Censuses, Registers and Surveys in a Post-war Situation: The Case of Bosnia-Herzegovina

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Sarajevo, April 2002

ABSTRACT

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Bosnia-Herzegovina (BiH) was one of the republics of former Yugoslavia, which became an independent country in 1992, but soon war broke-out and it lasted until 1995. Prior to the war the country had a good statistical system comparable to that of many developed countries. There were censuses every ten years since 1921, and there existed a good administrative record system including registration of births, deaths, marriages and divorces, registration of establishments etc. In addition, there were surveys on fertility, health conditions, housing, household budgets etc on a fairly regular basis.

The war resulted in a collapse of the statistical system; besides the pre-war census and survey data became obsolete due to wartime mortality, migration abroad and internal displacement of population. Following the war different international agencies stepped in to fill-in the vacuum by undertaking collection of data on different aspects.

Now the statistical system is getting reestablished with the setting up of the Agency for Statistics at the State level and two institutes of statistics at the entity levels. The civil registration system has been reestablished. As an interim measure 25 municipalities were selected by PPS selection and house listing was carried out to serve as a master sample for household surveys. This master sample was utilized for conducting a Living Standards Measurement Survey in Oct-November 2001; this survey included 13 modules and covered all topics that are normally included in a population census. It is planned to carry out a Household Budget Survey in 2002 and a Labor Force Survey in 2003.
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1. Introduction

Bosnia-Herzegovina was one of the six republics in former Federal Republic of Yugoslavia (FRY). Following the break-up of former Yugoslavia in 1992, Bosnia and Herzegovina was recognized as an independent country and became a member of the United Nations. War broke out in 1992 and lasted until end of 1995. The war ended with the signing of Dayton Peace Agreement on December 14, 1995. The Peace Agreement established BiH as a country of two entities, each with a high level of autonomy. The two entities are Federation of Bosnia and Herzegovina (Fed) and Republika Srpska (RS). The district of Brcko (BD) which did not join either entity became a separate administrative unit within BiH. Sarajevo became the capital of the state of BiH as well as Federation of Bosnia and Herzegovina, while Banja Luka became the capital of RS. The administration of the district of Brcko is located in Brcko town. The administrative structure within the two entities evolved differently, the Federation comprising 10 cantons with 82 municipalities, with considerable autonomy for the Cantons and RS being divided into 7 regions comprising 64 municipalities but having a more centralized administration.

The war had caused widespread destruction of the infrastructure in Bosnia-Herzegovina, and the country has not fully recovered from it. The statistical system in former Yugoslavia was one of the best in the pre-war Eastern Europe. While the statistical system in former Yugoslavia was well developed, all data processing was centralized in Belgrade, the capital of Yugoslavia. Before the war, one of the regional offices of the former Federal Statistical Institute of Yugoslavia was located in Sarajevo, but it was functioning only as a data collection and editing center. The war had damaged the building and much of the records. With assistance from EU, the building was repaired and the Statistical Institute of the Federation was established. The Republika Srpska was less fortunate. There was no office of the Yugoslav Federal Statistical Institute in Republika Srpska and an institution had to be created from scratch. The Institute of Statistics of the Republika Srpska was established in a small rented building in the center of Banja Luka, since it did not have a building of its own. A statistical office is still in the process of establishment in Brcko District.

In order to promote the unification and harmonization of statistics at the state level, the BiH Agency for Statistics (BHAS) was established in Sarajevo, and the Agency is responsible for coordination of statistical activities in the two entities and the district of Brcko and for channeling international assistance for statistical development. The statistical system before the war was oriented to a planned
economy, and the legacy continues. As the country makes a transition to a market economy, there is an urgent need to harmonize the data collection in accordance with international and European standards. In order to accomplish this the statistical system requires a host of inputs ranging from upgrading of offices and equipment and technical assistance for capacity building and publication and dissemination of data on a current basis. This paper describes the efforts under way since the war, the processes adopted and the outcomes of these efforts.

2. Censuses, Registers and Surveys before the War:

Censuses

The first population census in Bosnia-Herzegovina was carried out under the Turkish regime in 1851, but this census enumerated only the males. As part of former Yugoslavia Bosnia-Herzegovina had carried out eight population censuses since 1921. Subsequent censuses were taken in 1931, 1948, 1953, 1961, 1971, 1981 and 1991. Successive censuses included additional questions to those asked in earlier censuses. Housing was included for the first time in 1971 and four questions relating to agriculture were included in 1981. In 1991 a full-fledged agricultural module with 90 questions was included in the census. The 1991 census has produced useful tabulations on demographic characteristics, education, economic characteristics, housing, migration and agricultural households. The coverage of the 1991 census varied in different areas depending upon the quality of enumerators, extent of cooperation from the public etc. Particularly in urban areas there have been under-enumeration of population (Sekulic, 1996). Due to large-scale population movements as a result of the war, the 1991 census data have been rendered obsolete. Nevertheless the 1991 census has been useful for establishing the lists of enumeration areas for the master sample (described later).

Civil Registration

Until 1939 registration of births, deaths and marriages in former Yugoslavia were carried out mainly by religious institutions and to a lesser extent by civil authorities. The law on civil registration adopted in 1946 made it mandatory to register births, deaths and marriages in the civil registration office, and divorces were recorded by courts. The statistics available for this period provided only the number of births, deaths, marriages and divorces without further details. Since the early 1950s civil registration statistics were compiled in greater detail and published in monthly bulletins. The unit of observation in this case has been the vital events. Since 1988 change of residence was registered including immigration and emigration, the unit of observation being the person who had changed residence. A sample survey carried out in 1953 showed that the coverage of vital registration was nearly complete. There were omissions of deaths of infants occurring in the first days of the infant’s life. The quality of data on causes of deaths varied depending upon the availability and quality of health service institutions. The authorities on a regular basis brought out abridged life tables derived from vital statistics particularly for the census years.
Surveys

As part of the former republic of Yugoslavia, BiH had carried out several surveys, notably demographic surveys, household budget surveys and livestock surveys.

In 1970 and 1976 fertility surveys were carried out, the latter being under the World Fertility Survey programme. These surveys canvassed two questionnaires— a household questionnaire and a questionnaire for the women in the age group 15-49. Estimates for BiH from these surveys are known to be reliable and comparable with such surveys elsewhere.

Under the Yugoslav administration Household Budget Surveys (HBS) were carried out in BiH during 1984 and 1991. The aim of these surveys was to collect data on income, expenditure and consumption of households as well as some data on living standards. A two-stage design was followed, with enumeration areas as primary sampling units and households as secondary units. The households were grouped into agricultural, non-agricultural and mixed households. Agricultural households were households whose members were mainly engaged in agricultural activities and none had a permanent job outside agriculture. Non-agricultural households were those having no land and one or members had permanent jobs. Mixed households were households where some members were engaged in agricultural activities, while one or more members had non-agricultural occupations. The HBS adopted the soviet system of a fixed panel of households that were never changed over the duration of the survey. Only households with exactly four members were included in the sample. Four member households with similar characteristics replaced the households that had moved out or could not be located, and those who refused to provide information. The sample size for the quinquennial survey was 3300 households and this was divided into three panels of 1100 households for the annual survey and covered by rotation.

A livestock survey was carried out annually since 1965, the last such survey being carried out in 1991. The 1991 survey covered a sample of 33400 households selected from 3340 enumeration areas following a two-stage sample design. The country was divided into 25 regions and the sample was selected from each region by PPS. The frame for the livestock survey was the list of households having livestock as recorded in the preceding census. The survey provided estimates of livestock by kind of livestock, and average number of livestock per household for each region.

3. Post war Scenario

Organization of the Statistical System:

Following the establishment of BiH as a separate state, comprising two entities, namely Federation of Bosnia and Herzegovina and Republika Srpska, two statistical offices were established at the entity level. The Institute of Statistics of the Federation was created from the former regional office of the Yugoslav Federal Statistical Institute. It retained some of the documentation, maps and copies of the materials of the previous
census of 1991 and surveys. It has ten cantonal offices that are responsible for data collection. The data are collected by the regional offices and forwarded to the Federal Institute of Statistics in Sarajevo, which compiles and publishes them in monthly bulletins of Statistics and in an annual Yearbook of Statistics. In the Republiks Srpska, the RS Institute of Statistics was established in 1992 and is functioning in a rented building with great space constraints. The institute is expected to move into its own premises in the coming months. As in the case of the Federation, RS Institute has established 5 regional offices to collect data, and these are forwarded to the RS Institute for compilation. The RS Statistical Institute has been compiling and publishing the data in monthly/quarterly bulletins of Statistics since 1996. In Brcko district a statistical bureau has recently been established with just three staff members and this institution has a long way to go before it is in a position to compile data on a regular basis.

At the state level the Agency for Statistics was established in 1998 with the mandate to compile state level data by aggregating the entity level data, to publish and disseminate them and to serve as the focal point for contacts with donor agencies. A board consisting of three members representing the three ethnic communities of BiH manages the agency. The agency with just four professional staff in addition to the management board has been bringing out Statistical Bulletins at the state level, and has been providing technical support to the entity institutes for the conduct of surveys and channeling international assistance in the field of statistics. The other important role of the agency is the harmonization of concepts, classifications and procedures in the collection and compilation of statistics in BiH.

The Agency as well as the entity institutes are functioning under severe resource constraints- space, manpower and finance- and are able to collect compile and publish only limited information. The post-war political dispensations have resulted in the state-level institutions including the Agency for Statistics with limited powers and financial resources, with the result that country wide economic and social statistics are not being produced in an adequate measure.

**Civil Registration:** As in the past births, deaths and marriages are registered in the place of occurrence and are recorded in the registration offices below the municipality level. These are compiled by the entity institutes according to place of residence of the mother in the case of births and the place of residence of the deceased person in the case of deaths. Divorces are recorded in the locality of residence of the couple. Beginning 1996 the Federal Institute of Statistics and RS Institute of Statistics have been compiling vital registration data at the municipality level and are publishing them in their Bulletins of Statistics.

**Administrative Registers:**

Administrative registers are maintained at the municipalities covering companies, associations, cooperatives, non-governmental organizations etc with codes for the different types of organizations, nature of their activities, form of ownership and source
of funds. The entity institutes collect data on employment and wages from the enterprises and compile them at cantonal and entity levels according to type of enterprise, nature of activities, form of ownership and source of funds. These data are collected by mail from the enterprises. The staffs of the institutes make personal visits to speed up the reporting. These registers suffer from duplication, missing units, incorrect addresses and misclassifications (Sabanovic, 2001). In Brcko district a beginning has been to register all the organizations located in the area. Data on Unemployment are collected from employment bureaus and compiled at the entity level. These are published in the Statistical Bulletins of the entities and of the Agency.

4. Various Surveys carried out by UN Agencies, EU, NGOs etc.

The lack of statistical information for BiH has led to efforts by international organizations to gather information on diverse topics required for policy making and strategy development. Notable among these are United Nations, European Union, UNICEF, and WHO etc. These surveys are ad hoc in nature, and do not provide continuity in data collection, although they have provided much valuable information.

Early Warning System (EWS) Reports:

Since 2000, UNDP has been sponsoring a series of studies under the early warning system project. These reports are published quarterly and an annual report is also published (UNDP, 2000a; UNDP, 2001) The aim is to use the EW methodology to monitor basic crisis indicators such as social tensions and conflict, natural phenomena, human rights violations, economic trends etc. The analysis is based on public opinion surveys on different subjects of interest carried out through out the country. The survey covered a sample of 1500-2000 persons selected from 300 settlements in 5 geographic regions divided between rural and urban and different ethnic groups. The EWS surveys cover topics like political stability, economic and financial viability, income and social security and ethnic relations. These reports provide considerable insight into the economic and social trends in BiH, but in view of small samples involved these cannot be used for generalizations or extrapolations .

Human Development Reports:

UNDP has brought out two Human Development Reports in 1998 and 2000 (UNDP, 1998; UNDP, 2000b) These reports have been prepared by leading academics in the country on key issues facing the country. The first report is divided into three parts reflecting three distinct thematic clusters. Part I provides the background to the analysis such as human, political and social situation, environment, poverty and social protection. Part II is concerned with the critical components of human development, namely, Health Care, Education and Employment. Part III deals with vulnerable groups such as refugees, women and elderly who constitute two-thirds of the population of BiH. This report is based on secondary data from different sources, mostly administrative records. Regrettably, due to lack of necessary data the HDR was unable
to present a composite Human Development Index (HDI) usually found in such reports.

The Human Development Report for 2000 is devoted to Youth and covers education, health, economy, sexuality, leisure activities, religion, politics and civil society. This report is based on a countrywide public opinion survey to measure the attitudes of young people (14-30 years) to different social issues. The survey is based on a face-to-face interview of a representative sample of 1000 persons (500 in FBIH and 500 in RS) drawn from three ethnic groups. A pre-coded questionnaire was used and the interview was conducted in privacy. This report carries some interesting findings pertaining to youth although the sample is small and the responses are subject to considerable sampling variance. The report presents a set of useful recommendations outlining the strategy for youth development.

Reproductive Health Surveys

A reproductive health survey was carried out by the Institutes of Public Health in the RS and in the Federation based on WHO methodology and questionnaire. (UNFPA and WHO, 1999; UNFPA and WHO, 1999b) The aim of the survey is to gain insight into knowledge, attitude and practices of women in the reproductive age group in the area of reproductive health and family planning. An additional aim is to provide insight into the availability and use of health care services. A random sample of 1300 households was selected in each entity and women in the reproductive ages (15-49) were identified. The survey covered only women who were married, or were living in a marriage like arrangement as well as those who were living alone, but had children. 1000 women were selected from each entity from the sample of 1300 households spread over 30 clusters. The survey included questions on (i) Demography,(ii)Structures of the Family,(iii)Knowledge and Practice of Contraception ;(iv)Reasons and methods of termination of pregnancy, (v) Opinions on sex and marriage, (vi) Maternal morbidity, (vii) Access and Use of Health Care services. Although the sample is small the survey provides some valuable insights into the health risks related to pregnancy, knowledge attitude and practices of contraception, and use of appropriate health care services.

Multiple Indicator Cluster Survey

UNICEF sponsored a multiple-indicator cluster survey (MICS) based on standard UNICEF methodology in the two entities. (UNICEF, 2000a; UNICEF, 2000b). The aim of MICS is to provide key health indicators at the entity level with breakdowns for rural and urban areas. Information was also collected on child labor among children 5-14 years old and living arrangements of children in general and orphans in particular. A self-weighted sample of 10780 households was selected in two stages after stratification- 6580 households from Federation and 4200 households from RS. Stratification into urban and rural was done at the municipalities level. Urban was defined as cities and municipality centers, and all other areas were defined as rural.. Where the municipality centers were small they were treated as rural. The primary
The sampling unit for the survey is a segment containing approximately 110 households or 374 persons. The number of sample clusters was allocated proportionate to the urban and rural population in each municipality. The sample of clusters was selected by PPS. Some reserve segments were also selected for replacement in case the selected segments were empty, or had less than 80 households, or inaccessible due to mine fields, or shared between the two entities. The supervisors listed all the households in the selected segments in a listing table and then selected 20 households randomly from each segment.

The questionnaire used was the UNICEF model questionnaire with some modifications and additions. The questionnaires were translated into local languages and a Pilot survey was carried out in 100 households in each entity before finalization. Three questionnaires were utilized in the survey. The household questionnaire sought information on each household member—sex, age, literacy, marital status, and orphanhood, education, child labor, water supply and sanitation. In addition a separate questionnaires for women 15-49 and children under 5 years of age were also canvassed. Mothers or the foster-mothers answered the questionnaire for children. The questionnaires for women and children included the following modules:

**Women's Questionnaire:**
1. Child Mortality
2. Maternal Health and Health of the New Born
3. Knowledge and Use of Contraception
4. Knowledge of HIV/AIDS transmission/prevention

**Children's Questionnaire:**
1. Birth Registration and early learning
2. Care of children during illness
3. Immunization including date and type of most recent vaccination
4. Anthropometrics

The MICS made special efforts to ensure a high response rate. The supervisors interviewed 10 percent of the households again and checked the data. The data entry was performed using the ISSA 52 software. In order to ensure quality control, the questionnaires were entered twice, and internal consistency checks were performed. The data entry was completed in seven weeks.

MICS has provided nearly 30 key health indicators at the entity level with breakdowns for rural and urban areas. This included rates of literacy and school enrolment, access to water supply and sanitation, extent of stunting and wastage among children under 5 years of age, low birth weight, immunization coverage, incidence of diarrhea and use of ORS during the two weeks preceding the survey, incidence of acute respiratory infections (ARI) during the two weeks prior to the survey, knowledge of women about
contraception and about HIV/AIDS, the extent of prenatal care, assistance at delivery, registration of births etc.

Health Expenditure and Perceptions Survey

The Departments of Health in the two entities carried out a Health Expenditure and Perceptions Survey in 1999 with financial support from World Bank and UK Know-How Fund (World Bank, 1999a; World Bank, 1999b). The survey covered 3300 households in BiH, of which 2200 were from the Federation and 1100 were from RS. The sample households in the Federation were selected from three Cantons, namely, Zenica, Una Sana and West Bosnia, and the sample households in RS were selected from the Banja Luka and Rogotica regions. The aim of the survey was to collect information on household access to and utilization of health care services and related expenditures, which are required for preparing Health Resource Accounts. A secondary aim was to explore the household perceptions of current and future health care provisions, and to ascertain their opinion on health sector issues including priorities for health care, future funding options and willingness to pay for the services. The questionnaire comprised of four parts, as follows:

A. Household Member Characteristics

This section included 14 questions on individual characteristics, such as sex, age, ethnicity, migration, education, occupation, insurance and exemption status.

B. Utilization of Health Care Services

This section included 35 questions on health service utilization and expenditures by household members. It is divided into hospital and non-hospital services. The reference period for non-hospital services is the previous month while the reference period for hospital services was the previous 12 months.

C. Household Characteristics

This section, comprising 20 questions sought information on the household income during the previous month, household expenditures during the same month and the amount spent on health care. Questions were asked about the distance to alternative health care facilities (access to health care) and informal payments made by the household for health care services.

D. Household Perceptions

This section comprised of seven questions to ascertain their opinion on the current state of health provision and their preferences regarding health care financing. The survey
provided estimates of a number of parameters important in the analysis of health care patterns of utilization of hospital and non-hospital services, expenditures associated with admissions to hospitals, expenditures associated with visits to non-hospital institutions, relationship of health expenditures to household income and total household expenditures, total private expenditures for health care including informal payments. The study also presented estimates of income elasticity of demand for health services, and a multi-variate analytical model of health spending for BiH. Separate reports on the household perceptions of the healthcare in the two entities are available.

Food Security Surveys:

In 1988 two food-security surveys were carried out, one by European Commission Humanitarian Office (ECHO) and the second by World Food Programme (ECHO, 1998; WFP, 1998). The ECHO survey covered 1200 households selected from 60 randomly chosen clusters, of which 34 were chosen from Federation and 24 from RS. The clusters were selected on the basis of probability proportional to size using UNHCR 1996 Census of refugees as the sampling frame. Since the aim was to produce estimates at the entity levels, the sample was not allocated proportionately to the population of different cantons/regions. The questionnaire used in the assessment is the one used elsewhere in the transition countries, with necessary modifications. The final questionnaire included questions regarding demographic characteristics, access to resources, coping mechanisms, food consumption and expenditures. The survey provides estimates of food vulnerability among different groups of food-aid beneficiaries and potentially food insecure households.

The WFP Survey in the same year was aimed at characterizing the current food aid beneficiaries according to vulnerability indicators, to determine the target groups for food aid programmes and to provide the basis for designing other humanitarian and social welfare programmes. The survey was carried out by WFP in collaboration with three NGOs. 1199 food beneficiary households having approximately 4080 persons were selected at random from 153 clusters within five WFP Areas of Responsibility (AORs). The questionnaire used for the survey is a modified version of the ECHO questionnaire. The survey provides estimates of livelihood pattern among food beneficiaries, average expenditure on food among aid beneficiaries and among the different vulnerable groups. The survey also provided estimates of food vulnerability among the different categories of food aid beneficiaries.

5. Plans for Development of Statistics

Statistics Law for BiH

A Statistics Law for Bosnia and Herzegovina has been prepared and is awaiting approval by the Council of Ministers. This law is meant to give legal status to the organization and production of statistics in BiH. This law ensures confidentiality of individual information and defines the role of the Agency for Statistics for the
Statistical Systems Project

A project was initiated at the end of 2000 with support from World Bank, DFID and UNDP in order to build the basis for a statistical system in BiH. The participating institutions are the Agency for Statistics at the state level and the institutes of statistics of the Federation and RS at the state level (UNDP, 2000c). The long-term objective of the project is to promote an environment in BiH in which decision-making is based on relevant and reliable statistics. The immediate objective of the project is to carry out a series of high quality surveys in accordance with international standards, to produce statistics and indicators that are relevant and comparable for the two entities and for the state of BiH. The project is also intended to analyze the results of the surveys and disseminate them to all interested groups. The project envisaged the creation of a master sample and the implementation of the Living Standards Measurement Survey, Household Budget Survey, a Panel Survey and a Labour Force Survey during a three-year period 2001-2003. The plans for the Master sample were developed with assistance from experts from Statistics Sweden under a grant from SIDA, while the enumeration of Master sample was funded by DFID and executed by UNDP. The LSMS and LFS will receive assistance from World Bank and UNDP, while the HBS will be carried out with assistance from ISTAT under a grant from the Italian government. A consultancy firm under a DFID grant will carry out the panel survey.

6. Master Sample

The war in Bosnia-Herzegovina and the large-scale movement of population that occurred as a result of the war had rendered the 1991 census frames obsolete. It was decided to establish a master sample of stratified geographical areas with an updated listing of households to serve as frame for future surveys. An expert from Statistics Sweden (under a grant from Swedish International Development Agency) selected a sample of 25 municipalities. Complete listing of households was carried out by the two
entity institutes (funded by DFID through UNDP). This task was accomplished during 2000-2001. The municipalities were stratified into three strata before selecting the sample of municipalities:

Strata 1 (Urban): Municipalities having 65% or more urban households in the 1991 census;
Strata 2 (Semi-Urban): Municipalities having between 35% and 65% urban households in 1991;
Strata 3 (Rural): Municipalities having less than 35% urban households;

The number of households in each municipality in the year 1999/2000 was estimated from different sources of data including the 1991 census, data from civil registration for the municipalities, estimates of migration for the different municipalities etc. In RS the census of refugees and displaced persons conducted in 1996 was also utilized.

Two alternative variants of the master sample of municipalities were proposed by the Swedish consultants (Bodin and Cassel, 2000) as follows:

Option A: 100 percent of municipalities in Stratum 1, 50 percent of municipalities in Stratum 2 and 20 percent of municipalities were selected in Stratum 3, the selection of municipalities being done PPS;
Option B: 50 percent of municipalities in Stratum 1 using PPS, 40 percent from Stratum 2 by simple random sampling and 50 percent of municipalities in stratum 3 using simple random sampling.

Option A included 54 municipalities –29 from Federation and 25 from RS, while Option B included 25 municipalities- 14 from Federation and 11 from RS. Option A required the listing of 11440 enumeration areas in the two entities having an estimated 680000 households. Option B required the listing of 6100 enumeration areas having 380000 households. There were practical issues to be tackled, such as preparation of maps, demarcation of boundaries of enumeration areas, and the logistics of the operation. The cost of listing would be greater for Option A than for Option B. It was therefore decided to accept Option B, and enumerate the 25 municipalities included in Option B.

The updating of enumeration areas and house-listing was done in three stages as follows:
Stage 1: Updating of maps with respect to street names, street numbers, and buildings
Stage 2: Establishment of list of households and collection of basic information;
Stage 3: Entry of the information pertaining to the households in a special format.

In the Federation the Federal Geodesy Office coordinated the preparation of the maps, while in the RS the Cadastral and Mapping Authority carried out this task. The Institutes of Statistics in the Federation and the RS implemented the second and third stages. They recruited enumerators from unemployed persons from the selected municipalities and the municipalities provided the controllers. The staff of the institutes
trained the enumerators and controllers served as supervisors of the fieldwork. A questionnaire for the household count was designed which included the name of head of the household, address, telephone number, members of the household and their sex and age. The fieldwork in all the municipalities lasted four weeks in June 2001. Soon after, the questionnaires were brought to the respective institute headquarters and the data were entered in a computerized format using the ACCESS software. The entire process of data entry and tabulation of the results was completed in four weeks. In order to ensure accuracy of the data, several control procedures were adopted, including verification of the entries by the supervisors in 10 percent of the households, and double entry of the filled questionnaires and their cross-verification. The master sample was subsequently utilized for carrying out the Living Standards Measurement Survey (LSMS) and the experience showed that the household listing in the master sample was well done.

8. The Living Standards Measurement Survey (LSMS)

This is a major collaborative project undertaken in Bosnia-Herzegovina with the support of the World Bank, DFID and UNDP. The implementation of the project was carried out by the entity level statistical institutes, namely Federal Institute of Statistics (FIS) and Republika Srpska Institute of Statistics (RSIS) in their respective areas in coordination and technical support from BiH Agency of Statistics (BIHAS). On 26 September 2001 the Living Standards Measurement Survey (LSMS) was successfully launched throughout Bosnia and Herzegovina. The survey covered a sample of 5400 households - 3000 households in the Federation and 2400 households in the Republika Srpska. The survey was completed on 23 November 2001.

The aim of LSMS was to collect information on both monitory and non-monitory indicators of welfare. The key monitory indicator is the consumption aggregate, while the non-monitory indicators pertain to education, employment, health etc. The LSMS was an integrated household survey covering a number of topics-population, housing, education, health, labor, migration, voucher, credit, social assistance, consumption, agricultural and non-agricultural activities. There were two types of questionnaires. The household questionnaire included 13 modules, each covering a specific topic. The interviewers filled the household questionnaire by visiting each selected household. There were two visits, the first ten modules were covered during the first visit, and the remaining modules were covered during the second visit two weeks later. In addition the supervisors for a group of enumeration areas canvassed a prices questionnaire. Standard LSMS concepts, definitions and procedures were followed in the survey. The methodology of LSMS has evolved over a long time and has been based on the experience gained in a number of Asian, African and East - European countries. The data from the different modules can be linked with the help of the unique household ID, and this would facilitate analysis of interrelationships between different variables.

The planning of the survey (survey design, questionnaires and logistics) was carried out by a survey management team comprising of representatives of the Federal Institute of Statistics, Republika Srpska Institute of Statistics and BiH Agency of Statistics (BiHAS) with advice from the specialist from the World Bank and a resident
Chief Technical Advisor provided by UNDP. The entity institutes selected the sample of households with advice from the UNDP resident advisor. The survey covered 3000 households in the Federation and 2400 households in the RS. The sample was selected from the 25 municipalities included in the Master sample described earlier. The sample was allocated to the different municipalities proportionate to the estimated number of households in each municipality. The households were selected in two stages. In the first stage, the enumeration areas or groups of enumeration areas having at least 50 households were selected, and in the second stage 12 households were selected by systematic sampling from each enumeration area or group of enumeration areas. For each enumeration area (or group of EAs), 4 additional households selected at random were provided for replacement in case some of the households could not be covered.

In June 2001 a pilot survey was carried out by the entity institutes in a sample of 216 households equally divided between the two entities. The results of the pilot survey were thoroughly discussed in two workshops held in Laktasi (RS) and in Zenica (Federation) and based on these the household questionnaires comprising of 13 modules were finalized. In addition several improvements were made in the logistics of the survey (selection of interviewers and supervisors, issue of contracts, method of training, procedures of data entry, etc.). 112 interviewers and supervisors were recruited by the two entity institutes and trained in 4 training workshops held in Teslic (RS) and Zenica (Federation). In addition, 19 data entry operators were trained in 2 workshops held in Sarajevo and Banja Luka.

The survey has adopted a number of innovations. This is the first time such a survey was undertaken in Bosnia-Herzegovina, and the survey collected data required for planning and policy making and for developing the Poverty Reduction Strategy Paper (PRSP). This is the first time that such a large questionnaire comprising of 13 modules has been attempted in a survey. For the first time a master sample has been established from the two entities and for BiH. The survey had adopted a common approach for the 2 entities and this had led to harmonization of concepts, definitions and procedures in the two entities. For the first time new software CSPro was employed for data processing. Seven data entry centers were set up – 4 in the Federation and 3 in the RS to enter the data as and when they were collected in the questionnaires. These data were transferred by telephone links to the micro servers located at the FIS and RSIS using a modem and software called PCANYWHERE. This is a first time that such a technology is being employed in BiH. The data have been tabulated and the results will be published at the entity level and state level. The publication of the results is expected to stimulate a thorough analysis of the data by the official and non-official agencies engaged in the development of BiH. The survey has contributed to capacity building in the entity institutes and BHAS in the field of sampling, collection, processing and analysis of data and use of the latest softwares for statistical analysis. The results of the survey are expected to be published by June 2002 and the data set will also be placed on the website.

LSMS has provided high quality indicators on most aspects of household welfare (consumption, income from labor market activities, household enterprises or agriculture, asset ownership, migration, health, education, vouchers and credit, etc.). It is expected that the results of the survey will provide the basis for decision-making on
poverty alleviation, for generation of employment and for long-term social and economic policies.

7. Proposed HBS, LFS and Panel Surveys

**Household Budget Survey:**

A household Budget Survey will be carried out with financial assistance from the Italian government and technical assistance of Italian Statistical Institute (ISTAT). The main objective of HBS is to provide accurate data on consumption patterns in the country as well as data on expenditures on health, education and social services. These data will be required for developing the weights for consumer prices indices, and also for compilation of estimates of household consumption in the system of national accounts. The size of the sample and the method of sample selection etc will be determined in consultation with experts from ISTAT. It is planned to collect data during a 12-month period in order to reflect seasonal variations in consumption expenditures. The instruments for data collection and the procedures are yet to be determined, and it is expected that the survey will be implemented by the end of 2002.

**Panel Survey:**

The panel survey supported by DFID will be carried out in a sub-sample of the LSMS sample with a view to observe the changes over time in the various characteristics observed in the LSMS (Laurie and Lynn, 2002). Allowing for replacement for non-response, the sample is likely to be of the order of 3000 households. The aim of the panel survey is to provide longitudinal data by re-interviewing these households over a period of two years following the LSMS. The re-interviews will take place in the autumn of 2002 and 2003. The panel survey is expected to provide data on key transitions in the labor market and geographic mobility, which have a bearing on the well being of individuals and households and considered relevant for social policy. While the questionnaire will follow the pattern of the LSMS questionnaire, some additional questions are likely to be included for obtaining in-depth information on labor market dynamics.

**Labor Force Survey:**

A Labor Force Survey to be carried out in 2003 is likely to cover a larger sample of approximately 10000 households, so as to provide estimates of employment and unemployment at the state and entity levels for urban, semi-urban and rural strata. In the absence of a population census, the labor force survey is expected to provide data on the stock of the labor force and its characteristics which are needed for employment generation programmes.
8. Conclusions

In conclusion, it may be stated that the statistical system in BiH has not fully recovered from the effects for the war, although great efforts have been made with the support of the international community. The registration systems have been re-established to a great extent and some surveys have been carried out. Yet the system is handicapped by lack of staff and financial resources. There are no indications of an impending population census or a regular household survey programme or well-defined plans for analysis of data. The following are recommended as the essential steps for the development of the statistical system in BiH:

1. Population Census: A population census is vital not only to provide much needed social and economic indicators, but also to provide a frame for future surveys. It normally requires two years of preparation for a carrying out population census, but it requires a political commitment and allocation of necessary resources, and the enactment of the legislation vesting the institutes the authority to carry out a census.

2. Programme of household surveys: At present all surveys are carried out on an ad hoc basis, depending upon the availability of funding from donor agencies. There is need to establish the priorities for surveys on the basis of needs of the country, besides the availability of funds from international agencies. One of the surveys needed is on the informal sector, or the “gray economy” as it is called in BiH. This sector constitutes a sizable segment of the economy, but little information is available at present. For monitoring poverty levels, there is need to collect data on monitory and non-monitory indicators on a regular basis. Surveys on the model of MICS will be appropriate.

3. Harmonization of Procedures: In view of the transition taking place in BiH from a planned to a market economy, there is a continuing need to harmonize concepts, classifications and procedures in accordance with international and European standards. The Agency can play an important role in this task by promoting coordination with other state and entity level institutions, and especially the entity statistical institutes.

4. Dissemination of Data: At present the data are published in the monthly bulletins or in the annual yearbook of statistics, and distributed to the municipalities and Kantons. A limited number of copies of these publications are also sold to private institutions and individuals. There is no arrangement for sharing of datasets. For the first time the data sets from the LSMS will be made available to the public and also put on the website of the World Bank. A website is under creation for the Agency for statistics and the LSMS data is expected to be included in this website. The Agency and institutes should also convene meetings of data users, to get feedback on the results of surveys such as LSMS and to get their views on future statistical activities.

5. Analysis of data: In the past the entity institutes and the Agency have been institutions for data collection and compilation and not engaged in the analysis of the
data. If adequate resources are provided the Agency is ideally placed to carry out analysis of data collected and dissemination of such analysis through seminars, publications etc. The publication of a Journal should be considered as more data are collected and analyzed.

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