, domestic credit, broad or narrow money	x	
3.2 Central bank aggregates	3.2.1 Monetary base	x	
3.3 Interest rates	3.3.1 Short and long-term government security rates, policy variable rate	x	
	3.3.2 Money or interbrain rates and a range of deposit and lending rates	x	
3.4 Stock market	3.4.1 Share price index, as relevant		x
4. External sector			
4.1 Balance of payments aggregates	4.1.1 Imports and exports of goods and services, current account balance, reserves, overall balance	x	
4.2 External debt and debt service schedule	4.2.1 Public and publicly guaranteed external debt, broken down by maturity	x	
	4.2.2 Public and publicly guaranteed external debt service schedule	x	
	4.2.3 Private external debt not publicly guaranteed, and debt service schedule		x
4.3 International reserves	4.3.1 Gross official reserves denominated in U.S. dollars	x	
	4.3.2 Reserve-related liabilities		x

Annex 3.1

GDDS Framework: Core Indicators and Encouraged Extensions			
Data categories	**Core indicators**	**Core indicators**	**Encouraged extension(s)**
4.4 Merchandise trade	4.4.1 Total exports and total imports	x	
	4.4.2 Major commodity breakdowns with longer time lapse		x
4.5 Exchange rates	4.5.1 Spot rates	x	
5. Socio-demographic data			
5.1 Population	5.1.1 Population characteristics: size and composition of the population by standard enumeration units, derived from census, surveys, or vital registration system	x	
	5.1.2 Disaggregation of population and vital statistics data by age, sex, and geographic units, as appropriate		x
	5.1.3 Dynamics of growth: vital statistics: births, deaths, and migration	x	
	5.1.4 Mortality rates, crude birth rate, fertility rate, and life expectancy		x
5.2 Education	5.2.1 Financial, human, and physical resources available to public and private (if significant) educational institutions, recorded by level of education or type of program	x	
	5.2.2 Disaggregation of data by sub national or regional units, as appropriate, is recommended for all data categories. Characteristics of teaching staff, including training, experience, and terms of employment (full or part time). Expenditures by households on education (including fees and other expenses for public or private education)		x
	5.2.3 Measures of student progress through school, such as enrollment, dropout, and repetition rates, recorded by level of education and sex of students	x	
	5.2.4 Calculation of net enrollment rates (by grade and sex)		x
	5.2.5 Outcomes: educational attainment measured by progress through school, graduation rates, and average grade level completed	x	
	5.2.6 Scores on standardized achievement exams		x
5.3 Health	5.3.1 Financial, human, and physical resources available to public and private (if significant) health system, including public expenditures on health services; capacity of health care facilities by location and type of facility, and the number of trained personnel by location and certification	x	
	5.3.2 Private (household) expenditures on health services. Disaggregation of data by sub national or regional units, as appropriate		x
	5.3.3 Service delivery: Measures describing the number of clients served and type of care provided by public and private care providers, including inpatient, outpatient, and preventative care; population served by public health services such as immunizations, sanitation services, and improved water supply	x	

Annex 3.1

GDDS Framework: Core Indicators and Encouraged Extensions			
Data categories	**Core indicators**	**Core indicators**	**Encouraged extension(s)**
	5.3.4 Measures of the responsiveness of the health system to non-health aspects of service delivery. Disaggregation of data by sub national or regional units, as appropriate		x
	5.3.5 Outcomes: statistics on mortality and morbidity, including mortality by cause and the incidence of disease by location and patient characteristics	x	
	5.3.6 Comprehensive assessment of the burden of disease		x
5.4 Poverty	5.4.1 Income poverty: number and proportion of people or households with less than minimum standard of income or consumption; valuation of minimum consumption bundle	x	
	5.4.2 Measures of the distribution of household or per capita income or consumption		x
	5.4.3 Other poverty measures: measures of deprivation or insecurity used to identify the population living in poverty, such as evidence of malnutrition, endemic diseases, educational achievement, and lack of access to basic services	x	
	5.4.4 Separate poverty estimates for urban and rural populations or for major regions, states, or provinces. Disaggregation of data by sub national or regional units, as appropriate		x

Annex 3.2

Millennium Development Goals Indicators

1 Proportion of population below $1 (PPP) per day
2 Poverty gap ratio [incidence x depth of poverty]
3 Share of poorest quintile in national consumption
4 Prevalence of underweight children under five years of age
5 Proportion of population below minimum level of dietary energy consumption
6 Net enrolment ratio in primary education
7 Proportion of pupils starting grade 1 who reach grade 5
8 Literacy rate of 15-24 year-olds
9 Ratios of girls to boys in primary, secondary and tertiary education
10 Ratio of literate women to men 15-24 years old
11 Share of women in wage employment in the non-agricultural sector
12 Proportion of seats held by women in national parliament
13 Under-five mortality rate
14 Infant mortality rate
15 Proportion of 1 year-old children immunised against measles
16 Maternal mortality ratio
17 Proportion of births attended by skilled health personnel
18 HIV prevalence among 15-24 year old pregnant women
19 Condom use rate of the contraceptive prevalence rate
20 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14
21 Prevalence and death rates associated with malaria
22 Proportion of population in malaria risk areas using effective malaria prevention and treatment measures
23 Prevalence and death rates associated with tuberculosis
24 Proportion of tuberculosis cases detected and cured under DOTS (internationally-recommended TB control strategy)
25 Proportion of land area covered by forest
26 Ratio of area protected to maintain biological diversity to surface area
27 Energy use (kg oil equivalent) per $1 GDP (PPP)
28 Carbon dioxide eMissions (per capita) and consumption of ozone-depleting CFCs (ODP tons)
29 Proportion of population using solid fuels
30 Proportion of population with sustainable access to an improved water source, urban and rural
31 Proportion of urban and rural population with access to improved sanitation
32 Proportion of households with access to secure tenure
33 Net ODA, total and to LDCs, as percentage of OECD/Development Assistance Committee (DAC) donors' gross national income (GNI)
34 Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation)
35 Proportion of bilateral ODA of OECD/DAC donors that is untied
36 ODA received in landlocked countries as proportion of their GNIs
37 ODA received in small island developing States as proportion of their GNIs
38 Proportion of total developed country imports (by value and excluding arms) from developing countries and LDCs, admitted free of duties

Annex 3.2

Millennium Development Goals Indicators

39 Average tariffs imposed by developed countries on agricultural products, textiles and clothing from developing countries

40 Agricultural support estimate for OECD countries as percentage of their GDP

41 Proportion of ODA provided to help build trade capacity

42 Total number of countries that have reached their Heavily Indebted Poor Countries Initiative (HIPC) decision points and number that have reached their HIPC completion points (cumulative)

43 Debt relief committed under HIPC Initiative, US$

44 Debt service as a percentage of exports of goods and services

45 Unemployment rate of 15-24 year-olds, each sex and total

46 Proportion of population with access to affordable essential drugs on a sustainable basis

47 Telephone lines and cellular subscribers per 100 population

48 Personal computers in use per 100 population and Internet users per 100 population

Annex 3.3

Indicators present in the Somalia Human Development Report 2001

Category	Indicator
Demographic profile	
	Population (male, female, 65 and above, 15-64, under 15, under 5, urban, rural settled, nomadic, annual growth rate)
	Life expectancy at birth
	Dependency ratio
Populations in distress	
	People killed in disasters
	Internally displaced persons
	Refugees
Profile of Human Poverty	
	Adult literacy rate
	% of population without access to safe water
	% of population without access to health services
	% of population without access to sanitation
	Population below income poverty line of US $1 per day
Progress of survival	
	Life expectancy at birth
	Infant mortality rate
	Under-five mortality rate
	Maternal mortality ratio
Health profile	
	Infants with low birth weight
	Children 1-5 immunised against all childhood diseases
	One year olds immunised against all childhood diseases
	One year olds fully immunised against polio
	One year olds fully immunised against TB
	One year olds fully immunised against Measles
	Oral dehydration therapy use
	Pregnant women with anemia
	Female genital mutilation
	Tuberculosis
	Total cholera cases
	Total malaria cases
	Total leprosy cases
	Fatality due to measles
	HIV/AIDS
	Doctors per 100,000
	Nurses per 100,000
Education profile	
	Adult literacy rate
	Youth literacy rate

Annex 3.3

Indicators present in the Somalia Human Development Report 2001

Category	Indicator
	Primary age group enrolment ratio
	Enrolled children of primary school age who are attending school
	Children reaching grade 5
	Secondary enrolment ratio
	Tertiary enrolment ratio
	Tertiary students in science
	Combined gross enrolment ratio
	Public education expenditure
Access to information flows	
	Televisions
	Radios
	Telephone lines
	Public telephones
	Cellular mobile subscribers
	People connected to the internet
Economic performance	
	GNP
	GNP per capita
	Real GDP per capita (PPP US$)
	GNP per capita annual growth rate
	Average annual rate of inflation
Macroeconomic structure	
	GDP
	GDP Agriculture
	GDP Industry
	GDP Services
	Private consumption
	Gross domestic investment
	Gross domestic savings
Resource flows	
	Exports of goods and services
	Imports of goods and services
Resource use	
	Public expenditure on education
	Public expenditure on health
	Public expenditure on military
	Trade in conventional weapons: imports
	Total armed forces
Aid and Debt	
	Total official development assistance received
Aid and Debt	Humanitarian and development assistance
Aid and Debt	Total external debt

Annex 3.3

Indicators present in the Somalia Human Development Report 2001

Category	Indicator
Environmental profile	
	Land area
	Population density
	Rangeland
	Arable land
	Forest and woodland
	Unclassified land
	Livestock per capita
	Production of fuel wood
	Annual internal renewable water resources
	Annual fresh water withdrawals
	Average annual rte of deforestation
Primary energy supplies	
	Crude oil
	Petroleum products
	Primary electricity
	Fuel wood
	Agricultural residues
Food security	
	Daily per capita supply of calories
	Food production per capita index
	Food aid
	Food aid in cereals
	Percentage of under-five children who are severely o moderately undernourished
Job security	
	Labor force
	Labor force agriculture
	Labor force industry
	Labor force services
Gender development	
	Life expectancy at birth
	Adult literacy rate
	Combined primary gross enrolment ratio
Gender and education	
	Female adult literacy rate
	Female primary age group enrolment ratio
	Female primary gross enrolment ratio
	Female secondary age group enrolment ratio
	Female tertiary students

Annex 3.4

Selected World Development Indicators

Category	Indicator
Size of the economy	
	Population
	Surface area
	Population density
	Gross national product (GNP)
	Average annual growth rate of GNP
	GNP per capita
	Average annual growth rate of GNP per capita
	GNP measured at PPP
Quality of life	
	Growth of private consumption per capita
	Prevalence of child malnutrition
	Under-5 mortality rate
	Life expectancy at birth
	Adult literacy rate
	Urban population
	Access to sanitation in urban areas
Population and labor force	
	Total population
	Average annual population growth rate
	Population ages 15-64
	Total labor force
	Average annual labor force growth rate
	Females as a percentage of the labor force
	Children ages 10-14 in the labor force
Poverty	Rural population below the national poverty line
	Urban population below the national poverty line
	Total population below the national poverty line
	Population below $1 a day
	Population below $2 a day
	Poverty gap at $1 a day
	Poverty gap at $2 a day
Distribution of income or consumption	
	Gini index
	Percentage share of income or consumption
Education	
	Public expenditure on education
	Net enrollment ratio
	Percentage of cohort reaching grade 5
	Expected years of schooling
Health	

Annex 3.4

Selected World Development Indicators

Category	Indicator
	Public expenditure on health
	Access to improved water source
	Access to sanitation
	Infant mortality rate
	Contraceptive prevalence rate
	Total fertility rate
	Maternal mortality ratio
Land use and agricultural productivity	
	Land under permanent crops
	Irrigated land
	Arable land
	Agricultural machinery
	Agricultural productivity
	Food production index
Water use, deforestation, and protected areas	
	Freshwater resources
	Annual freshwater withdrawals
	Access to improved water source
	Annual deforestation
	Nationally protected areas
Energy use ad eMissions	
	Commercial energy use
	GDP per unit of energy use
	Net energy imports
	Carbon dioxide eMissions
Growth of the economy	
	Gross Domestic Product (GDP)
	GDP implicit deflator
	Agriculture value added
	Industry value added
	Services value added
	Exports of goods and services
	Gross domestic investments
Structure of output	
	Gross Domestic Product (GDP)
	Agricultural value added as percentage of GDP
	Industry value added as percentage of GDP
	Manufacturing value added as percentage of GDP
	Services value added as percentage of GDP
Structure of demand	
	Private consumption
	General government consumption

Annex 3.4

Selected World Development Indicators

Category	Indicator
	Gross domestic investment
	Gross domestic savings
	Exports of goods and services
	Resource balance
Central government finances	
	Current tax revenue
	Current nontoxic revenue
	Current expenditure
	Capital expenditure
	Overall deficit/surplus
	Goods and services expenditures
	Social services expenditures
Balance of payments current account and international reserves	
	Goods and services exports
	Goods and services imports
	Net income
	Net current transfers
	Current account balance
	Gross international reserves
Private sector finance	
	Private investment
	Stock market capitalization
	Listed domestic companies
	Interest rate spread
	Domestic credit provided by the banking sector
Role of government in the economy	
	Subsidies and other current transfers
	Value-added by state-owned enterprises
	Military expenditures
	Composite ICRG risk rating
	Institutional Investor credit rating
	Highest marginal tax rate
Power and transportation	
	Electric power consumption per capita
	Electric power transMission and distribution losses
	Paved roads
	Goods transported by roads
	Goods transported by rail
	Air passengers carried
Communication, information, and science and technology	
	Daily newspapers

Annex 3.4

Selected World Development Indicators

Category	Indicator
	Radios
	Television sets
	Telephone mainlines
	Mobile telephones
	Personal computers
	Internet hosts
	Scientists and engineers in research and development
	High-technology exports
	Patent applications filed
Global trade	
	Merchandise exports
	Merchandise imports
	Manufactured exports and imports
	Commercial services
Aid and financial flows	
	Net private capital flows
	Foreign direct investment
	Total external debt
	Present value of external debt
	Official Development Assistance (ODA)

Annex 3.5

A Note on National Accounts Aggregates

1. A system of national accounts normally consists of a number of separate accounts, each describing a specific set of economic processes, e.g. production, income distribution, use of income, accumulation. Each of these accounts contains a balancing item, e.g. Gross Domestic Product (GDP), Net National Income, Disposable Income, Saving, Net Lending. The main accounts are:

2. Production account: this account gives details on the size and composition of the output produced, and the various inputs used in production, as well as on the composition of the Value Added; income-outlay account: gives details on the size and composition of the incomes received, and on the current expenditures made out of the incomes; capital account: gives details on the size and composition of the capital formation (investments), and the sources applied for financing the investments made.

3. Complete sets of national accounts, such as those described in the *SNA'93,* are currently compiled by only a few countries. The complete set of accounts includes not only major aggregates for the total economy (GDP, Gross National Income, Gross Disposable Income, Saving, and Net Lending/Net Borrowing) but also full transactions accounts for institutional sectors and balance sheets for the total economy and institutional sectors. For many countries, such complete accounts exceed current analytical and policy requirements and/or cannot be compiled with available resources. For many countries in the early stages of national accounts development, priority might be assigned in the medium term to developing major aggregates for the total economy and improving their quality. Longer-term objectives might include the development of accounts for those sectors that are particularly important. The major macro-economic aggregates which result from a system of National Accounts are given below.

4. Gross Domestic Product (GDP)

GDP can be defined in three different ways:

- Output – Intermediate consumption
- Compensation of employees + Gross operating surplus (+ net indirect taxes)
- Final consumption expenditures + Gross investment + Exports – Imports

Thus there are three methods for estimating GDP:

- Production approach (main source: establishment surveys)
- Income approach (main sources: income tax statistics, social security statistics, labour statistics)
- Expenditure approach (main sources: household surveys, foreign trade statistics, capital formation statistics, retail sales statistics)

These approaches are combined in a fourth input-output approach: input-output tables, which contain supply and use by industry and commodity.

5. Net National Income (NNI)

Net National Income (NNI) is defined as: GDP + compensation of employees and property income (interest, dividends etc.) from abroad – Wages and property income to abroad – Consumption of fixed capital.

Here the 'domestic' concept, pertaining to territory, is changed into the national concept, pertaining to residency. Also, the gross is converted into a net concept by subtracting the depreciation on capital goods.

6. Net National Disposable Income

7. Net National Disposable Income is defined as NNI + Current transfers from abroad – current transfers to abroad.

8. Current transfers are payments which are not related to production activities.

9. GDP can be given at various valuations: market prices, factor costs and basic prices. The relationship between these valuations is as follows: GDP at market prices = GDP at factor costs + indirect taxes on products, including imports, and on production – subsidies = GDP at basic prices + indirect taxes on products, including imports – subsidies on products, including imports. GDP can be given at current prices, i.e. this year's volumes valued at prices of this year, and at constant prices, this year's volumes valued at prices of a previous year.

10. The 1993 SNA recommends that a system of national accounts should consist of a Supply and Use Table (SUT) and a System of Integrated Economic Accounts (IEA), related through a Cross-Classification Table (CCT). Together, these component parts make up the integrated set of accounts called the Central Framework (CF). The system can include a variety of extensions and additions to the Central Framework, such as Satellite Accounts, Social Accounting Matrices and Regional Accounts. In practice, few countries have the capability at present to implement all of the 1993 SNA recommendations and there will be a migration of a simple set of accounts to an ever-more-elaborated set of accounts over time.

11. Classifications play a central role in national accounting. Setting up a system of national accounts for any country must start with the adoption and tailoring to national needs of the main international classifications. Among the major items that are classified one may mention:

a. Transactions: economic phenomena are classified according to the kinds of transaction that underlie them. For example, output and intermediate consumption are part of the productive transactions, and compensation of employees is a distributive transaction. The transaction classification normally used is the one given in SNA'93.
b. Institutional units: enterprises, households, government, usually grouped into sectors, which are autonomous with regard to the description of the distribution and financing process. The standard institutional classification is given in SNA'93.
c. Establishments, grouped into branches of industries, which are autonomous and homogeneous with regard to the production process. Industries are usually classified using the International Standard Industry Classification (ISIC) (European countries use the NACE classification)
d. Products. There are many classifications for products. One may mention the Central Product Classification (CPC) and the variant where products are classified according to activities, the CPA. For household consumption purposes there is the COICOP

classification (Classification of individual consumption by purpose). For trade statistics there are yet other classifications, e.g. the Harmonized System (HS).

e. Other examples of items that are classified pertainto asset types, functions of government (COFOG) and occupations (ISCO).

Annex 3.6

Estimation of GDP on the basis of the proposed survey programme

1. The Mission has already noted the importance of providing estimates on Gross Domestic Product (GDP) as an essential input for the HDR as well as for development planning and policy purposes in the Somali administrations. Further, since there are no subsidies and hardly any significant components of indirect taxes, the Mission is of the view that estimates of GDP at market prices and estimates of GDP at factor cost may be treated alike, at least in the initial stages of development work. The Mission would like to briefly mention in broad terms the approach and data sources which may be used for estimating value added in each of the major branches of the primary, secondary and tertiary sectors.

2. The Mission feels that the Integrated Programme of Surveys for the Medium-term, which is detailed in Chapter 5, will provide reliable data on estimates of crop production, estimates of livestock production and estimates of value added for the formal sectors of non-agricultural economic activities on an annual basis. For the informal sectors of non-agricultural economic activities it will provide estimates of value added once in five years for manufacturing, trade, transport, hotels and restaurants, education and health services. For the other years, when surveys of the informal sector of non-agricultural economic activities are not undertaken, the Mission would like to recommend that, as is done in many developing countries where the informal sector of non-agricultural economic activities is of significance, suitable indicators like value added per worker in any given branch of non-agricultural economic activities in the informal sector is estimated on the basis of value added per worker in the formal sector of that branch of the non-agricultural economy (which would be available from annual rounds of the proposed Establishment Surveys of the non-agricultural economy). This estimate, when multiplied by an estimate of the labour force engaged in the informal sector of that branch of the non-agricultural economy (which would be available on an annual basis from the proposed survey programme) would provide workable estimates of value added from that branch of the non-agricultural economy.

3. For major crops such as maize and sorghum, estimates of crop production can be obtained for the eight important crop producing regions in Southern Somalia on an annual basis through the Survey on Estimation of crop production, proposed in Chapter 5. For minor crops such as cowpeas, fruit and vegetables, the Ministry of Agriculture in each of the Somali Administrations should be able to get some ready and rough estimates based on crop conditions through administrative channels. For computing the value added from crop production and livestock production, in addition to estimates of output, estimates of inputs would also be required. In the discussions which the Mission held with FAO Somalia and FSAU Somalia, it was clear that neither of these two agencies will be able to provide data on inputs. For this reason, the Mission proposes that in each of the annual rounds of surveys on crop production and livestock production, a small schedule relating to inputs may also be canvassed from each household selected for the surveys on crop production and livestock production as was done in SES 2002.

4. There is a small catch in this, which the Mission would like to state and suggest a statistical procedure to provide valid answers. By and large, a farmer may find it difficult to give details of estimates of inputs, except perhaps the amount of seeds for maize, and sorghum separately

since inputs purchased are generally used for the entire agricultural holding including all crops grown during the year. Thus, provision will have to be made in the schedule to be drafted for recoding inputs, to note down the quantity of inputs along with the information about the area of each crop for which that input was used. On the basis of this information available from each sample farmer the estimates of any input for maize and sorghum separately can be obtained by using the well-known least-squares technique of estimation. These remarks and the solution suggested also apply to estimation of inputs of livestock production. For other minor crops like cowpeas, fruits and vegetables, in the initial stages some case studies may be undertaken to devise rough and ready indicators and procedures to estimate value added for such crops. Similar remarks apply to livestock by-products like hides and skins.

5. The Mission has noted that fishing is an important activity currently localised mainly in some coastal areas in Somaliland, Puntland and to a lesser extent in the coastal line of Central and Southern Somalia... The Mission understood during the field visit to Bosasso that fishing activity is currently operated by a few large local entrepreneurs either alone or jointly with some foreign companies. Further, all such operations are licensed and the port managers have a fairly good record to generate a list of such establishments. The records maintained by the port managers would help in classifying these fishing establishments as large, medium and small. The Mission was made to understand that individual fishermen or in partnership with locals is not a common phenomenon at present and is not very likely to develop in the near future. The Mission thus feels that for this branch of economic activity the Ministry of Fishery in both Somaliland and Puntland could be inspired to undertake an establishment survey on an annual basis under the technical guidance and advice of the Director General of Statistics of the Somali Administration.

6. The Mission has not been able to devote time to study the status of collection of data pertaining to the mining and quarrying branches of economic activity. The concerned line ministry could be inspired to collect the requisite data on inputs and outputs of this economic activity through administrative channels under the technical guidance and advice of the Director General of Statistics of the Somali Administration.

7. For the manufacturing sector, the principle data source will be the Establishment and Enterprise Surveys introduced in Chapter 5. It should be attempted to obtain data on output and inputs directly from all large enterprises, e.g. in the food processing sector. Normally, these enterprises are listed in a Business Register. The establishment of such a register is discussed in Chapter 5 as well. In so far as construction is concerned, the proposed Establishment Survey would be able to provide value added for a large part of this sector excluding mainly construction in the household sector. Estimation of value added for the construction sector is a special subject, fraught with difficulties. Special care must be taken for this important sector.

8. On similar lines estimates of value added for the utility sector (water supply and electricity) and for the sectors trade, transport, hotels and restaurants and communication can be obtained. For each of these sectors the principle data source will be the surveys identified in Chapter 5, complemented with data collected directly through administrative channels by the Somali Administrations.

9. Data on government output and inputs should come from the data on government revenues and expenditures. This is discussed further in a later section. Health and Education are other important service sectors. Here, important data can be supplied by UNICEF, UNESCO and WHO. These are to be supplemented by data collected directly by the Somali Administrations. In the case of these sectors various indirect approaches to value added estimation must be used, based on the available indicators. Estimation of value added for the service sectors is a

difficult subject, also for countries where plenty of data are available. For the remaining service sectors such as financial intermediation, renting and business services special estimation procedures tailored to the Somali context need to be worked out when these sectors are found to be sufficiently important to warrant explicit attention.

Annex 3.7

A Note on Production and Price Indices

1. The GDDS framework for the real sector includes monthly production indices. These important short-term indicators of economic activity are normally based on monthly business surveys. The need of this part of the GDDS may not be obvious, but the Mission finds it important that a start is made with a set of indices which will make it feasible to make regular estimates of GDP possible. A derivation of GDP on the basis of surveys, as was proposed in the previous section is a time consuming affair. Repeating this in consecutive years will yield values that do not necessarily yield realistic time-series. The usual approach followed by national accountants is to do these 'survey based' derivations only intermittently, say, once every five years, and to base the estimates of GDP in the intervening years on an updating approach using a set of production and price indexes. Applying production indices to the base year estimates yield estimates for the current year in constant prices, which can then be inflated by price indexes to yield estimates in current prices. This needs to be done on the level of activities for which GDP is calculated.

2. Production indexes can be calculated using value added as weights. If *Laspeyres* price indices are used then the indexes must be of the *Paasche* type to insure that the value indices behave correctly. However, *Paasche* indices presuppose that weights are updated for each period. In the Somali case it is clear that, given the scarcity of data, reasonable approximations will have to be worked out. Production indices are normally collected on a monthly or quarterly basis and then aggregated into yearly indices. This presupposes a data collection scheme that allows for the regular inflow of output data for the most important sectors of the economy. This will be difficult to achieve for Somalia in the Medium-term. Alternatively, the surveys proposed in Chapter 5 can be used to obtain yearly production data for the major sectors. The previous section discussed the major sectors in some detail in the context of benchmark GDP estimation. The same sources will yield the data on which production indices can be based, so these need not be enumerated here again. It is important to note that the coverage for a yearly system of production indexes need not be as complete as was needed in the previous section for estimating benchmark figures. It is sufficient that the most important sectors of the Somali economy are covered: major and minor crops, fish, the most important manufacturing sectors, construction, water supply and electricity and some of the more important tertiary sectors. Note also that if data of sufficient quality on expenditures is available for the intermittent years the expenditure approach can be used as well allowing for time saving shortcuts.

Indicators for PMAS / PMATU

Economic/Demographic	Real GDP growth
	Population
	GNP per Capita
	Population below poverty line
	Labour force
	Unemployment rate
	Internally displaced persons
	Refugees / returnees
	Economic Dependency ratio
Health	Life expectancy
	Infant mortality
	Under-5 mortality
	Maternal mortality
	Malnutrition in under-5
	distance to nearest health facility
	Health professionals (doctors) per 100,000 pop.
Education	Primary enrollment rate
	Primary school completion rate
Water and Sanitation	Pop. With access to safe/clean portable water
	Distance to nearest water source
Physical infrastructure	No of Primary schools broken down by district / county
	Access roads / all-weather roads (Km.)
Food security	

Annex 3.9

Data categories	Core indicators	Frequency	Source
Real sector			
National accounts	GDP, according to the value added calculated from output and inputs for major sectors		
	A. Agriculture (including livestock): maize and sorghum as major crops, cowpeas, fruits and vegetables as minor crops. Cattle, sheep, goat and camel as major herds	Yearly	Survey for crop production, livestock production
	B. Fishing	Yearly	Establishment survey
	C. Mining and quarrying	Yearly	Administrative channels
	D. Manufacturing: food processing and other important sectors	Yearly	Establishment and Enterprise survey
	E. Electricity and water supply	Yearly	Establishment survey
	F. Construction	Yearly	Establishment survey
	G. Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods	Yearly	Establishment and Enterprise survey
	H. Hotels and restaurants	Yearly	Establishment and Enterprise survey
	I. Transport, storage and communications	Yearly	Establishment and Enterprise survey
	J. Financial intermediation	Yearly	Establishment survey
	K. Real estate, renting and business services	Yearly	Establishment survey
	L. Public administration and defense	Yearly	Administrative channels
	M. Education	Yearly	Establishment and Enterprise survey
	N. Health and social work	Yearly	Establishment and Enterprise survey
	O,P,Q. Other community, social and personal service activities	Yearly	Establishment and Enterprise survey
	Household consumption	Yearly	Administrative channels
	Gross Fixed Capital Formation	Yearly	Establishment and Enterprise survey
Production indices	Index of industrial production	Quarterly	Administrative channels
Price indices	Consumer Price Index (CPI)	Monthly	Administrative channels
Labour	Employment, unemployment	Yearly	Labour Force Survey, Annual thin sample
	Wages/earnings	Yearly	Labour Force Survey, Administrative channels
Fiscal sector			
Zonal government aggregates	Revenue, expenditure, balance	Yearly	Administrative channels
Zonal government debt		Yearly	Administrative channels

Annex 3.9

Data categories	Core indicators	Frequency	Source
Real sector			
Financial sector	Not relevant for the Medium-term		
External sector			
Major trade aggregates	Exports, Imports, Import duties according to Harmonized System, both quantities and values	Monthly	Administrative channels
Exchange rates	Spot rates	Weekly	Administrative channels
Socio-demographic data			
Population	Population size with breakdown by urban – rural (and nomadic if possible), sex and region (down to the main village level or Laanta in urban areas)	Yearly	Settlement Survey, Dual Sample Registration System, Other agencies
	growth rate in population	Yearly	Settlement Survey, Dual Sample Registration System, Other agencies
	birth rate	Yearly	Settlement Survey, Dual Sample Registration System, Other agencies
	infant mortality rate	Yearly	Settlement Survey, Dual Sample Registration System, Other agencies
	under-five mortality rate	Yearly	Settlement Survey, Dual Sample Registration System, Other agencies
	maternal mortality ratio	Yearly	Settlement Survey, Dual Sample Registration System, Other agencies
	live expectancy at birth	Yearly	Settlement Survey, Dual Sample Registration System, Other agencies
Education	adult literacy rate	Yearly	Administrative channels, Other agencies, SES
	youth literacy rate	Yearly	Administrative channels, Other agencies, SES
	primary age group enrolment ratio	Yearly	Administrative channels, Other agencies, SES
	enrolled children of primary school age who are attending school	Yearly	Administrative channels, Other agencies, SES
	children reaching grade 5	Yearly	Administrative channels, Other agencies, SES
	secondary enrolment ratio	Yearly	Administrative channels, Other agencies, SES
	tertiary enrolment ratio	Yearly	Administrative channels, Other agencies, SES
	tertiary students in science	Yearly	Administrative channels, Other agencies, SES
	combined gross enrolment ratio	Yearly	Administrative channels, Other agencies, SES
Health	Infants with low birth weight	Yearly	Administrative channels, Other agencies
	Children 1-5 immunized against all childhood diseases	Yearly	Administrative channels, Other agencies

Annex 3.9

Data categories	Core indicators	Frequency	Source
Real sector			
	One year olds immunized against all childhood diseases	Yearly	Administrative channels, Other agencies
	One year olds fully immunized against polio	Yearly	Administrative channels, Other agencies
	One year olds fully immunized against TB	Yearly	Administrative channels, Other agencies
	One year olds fully immunized against Measles	Yearly	Administrative channels, Other agencies
	Oral dehydration therapy use	Yearly	Administrative channels, Other agencies
	Pregnant women with anemia	Yearly	Administrative channels, Other agencies
	Female genital mutilation	Yearly	Administrative channels, Other agencies
	Tuberculosis cases	Yearly	Administrative channels, Other agencies
	Cholera cases	Yearly	Administrative channels, Other agencies
	Malaria cases	Yearly	Administrative channels, Other agencies
	Leprosy cases	Yearly	Administrative channels, Other agencies
	Fatality due to measles	Yearly	Administrative channels, Other agencies
	HIV/AIDS	Yearly	Administrative channels, Other agencies
	Doctors per 100,000	Yearly	Administrative channels, Other agencies
	Nurses per 100,000	Yearly	Administrative channels, Other agencies
Poverty	Daily per capita supply of calories	Yearly	SES
	Food aid	Yearly	Administrative channels, Other agencies, SES
	Food aid in cereals	Yearly	Administrative channels, Other agencies, SES
	Percentage of under-five children who are severely or moderately undernourished	Yearly	Administrative channels, Other agencies, SES
	% of population without access to safe water	Yearly	Administrative channels, Other agencies, SES
	% of population without access to health services	Yearly	Administrative channels, Other agencies, SES
	% of population without access to sanitation	Yearly	Administrative channels, Other agencies, SES
	Population below income poverty line of US $1 per day	Yearly	Administrative channels, Other agencies, SES
	% of population with access to televisions	Yearly	Administrative channels, Other agencies, SES
	% of population with access to radios	Yearly	Administrative channels, Other agencies, SES
	% of population with access to telephone lines	Yearly	Administrative channels, Other agencies, SES
	% of population with access to public telephones	Yearly	Administrative channels, Other agencies, SES
	% of population with access to cellular mobile subscribers	Yearly	Administrative channels, Other agencies, SES
	% of population with access to connected to the internet	Yearly	Administrative channels, Other agencies, SES
Other data			

Annex 3.9

Data categories	Core indicators	Frequency	Source
Real sector			
Environmental	Land area	Yearly	Administrative channels, Other agencies
	Population density	Yearly	Administrative channels, Other agencies
	Area of rangeland	Yearly	Administrative channels, Other agencies
	Area of arable land	Yearly	Administrative channels, Other agencies
	Area of forest and woodland	Yearly	Administrative channels, Other agencies
	Area of unclassified land	Yearly	Administrative channels, Other agencies
	Production of fuel wood	Yearly	Administrative channels, Other agencies
	Annual internal renewable water resources	Yearly	Administrative channels, Other agencies
	Annual fresh water withdrawals	Yearly	Administrative channels, Other agencies
	Average annual rate of deforestation	Yearly	Administrative channels, Other agencies
Human Rights	internally displaced persons	Yearly	Administrative channels, Other agencies, FGD
	Refugees	Yearly	Administrative channels, Other agencies, FGD
	victims as a result of war	Yearly	Administrative channels, Other agencies, FGD
	victims as a result of disaster	Yearly	Administrative channels, Other agencies, FGD
	victims as a result of repression	Yearly	Administrative channels, Other agencies, FGD
	victims as a result of discrimination of minority group	Yearly	Administrative channels, Other agencies, FGD
Gender issues	Female life expectancy at birth	Yearly	Administrative channels, Other agencies, SES
	Female literacy rate	Yearly	Administrative channels, Other agencies, SES
	Female adult literacy rate	Yearly	Administrative channels, Other agencies, SES
	Female primary age group enrolment ratio	Yearly	Administrative channels, Other agencies, SES
	Female primary gross enrolment ratio	Yearly	Administrative channels, Other agencies, SES
	Female secondary age group enrolment ratio	Yearly	Administrative channels, Other agencies, SES
	Female tertiary students	Yearly	Administrative channels, Other agencies, SES
Housing	type of dwelling and houses by number of rooms, both given for urban and rural	Yearly	Administrative channels, Other agencies, SES
Infrastructure	e.g. roads	Yearly	Administrative channels, Other agencies
Rainfall		Yearly	Administrative channels, Other agencies
Energy Use		Yearly	Administrative channels, Other agencies

Annex 4.1

Determination of Sample Size

1. For determining the sample size required for a stratified two/three-stage sampling design one would not only need some idea about the coefficient *of* variation (CV) but also the components *of* variance between PSUs and within PSUs. In the absence *of* any information relating to components *of* variance between PSUs and within PSUs being available either from an earlier survey on the same subject or a related subject the practical solution lies in proceeding in two stages by working out first the sample size required for a simple random sample (SRS) and thereafter make some adjustments to the sample size to take into account the effect *of* two/three-stage sampling design and the stratification.

Sample Size for SRS

2. A straightforward procedure for determining the sample size is to make use of the information relating to co-efficient (CV) of some key variables. As an alternative, the sample size can also be worked out on the basis of some assumptions relating to the basic distribution of a few key variables under study. For a socio-economic survey most of the key variables like household income, and household expenditure, generally follow log-normal distribution. It is easy to show that if $\log_e y$ follows a normal distribution with mean m and standard deviation (SD) s, where y is the variable under study, then CV of y is given by:

$$(CV)^2 = \text{Exponent } (s^2) \text{ minus } 1$$

Lognormal distribution has a property, which makes derivation of CV fairly easy. The proportion of population values less than or equal to mean in case of log-normal distribution is given by P(s/2), where P(t) is the area to left of t of a standard normal probability distribution. Therefore, if one can guess the proportion of households whose value for the variable under study is less than or equal to the average, it is possible to get an estimate of s and thus arrive at an estimate of CV.

3. Keeping in view the possible uses of the results of household based surveys on demographic, social, socio-economic aspects it may be reasonable to assume that sampling precision of five percent at national level will serve the purpose. With this assumption it is easy to derive that n, the sample size required for estimating the population mean of y with 95% level of confidence, is given by:

$$n = 1600\ (CV)^2$$

Based on the data published by the ILO (Household Income and Expenditure Statistics No. 3, 1968-76), the UN publication (National Household Survey Capability Programme; Household Income and Expenditure Surveys: A technical Study, United Nations, 1989) presents a table giving estimate of CV of household income as also proportion of household with income less than the average for 55 countries of the world including 14 from Africa. The Table reveals that nearly two-thirds of the household had income less than the average income of the population under study. The Mission also has attempted to compute the percentage of household below the average for each of the three variables household income, household total consumption expenditure, and household expenditure on food from the data collected under SES 2002. The results obtained were 63, 62, and 59 respectively for the above stated three variables. In view of this the Mission has assumed that two-thirds of the household have the estimate for the study

variable below the average of the study variable in the population. This with the assumption of log normal distribution provides estimate of CV as 1.0492 or roughly as one. Thus a sample of 1600 households selected as a simple random sample (SRS) is likely to provide national estimates of key variables like household income with standard error (SE) not exceeding five percent.

Sample Size for Two-/three Stage Sampling

4. A two/three-stage sample design is generally less efficient than a SRS of the same number of household in the sample. Thus to achieve the same level of precision as in a SRS a larger number of household will have to be sampled. This upward adjustment to the sample size is called the design effect and depends on the intra-class correlation coefficient within the PSUs. In the absence of any such information being available for Somalia, the Mission has made use of the experience in this regard documented in the "Handbook of Household Surveys", Studies in Methods, Series F No. 31, 1984, United Nations and assumed the value of 2 for the design effect to work out the sample size for the household-based sample survey. Under this assumption, the proposed sample size for providing estimates at the national level with not more than 5% SE works out to 3,200 households.

Sample Size for Attributes

5. The above calculations of sample size have considered study variables, which are continuous variants. However, most of the socio-demographic surveys also include several study indicators like percentage of children protected against, DPT, OPV, measles, BCG TT etc., which are attributes. It is easy to derive, as has been done for SES 2002 that a SRS of 3,300 households will be able to provide national estimates with SE of not exceeding five percent. Once again taking into account the design effect of two for a two/three-stage sample, it may be seen that with a sample of some 6, 600 household one can expect to estimate study variables at the national level, which are attributes with SE of not exceeding 5%with the proposed sampling design.

Annex 4.2

HOUSEHOLD-BASED SAMPLE SURVEY

URBAN

I) State:---------- Code:-------- iii) Town: ---------- Code:---------

ii) District:---------- Code: -------- iv) Laanta/Xaafada--------- Code:----------

Line No.	Serial No. of House	House category in code	Unit No.	Serial No. of Household	Name of the unit/Head of the Household	Foreign National No -1 Yes - 2*	Household Size	MI CODE**
1	2	3	4	5	6	7	8	9
Total	x		x	A	x			

Col. 9 Codes: Self employed - 1; Regular wage/salaried employer - 2; Casual labour - 3; Others - 4.

Annex 4.3

HOUSEHOLD-BASED SAMPLE SURVEY

Rural

I) State:---------- Code:-----

ii) District:----------Code:------

iii) Main Village: ---------- Code:---------

iv) Settlement---------- Code:----------

Line No.	Serial No. of House	House category in code	Unit No.	Serial No. of Household	Name of the unit/Head of the Household	Foreign National No -1 Yes - 2*	Household Size	MI CODE**
1	2	3	4	5	6	7	8	9
Total	x		x	A	x			

Rural labour - 4; Others - 5.

Col. 9 Codes: Self employed in crop husbandry - 1; Self employed in animal husbandry - 2;
Self employed in non-agriculture - 3; Rural labour - 4; Others - 5.

Annex 4.4

Definition of Informal Sector Used by African Countries

Benin
1992,1999
Definition: Informal sector: Included are all economic units which are mobile or which have a semi-fixed location, plus those economic units with a fixed location which have one or more of the following characteristics: lack of formal accounts, non-inclusion in the register of commerce, or non-registration with the OBSS (*Office Béninois de Sécurité Sociale).*

Botswana
1995/96
Definition: Informal sector employment: Persons working in unincorporated enterprises which are owned by households, do not keep a complete set of accounts and employ less than 5 paid employees. Domestic servants and other private household workers are included but separately identified.

Cameroon
1993
Definition: Informal sector: Production units without statistical number (SCIFE no.).

Ethiopia
1999
Definition: Informal sector: Unincorporated enterprises, with no book of accounts, mainly engaged in market production, with less than 10 persons engaged and not registered as companies or cooperatives; also included enterprises/activities which have no license.

Ghana
1997
Definition: Informal sector employment: Persons who defined themselves as being in the informal sector at the time of the survey.

Madagascar
1995
Definition: Informal sector: Production units without statistical number and/or without formal wrote accounts.

Mali
1989
Definition: Informal sector employment: Own-account workers excluding professionals; employers with less than 10 employees excluding professionals; employees (including apprentices) and unpaid family workers working in unincorporated enterprises.

1996
Definition: Informal sector: Private unincorporated enterprises without complete accounts, with less than 11 persons engaged in the enterprise, and without registration with the National Social Providence Institute (INPS) or Pension Fund.

Niger
1995

Definition: Informal sector: Enterprises owned and operated by households or household members which do not keep accounts or which do not submit accounts to any administration or institution.

South Africa
1999
Definition: Informal sector: Business activities which are not registered. Registration refers to registration under: - tax (VAT) requirements - professional groups' regulatory acts or similar acts
2001
Definition: Informal sector: Business activities which are not registered. Registration refers to registration under - tax (VAT) requirements - professional groups' regulatory acts or similar acts

Tanzania
1990/91
Definition: Informal sector employment: Persons employed in privately-owned enterprises having not more than 5 paid employees. Included are persons engaged in activities undertaken at a market place, in a temporary structure, on a footpath, in the street or in another open place, as well as domestic servants of private households. Excluded are persons employed in registered cooperatives, professional-type enterprises (e.g. doctor's or lawyer's practices) and in enterprises using high technology or having other 'formal'
1991
Definition: Informal sector: Activities which are privately owned and employing not more than 5 paid employees. Included are activities undertaken at a market place, in a temporary structure, on a footpath/in the street or in another open place. Excluded are registered cooperatives, professional-type activities (e.g. doctors, lawyers), activities using high technology or having other 'formal' characteristics, and domestic servants of private households.
1995
Definition: Informal sector: Private unincorporated enterprises without complete sets of accounts and with less than 6 employees (manufacturing, construction, mining and quarrying: less than 11 employees) employed in the activity. All or part of the products meant for sale. Domestic workers included if they consider themselves as self-employed business operators.

Zimbabwe
1986/87
Definition: Informal sector employment: Persons working in unregistered establishments.
1993 & 1994
Definition: Informal sector employment: Persons working in establishments which are not registered or licensed.

Kenya
1999
Definition: Small or micro-enterprises: Establishments with less than 10 persons engaged.
1992 to 1995
Definition: Activities undertaken in market stalls, underdeveloped plots, street pavements or without fixed location.

Senegal
1987 to 1996
Definition: Small or micro-enterprises: Small units producing and distributing goods and services which are not included in the sampling frame for "modern" formal enterprises.

Tunisia
1981, 1997

Definition: Small or micro-enterprises: Enterprises with less than 10 persons permanently engaged in the enterprise. Activities without fixed location are not covered.

Uganda
1992/93 & 1993/94
Definition: Persons working in household enterprises or in establishments with less than 5 persons engaged.

Costa Rica
2000.
Definition: All employees, own-account workers (excluding administrative, professionals and technicians), unpaid family workers and employers working in establishments with less than 5 persons engaged.

Côte d'Ivoire
1996
Definition: Employers, own-account workers, unpaid family workers, apprentices and unskilled labourers working in enterprises owned by themselves or by a member of their household or family.

Gambia
1993
Definition: Household economic activities, not operating a bank account, on the basis of the informal nature of the work of the head of household.

Zambia
1993
Definition: Employees or employers working in private sector enterprises with less than 5 employees and not entitled to paid leave and social security scheme (excluding professionals); self-employed persons; unpaid family workers; and small-scale farmers.

Reference: ILO Compendium of official statistics on employment in the informal sector, 2002s:

Annex 4.5

House List

URBAN ONLY Page No…….

I) Region……. Code…… iii) Town …….. Code……
ii) District…….. Code…… iv)Laanta/Xaafada…… Code…….

Line No.	Serial No. of House	House category in code	Unit No.	Serial No. of Household	Name of the unit/Head of the Household	Household size			Does the household/unit engaged in non-agricultural entrepreneurial activity Yes: 1. No: 2	If Yes in col.10					Remarks
										Location of premises code	Description of Activity	NIC Code	No. of usual workers		
						M	F	T					Total	Hired	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total	x		x	a	x										

Signature of enumerator……Date……..… Signature of Supervisor……..……Date……..……

Name of the enumerator…… Name of the Supervisor…….

Col. 3 Codes: Residential only - 1, Residential-cum enterprise unit - 2, Enterprise unit only - 3, Vacant - 4.

Col. 7 to 9: M=Male, F= Female, T=Total

Col. 11 Code: Within premises-1; Outside premises with fixed location; Outside premises without fixed location-3

Col.13 Code: One -digit National Industrial Classification (To be developed based on ISIC) To be given by the supervisor.

Annex 4.6

House List

RURAL ONLY Page No.……

I) Region……. Code…….. iii) Main village …… Code……
ii) District……. Code…….. iv)Settlement…… Code……

Line No.	Serial No. of House	House category in code	Unit No.	Serial No. of Household	Name of the unit/Head of the Household	Household size			Does the household/unit engaged in non-agricultural entrepreneurial activity Yes: 1. No: 2	If Yes in col.10					Remarks
										Location of premises code	Description of Activity	NIC Code	No. of usual workers		
													Total	Hired	
						M	F	T							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total	x		x	a	x										

Signature of enumerator……Date……..… Signature of Supervisor……..……..……Date……..……

Name of the enumerator…… Name of the Supervisor……

Col. 3 Codes: Residential only - 1, Residential-cum enterprise unit - 2, Enterprise unit only - 3, Vacant - 4.

Col. 7 to 9: M=Male, F= Female, T=Total

Col. 11 Code: Within premises-1; Outside premises with fixed location; Outside premises without fixed location-3

Col.13 Code: One -digit National Industrial Classification (To be developed based on ISIC) To be given by the supervisor.

Annex 4.7

ADDRESS SLIP FOR ESTABLISHMENTS FOR REPARATION OF BUSINESS REGISTER FROM SETTLEMENT SS 2004

1 Identification code as per the Enterprise list:

2. Full address of the Establishment: _____
_____
_____
_____

(a) Telephone No. with Area code (i) _____ (ii)_____(iii)_____

(b) Fax No. with Area code (i) _____(ii) _____

3 Any other information: _____

Annex 4.8

A Note on the Computer Aspects of Questionnaire Design

1. Questionnaires are usually made in MS Word or MS Excel, and this activity is not particularly difficult from the data processing point of view. It is useful to develop some standards in this respect concerning the layout. Questionnaires are normally divided into sections, units or modules. These in turn contain the various questions. Among the possible question types are:

1 Questions that ask for non-monetary numbers, e.g. number of household members.
2 Questions that ask for monetary values, e.g. income and expenditure questions.
3 Questions that ask the respondent to select an item from a predetermined enumeration. There are two variants:
3.1 Only one item can be selected ('radio button')
3.2 More then one item can be selected ('check boxes').
4 Open questions: the respondent must supply the answer
5 Tables, which can have a number of different layouts
5.1 Register: questions on the horizontal header, units (e.g. household members or satellite settlements or business activities) on the vertical stub
5.2 Main questions on the stub, sub questions on the header

There are hybrid questions possible. E.g. often the last item in an enumeration is an 'other' category, with a possibility to enter a description ('please specify'). This combines an open and an enumerated question.

2. It is very important that questions are systematically coded. There must never be any controversy as to which field in the database or which column in the tabulation plan belongs to which question. These codes usually consist of a specifier for the section (module), plus an identifier for the question within the section. Enumerations of the second type above ('check boxes') present a problem, since it may be that more then one entry is checked. This means that each of the enumerated items must be coded separately. If there is an 'other' category present, then the possible descriptive answer must be facilitated as well. Tables also present a possible problem. Register tables contain as many lines as are foreseen to be the maximum at design time (e.g. 20 for a household register). Not all these lines will be used, however. Usually, the lines from these registers are coded by giving sequential line numbers.

3. It is extremely important that there is no ambiguity as to which unit is used in the question. When relevant, there must be special allowance in the questionnaires for specifying the correct units. These can be physical units (kg, ton, and liter) or scale information (thousands, millions) or currency information (dollar, shilling). Ideally, all these possibilities are pre-coded as well, so that during data capture there is no ambiguity as to what is what.

4. All questionnaires begin with an identification section, allowing the enumerator to specify particulars on the interview (where, when, by who). Also, there is a section on particulars for manual checking and for data capture. Again, it is useful to develop standards as to the layout and contents of this identification section, which can be used for all surveys undertaken subsequently.

5. Good questionnaire design also involves the use of cross checks during the interview. For example, when obtaining demographic data by way of a household register, the answers that the mother gives on her children must be relatable to answers that are given for her children. Or

within income and expenditure modules of an establishment survey, there are obvious accounting identities that need to be met. Ideally, a questionnaire contains summary sections in which the enumerator lists the main totals so that discrepancies can be detected during the interview, after which further probing can take place. This is especially true for business surveys.

Annex 4.9

A Note on Survey Processing Software

1. *IMPS 4.1 and CSPro*: The Integrated Microcomputer Processing System (IMPS) suite, designed by the US Bureau of the Census, is widely used among developing countries in census and survey planning, data imputation and editing and tabulation. The most recent version IMPS 4.1 is comprised of a number of modules. Variables are defined in the Data Dictionary (DataDict). The data file structure is hierarchical, thus enabling the definition of different record types. The Data Entry module (CENTRY) is the most popular module of IMPS. It is a screen-oriented, menu-driving software package for the development of Data Entry application, the entering, verification, and modification of data, and the collection of statistics on the data entry operations. Some features of CENTRY are: menu-driven operations, questionnaire-oriented data entry, selective fields verification, sample verification (every 1 in k questionnaires), operator performance statistics, automatic range checking, programmable CONCOR consistency checking, geographic and questionnaire ID checking, automatic duplication of fields, field entry sequencing, interactive skip pattern definition, ASCII output file generation (ready for input into CONCOR and to other software such as SPSS) and protection of data against power failure. Inconsistency errors may be detected and corrected by the Consistency ands Correction module (CONCOR). Cross tabulations and frequency tables may be produced by the Cross Tabulation module (CROSSTAB), although the use of this module is restricted to two variables per column, and no calculation is possible after the production of tables. The main tabulation component of IMPS is CENTS, a system of computer programs which tabulate, summarize, and display statistical tables. CENTS provides the user a great deal of flexibility in formatting tables. The user controls placement of text such as headings, stubs, captions and footnotes. The user arranges the table text and specifies table matrix calculations, such as rows and column sums. The menu-driven Table Retrieval System (TRS) can be used to easily select, retrieve, display and print tables. The Variance Calculation System (CENVAR) is used for the calculation of the reliability (precision) measures for collected data.

2. The Census and Survey Processing System (CSPro) is a system for designing and running applications which perform data entry, cross-tabulation and mapping of census and survey data. CSPro was designed and implemented through a joint effort among the developers of IMPS and a number of partners. CSPro is very similar to IMPS except that contrary to IMPS, all modules of CSPro are windows based applications. All modules of IMPS running under Dos (CENTRY, CONCOR, and CENTS) have been removed or replaced, keeping however the same features. CSPRro is more attractive and more user friendly than IMPS.

3. *BLAISE 4.5*: BLAISE is a powerful software package for survey processing used by Statistical Bureaus throughout the world. Developed by Statistics Netherlands and licensed and supported in the United States and Canada by Westat, BLAISE includes many advanced capabilities that meet the high demands of today's surveys. It is based on a powerful but simple questionnaire definition language, derived from the Pascal language (hence the name), which defines both the structure of the database and the interviewer interface with screen layouts that can be customized. The same BLAISE instrument can be used for data review and editing as well. There are extensive question and consistency checking mechanisms. A separate part of the package (MANIPULA) can be used to process the data, i.e. impute for missing data, do further checking, e.g. with reference to previous survey results, perform adjustments for non-response, scale the survey results to population results and perform the aggregations needed to arrive at publication detail. Also, if so desired, the data can be exported from the BLAISE database to other formats such as SPSS, SAS, Access or Excel. Central in the BLAISE environment is the notion of a 'data model', comparable to the data dictionary of IMPS,

describing the sections and questions and their interrelationships of a certain survey. This serves as a prescription both for the generation of data-entry programs and for the structure of the database. There are a number of additional modules in the BLAISE suite, e.g. for tabulating and for exporting to other formats, e.g. SPSS. The MANIPLUS language allows one to build a Windows user interface for a MANIPULA application.

4. *SPSS Data Entry Builder 2.0*: The SPSS data Entry builder is the Data Entry module of SPSS. The basic elements of the Data Entry Builder are Forms, Questions, Variables and Rules. Forms are used to collect, enter, and view data. Forms can be created for both online data entry and printed questionnaires. Forms consist of questions. Questions can have different types of response controls, including text boxes, option buttons, check boxes and drop-down lists. Answers to questions are stored in variables. The Builder window can be used to view the variables in a file. Each question on a form represents a variable. The variables are defined at the same time as the questions. The text for the question is displayed in the Variable Properties window. Labels can be defined for the individual values that represent responses. Rules are designed for improving the speed and accuracy of online data entry. One can use the Rule Wizard to create Validation, Checking, and Skip & Fill rules. Validation rules trap errors as data are entered. Skip & Fill rules skip to specific questions and automatically fill in data based on previous responses. Checking rules identify logical inconsistencies between variables. A Data file created by SPSS Data Entry builder could be automatically open within SPSSWIN 8.0 or later.

Annex 4.10

A Note on Macro Editing and Imputations

1. The Mission wants to mention here two particularly powerful checking procedures. The first kind is the ratio check. Here we calculate major analytical ratios for which we assume that they can be reasonably constant within groups. Although applicable in household surveys, this is especially useful in establishment / enterprise surveys. Because of the often highly skewed nature of size distributions of enterprises that is typical of smaller economies, robust measures for outlier detection must be used. One technique to identify outliers and extreme values uses so called box-plot statistics (upper and lower adjacent values and upper and lower fences), which can be calculated by most statistical packages.

2. The second kind of checks is the composition check, where we compare more then two variables. Composition checks are checks that attempt to verify the relationship between manyvariables. Here we assume that these variables co-exist in fixed proportions. For instance the assumption that the production cost structures are similar for enterprises classified in the same ISIC group is a composition check. Composition checks can be implemented using measures of correlation. There are two such measures that are directly or indirectly available in MS-Excel. These are the Pearson correlation and the Spearman rank correlation.

3. Applying such checks to all units of the micro file, and then taking corrective action on the result of the outcome is sometimes called 'macro editing'. In this technique variables are not evaluated on the questionnaire level. Rather it is evaluated how the variables behave in the population of other similar units (either the whole sample or a particular stratum). Macro editing is a particular useful and efficient technique to improve data quality, and consequently reduce non-sampling errors, in surveys. It is important to note that macro-editing techniques are statistical techniques. Lower and upper limits to variables are computed based on the observed values, and not on any a-priori insights with regards to the upper and lower limits that would apply to any given ratio. Macro editing applies to groups of observations. If the statistical spread of the observations is large enough, the upper and lower limits will be so wide that they cease to be relevant. If on the other hand the spread is reasonably narrow, the technique will show up exceptional values quite well.

4. Data may also be *missing* for a variety of reasons: refusals to answer (question sensitivity), “Don’t know” responses (cognitive problems, memory problems), "not applicable" responses, and data processing errors. Missing data can reduce the effective sample size and may introduce bias. There are many methods for handling missing data ('imputation' methods). The Mission wants to mention two simple ones: "mean substitution" – in which mean values computed from available cases are substituted – and "hot deck", in which the most similar case to the case with a missing value is identified and its value used.

Annex 5.1

Training Workshop on Poverty Monitoring and Analysis and Related Initiatives.

1-5 November 2002, Dubai
Aide Memoir

The workshop participants after reviewing and deliberating on the project documents of Somalia Watching Brief (SWB); Setting up a Poverty Monitoring and Analysis System (PMAS); Poverty Dialogue, Assessment and Mapping (PDAM) as well as the Low Income Countries Under Stress -Country Concept Note (LICUS-CCN) under formulation consider that they provide a valuable opportunity to bring the country back into the world map of development statistics. They would help the country to find its rightful place in the country profile folders of international and regional financial and development institutions. The participants recognised the perceived impact of the above projects, in particular on planning, policy formulation and informed decision making from a statistical perspective and agreed to cooperate and work together to implement the projects as follows:

1. The participants formed a Technical Coordination Group (TCG) to facilitate the implementation of the projects. They would meet periodically at one of the four centres (under rotating chairpersonship by members) in Somalia to discuss methodological and operational issues and to review the progress. The TOR of the TCG would be finalised by the members during the next meeting to be held at Hargeisa during December 2002 or January 2003;

2. The participants agreed that the projects discussed above should lead to the following:
a. Establishment of sampling framework and data collection methodologies tailored to the needs and local conditions
b. Establishment of a database for macroeconomic statistics and socio-economic data
c. Improved capacity of the administrations to collect and compile statistical data through appropriate and adequate training and technical assistance
d. Extensive dialogue with civil society, private sector and other stakeholders on the poverty assessment and analysis as well as on targeting Millennium Development Goals
e. Assessment and mapping of poverty
f. Setting up a poverty monitoring and analysis unit within the Ministry of Planning in Bosasso, Hargeisa and Mogadishu
g. Preparation of a baseline report on Millennium Development Goals establishing the baseline data on indicators, intermediate and final targets as well as their costing.
h. Capacity to process and analyse statistical data using popular statistical software packages
i. Capacity to utilise Geographical Information System for planning and policy analysis. (This has to be in-house unlike in the past; this is particularly useful for poverty analysis and mapping);

3. The TCG would prepare an inventory of statistical data collection efforts so far and the data currently available. In doing so they would look into available options to coordinate and streamline the statistical data collection initiatives undertaken by various agencies in the field and to build effective partnership with the line ministries. Options would also be suggested to collect and disseminate such data on a regular basis and to establish a statistical database in due course. The reports received from the TCG would be analysed and consolidated by UNDP;

4. The TCG would support initiatives to undertake sectoral assessment of data availability, data needs and gaps This would include a statistical audit of the existing and emerging data collection efforts with a view to improving their quality, reliability, accuracy and conformity to

international standards and practices and also to prioritise the data collection efforts in consultation with all stake holders including the line ministries;

5. A decentralised implementation strategy would be followed to execute the SWB, PMAS and PDAM projects in the field. Accordingly, they would be implemented by UNDP from Baidoa, Bosasso/Garowe, Hargeisa and Mogadishu in collaboration with the corresponding Department of Statistics/Ministry of Planning.

6. The administrations would take the lead role to collect, compile and carry out initial analysis of the data. UNDP would provide training and technical support and would also support to aggregate and consolidate the data and to prepare final reports.

7. The projects would be implemented as per the common work plan jointly formulated and agreed upon. The work plans would be reviewed regularly and revised when necessary.

8. The feasibility of establishing statistical units by the administration at lower administrative levels such as regions would be explored to strengthen grass-root level data collection in due course.

9. The following activities would be undertaken on a priority basis by the department of Statistics, Ministry of Planning.

- Marker prices
- Farm prices of major agricultural produce
- Livestock prices (export prices, local market prices and those received by pastoralists)
- Exchange rates (official and market)
- Trade statistics from major ports and check-posts
- Passenger and flight statistics
- Flow of remittances
- Enumeration of non-agricultural establishment
- Organising workshops on MDGs and PMA

10. For the collection and compilation of above statistics, UNDP would support the administration to establish a common methodology and procedure comparable to the international standards and classifications through appropriate in-house and on the job training and supporting manuals following which a uniform methodology related to such data collection would be established at all the centres.

11. In order to assess the overall statistical data needs and gaps, sectoral statistical experts would undertake an assessment in the respective sectors and assist to formulate sampling framework and data collection methodologies to undertake the data collection. This would be done with close cooperation and coordination of all partners including development partners and line ministries led by the Department of Statistics, Ministry of Planning.

12. Training and technical assistance: Statistical staff of the Ministry of Planning and other relevant ministries would be encouraged to participate in short-term training in the following:

- Collection of prices and compilation of consumer price index
- Compilation of trade statistics
- Compilation of passenger and flight statistics
- Primary surveys
- Poverty assessment and mapping
- Poverty monitoring and analysis
- Statistical software for data analysis

Medium/long-term training would be organised to support the capacity building needs of the administration consistent with the data collections needs

13. Preliminary estimates show that the resources needed by UNDP to support the above activities as part of cost sharing are as follows:

- Prices and trade data collections $6,000-8,000 per centre
- Enumeration of non-agricultural establishment $ 1,000- 1,3,00 per centre
- Workshop (20 participants – 3 days) $ 1,000 – 1,500 per centre
- Translation and printing of Poverty and MDG related documents for dissemination
- (Workshops, media etc.) $ 2,500
- Computers and supporting facilities where skills are available and the facilities could be maintained. ($ 10,000)

14. Support through short-term local consultants: UNDP would be provided with a list of CVs of 10 well qualified and experienced experts (Degree in Maths/Stats or other quantitative or development oriented disciplines with minimum three years experience and with established credentials) for possible recruitment of one or two by UNDP to be seconded to the Ministry on a short-term basis. However for sampling design, survey methodologies and framing questionnaires, the expertise of international staff with experience in post conflict countries would be utilised.

15. As a follow up to their meeting with the Somali Business Council (SBC) in Dubai, the TCG would take advantage of SBC's offer to assist in strengthening the trade and remittance statistics for Somalia. UNDP would support the preparation of trade statistics for 1993-2001 for Somalia based ob the data received from Dubai Chamber of Commerce/ Dubai Ports. This would be shared with SBC for review and streamlining the estimates.

16. UNDP, with the administrations, would also look into the needs of the private sector in terms of supporting preparation of feasibility studies to attract investment in important sectors of the economy. The Chairman of the Business Council would forward more details to UNDP in this respect.

17. The participants agreed to work together and share data and information as well as follow a common approach and methodology in data collection, compilation and analysis. The participants, on their return, would brief their concerned institutions on the objectives and outcome of the workshop and their tentative agreement on the workplan and way forward and would also share the workshop documents with all those interested.

18. Finally the participants expressed their appreciation to World Bank and UNDP for their efforts to strengthen the statistical systems in the country.

Participants:

- Nur Weheliye, Director General, Ministry of Planning, Mogadishu
- Awil Farah Mohamed, Director General, Ministry of Planning, Hargeisa
- Hassan Jama, Director, Department of Statistics, Ministry of Planning, Hargeisa
- Abdulkadir Ali Dubad, Ministry of Planning, Bosasso
- KNS Nair, Programme Manager, Poverty reduction and economic Recovery, UNDP Somalia

Dubai
6 November 2002

9 Appendixes

Appendix 1

Terms of Reference

Statistical Capacity Building for Somalia

Terms of Reference

Duty station: Nairobi

Duration of consultancy: (3 persons, 4-6 weeks)

Project and B/L:

A. Introduction:

The statistical systems in Somalia, like other state institutions, started to collapse even before the civil war resulting in lack of institutional capacity to collect and compile data for planning and informed policy and decision-making. The collapse of the Somali state in 1991 resulted in the destruction of all governing and economic management institutions in Somalia, most of which are yet to be re-established. Therefore, rebuilding critical macro-economic and socio-economic data is essential to understand and monitor the situation and support reconstruction and development programmes in Somalia. Since the civil war, there has been no national institutional capacity to collect and compile statistics in Somalia. However, there are functional administrations, which are involved in the collection and compilation data to a limited extent. Due to the absence of skilled personnel, training and supporting facilities, the data collected and compiled often do not conform to the standards and quality prescribed at international level bringing severe limitations in terms of their accuracy, quality and comparability. There are other institutions notably UN agencies involved in the collection of and compilation of sectoral statistics. These agencies address the critical data needs and gaps in some sectors in a limited way, but their data collection systems and methodologies could be reviewed to ensure that they conform to internally agreed standards and methods and to ensure that these statistics are widely disseminated and utilised. These initiatives could be further strengthened with the growing participation and collaboration of the respective institutions within the administrations. In due course, with adequate technical capacity building and provision of supporting facilities, these institutions could progressively undertake most of theses initiatives. The administrations institutional capacities will help and augment the national statistical institution when it is formed.

B. Somalia Watching Brief:

Watching Brief is used as a monitoring mechanism by the World Bank to keep track of socio-economic developments in conflict/post conflict countries by collecting critical macro-economic and socio-economic data. The Watching Brief project for Somalia is supported by World Bank and implemented by UNDP in collaboration and cooperation of Somali administrations and international partners involved in the collection and compilation of data. The project is under

implementation in Garowe, Hargeisa and Mogadishu in collaboration with the respective administrations. Besides generating statistics at regional level, UNDP will support their aggregation and consolidation to generate baseline data at national level. The main objectives of the project include (i) identifying critical data needs and gaps (ii) establishing systems and procedures for collection and compilation of statistics; (iii) strengthening ongoing data collection efforts and building the capacity of functional statistical institutions, and (iv) establishing a baseline socio-economic database for monitoring. The ongoing efforts under the Watching Brief Programme will be further strengthened under the macro-economic data collection and analysis, a component of a pilot programme under LICUS (Low Income Countries under Stress) under implementation in Somalia.

C. Objective of Consultancy:

The overall objective of the consultancy is to prepare an action plan to strengthen the statistical data collection and analysis in Somalia.

Specific Objectives:

1. Review the ongoing efforts to collect and compile statistics
   - Data quality, standards and accessibility
   - Consistency, accuracy, relevance and timeliness
   - Major producers of statistics
   - Review the methodology and scope for improvement where relevant
   - Major users
   - Dissemination

2. Assess critical data needs and gaps
   - Demographic and population statistics
   - Reproductive health statistics
   - Economic statistics
   - Social statistics
   - Environment
   - Other sectors and thematic data gender, human rights etc.)
   - Disaggregated data by social groups and geographical areas (rural, urban and nomadic. Vulnerable social groups etc.
   - Support MDG monitoring and lay the foundation to meet critical data needed to undertake poverty assessment, poverty profile and poverty mapping and preparation of a PRSP in due course

3. Suggest a framework to strengthen the ongoing efforts in data collection and expand the scope and coverage to address critical data needs and gaps
   - Scope and coverage
   - Sequencing of data collection
   - Methodological improvements
   - Accuracy and reliability

4. Assess the capacity building needs of functional administrations for statistical data collection, processing, analysis and dissemination
   - Role and functions of statistical departments of the three Somali administrations
   - Role and functions of statistical units of line ministries
   - Role and functions of statistical unit of municipal administrations
   - Skills available and skills needed

- Capacity building needs of institutions of economic governance (Planning, Finance, Central/State Bank etc.) and social statistics (Education, Health ...)

5. Examine how Somalia could benefit from the international initiatives in the production and dissemination of statistical data and national statistical capacity building.
   - Adherence to key internationally agreed standards, methods and good practice as promoted by the UN Statistical Commission
   - Partnership in Statistics for Development in 21st Century (PARIS21)
   - International Comparison Programme for Africa (ICP-Africa) and other initiatives of Economic Commission for Africa and African Development Bank
   - Subscription to IMF's General Data Dissemination Standards (GDDS) and other similar initiatives

6. Formulate a plan for statistical data collection and capacity building of statistical institutions in Somalia identifying specific short-term and Medium-term interventions addressing, *inter alia*, the following:

   Statistical data collection, compilation, analysis and dissemination
   - Strategic goals and time-bound targets
   - National/regional needs and priorities
   - Sequencing of data collection
   - Alternative methodologies and options
   - Coordination, collaboration and networking among data producers
   - Standardisation and quality control
   - Data dissemination
   - Progressive Somali ownership in the absence of a national statistical organisation
   - Dialogue between consumers and producers of data
   - Application of IT
   - Costing

   Statistical capacity building of functional statistical institutions (disaggregated regionally and by relevant line-ministries and institutions)
   - Training and on-the-job training:
   - Supporting facilities
   - Coordination of ongoing data collection efforts
   - Administrative reporting systems
   - Statistical legislation and supporting institutional framework
   - Indicators for monitoring statistical capacity building
   - Application of IT
   - Costing

D. Qualifications and experience:

Advanced degree in Statistics or a related discipline with formal training in statistics. At least 10 years experience in supporting/organising collection and compilation of socio-economic and demographic statistics at national and regional level.

E. Competencies:

Expertise in one or more of sectoral statistics (economic statistics including prices, trade, balance of payments and national income) and/or thematic statistics (poverty, MDGs, gender,

human rights etc.) and statistical methodology (sampling, surveys etc.). Familiarity with internationally agreed statistical standards and methods and good practices and ongoing efforts (PARIS21,GDDS, UNSO etc.). Field level working experience with statistical institutions in developing countries, preferably in Africa. Familiarity with problems and constraints of data collection in conflict/post conflict countries. Proficiency in English and excellent drafting skill. Computer literacy, particularly in word processing. Familiarity with popular statistical packages will be an advantage.

Appendix 2

Mission Activities

1 Briefing on general background

1.1 Briefing from Dr. Nair and his team

1.2 Meetings with some key Somali officials in Nairobi

1.3 Elaboration of list of documents for review by Mission team

2 Preparation of Mission Work Plan

2.1 Review of Terms of Reference

2.2 Elaboration of Work Plan

2.3 Preparation of common reporting form for data collection activities

2.4 Preparation of list of statistical issues to be addressed

3 Review of data collection activities by UN agencies stationed in Nairobi

3.1 Familiarization and review of status quo

3.1.1 Review of background documents

3.1.2 Data collection and survey coordinating environment at UNDP (e.g. DIMU)

3.1.3 PMATU/PMAS Establishment Mission

3.2 UNDP and UNFPA

3.2.1 Socio-economic survey

3.2.2 Settlement level survey

3.2.3 Establishment survey

3.2.4 DHS

3.3 Other UN agencies and partners

3.3.1 FSAU

3.3.2 FEWS

3.3.3 FAO (Water sources information system)

3.3.4 UNICEF

3.3.5 WHO (HIS)

3.3.6 WFP

3.3.7 UNESCO

3.3.8 USAID / EU

3.3.9 Other

3.4 Meeting with Statistical Working Group

3.5 Elaboration of work plan regarding the activities in Somalia

4 Review of institutional arrangements, data collection activities and data actually collected by NGO's and administrative organizations in Somalia

4.1 Somaliland

4.2 Puntland

4.3 Central and Southern Somalia

5 Evaluating activities

5.1 Elaboration of framework to strengthen the ongoing efforts in data collection and expand the scope and coverage to address critical data needs and gaps

5.2 Assessment of capacity building needs of functional administrations for statistical data collection, processing, analysis and dissemination

5.3 Assessment of the extent to which Somalia could benefit from the international initiatives in the production and dissemination of statistical data and national statistical capacity building.

6 Formulating a plan for statistical data collection and capacity building of statistical institutions in Somalia identifying specific short-term and Medium-term interventions

7	Formulating a plan for Statistical capacity building of functional statistical institutions (disaggregated regionally and by relevant line-ministries and institutions)
8	Consultations with Statistical Working Group
9	Finalization of report

Appendix 3

Date	Organisation	Name	Function
12/12	DFSCO	Hamish Cameron	Security Briefing
18/12	DIMU	Walter Odede	GIS Technician
8/12,9/12,17/12	EU	Paul Simkin	Technical Assistant for Governance and SME
18/12	FAO	Chris Print	Project Co-ordinator/Technical Advisor Somalia Water and Land Information Project Emergency Operations and Rehabilitation Division
5/12	FAO	Etienne Peterschmitt	Agriculture and Fisheries Co-ordinator
30/12	FAO	Harold Weepener	GIS Specialist
5/12	FAO	Patrik Berner	Food Security Coordinator, Somalia, Emergency Unit
5/12,30/12 (MS)	FEWS NET	Mohamed Y.Aw-Dahir	Representative Somalia
22/12	FEWS NET	Sidow Ibrahim Addou	Representative Somalia
10/12,22/12,31/12 (MS)	FSAU	Bernard Owadi	Senior Nutritionist
8/12	FSAU	Charles Rethman	Head of Information
9/12	ICRC	Beat Mosimann	Deputy Head of Somalia Delegation
9/12	IFRC	Ahmed Gizo	Head of Somalia Delegation
9/12	IFRC	Bernard Omollo	Health Officer
12/12	IFRC	Kwame Asamani-Darko	Health Economist / Delegate
25/11,8/12,15/12	ILO	Joseph Connolly	Chief Technical Advisor
17/11	Institute of Commonwealth Studies, University of London	Madhuri Bose	Fellow & IPRD Programme Director
18/12	Office of the President, Republic of Kenya	Geoffrey Tembo Mulama	Deputy Chief Economist, Poverty Eradication ComMission
20/11	Puntland Development Research Centre	Abdulrahman A. Osman	Director
17/11,20/11,4/12, 11/12 (Proforma), 15/12,16/12	Puntland Livestock Producers Association (PULPA)	Hersi Abdulle Guleed	Chairman
23/12,31/12 (MS),5/1 (MS)	Puntland Livestock Producers Association (PULPA)	Mohammed Rini Sanedor	Vice-Chairman
17/11,18/11,19/11,21/11,25/11,27/11,28/11,2/12,3/12,12/12,16/12,18/12,19/12,20/12,21/12,22/12,23/12,3/1	Puntland State Agency for Water, Energy and Natural Resources (PSAWEN)	Ali Abdillahi Farah	Deputy Chief Executive
18/11,25/11,27/11,28/11	Puntland, Accountant General Office	Ali Mohamed Mohamed	

Appendix 3

Date	Organisation	Name	Function
9/12	Puntland, Accountant General Office	Hassan Mireh Osman	
4/12	Puntland, Bosasso Port Authorities	Yahye Abdulle Mohamud	Port Manager
4/12	Puntland, Central Bank	Dr. Basha Abdi Gaala	Governor
4/12	Centre for Research and Dialogue Somalia	Jabril I. Abdulla	Co-Director
3/12	Puntland, Diakonia, Garowe	MS	
3/12	Puntland, FSAU, Garowe	MS	
3/12	Puntland, Ministry of Agriculture, Livestock and Environment	Abdisalam Klarsane Bono	Officer
5/12	Puntland, Ministry of Agriculture, Livestock and Environment	Abdul Nur	Agriculture Advisor
5/12	Puntland, Ministry of Agriculture, Livestock and Environment	Ahmed Mohud Mohed	Head Environment Section
10/12	Puntland, Ministry of Agriculture, Livestock and Environment	Saleiman Abdi Divie	Vice-Minister
4/12	Puntland, Ministry of Commerce and Industry	Farah Dohajog	Minister
9/12	Puntland, Ministry of Commerce and Industry	Ilmi Ali	Deputy Minister
6/1	Puntland, Ministry of Education	Farah Mahile	Director of Administration
6/1	Puntland, Ministry of Education	Ismail Duale Kambi	Director of Schools
6/1	Puntland, Ministry of Finance	Ali Farhan	Head of Training and Statistics Department
8/1	Puntland, Ministry of Finance	Mohamed Ali Moallim	Head of Statistics Department
8/1	Puntland, Ministry of Finance	Rashir Musa Ismail	Head of Training Department
8/1	Puntland, Ministry of Health	Dr. Abdi Awad Ibrahim	Director General
8/1	Puntland, Ministry of Local Government and Rural Development	Abdikain Ali Nimtsay	Minister of Information
8/1	Puntland, Ministry of Local Government and Rural Development	Abdirazak Ali Saeed	Vice-Minister
10/1	Puntland, Ministry of Local Government and Rural Development	Ali Abdi Aware	Minister
10/1	Puntland, Ministry of Planning and Statistics	Mahamud Warsame Farah	Minister

Appendix 3

Date	Organisation	Name	Function
10/1	Puntland, MOPAS	Abdulkadar M. Ahmed	DG Ministry of Planning and Cooperation Puntland
10/1	Puntland, Ministry of the Interior and Security	Ali Muhamed AbdulRachman	Director General
10/1	Puntland, UNICEF, Bosasso	Ibrahim Abdi Shire	Planning, Monitoring and Evaluation Officer Puntland
10/1	SACB, Health Committee	Dr. Imanol Berakoetxea	Somalia Health Coordinator for International Organisations
10/1	TNG, Ministry of the Interior and Security	Hussein Elabe Fahiye	Minister of Planning and International Cooperation, Transitional National Government (TNG) (Used to be director of the Statistical Office)
10/1	TNG, MOPAS	Nur A. Weheliye	DG Ministry of Planning and Cooperation TNG
10/1	UNDP	Abdullahi Sheikh Ali	National Coordinator Millennium Development Goals
10/1	UNDP	Dr. K.N.S. Nair	Programme Coordinator, Somalia Watching Brief and Poverty Reduction and Economic Recovery Programmes, UNDP
10/1	UNDP	Mariam Alwi	Program coordinator for Somalia
11//1	UNDP	Richard N'getich	
11//1	UNESCO	George Kolath	Programme Officer
11//1	UNESCO	James Wamwangi	Project Coordinator, Technical & Vocational Education and Demobilization
11//1	UNESCO	M.Devadoss	Head a.i. and Programme Coordinator
11//1	UNFPA	Dr. Jeylani M. Dini	National Programme Officer Somalia
11//1	UNFPA	Jacqueline Desbarats	Representative Somalia Office
11//1	UNICEF	Marcus Betts	Planning, Monitoring and Evaluation Officer
11//1	UNIFEM	Hendrica Okondo	Programe Coordinator
11//1	UNIFEM	Inderpal Dhiman	
11//1	UN-OCHA Somalia	Calum McLean	Chief
11//1	USAID	Maura Barry	Somalia Program Manager
11//1	WFP Somalia	Lubna Alaman	Programme Co-ordinator
13/1	WHO	Dr. Daher Aden	Medical Officer PHC
20/1	WHO	Dr. Ibrahim Betelmal	WHO Somalia Representative

Appendix 4

Category	Author	Year	Title
General			
	UNDP-Som	2002	Human Development Report 2001
	UN	2002	Joint Action and Recovery Plan for Somalia 2002 - 2003
	UNDP-Som/World bank	2003	Country Re-engagement Note
Socio-Economic Survey & Settlement Level Survey			
	UNDP-Som	2003	Socio-Economic Survey 2002, Report No. 1, Somalia Watching Brief, 2003
	UNDP-Som	2003	Socio-Economic Survey 2002, Technical Report on Design and Implementation, Report No. 2, Somalia Watching Brief, 2003
	UNDOS	1998	Socio-Economic Survey conducted in Middle Shabelle Region
	UNDOS	1998	Socio-Economic Survey W.Galbeed and Sahil Regions
	Prof.M.Kimani		Report on UNDP/UNDOS Methodology on Settlement Level Survey 1999
Demographic			
	K.E. Vaidyanathan	1997	Report of the UNFPA Consultant on Population Statistics of Somalia
	Fowler	1997	Trip Report Timothy Fowler
UN Organisations			
	UNDP	2003	Implementing Rights-Based Programming
	UNDP	2003	Gender and Reproductive Health Survey
	UNICEF	1996	Multiple Indicator Cluster Survey
	UNICEF	2001	Multiple Indicator Cluster Survey 2000, Technical report
	UNICEF	2003	Unicef Somalia Country Programme: 2004 - 2008
	UNICEF	2003	Unicef Somalia - Integrated Monitoring and Evaluation Plan 2004 - 2008
	UNICEF	1993	Situation of Children in Somalia: Results of Surveys (1 page)
	UNICEF		Somalia at a glance
	UNICEF	2002	Assessing the current status of the nomadic population in Somalia
	UNESCO	2003	Survey of Primary Schools in Somalia 2002/3, vol.1 Technical Report
	UNESCO	2003	Survey of Primary Schools in Somalia 2002/3, vol.2 Annexes on School Level Data
	UNESCO		School Data Form
	FSAU		FSAU Focus: Southern Somalia Deyr Crop, Assessment 2001-2002
	FSAU	2002	Food Utilisation in Somalia
	FSAU	2003	UN Somalia website: FSAU food economy baseline profiles (10)
	FSAU	2003	Baseline Profiles: Juba, Pump Irrigated Commercial Farming: Tobacco, Onions, Maize
	FSAU	2003	Guide to interpreting FSAU's Food Economy Baseline Profiles
	FSAU	2003	Monthly Food Security Report Somalia

Appendix 4

Category	Author	Year	Title
			Appendix 4
	FAO	1993	Survey of water points in Hiran and Galgadud provinces (Somalia)
	FAO	1993	Towards a Strategy for Agricultural Development in Somalia: From Relief, Rehabilitation and Reconstruction to Development
	WHO	2003	Country profile
Somali Organisatioons			
	UNDOS	1999	Price bulletin nr. 22
	UNDOS		UNDOS Data Collection Methodology Prices and Exchange Rates
	UNDOS		A Data Collection Check List for Field Officers
	Bossaso Port Authority		Ships and Import Cargo Statistics for the year 2001/2002
	Bossaso Port Authority		Ships and Import Cargo Statistics for the year 2002/2003
	Bossaso Port Authority		Ships and Export Cargo Statistics for the year 2001/2002
	Bossaso Port Authority		Ships and Export Cargo Statistics for the year 2002/2003
	MOPAS, Somaliland	2003	Somaliland in figures
	MOPAS, Puntland	2003	Fact and Figures in Puntland
	MOPAS, Puntland	2003	Annual Plan of Action
	MOPAS, Puntland	2004	List of Ministries Staff involved in Statistics
	The Ministry of Local Government and Rural Development, Puntland	2003	Work Program
	PSAWEN	2003	Borehole Status in Puntland State of Somalia
	PDRC		Organizational Profile & Program of PDRC
		2003	Hargeisa statistical abstract
		2003	Statistical abstract of Borama Municipality
DIMU			
	UNDOS		Information Bank on Somalia, Form 1, Form on individuals
	UNDOS		UNDOS Socio-Economic Database Handbook
	UNDOS		The Information Bank on Somalia Handbook
	UNDOS	1998	Data and Information Management Unit, Annual Report 1998
	UNDP-DIMU	2000	The Field Atlas of Settlements in Somalia
Reports on Somali Economy			
	UNDOS	1995	Report on Money and Trade in Somalia
	Satish C. Mishra	1993	Finance, Banking and Economic Regeneration in Somalia
	Marchal	2002	A Survey of Mogadishu's Economy

Appendix 4

Category	Author	Year	Title
	Michel Del Buono and Jamil Mubarak	1999	The Macroeconomy of Somalia. A Conceptual View
	UNDOS	1997	Report on; Socio-economic flows & mechanism at household & small enterprise level
Unclassified			
	UNDOS		Monthly Information System: proposed format for production of Regional Profiles
	UNDOS	1997	Report Of The Meeting Of Statistical Working Group
	UNDP-Som	2003	Available list of indicators ("Matrix")
	UNDP-Som	2003	Aide Memoir, Training Workshop on Poverty Monitoring and Analysis and Related Initiatives, 1-5 November, Dubai
	UNDP-Som	2003	Draft Agenda Meeting of the Technical Coordination Committee 1 - 10 September 2003
	UNDP-Som	2003	Report on Technical Coordination Committee Workshop 1 - 10 September 2003
	S.Serai, UNISOM	1994	Progress Report on Collection of Economic Social Statistics Data; Work Program During 22 March to 18 April 1994
	PAPFAM	2001	The Arab Family Health Survey: Sampling Manual
	PAPFAM	2002	Conceptualization and Methodology
	UNOSOM	1994	Terms of reference for a statistician to support the development office
	Mulama	2003	Outline of activities for PMATU/PMAS Establishment
	Mulama	2003	PMATU Training Programme (proposal)
	Mulama	2003	Poverty Monitoring And Analysis System for Somalia
	Mulama	2003	Addressing data needs on poverty in Somalia
		2002	Training Workshop on Poverty Monitoring and Analysis and Related Initiatives
			A Review of Successful Interviewing Techniques
			Guidelines for the Evaluation of Social Development Programmes (Ch.5 from 'Measuring the process')
	SACB	2003	Somalia Aid Coordination Body, directory
	CBS Kenya	2003	Economic Survey 2003
	CBS Kenya	1996	Welfare Monitoring Survey II 1994
	EASTC		Prospectus Eastern Africa Statistical Training Centre (EASTC)
Questionnaires			
	UNDP-Som		Non-Agricultural Business Establishment Survey Questionnaire
	UNDP-Som		Questionnaire for Cost of Production of the main staple crops
	UNDP-Som		Settlement Level SS 2004 (draft)
	UNDP-Som		Base line survey on gender and reproductive health, 2002-2003
	UNDP-Som		Socio-economic household survey, 2001-2002: household survey questionnaire
	UNDP-Som		Socio-economic household survey, 2001-2002: community survey, livestock questionnaire
	UNDP-Som		Socio-economic household survey, 2001-2002: community survey, agriculture questionnaire

Appendix 4

Category	Author	Year	Title
	UNDP-Som		Settlement level survey (nine regions, copy of North West for 1997)
	UNDP-Som		Socio-economic household survey (seven regions, copy of North West for 1997)
	UNDP-Som		Survey on educational facilities (nine regions, copy of North West for 1997)_
	UNFPA		A guideline for UNFPA household survey 2002
	The Government of Puntland		Questionnaire of Demographics and Animal Statistics
	The Ministry of Local Government and Rural Development, Puntland		Questionnaire of Coastal Areas Statistics
	UNDP		A guideline for socio-economic settlement survey
	UNDP		General instructions for conducting the household survey 2001