STATISTICS DENMARK

Statistisk sentralbyrå
Statistics Norway

Statistiska centralbyrån
Statistics Sweden

MZ:2003:16

Mid-Term Report

from a short-term mission on final data quality control and reporting IAF 2002/3

From 17 September to 31 December 2003

Erwin Triebkorn

Instituto Nacional de Estatística

This report contains
restricted information
and is for official use only.

Ref. no. 104.Moz.98

October 2003

Address in Germany: *Erwin Triebkorn*
Karl Liebknecht Str.14
D-15370 Petershagen
E-Mail: *Erwin.t@gmx.de*
Telephone: *+49-33439-65637*

Address in Mozambique: Av. Julius Nyerere 854
Maputo
E-mail: *Erwin.Triebkorn@INE.gov.mz*
Telephone: *+258-1-492114*
Telephone (private): *+258-1-498044*

Table of Contents

1 EXECUTIVE SUMMARY

According to the Terms of Reference the consultant should

- Guide the final quality consistency control and document this part of the data-processing process,
- Revise a tabulation plan for the final report and for final results publication
- Ensure the comparisons between IAF 2002/03 and IAF 1996/97.
- Conceptualize the final report framework and structure
- Train INE staff in data analysis and IAF report production

Since the beginning of the consultation the following major results have been achieved

- The quality of data has increased considerably. It can be stated that as a result of a thorough validation the quality of data on a national level of aggregation is fairly good. Problems may occur in analyzing data by provinces or commodity groups.
- The elaboration of the tables with final results is in progress.
- The structure of the IAF 2002-3 final report is ready and approved by the Vice-president of INE
- INE-staff is more qualified for consistency control.

2 INTRODUCTION

The author of the report is an expert on household surveys with more than 40 years of experience. He organized the first nation-wide household survey in Iraq in 1970-72. In Mozambique he has assisted the process of revival of the government statistics since 1976, i.e. from soon after the independence of the country. His main contribution was the assistance to the preparation and execution of the Census of Population in 1980 and 1997. As an UNDP expert he organized the household surveys in 1991-1993 in Maputo and the provincial capitals. Because of the Census 1997 he was not involved in the process of the preparation and execution of the Household Survey (IAF) in 1996/7, but participated in the report writing.

He assisted the preparation of IAF 2002/3 from the beginning, i.e. designing the questionnaires, elaboration of manuals, training of personal and the planning of the pilot survey (but not the analysis of the pilot survey). He did not participate in the supervision of the fieldwork during the survey. In March-April 2003 he participated in the validation of the data for the first 6 months of the survey and the elaboration of a report on the preliminary results. According to his Terms of Reference for the present mission the author will assist in the data quality control and report writing as well as training of personal.

3 ACTIVITIES DURING THE MISSION

3.1 Situation at the beginning of the mission

The data collection was finished before this author arrived. According to the sampling techniques applied to IAF 2002/3 a sample size of 8,727 households had been selected in 858 enumeration areas to ensure representative results on the national and provincial level. 7,984 households out of the selected sample were interviewed. This gives the very high response rate of 90.5% among the original sample.

In addition interviews were obtained among a representative group of reserves as 3 households had been selected as reserve in each enumeration area. In total 665 households, who were absent during the period of data collection and 51 households who refused, were substituted by households from this reserve. Finally the total number of households covered by the survey reached 8,700, i.e. 99.7% of the originally calculated sample size.

The data entry had also been finished and data validation was in progress. The consultant on data processing, Jim Otto, who arrived 2 weeks earlier, had produced a set of tables with preliminary results. The analysis of these tables showed the need to continue and intensify the quality control.

3.2 Data validation

The most common errors were linked to quantities and prices. One reason was omissions, for instance, quantity had been recorded but not the value. Another type of error was of inconsistent entries since expenditure on some items were too small or too large in relation to the quantity. In some cases the decimal point was put at the wrong place. Some enumerators did not pay attention to the fact that in the questionnaire on monthly expenditure, the value had to be written in 1,000 Meticals. Thus, a box of matches with a price of 1,000 Meticals got a value of 1,000,000. Especially in rural areas, but also to a lower degree in urban, people use local units of measurement instead of standard units. Although the enumerators had a balance to convert the local units into standard once, some did not use the balance or had problems with the calculation.

The cleaning of these errors was done using price limits based on local market prices. On the basis of quantity bought and amount paid, an average price was calculated and compared with the price limit. The listed differences served as basis to consult the questionnaire and correct the data. Thus, most of the errors could be corrected. Some errors were corrected only after supervision visits in the field by the staff of INE.

Another type of errors was linked with the calculation of auto-consumption or the own consumption i.e. items produced and consumed by the household. The questionnaire referred to the consumption during the day before the interview. There were a total of 1,337 observations with quantity and no value out of 57,373 observations (2,3%). The value for these observations wes imputed using a unit price for the product as close as possible in time and space to the case of missing data. The unit price was calculated as an average on the basis of the data collected with the Questionnaire on Daily Expenditure and the Community Questionnaire. The same procedure was used for income in kind.

The most difficult question was the estimation of rent for owner occupied houses. There is to say, that especially in rural areas it is not a common habit to rent houses. According to the manual the household living in its own house should estimate the value, which he would have got if he had rented it out. In rural areas the data recorded ranged from 1,000 to 8,000,000 Meticais per month and in urban areas from 10,000 to 36,000,000 Meticais. To solve the problem a model using data on the building material, facilities on water supply, sanitation and energy was used to impute the rent for different types of housing in rural and urban areas.

The validation was done by a group of people especially prepared for that task. They have got permanent assistance from the author. Today they are able to do this kind of scrutiny without further assistance.

3.3 Comparison with IAF 1996/7

Although IAF 1996/7 was based on a similar concept as the actual one, the comparison is very complicated. The main problem comes from the fact that 6 years have passed and people can hardly remember what was done. The questionnaires have been destroyed and data records are not complete. Many

different people participated in the data processing and there exists practically no documentation.

The comparison of the results from the two surveys is also linked with some methodological differences.

A different definition of urban and rural areas was used. In 1996/7 only the 11 provincial capitals including Maputo City were considered urban and the rest of the country was rural. In 2002/3 the urban area includes all 23 cities and 68 towns. This definition responds to the official territorial division of the country. The Law 6/86 defined which areas belong to urban and which is rural. It is to say, that the infra-structure in these small towns and to a great extend also in the cities is not much different of that in rural areas. Therefore nearly half of the population in the urban area works in agriculture. For practical reasons and to ensure the comparability the IAF 2002/3 data have been recalculated using the area definition from 1996/7. According to the actual definition the share of the population in urban areas in 2002/3 amounts to 32.1% of the total population, but using the 1996/7 definition the urban population would be only 19.8%. In 1996/7 the urban share was calculated as 18.5%.

The use of different classifications is another problem. In 2002/3 the CLASSIFICATION OF INDIVIDUAL CONSUMPTION BY PURPOSE (COICOP-HBS), adopted to the conditions of Mozambique (CCIO), was used to classify goods and services. The COICOP-HSB consists of 12 major groups. The classification used in 1996/7 was based on the SNA classification, which consisted of 8 major groups. This fact had been taken into consideration in data comparisons. During the period between the two surveys Mozambique experienced a high inflation. The consumer price indexes (CPI) calculated by INE is not a good instrument to measure inflation. It is not representative for the country because it is based only on the 3 major cities. CPI does not exist for rural areas. It needs urgently to be actualised. Major changes in the structure of consumption do not find an adequate reflection in the indexes. For instance, habitation is still represented by rent paid for houses in government ownership. In 1996/7 this rent was extremely low. In the meantime a great part of these houses have been privatised and have now a rent incomparable higher than before. Expenditure on transport and communication per household increased from 11,760 Meticais in 1996/7 to 134,984 Meticais 2002/3. The CPI for transport and communication amounts only to 237%. Transportation is represented by bicycle only although the number of cars has risen considerably. 11% of households in urban areas have now at least one mobile telephone, but it is not represented in the CPI. In 1996/7 very few households had a telephone. That is just to show that the CPI does not reflect the reality. More study is needed to find a better solution.

3.4 Report writing

A working group has been created to analyse the survey data and write the reports. The group works under the leadership of the Director of the Directorate of Demographic, Vital and Social Statistics, Fátima Zacarias. Members of the group are: Cassiano Soda Chipembe, Chef of the Department of Demografic Studies, Firmino Guiliche, Chef of the Department of Prices e Conjuncture, Elísio Mazive, Creva Carlos, Duce Pedro, Teigland Jon, Long

term consultant and the author. The structure of the basic report has been discussed and approved by the Vice-President of INE, Manuel da Costa Gaspar. (see Appendices 2). Separate reports on methodological aspects of the survey as well as reports on victimization and communities will be elaborated. It is to stress that the group works as a team, once a week there is a regular meeting to evaluate the progress. The author is in constant contact with the group members to discuss problems and transmit his experience. This kind of on the job training will be intensified until the end of the mission. The draft of the report should be ready by the end of November. A meeting with the main users of the information is planed for December.

4 RECOMMENDATIONS

Data on auto consumption and imputed rent have a decisive impact on the household income as well as expenditure. The share of auto consumption in the total income amounts to 51% in rural and 8% in urban areas. The value of the imputed rent amounts to 5% and 18% respectively. The accuracy of these data depends strongly on the capacity of the enumerator. This should be taken into consideration in preparing new surveys. The enumerators should be better trained on how to use the balance. It should be tested whether questions on the cost of construction and the age of the houses could deliver a better basis for imputing the rent.

For practical reasons daily expenditure have been collected in Metical while monthly expenditure and income in thousands. The practical experience has shown that the different unit caused errors. The author recommends in future using the same unit in all parts of the questionnaire.

The IAF 2002/3 delivers a huge amount of price information but it shows also the urgent need to revise the consumer price indices. The structure of weights will change drastically. This will put the measurement of changes in cost of living over time on a more reliable basis. The author recommends making efforts aiming at collecting prices in rural areas.

In the past INE has given much attention and spent relatively more time on preparing and executing new household surveys than on analyzing the output. The IAF 2002/3 has proved that the staff of INE is able to prepare and execute efficiently such surveys. There exists also a group of people with good experience in data validation. The author recommends focusing more on qualifying the staff in analytical work.

APPENDIX 1. Persons met

INE

Mr. João Dias Loreiro, President
Mr. Manuel da Costa Gaspar, Vice-President
Mr. Arão Balate, Director of the Directorate of Census and Survey
Ms. Fátima Zacarias, Director of Directorate of Demographic, Vital and Social Statistics
Mr. Cristovão Muahio, Chef of Department of Sampling and Methodology
Mr. Firmino Guiliche, Chef of the Price and Conjuncture Department
Mr. Cassiano Soda Chitembe, Chef of the Department of Demographic and Social Studies
Mr. David Megill, Consultant in sampling
Mr. Jim –Otto, Consultant in data processing
Mr. Hans-Erik Altvall, Team leader Scanstat
Mr. Jon Teigland, Long-term consultant in demographic and social statistics

Ministry of Planning and Finance

Mr. Arndt Channing, Consultant in Poverty studies

APPENDIX 2. Structure of the Report

Report on the main results of IAF 2002/3

1 INTRODUCTION
1.1 Objectives of the survey
1.2
1.1 Organization of the fieldwork
1.3 Compatibility with IAF 1996/7
1.2 Representatively of the results

2 DEMOGRAPHIC CARACTERISTICS
2.1 Size and composition of the household
2.2 Structure of the household according to head of household
2.3 Structure of the population compared with the census 1997 results

3. EMPLOYMENT
3.1 Dependency rates
3.2 Distribution of the population in economically active and not active
3.3 Distribution of economic active population according to economic sector and position in the working process

4 INCOME
4.1 Income per household and per capita by residence area and province
4.2 Income per household by source of income
4.3 Comparison of income level and structure with data from IAF 1996/7

5 EXPENTITURE
5.1 Expenditure per household and per capita by residence area and province
5.2 Expenditure per household by head of household
5.3 Structure of expenditure by commodity groups
5.4 Level and structure of expenditure by gender of household head
5.5 Level and structure of expenditure by quintiles of population
5.6 Comparison of level and structure of expenditure with IAF 1996/7
5.7 Relation between level of expenditure and possession of durable goods
5.8 Relation between level of expenditure and the indicators of poverty
5.9 Level of expenditure and the opinion on the economic situation

6 LEVEL OF EXPENDITURE AND HOUSING CONDITIONS
6.1 Size and quality of housing by population quintiles
6.2 Sources of water and energy and sanitation by population quintiles
6.3 Situation of the social infra structure

7 LEVEL OF EXPENDITURE AND EDUTION
7.1 The rate of illiteracy compared to Census 97 results
7.2 Relation between illiteracy and level of expenditure
7.3 Rates of school enrolment by population quintiles
7.4 Relation between level of expenditure and level of education