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# Mission Report

## from a short-term mission on

## Development of a new system for Economic Statistics

## *27 October-21 November* 2003

## TA for the Scandinavian Support Program to Strengthen the Institutional Capacity of the National Statistics, Mozambique

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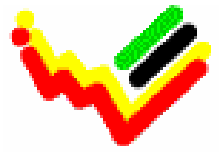

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# List of abbreviations

| | |
|---|---|
| CO | Scanstat Coordination Office in Statistics Denmark |
| CAE | Classificação de Actividades Económicas (type of economic activity) |
| CEMPRE | Censo de empresas 2002 (Business census 2002) |
| CNBS | Classificação Nacional de Bens e Serviços (product classification) |
| Danida | Danish International Development Assistance |
| DEBA | Department for Statistics on Goods and Environment |
| DESC | Department for Statistical Services and Business Statistics |
| DESE | Directorate of Statistics on Enterprises and Sector Economics |
| DISI | Department of Informatics and Information Systems |
| DPINE | Provincial delegation of INE |
| FUE | Ficheiro de unidades estatísticas (software for the business register bought from INE-P) |
| INE | Instituto Nacional de Estatística, Moçambique |
| INE-P | Instituto Nacional de Estatística, Portugal |
| MOPH | Ministério de Obras Publicas e Habitação |
| Scanstat | Consortium between Statistics Denmark, Statistics Norway and Statistics Sweden |
| SCB | Statistics Sweden |
| SEN | The national statistical system |
| SSB | Statistics Norway |

# 1 EXECUTIVE SUMMARY

The National Statistical Institute (INE) is preparing a new system for the short-term economic statistics, covering monthly data on the staff situation, production and turnover in manufacturing industry, construction industry and services, including

- new samples from the new business register,
- review of the contents, review of the whole survey methodology to improve the relevance to better meet user needs,
- improve the quality in the source data as well as in the internal processing routines,
- establish good routines and practice for the field work and the communication with the province delegations

The main objectives for the mission were to assist in the sampling process, the implementation of the new samples, design of the data processing routines and routines for bridging between the old and the new system for the surveys.

The sampling process was scheduled to take place the first week of the mission, but since the business register was still suffering from problems with the data structure the sampling was delayed.

Mr Andersen was mainly concentrating his work on the conceptual and the subject matter oriented issues, while Mr Petersson gave more attention to the sampling process and the data processing routines. The mission was the second of two missions by the same consultants. The first mission took place in September 2003.

The consultants had meetings with the staff in the directorates for national accounts and sector statistics to review the situation and discuss the proposals.

The main recommendations are to:

1. Keep the questionnaires simple - should be easy to understand and fill in
2. Shift to quarterly data collections.
3. Extend the involvement of provincial delegations - for maintaining the quality of the business register, in data capture, editing and validation.
4. Improve the routines for control of the nonresponse.
5. Adjusting and developing new production routines in Access will be a major challenge for the next months. It is recommended that INE update the data processing routines using internal IT-resources only.
6. Measuring prices and price changes should be a high priority task. Robust price statistics handling quality changes is basic when monitoring economic activities measured in fixed prices. Starting a new Producer's Price Index for Mozambique is suggested.
7. More and better price statistics covering services are needed. The CPI coverage and measurement methods on services should be improved. An extended CPI coverage including the business sectors should be considered.
8. Working with prices within economic statistics requires a strengthening of resources.

Memorandum: Many of the activities that were expected to take place immediately after the mission in September were not in progress even in November. Considering the delay in the preparatory work, it was appropriate to postpone the conference for the DPINE staff. According

to the INE plan the conference will be the time for introducing the revised surveys to DPINE staff.

If the work on defining the output variables and design of the questionnaires will be further delayed, INE will have to postpone the launching of the overhauled surveys. In that case it is recommended to proceed with the old survey until INE is prepared to shift to the new system. Starting the new surveys (Business Confidence Surveys) should be delayed even more.

There is an obvious need for consolidation of the system for economic statistics, focusing on the day-to-day routines for the corner-pillars of the statistics:

- updates of the business register
- estimates of the production by sector
- exports and imports
- measuring changes in prices

The current system with monthly data collections for statistics that are published quarterly, demands resources. The opinion of the consultants is that quarterly data collection is sufficient for the time being. Then more resources could be to be allocated to follow-up of non-response and also it would contribute to ease the respondent burden. The processing and publishing is planned to be quarterly, as was the case also in the surveys 2000-2003.

The consultants appreciate the inclusion of an experienced national programmer in the work on the development of the routines for the short-term statistics in DESE. The best solution for updating and maintaining the computer applications for the short-term statistics is to rely on national staff, if only there is time enough. A shift to quarterly data collections would allow sufficient time for the update of the data processing routines, since the data for the first quarter will then be collected in April 2004. To make the update of the routines successful it is crucial that the communication between the subject-matter experts and the IT-staff is well-organised. A programmer who is not also a subject-matter expert needs clear specifications of how the routines should work and how the expected output should be organised.

Since there was no final meeting where the proposals were presented and discussed, the consultants have not been able to consider to position of INE in the editing of this report. The report does not contain any recommendations for further external support to the development of the surveys. The assistance given in the two missions in September and November 2003 have hopefully given the INE a satisfactory theoretical basis for the development of the surveys. In case there is need for technical support to update the data processing routines, the consultant Mr Petersson would be able to provide some assistance via email.

# 2 RESUMO EM PORTUGUÊS

O Instituto Nacional de Estatística (INE) realizou um censo do Empresas (CEMPRE) 2002/2003. Os objectivos principais da missão foram de assistir nas preparações para a implementação de um novo sistema para os inquéritos mensais nas áreas indústria, construção e serviços. As tarefas principais no processo de elaborar e introduzir o novo sistema identificou-se como:

- desenvolvimento do conceito
- estudos da estrutura do universo de empresa
- desenho da amostragem
- definir os resultados e indicadores queridos
- definir os dados para recolher
- períodos e rotinas de recolha e processamento dos dados
- acções e ferramentas para facilitar e economizar o trabalho
- rotinas para o processamento dos dados
- sistema para estimações
- rotinas para facilitar a análise e comparar os novos e os velhos inquéritos

A missão foi feita durante outubro e novembro de 2003 por Tom Langer Andersen de Statistics Norway (SSB) and Kenny Petersson de Statistics Sweden (SCB). A missão foi feita junto com o pessoal do pelouro económico, conforme os termos de referencia (Appendix 4).

As actividades principais foram discussões e entrevistas com o pessoal do INE. Os consultores também elaboraram documentos para as discussões do conteúdo e sobre as rotinas para a amostragem e o processamento.

Realizou-se também discussões sobre maneiras para facilitar as rotinas manuais para as últimas etapas do processamento.

Os resultados/observações principais foram:

- Estrutura do FUE

A estrutura do cadastro de estabelecimentos foi denormalizada até o nível de estabelecimento numa base de dados separada fora do FUE e os problemas ligados da ausência de registos separados para as sedes das empresas não foram resolvidos ao início da missão. Por causa da situação no FUE atrasou-se a amostragem e também as etapas seguintes.

- Amostragem do cadastro de estabelecimentos (FUE)

Durante a missão elaborou-se uma rotina para amostragem aleatório de estabelecimentos. A rotina conte folhas de cálculos para análise da estrutura do FUE e cálculos para definir a distribuição da amostra por estrato usando o método “Neyman-Allocation”. A rotina para escolha da amostra foi elaborada em Access. Uma documentação detalhada sobre cada parte desta rotina foi apresentada durante a missão. Utilizou-se a rotina para elaborar duas versões das amostras durante a missão.

- Conteúdo dos inquéritos

Os consultores sublinharam que é muito importante enfocar o objectivo principal dos inquéritos e elaborar questionários simples para atingir uma taxa de resposta suficiente. Propostas do conteúdo foram elaboradas pelo consultor Tom Langer Andersen (Appendix 6).

- Rotinas para recolha de dados

A mudança para uma nova amostra é uma oportunidade para marcar também mudança para rotinas mais elaboradas sobre controles e organização do trabalho. A recomendação principal é reforçar as rotinas por meio de elaborar exemplos típicos e discutir como tratar estes casos. A parte mais prioritada e o tratamento de casos diferentes de não-respostas. Recomenda-se usar uma rotina comum para a comunicação entre a sede e as DPINEs, tratando todos os seis tipos de questionários.

- Rotinas para o processamento dos dados

Recomenda-se primeiro reforçar a parte do processamento para monitorar a recolha de dados e classificação dos estabelecimentos sem resposta. Para as outras partes do processamento recomenda-se usar as rotinas existentes como padrão para o novo sistema. Para simplificar a manutenção recomenda-se usar um directório comum no servidor para todos os tipos de questionários. Recomenda-se uma base de dados comum para a comunicação entre a sede e as DPINEs e também para as tabelas de saída. A decisão de destinar um informático do INE para realizar a transformação das rotinas de digitação e processamento vai simplificar a manutenção das rotinas. Uma preocupação é que o conteúdo dos inquéritos não foi definido mais sedo, e por isso deixa-se pouco tempo para actualizar as rotinas de entrada, especialmente se os inquéritos continuam com levantamento mensal.

A recomendação dos consultores é que o INE pode diminuir o os recursos para recolha dos dados por meio de mudar para inquéritos trimestrais. Conforme a discussão, é provável que o INE vai continuar usar inquéritos mensais. Por isso dá-se referências a inquéritos mensais nas propostas de conteúdo dos questionários, mas a proposta dos consultores é usar inquéritos trimestrais se não faz-se processamento mensal.

As recomendações principais foram discutidas na reunião final da missão em setembro 2003. Os consultores não participaram nas discussões finais das propostas desta missão.

Agradeço todo o pessoal de INE, que tivemos a vantagem encontrar e trabalhar junto com durante a estadia no INE.

# 3 INTRODUCTION

The objectives for the mission were to assist in the design and development of the routines for the shift to a new system for the short-term statistics in the business sector that is going to be launched in January 2004. In terms of reference (see Appendix 4) the objectives are gives as follows:

1. Follow up recommendations given in the first mission.
2. Give suggestions to further improvements in the production routines.
3. Finalize the sample plan and draw new samples for the monthly surveys within economic statistics.
4. Assist INE in preparing the implementation of the new samples and revised surveys from the beginning of 2004.
5. Assist INE in preparing a training of INE-staff in producing statistics based on new samples from 2004.
6. Assist INE in designing the program for dataentry/dataprocessing of the monthly surveys
7. Assist INE in finalizing questionnaires and instructions for the monthly surveys
8. Assist INE in analyzing the results from 2002-03 in the light of the new Business Register and the estimates for e.g. National Accounts (including how to translate CAB to CNBS)

The consultants gave advice on these issues in meetings with the INE staff members that are in charge of the surveys and the national accounts.

The appendix 15 to the report from September 2003 contained a short summary of the proposed process for the implementation of the new system for the surveys.

The plan for the mission was to include the same two consultants, Mr Tom Langer Andersen, SSB and Mr Kenny Petersson, SCB who made a mission in September 2003 to prepare a plan for the new system. Unfortunately the two consultants could not make the second visit to INE the same period.

The mission by Mr Kenny Petersson from Statistics Sweden (SCB) was conducted during the period 26 October–14 November, while the mission by Mr Tom Langer Andersen from Statistics Norway (SSB) was conducted 11 – 21 November 2003.

The main counterparts were Mr Azarias Nhanzimo, Director of the Directorate of Statistics on Sectorial Economics and Enterprises, Mr Cirilo Tembe, Head of the Department for Statistical Services and Business Statistics, Ms Natércia Macuácua, Head of the Department for Statistics on Goods and Environment and Mr Calado Fijamo, senior officer in the Department of Informatics and System Design (DISI). The mission was planned in the Division for Economic Statistics in collaboration with the team leader of the Scandinavian Support Program, Mr Hans-Erik Altvall.

This report contains the views of the consultant(s), which do not necessarily correspond to the views of Danida or INE.

# 4 ACCKNOWLEDGEMENTS

The consultants would like to express many thanks to all the people we have met and had the pleasure to work together with during the stay in Mozambique. All the kind support from INE staff has highly facilitated the work and contributed to making the stay very pleasant.

# 5 FOLLOW-UP OF RECOMMENDATIONS FROM PREVIOUS MISSION

## 5.1 Operational definition of the target population

No further documentation was provided. In the preparatory meeting during this mission, the target population was defined as the CAE categories in the table below. These are the same as in the samples 1999.

| ISIC | ISIC-Sector | CAE | Area | Comment |
|---|---|---|---|---|
| A | AGRICULTURA, PRODUÇÃO ANIMAL, CAÇA E SILVICULTURA | 01 | | No |
| B | PESCA | 05 | | No |
| C | INDUSTRIAS EXTRACTIVAS | 10-14 | INDUST | Only 14 |
| D | INDÚSTRIAS TRANSFORMADORAS | 15-37 | INDUST | All except 37 |
| E | PRODUÇÃO E DISTRIBUIÇÃO DE ELECTRICIDADE, GAS E ÁGUA | 40 | | No |
| F | CONSTRUÇÃO | 45 | CONST | Yes |
| G | COMÉRCIO POR GROSSO E A RETALHO; REPARAÇÃO DE VEÍCULOS AUTOMÓVEIS, MOTOCICLOS E DE BENS DE USO PESSOAL E DOMÉSTICO | 50-51 | CS | Yes |
| H | ALOJAMENTO E RESTAURAÇÃO (RESTAURANTES E SIMILARES) | 55 | ALOJAM | Yes |
| I | TRANSPORTES, ARMAZENAGEM E COMUNICAÇÕES | 60-64 | TRANS | |
| J | ACTIVIDADES FINANCEIRAS | 65-66 | | No |
| | | 67 | SERVIÇ | No |
| K | ACTIVIDADES IMOBILIÁRIAS, ALUGUERES E SERVIÇOS PRESTADOS AS EMPRESAS | 70-74 | SERVIÇ | Yes |
| L | ADMINISTRAÇÃO PÚBLICA, DEFESA E SEGURANÇA SOCIAL OBRIGATÓRIA | 75 | | No |
| M | EDUCAÇÃO | 80 | SERVIÇ | No (see note) |
| N | SAÚDE E ACÇÃO SOCIAL | 85 | SERVIÇ | No (see note) |
| O | OUTRAS ACTIVIDADES DE SERVIÇOS COLECTIVOS, SOCIAIS E PESSOAIS | 91 | | No |
| | | 92 | SERVIÇ | Yes |

The schools and health institutions in the private sector were initially identified as being in the target population, but the proposal from the consultants is that these should be included only in the annual survey. There are no “business cycles” of major interest for the school sector. It is normal that the schools are closed during school holidays, and therefore there is no reason to make the conclusion that there is a crisis in the service sector for that reason. The conclusion is

that annual data are sufficient and the CAE 2-digit categories 80 and 85 are excluded from the quarterly surveys.

The target population will be reduced also for these types of economic activities by filtering on the variable FJR (forma juridical) according to the following. Only the types of juridical form that are indicated with the code “1” in the column “AmostFJR” are going to be covered by the survey.

| FJR | FJR_DSG | AmostFJR |
|---|---|---|
| 00 | IGNORADO | 0 |
| 01 | S.A.R.L | 1 |
| 02 | SOCIEDADE POR QUOTAS | 1 |
| 03 | EMPRESÁRIO EM NOME INDIVIDUAL | 1 |
| 04 | COOPERATIVA | 1 |
| 05 | EMPRESA ESTATAL | 1 |
| 06 | EMPRESA PÚBLICA | 1 |
| 07 | OUTRAS | 1 |
| 08 | ASSOCIAÇÕES E FUNDAÇÕES | 0 |
| 09 | ONG NACIONAL | 0 |
| 10 | ONG ESTRANGEIRA | 0 |
| 11 | ADMINISTRAÇÃO PÚBLICA | 0 |

Initially there were 48218 establishments in the business register. After selection of the above-mentioned types of economic activity, the remaining population was 39 443 establishments. After the exclusion of the juridical forms “00” and “07”-“11” the target population covered 30 385 establishments.

| ISIC Sector | Target industries | | | Not target industries | | | Grand total |
|---|---|---|---|---|---|---|---|
| | In selected juridical forms | Not in selected juridical forms | Target industries total | In selected juridical forms | Not in selected juridical forms | Not target industries total | |
| A | | | | 738 | 73 | 811 | 811 |
| B | | | | 153 | 6 | 159 | 159 |
| C | 51 | | 51 | 15 | | 15 | 66 |
| D | 3 177 | 47 | 3 224 | 42 | 1 | 43 | 3 267 |
| E | | | | 111 | 6 | 117 | 117 |
| F | 345 | 34 | 379 | | | | 379 |
| G | 17 693 | 134 | 17 827 | | | | 17 827 |
| H | 5 983 | 57 | 6 040 | | | | 6 040 |
| I | 763 | 17 | 780 | | | | 780 |
| J | 34 | 1 | 35 | 274 | 31 | 305 | 340 |
| K | 687 | 146 | 833 | | | | 833 |
| L | | | | | 3 873 | 3 873 | 3 873 |
| M | 265 | 7 139 | 7 404 | | | | 7 404 |
| N | 97 | 1 366 | 1 463 | | | | 1 463 |
| O | 1 290 | 117 | 1 407 | 14 | 3 380 | 3 394 | 4 801 |
| Q | | | | 51 | 7 | 58 | 58 |
| Total | 30 385 | 9 058 | 39 443 | 1 398 | 7 377 | 8 775 | 48 218 |

After this had been agreed upon, the sampling process could proceed.

## 5.2 Continued work on the data quality in the business register

During the month that had passed since the previous mission, INE had continued to update the business register, both in the headquarters and in the province delegations. The province delegations had been requested to indicate the number of staff members for establishments for which this information was missing.

The structure of the business register was not updated. During the final part of the processing INE had treated all establishments as "enterprises" in the data processing routines. A problem that had been observed already in September 2002, when the CEMPRE took place, was that there were no separate data for the headquarters establishment. Dependent establishments were introduced in a separate questionnaire, while only a common questionnaire for the whole enterprise was filled in during the interview with the headquarters establishment. During the last week of October 2003, the consultant assisted in validating the data and trying to produce separate records for the headquarters in the cases there were more than one establishment in the enterprise.

## 5.3 Identify the old samples in the new business register

There were no links between the old business register and the new business register, FUE. To enable comparisons between the years 2003 and 2004 on enterprise and establishment level, there is need to include the old establishment ID in the new business register, at least for the large establishments in the surveys 2003 that are going to be all included in the surveys 2004. The plan for the sample process is to include all establishments with 30 or more employees in the surveys 2004.

It seemed as no action had been taken to identify the large establishments in the surveys 2003 in the business register. The consultant prepared a small routine that showed the data for the establishments in the surveys 2003 in the main window of a form, a search criterion for any part of the name of the establishment and a subform showing the items in the business register meeting the search criterion. The intension was that the operator should enter the old establishment ID for the corresponding record in the business register when the right establishment had been identified.

The routine was distributed with the name FUE_IdentificarVelhos.MDB.

This operation may reveal that an establishment that is still active cannot be identified in the business register. It is recommended to check all possibilities before a "missing" establishment is introduced as a "new" in the business register. A first recommendation is to only include new records for establishments with 30 or more employees in the surveys 2003. A problem is that the data entry routine for the FUE may require information that is not available in the surveys 2003. INE will have to define a strategy for this. The FUE has "document codes" for all updates, so it can later easily be verified which are the records that come from the check of the establishments in the surveys 2003.

## 5.4 Define output variables

It was recommended to focus more on the desired output variables and the indicators that are wanted as the result of the processing in the planning of the contents. The conclusion is that

INE has established closer links between the conceptual development and the planning of the data processing routines.

## 5.5 Price statistics - improving quality in measurement

A major challenge for the revised short-term statistics is to contribute to improved quality in price measurement. Further there is a need for information about price changes for the industrial sectors, where prices are not covered by the current surveys. Price statistics are needed for national accounts purposes. Price indicators should also add information to the analysis of inflation in the country.

A basic national account price principle is adopted for the observation of prices i.e. measuring the pure price change - for a basket of products having fixed quality over time.

For a given definition of the product - the basic task is to observe the prices of that specific sample of products - selected by the respondent over time. This requires a close follow-up of the respondent focusing on keeping the product quality stable in time. This is the recommended approach for price data capture within manufacturing.

This system should be considered as the start of a new Producer's Price Index (PPI) mainly developed for deflation purposes. The statistic covers the manufacturing sectors i.e. the main goods producing industry.

For measuring producers price and changes in the non-manufacturing industries basically a qualitative approach is used. This is likely not a long-run solution but seems in fact to be the only feasible for the forthcoming years when having restricted funds in producing statistics.

It should be added that a cost price approach is recommended for the construction sector - though on a quarterly basis.

It is further recommended that resources should be invested in a development project for the CPI - especially focusing on improvements for the services. The CPI covers services used by private households mainly. An extended CPI coverage including the business sectors should however be considered. Discussions with CPI management clearly indicate that INE requires assistance in working with these issues. INE needs support on working with an updating of the basket of goods and services as well as in introducing new weights.

For all national accounts sectors a Paasche price formula having current weights will be used.

The measurement task for prices is complicated - requiring skills, competence and precision in the performance of the current routines. A close follow-up of respondents is required for the purpose of securing the fixed quality of the products covered by the basket. A current work for achieving good quality in price statistics will require additional resources for the departments involved. This is especially the case for manufacturing industries where the PPI model is introduced. Further resources can also be required for the coverage of other non-manufacturing industries. It is recommended that one person strengthen the manufacturing staffs. Economist competence is recommended.

## 5.6 Critical evaluation of the contents in the surveys 2000-2003

One recommendation was to evaluate the quality of the variables that had been included in the surveys 2000-2003 and question the feasibility of the questions if the conclusion was that the data quality did not allow any valuable analysis of the data. INE is aware of the quality problems for many of the variables in the surveys 2000-2003.

## 5.7 Contents and design of questionnaires

The work on the development of the contents of the new surveys was going on during the whole mission. The recommendations in the report from the mission in September were discussed in recurrent separate meetings in DESC and DEBA.

As mentioned also in the report from September 2003 it is very important to attain a reasonable rate of response. Therefore there is need for a very limited number of questions and the questions should focus on the direction of the change in the economic activities rather than the volume itself. A core objective of short-term indicators is to estimate the change in the business cycles of economic activity. This is also a strong demand from the national accounts, especially since there are plan to introduce quarterly national accounts.

The revised short-term statistical (STS) system defines three blocks of variables introduced for each survey. In total a limited set of variables are selected

Block C. The key variables - common to all industries

- Turnover as a production indicator. The turnover concept is recommended due to that this a well-known concept for most enterprises (establishment).
- Employment and wage costs should be continued using the concepts and definitions established.

Block D. Measuring prices and price changes - block is common to all industries but method differs

- Manufacturing.
  Measuring producers price for a limited number of detailed specified products from each establishment. This should be considered as the start of a new producer's price index (PPI) of Mozambique. The PPI will be based on the national account principle for measuring prices: measuring the pure price change - for a constant basket of products having fixed quality in time.
  It is recommended that the PPI statistic should be subject for further development.
- All other industries.
  Measuring price change in a qualitative way - being an approximation.
- Construction.
  Utilise administrative information from the MOPH to establish a cost price index - using monthly values and quantities consumed of building materials.
  It is recommended that the construction area should be subject for further studies and analysis in 2004.
- CPI and services.
  The Consumer Price Index covers services used by private households. The quality of price measurement for these areas is considered as poor.
  It is recommended that a development project for the CPI should be started in 2004. The mission should assist in improving the current coverage of the service sectors. For

improving the national account basis for establishing deflators, an extended coverage including service transactions from business to business should also be considered.

Block E. Other quantitative variables or value indicators for the industrial sectors
This type of variables is included to provide additional information on the changes in the economic activities. The exact types of variables differ across surveys.

- For each survey an analysis is made on the variables observed in the period 2000-2003. Those variables not providing valuable analysis or the ones showing large item nonresponse are not continued in the revised set of variables.
- For surveys that have had large unit nonresponse during the period the total number of variables suggested to be covered has been reduced.

A general principle should be that in case of an overload in the number and complexity of variables, it is the block E that should be reduced. Block C and D are both considered having very high priority.

For background to comments in block E - see the sector analysis presented in appendix 10 in the mission report from last September. For further information on prices, production and national accounts relations - see appendix 5 in this report. See appendix 6 for the draft questionnaires.

In the development of the questionnaires it is important also to consider the survey unit and the situation of the respondent, the person who is filling in the questionnaires. The intension is that the questionnaires should be collected within 15 days after the end of the reference month. In general data from the accounts system of the enterprise could not be expected to be available for the respondent. There is also a plan to move to data entry in the province offices. This plan can only become true if the questionnaires are relatively simple.

INE is recommended to take a strong position that the contents have to be simplified compared to the current surveys to reach acceptable response rate. The response rate will be affected if the questionnaire is difficult to answer and also if the questions refer to information that the enterprise does not want to be spread to a wider audience. INE is also becoming more aware of the need to consider the response burden. The validation of the data in the current surveys give very strong arguments for simplifying the questionnaires since INE does not have sufficient resources to solve the quality problems in the current surveys. Including more questions and more complicated questions in the surveys inevitably leads to higher costs for the data collection, higher non-response rates, higher costs for data processing and validation. See also chapter 5.10 Strategy for handling nonresponse.

To summarize there are many good arguments for simplifying the questionnaires. In a meeting between representatives from DESE and the national accounts 13 November there was an agreement that most of the quantitative data that are required for the national accounts should be collected in the annual surveys. A separate qualitative survey, mainly directed to the larger enterprises will give tools for the analysis and the estimates that will be needed for the development of quarterly national accounts.

It was strongly recommended already in September that there is need to define the contents as early as possible in the process. First define a set of desired output variables and then try to design a good questionnaire. The design work may often lead to changes when also the operational definitions of the variables are defined.

## 5.8 Data collection routines

### 5.8.1 Pre-printed control forms for enterprises with more than on establishment

For documentation of the results of the first contact with the selected survey units, the proposal is to use a pre-printed form for each enterprise in the survey. This form should contain one section with information about the selected enterprise itself and one section with a list of all establishments of the enterprise in a tabular structure with columns for name, province, main type of economic activity and total number of staff members according to the FUE. In an extra column there should be space for DPINE staff to mark what establishments that the enterprise is prepared to include in the data deliveries. And - if a selected establishment should be surveyed by sending the questionnaires to the establishment itself or send it to the enterprise headquarters. If preferred INE could print this type of separate questionnaires only for enterprises with more than one establishment and use only the planned "control form" to supply information about the rest.

The control form should contain one row for each survey unit (enterprise or establishment). If the enterprise has only one establishment, the enterprise ID should be used as identity in the survey. The control form should be an Excel file in which the DPINE fills information about the contacts with the survey unit with a response code for each quarter (or month if INE decides to continue with monthly data collections).

### 5.8.2 Update of applications for the data processing

The applications for the data processing routines have to be updated. Parts of the new routines should be developed for printing the control forms. This process is mainly to identify the enterprises to which the selected establishments belong, since it was decided to first contact the headquarters of the sampled establishments and let the headquarters decide if the headquarters or the sampled establishment should be the respondent to the surveys. For the areas of construction and transport it is always the enterprise that is the respondent, but all establishments should be listed to make both the enterprise and the DPINE clearly aware of which unit the data should refer to. In some cases the main type of economic activity is in construction or transport, but there may be secondary activities in other areas. The control forms for the data collection can also be designed and printed as soon as the sampling process is finished.

The work on the routines for the control forms will give a general structure for the parts of the processing routines that refer to the data collection routines. It is recommended to use one common database for the follow-up of the control forms and also as source for printing all written information to the DPINEs. This will mean that all survey units in the same province will be processed together, regardless of which area (main type of economic activity) the enterprise or establishment belongs to. The first preparations for the update of the data processing routines can start immediately. The most important is to design the structure of the routines, table names, main forms and query structure. The type of forms that will be used for data entry can be discussed before the contents of the questionnaires are finally decided.

As soon as the contents of the questionnaires (the variable list) are finally decided, the development of the data entry routines should start. Since there are several different versions of

the questionnaires it is important to start with the common parts and build uniform routines for these parts, with the same names for tables variables and code values. The routines for the surveys 2003 should be possible to use as templates.

One important part of the processing routines is to include data for the large survey units in the surveys 2003 in the routines for the processing 2004 when the enterprise/establishment is in the survey both years. The matching may not be trivial since the survey unit 2004 may be the enterprise and there may be more than one corresponding establishment in the survey 2003.

## 5.9 Testing the questionnaires

It is strongly recommended to test the questionnaires before starting up the revised surveys in January next year. A test should be made for each survey limited to a small number of respondents. The test should cover respondents located in Maputo Cidade and Maputo Province. The DPINEs should be responsible for performing the test - and the follow-up interview.

The documents that should be tested are:

- A general letter introducing the survey, information on how to fill in the questionnaire, presenting time schedules for responding etc.
- The questionnaire including general information, definitions etc.

The test interview must be planned using a prepared form as the basis. The interviews must have a general part covering the respondent impressions as concerns the design, the logic in the structure, the quality of the general information given, time used to find the relevant background information, time used to fill in the form etc. Further - for each variable a small number of questions should be prepared clarifying if the question is understood, the experienced complexity, the use of supporting information given in definitions etc.

## 5.10 Strategy for handling nonresponse

The control of the sample when the surveys with the old samples were launched in May 2000, were not very successful. To avoid similar problem when the new samples are introduced in January 2004, there is need for more detailed information to the DPINEs about how to act if a selected item is not found or not willing to participate in the survey. A development of the non-response form, “Disciplina” to register the situation for the non-response for each quarter is proposed. The core categories, that are needed for correct estimation methods are

A. Business temporarily closed or similar situation that is interpreted as an existing establishment with no (zero) production.
B. Non-response for a survey unit that is active, not contacted, refusal etc. The production is assumed to be the average of the responding units. This is “normal” non-response one could say
C. The unit does not exist or is not active in a type of economic activity that is in scope of the survey. These items are excluded from the survey and will reduce the estimates of the total production in the sector.

The groups may very well be sub-divided into more precise answer categories. The table “Tmotivo” in the old survey shows examples of possible explanations. This table may very well be updated and included in the instructions to the DPINEs.

| Cod_Motivo | Motivo | M2 |
|---|---|---|
| 0 | Sem informação | B |
| 1 | Resposta normal | |
| 2 | Fechado temporariamente, existe mas não tem produção | A |
| 3 | Não contactado, mas existe e provavelmente tem produção | B |
| 4 | Não existe | C |
| 5 | Não localizada | B |
| 6 | Extinta | C |
| 7 | Mudança de ramo | C |
| 8 | Duplicação de estabelecimento no cadastro | C |
| 9 | Existe numa outra província | B |
| 10 | Não tem motivos de substituição | B |
| 11 | Não-resposta ou recusa | B |

The new code corresponding to the code "CodMotivo" in the old survey should be entered by the DPINE in the column for each quarter in the new version of the control form (Disciplina). The province delegation could fill the form accord the example below.

| | | Trimestre | | | | |
|---|---|---|---|---|---|---|
| ESTID | Estabelecimento | 1 | 2 | 3 | 4 | Situação actual |
| 300201 | TRA, LDA | 1 | 1 | | | |
| 65 | PADARIA CCC, LDA | 1 | 1 | 6 | 6 | Fechado definitivamente |
| 320123 | PLASTICOS ZZZ, LDA | 5 | 5 | 5 | 5 | |
| 108 | CERVEJA XXX, S.A.R.L. | 1 | 1 | 1 | 1 | |

INE must expect to face nonresponse also for the future. Working efficiently with nonresponse requires adequate tools. INE should develop the standard information to be distributed to the respondents. The legal basis for the regular surveys provides INE with a tool for fining in case of nonresponse. This tool is for the time being for some unspecified reason not in use.

Further - routines for working with nonresponse must be introduced to the province delegations that will have the tasks and responsibilities for this work. See the chapters 7.2.2 and 7.2.3 in the mission report from last September for draft routines for this work.

## 5.11 Strengthen the routines for the data collection

There were relatively detailed proposals on how the routines for the data collection could be strengthened. The main concept was agreed upon, but the result of the work is still to come. Assistance in this area is also included in the terms of reference for the mission in November 2003. The proposals regarding the handling of non-response above are parts of the same strategy.

Working with routines for the revised regular short-term statistical survey (STS) has been disturbed by the work for starting a new qualitative survey (business confidence survey) also to be started from January 2004. Introducing this survey will for the larger units increase the response burden by a factor of two. Further - the workload are expected to increase both for the central staffs as well as for the provincial staffs. The mission report from last September has a large focus on improving quality in the data collection phase. Improving and strengthen the routines in data collection, extend the involvement of provincial staffs in both data capture and data entry, increase the focus on nonresponse etc. are some of the initiatives recommended.

The involved managements do not prioritise activities in these areas. Neither the introduction of the new BCS seems to have initiated the discussion and development works needed.

The table below compares the two surveys having. The bottom part provides a draft time schedule or production plan designed by the consultants. These issues have not been subject for discussion and consequently no further initiatives have been taken for working out the detailed plans needed.

**Comparing the two types of surveys**

| | Short-term economic statistics (STS) - Quantitative surveys | Business Confidence Survey (BCS)- Qualitative surveys |
|---|---|---|
| | | |
| Industrial sectors covered (separate forms for each sector) | Manufacturing<br>Construction<br>Trade and services<br>Transports<br>Hotels and restaurants<br>Ports and airports | Manufacturing<br>Construction<br>Trade and services<br>Transports (planned)<br>Hotels and restaurants<br>Ports and airports (planned) |
| Sampling units | Enterprise / establishment | Enterprise |
| Samples | All units having 30 or more employees<br>Sampling for smaller units | All units having 50 or more employees<br>(cut off) |
| No units covered | Approx. 2000 | Approx. 500 |
| Legal basis | Mandatory | Mandatory? |
| | | |
| Variables | Turnover / production<br>Employment<br>Wage costs<br>Prices<br>A limited number of additional variables specific for each survey | In large the same variables though adding specific confidence questions.<br>Some differences across the surveys |
| Relevance for National Accounts | High | Small / not relevant |
| | | |
| Responsible for data capture | DPINE | DPINE |
| Frequency in data capture | Monthly | Monthly |
| The relevant contact person in survey unit | Working in the accounting office | Working in or close to management of the enterprise |
| Respondents time limits | 15th each month | 1st each month |
| Extended limits when delays | 20th each month | 5th each month |
| Nonresponse routines activated | 25th each month | 10th each month |

| | Short-term economic statistics (STS) - Quantitative surveys | Business Confidence Survey (BCS)- Qualitative surveys |
|---|---|---|
| Frequency in data entry - editing | Monthly | Monthly |
| Frequency in processing | Monthly | INE: Monthly[1] |
| | | |
| Frequency in publishing | Quarterly<br>45 days after end of quarter | INE: Monthly<br>30 days after end of month |

Discussion in DESC about the contents of the surveys

## 5.12 Tools for validation and/or data entry in the province delegation

This item was agreed upon in September. The time for the implementation will depend on how other preparations proceed. Assistance in this area is also a part of the mission in November 2003. In a meeting with the DPINEs of Maputo City and Maputo Province November 13, the DPINEs expressed their need for data processing capacity. One reason is that the DPINEs make their own statistics for the province with the same source data. INE was recommended to design routines in Excel, since the maintenance of routines in Access had shown to be cumbersome when assistance from INE central office is required to solve problems.

[1] According to information the National Bank of Mozambique will be responsible for processing and publishing of the data.

## 5.13 Improved tools for macro-validation

In the old data processing there were menu-driven data processing routines that allowed continuous update of the basic output tables, N41 for the staff situation and the total turnover, and specific general tables for the other surveys (N52-N57). Most tables were designed for quarterly data processing, but for the survey on hotels and restaurants, there was also a routine for monthly statistics.

INE is expected to proceed with the same type of macro-validation and develop it further. A somewhat modified routine for the validation of the development of the producer prices in manufacturing industry was implemented during the mission.

## 5.14 Assisting INE in designing the programs for data entry/processing

A major challenge for INE during the next months will be to develop the Access applications to be used in data entry and editing, in validation and estimation. Further there is a need for developing an Excel application to be used in the provincial offices during data collection.

Assistance in the area of updating the data entry and data processing routines for the new surveys was included in the terms of reference for the mission. Due to change of priorities from the INE side, there was less focus on assistance in this area than initially planned. The delay in the work on the contents of the surveys also implied that the design of the details of the processing routines had to be postponed.

INE has received technical assistance for the development of the routines for the surveys 2000-2003 from the Twinning project. These routines give a good basis and can be used as templates for the design and development of the routines for the new surveys. There is now an experienced programmer available for application development in the DESE directorate, so the shift to the new surveys is a suitable time for INE to take over the maintenance of these routines. The consultant gave general advice on possible solutions to maintain an even larger common part of the processing routines than before. One reason is that the contacts with the DPINES will be facilitated if there is only one common application that provides the tables for the control of the non-response (earlier called “Disciplina”). Another is that the common output tables referring to the table N41 (number of staff members, staff costs and total turnover) should preferably be produced (only) in the common database. In the current routines there are separate (but identical) output tables in each survey with this information. The database InqMensal_SaidaResumos.MDB in the old processing routine shows how these tables have been combined as an additional step after the processing of each survey.

The need for time for the INE staff to update the routines is a strong argument for a shift to quarterly surveys from 2004. If the first round of the data processing will start in April there is enough time to update the data processing routines, which would probably not be the case if INE proceeds with monthly surveys and starts the first round of the processing in February. It can also be expected that it will be quite time-consuming to establish good routines for the cooperation with continuous interaction between the statisticians and the programmer.

It is recommended that INE take the full project responsibility when developing the new applications. Only internal IT-competence should be used. The current applications have been developed in stages using two experts. None of the experts are permanently connected to INE today. This has in fact delayed the developments needed and also induced non-optimal uses of

the applications. And - still there are parts of the current applications that are not utilised by the staffs. Further - INE must have this competence inside as a part of the user support strategy. The need for an internal and well-functioning support to the users will further increase at the time extending the involvement of DPINEs in data entry and editing. Consequently - is not recommended to base the programming and development of a new system on external experts.

## 5.15 Construction - extended use of administrative data

Statistics for the construction sectors must in a long-term be built from administrative data mapping the project (obras) populations. The mapping will cover all licensed projects but should in principle also include illegal or unlicensed projects. Establishing a complete picture of the project populations requires a concerted action involving both INE and MOPH. The task of establishing information for the vast majority of projects will in practise be a long-term activity. As a medium-term initiative - being a part of the long-term strategy - statistics on building activities should be approached using the building enterprise or contractor as the survey unit. It must be added that the medium-term approach must not rule out the work required for reaching the long-term target of building project populations.

Use of administrative data was in the mission report from last September recommended for construction industry. The report suggested starting an evaluation of the sources - availability and data quality. As the discussion above indicates an extended use of administrative data for mapping the population of projects will require time and analysis. However - some areas can give fairly rapid results. As a first area for cooperation between INE and MOPH it is recommended that INE start analysing the survey data collected by MOPH covering consumption of building materials on a monthly basis. These data can be basis for estimating cost price statistics.

As concerns the short-term statistics for construction a solution could be to focus on the building projects (obras) also in the INE survey. This will enable a better analysis of the possible differences between the two data collection systems. Data on the total contracted price for a building project is probably the cost variable that is expected to have the best quality. By including the projects as separate items in the questionnaires, the quality will easier be validated.

Ms Matilde Aurélio Chiulele reviewing data for the construction survey

## 5.16 Routines to bridge between the surveys 2003 and 2004

In the routine for the sampling process there is also a classification of the FUE by the CAE groups that were used for the stratification of the samples for the old surveys. The field is called "ESTRATO1999". A first evaluation of these data shows that there are now better tools to estimate the totals for the years 2002 and 2003, but also that the weighting procedure in the old surveys (that was established in all general output tables) did not give reliable results. The same conclusion had been made already earlier, mainly because of the quality of the old business register. The assistance during this mission provided some further input to the bridging activities (see below).

## 5.17 Data storage - output database

As an initiative to increase the availability of statistics from the regular STS it is recommended to develop a database for storing time series. The database should comprise all series meant for distribution to users - internal for national accounts and external users. The plans for publishing indicate the relevant levels for the series concerned.

For most industries the series considered for distribution are sections, divisions (2-digit) and in some cases groups (3-digit). This might differ somewhat across industries. All statistics will have series for the key variables - turnover, employment and wage costs. Further - producer price changes are planned produced for the same industries and levels. In addition some of the surveys will produce statistics for selected volume indicators. The database for storing series will also comprise the R-sector series produced for the national accounts.

The database for storing series will also constitute a basis for a new planned output database for use in Internet distribution to external users.

Further work are required both as concerns the internal database for storing time series as well as for establishing an output database for dissemination of statistics.

## 5.18 Training

INE has a number of training activities. One worth mentioning is training in production of statistics called “Statistics in Action” (STAC) where not only the theoretical but also the practical steps in the management of statistical surveys are covered. The training provided during the mission focused on strategies for development of the contents of the surveys and the sampling process.

# 6 IMPROVEMENT OF PRODUCTION ROUTINES

## 6.1 Maintaining quality of databases

An annual task in the survey of manufacturing industry is to provide data for the estimates of the development of the producer prices in the national accounts. Often the staff members prefer to elaborate spreadsheet solutions for the validation of the data. The database IndValidarEntrada.MDB already contained queries for the selection of the producers that had produced the same product two consecutive years. The preference of the staff was to export the result of the query to Excel and make the validation in Excel, but often it was found time consuming to introduce the updates in the database after the validation was made. A solution where we re-imported the spreadsheet to Access, compared the contents of the spreadsheet with the corresponding data in the database and updated all changed records in the database was created as a training activity during the second week of the mission.

## 6.2 Compare identical establishments over time

Comparison with the previous month/quarter will be an important tool for validation of the first data collection for the first three months of 2004. Then it is important that the source data for the establishments in the old surveys that are also in the new surveys are included in the routine for the data processing. The identification of the old samples in the FUE is the first step in this process.

# 7 SAMPLES FOR THE SURVEYS 2004

During the mission in September 2003 there was an evaluation of the source data. A routine for sampling of establishments was also prepared. In September the highest priority for INE was to proceed with the updating of the business register for the public release of the first results September 26. A number of proposals for the design of the samples were included in the report from the September mission, most of them in a separate appendix about the sampling.

During this mission the routine for the sampling was further developed and also used for the sampling at least twice, first as test and then to implement a somewhat modified stratification plan. The routine for the sampling included also the work on the restructuring of the business register. The routine is built to use the FUE logical structure and allows samples of both establishments and enterprises. The routine that was elaborated in detail was the part for sampling of establishments. A detailed documentation with verbal presentation of all queries in the Access database that was used for the sampling was handed over to INE with the database. The source data for the sampling were stored in a separate database FUE_FonteAmostra.MDB. This is the version of FUE database that INE is recommended to import into the FUE application and use for the day-to-day management of the business register.

The database FUE_Amostra.MDB has two important output tables, TEMPRESA and TESTAB. Both these tables contain the whole business register as it looked at the time for the sampling. The items that were selected for the surveys in the latest sampling procedure, were marked with the code “1” in the field INCLUIDO in the table TESTAB. The corresponding records in the table TEMPRESA will be extracted by matching on the enterprise ID code named NUMERO.

The routine for allocation of the sample was designed in Excel for using Neymann-alloction with the number of staff members as indicator variable. I.e. to produce a sample that minimizes the standard error in estimates of the number of staff members for the total population. The review of the sample plan according the Neymann-allocation, led to an increase of the number of medium-sized units and a decrease in the number of small establishments in the areas of restaurants and commerce. The total number of establishments that were included in the sample part of the survey (establishments with less than 30 employees in the areas of manufacturing, commerce, services or accommodation) was 618. The total number of survey units including the larger enterprises/establishments was 2048.

# 8 TIME SERIES PRESENTATIONS

The new business register, FUE, can be used to recalculate the totals for the years 2002-2003. The precondition is that the units that are included in the surveys 2002-2003 are considered (more or less) representative also for the (new) units that appear in the FUE, but are not covered by the old surveys. Nevertheless, such calculations are interesting for analytic purposes and also be compared with the totals that are estimated in the national accounts for these years.

Francisco Nuvunga, Valdemiro Xlhatchwayo and Maria Teresa Tovela in a meeting about the contents of the surveys of manufacturing and construction.

# Appendix 1. Persons met

National Institute of Statistics

| | |
|---|---|
| Valeriano de Levene | Vice-president of INE |

Directorate of Integration, Co-ordination and External Relations (DICRE).

| | |
|---|---|
| Alda Rocha | International relations |
| Calado P Fijamo | System development, DISI |

Directorate of National Accounts

| | |
|---|---|
| Saide Dade | Director |
| Firmino Guiliche | Head of the Department for Consumer Prices |
| Maria Fernanda Teixeira | GDDS Regional Advisor and National Accounts Advisor (IMF) |
| Ana Paula Dava | Department for National Accounts |

Directorate of Sector Economic Statistics (DESE)

| | |
|---|---|
| Azarias Nhanzimo | Director |
| Natércia Macuácua | Head of the Department for Goods and Environment |
| Cirilo Tembe | Head of the Department for Services and Business register |
| João Nhabete | Business register |
| Francisco Nuvunga | Manufacturing industry |
| Maria Teresa Tovela | Manufacturing industry |
| Valdemiro Xlhatchwayo | Manufacturing industry |

A number of other staff members not mentioned by name

Delegação provincial de Maputo Cidade

A number of staff members not mentioned by name

Delegação provincial de Maputo Província

| | |
|---|---|
| Leia Macamo | Delegada |

A number of other staff members not mentioned by name

Scandinavian Support programme

| | |
|---|---|
| Mr Hans-Eric Altvall | Team-Leader |
| Timmi Graversen | Long-term consultant, National Accounts |

## Appendix 2. List of literature

*INE: documentation of the monthly surveys in the areas of manufacturing, construction and services.*

*Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics (Eurostat 1998)*

*Commission Regulation (EC) No 588/2001 of 26 March 2001 implementing Council Regulation (EC) No 1165/98 concerning short-term statistics as regards the definition of variables*

Commission Regulation (EC) No 586/2001 of 26 March 2001 implementing Council Regulation (EC) No 1165/98 concerning classification into main industrial groupings.

*Methodology of Short-Term Statistics, Business statistics. Interpretation and Guidelines (Eurostat 2002)*

*Handbook on price and volume measurement in National Accounts (Eurostat 2001), chapters 1, 2 and 3.*

*Prevention and Treatment of Item Nonresponse. Leeuw, Hox and Huisman. Journal of Official Statistics, Vol. 19, No. 2, 2003, pp. 153-176.*

Statistics Denmark MZ 2003:15 . Development of a new system for economic statistics in Mozambique. Report from a short-term mission September 2003. Langer Andersen T, Petersson K,

## Appendix 3. Programme for the Mission

A number of meetings were held during the mission, most of them informal.
The consultants participated in a meeting with the province delegations of Maputo Cidade and Maputo Província

Messrs Tom Langer Andersen and Azarias Nhanzimo

## Appendix 4. Terms of Reference

**TERMS OF REFERENCE**
Within the Scandinavian Bridging Support Program

**For a short-term mission**
27th of October – 21st of November 2003
on
Development of a new system for Economic Statistics. PART II

### Background

INE is in the process of finalizing its first Business Census (CEMPRE 2003). The main objective with this Census is to establish a new and more complete register of enterprises and establishments in Mozambique. A business register based on data collected through the CEMPRE is planned to be in place during July 2003.

The new business register will serve as a frame for drawing new and more representative samples to the various surveys that INE conducts amongst enterprises and establishments. Today INE has in all 6 monthly sector surveys and two annual surveys. These surveys do not give good population estimates due to the lack of representative sample frames, and there are also problems within the production processes. Further development of methods and production routines is needed to be able to produce high quality and timely economic statistics based on new and more representative samples.

The mission presented in this document is the second of two planned missions during the second half of 2003 that will help INE develop a new and better production system for economic statistics based on the new business register established through the Business Census.

INE has also earlier had short-term assistance on economic statistics within the framework of the Twinning Project. In 1999 there was a short-term mission from Statistics Norway that concentrated on viewing the surveys within the Industrial sector (MOZINE 1999:9). Another mission, also from Statistics Norway, took place in the period 19th of June to the 6th of July 2000 (MOZINE 2000:12). This mission focused on production routines, methodology and dissemination of short-term statistics in general. The report from this mission drafts a complete plan for a new production system within short-term statistics.

While the two missions mentioned above focused mostly on methodological aspects, two following missions from Statistics Sweden were more related to developing the data applications for producing statistics. The main objective of a mission in October 2000 was to assist INE in the development of data processing routines for the monthly survey within the Industry sector using the tools Microsoft Access and Microsoft Excel (MOZINE 2000:10). A second mission in November 2001 continued the work to develop systems for the processing of the monthly surveys of establishments (MOZINE 2001:01).

### Main reasons for the mission

INE needs further assistance to implement already recommended methodology and production routines for economic statistics. Due to the fact that INE are in the process of establishing a new business register, assistance is needed in the transition from the old to the new register. Hereunder to plan and draw new samples and to review, update and adjust the methodology and production routines so that INE will be able to produce high quality and timely economic statistics based on new samples from 2004.

The first of the two missions planned during the second half of 2003 will focus on viewing and develop further the methodology and applications used in the production of current economic statistics. The second mission that is planned for October will focus on the transition from the old to the new business register in planning and drawing new samples from the Business register, and help INE prepare the implementation of the new samples and revised surveys from the beginning of 2004.

**Benefactors of the mission**

The mission will benefit the users of economic statistics through that they will get better economic statistics. INE-staff working with economic statistics will improve their qualifications in the area.

**Objectives of the mission**

- Follow up recommendations given in the first mission.
- Give suggestions to further improvements in the production routines.
- Finalize the sample plan and draw new samples for the monthly surveys within economic statistics.
- Assist INE in preparing the implementation of the new samples and revised surveys from the beginning of 2004.
- Assist INE in preparing a training of INE-staff in producing statistics based on new samples from 2004.
- Assist INE in designing the program for dataentry/dataprocessing of the monthly surveys
- Assist INE in finalizing questionnaires and instructions for the monthly surveys
- Assist INE in analyzing the results from 2002-03 in the light of the new Business Register and the estimates for e.g. National Accounts (including how to translate CAB to CNBS)

**Expected results**

- Suggestions to further improvements in the production routines
- A complete sample plan for Economic Statistics
- New samples for the short-term surveys based on the new business register
- A detailed action plan to prepare the implementation of the new surveys
- More qualified INE-staff

**Agenda for the mission**

Needs to be specified

**Tasks to be done by INE to facilitate the mission**

- Elaborate ToR for the mission
- Follow up on recommendations from the first mission
- Prepare and supply the consultant with necessary documents and information
- Supply good working conditions for the consultant

**Consultant and Counterparts**

Consultant:
Mr. Kenny Petersson from Statistics Sweden
Mr Tom Andersen from Statistics Norway
Main counterparts:
Mr. Azarias Nhanzimo – Director of Directorate for Sectorial statistics and Business Statistics
Mr. Cirillo Tembe – Head of Department for Statistical Services and Business Register
Ms. Natércia Macuácua – Head of Department for Statistics on Goods and Environment
Mr. Calado Fijamo Pereira – Department of Informatics

**Timing of the mission**

27th of October 2003 – 14th of November 2003 (Mr. Petersson)
10th –21st of November 2003 (Mr. Andersen)

Number of working days at INE-Mozambique will be 15 for Mr. Petersson and 10 for Mr. Andersen. Number of working days at home office will be 3 for each consultant.
Travel days come in addition.

**Report**

The consultant will prepare a draft report to be discussed with INE before leaving Maputo. He will submit a final draft to INE for final comments within one week of the end of the mission. Statistics Denmark as Lead Party will print the final version within 3 weeks of the end of the mission. The counterpart will ensure that the printed report has at least a summary in Portuguese if the report is in English or vice versa.

*These Terms of Reference were prepared by*

*Day / / .....*

*Approved by/in the name of the President of INE*

*Day / / .....*

# Appendix 5. Understanding national account requirements; prices and productions

**1. Some relations in the national accounts**

(1)-(4) below describes some important relations in the national accounts (NA). These relations are fundamental for the NA works when balancing the transaction flows within the economy. These concepts are also used when estimating the gross domestic production (GDP) etc. The GDP on national level is very often used when analysing the performance of the economy. The GDP defines the value added created by the productive activity in the economy.

The supply of goods and services in an economy is either produced domestically or imported.

(1) Supply goods and services =
Gross production (Gpr) +
Imports (Imp)

The supply of goods and services are used for several purposes.

(2) Use of goods and services =
Private consumption ($Con_p$) +
Government consumption ($Con_g$) +
Exports (Exp) +
Intermediate consumption (Int) +
Changes in stocks (Sto) +
Investments (Inv)

Sto1: Changes in stocks, raw materials
Sto2: Changes in stocks of finished goods and work in progress
Sto3: Changes in stocks of trading goods

Sto = Sto1 + Sto2 + Sto3

A basic principle in NA is that the supply = use - both on an annual as well as on quarterly basis.

The value added from the production activities (Gdp):

(3) Gross domestic product (Gdp) = Grp - Int

The factor remuneration (disregarding taxes for simplicity):

(4) Gdp = Wages and salaries (WaS) + Owner income (Owi)

The task of short-term statistics (STS) is mainly to provide information about the changes in the current production activities (domestic contribution to the supply) during the year. The external trade statistics provides information about the imports and exports. Data collected for production are also often important sources when estimating components of the use of goods and services.

The annual structural surveys are normally the dominant source when producing the annual NA.

The list of variables requested:

Grp: Production / turnover, current prices[2]
Int: Intermediate consumption, current prices[3]
Inv: Gross fixed capital formation / investments, current prices
$Con_p$: Private household consumption, current prices

$WaS_{value}$: Wages and salaries, current prices
$Emp_{volume}$: Employment, persons
$WaS_{price}$: Wages and salaries, wage rates

All relations specified in (1)-(4) above are estimated in current prices as well as constant prices. For achieving this, an overall task for the STS is to provide data on production (turnover is an indicator for production) and the changes in prices - the producer's price (Ppr). Thus the NA requirements cover producer price information on a regular basis.

Ppr Producer's price, Paasche price index

In NA the work on balancing the supply and use, and estimating gross domestic production are normally produced for a number of breakdowns - in the most detailed version of NA in Mozambique 144 products and 42 branches are used. These detailed figures can be added up to the 20 sectors specified below. See the list below.

National account sectors:

| | | |
|---|---|---|
| A | R01.0 | Agriculture and animal production (CAE 01) |
| B | R02.0 | Fish, aqua cultural products, and activities in related services (CAE05) |
| C | R03.0 | Extraction industries (coal, oil and gas) (CAE 10-11) |
| D | R04.0 | Production of food, beverages and tobacco (CAE 15) |
| D | R05.0 | Other manufacturing industries (CAE 16-37) |
| E | R06.0 | Production and distribution of electricity gas and water (CAE 40-41) |
| F | R07.0 | Construction and civil engineering (CAE 45) |
| G | R08.0 | Wholesale and retail trade (CAE 51 and 52) |
| G | R09.0 | Repairing services (CAE 50) |
| H | R10.0 | Hotels and restaurants (CAE 55) |
| I | R11.0 | Transports (CAE 60-64) |
| J | R12.0 | Financial activities (CAE 65 and 67) |
| K | R13.0 | Estate and related services (CAE 70-74) |
| L | R14.0 | Public administration, defence and social securities (CAE 75) |
| M | R15.0 | Education (CAE 80) |
| N | R16.0 | Health services (CAE 85) |

[2] In manufacturing Production = Turnover + increase in stocks of finished goods and work in progress. However in Wholesale and retail trade Production = Turnover - purchase of tradable products + increase in stocks of tradable products.

[3] Intermediate consumption in most cases equal Purchases of intermediate goods and services - increase in stocks of raw materials.

O R17.0 Other collective activities, social and personal (CAE 90-93)
P R18.0 Families with hired staff (CAE 95)
Q R19.0 Ideal organisation and home services in households (CAE 93)
Q R20.0 International organisations and foreign institutions (CAE 99)

**2. Fulfilling the national accounts requests for data**
For the produce of the annual national accounts (ANA) the main sources are:

- Annual structural surveys
- Quarterly and annual account reports from the enterprises
- External Trade Statistics
- Sources covering government and municipal activities
- Other sources

The ANA results will in the future be the basic framework for the quarterly national accounts (QNA). How detailed the requirements for the QNA will be remains to be seen. This might be on the annual 20-sector level or a somewhat more aggregated level.

For producing QNA for a specific year (year t) the NA-staff will always utilise the last final ANA-results as a basis. If the ANA-results for year t-1 are available it will be distributed on quarters (time-consistency) and the current QNA will be estimated projecting the quarterly ANA t-1 results using current (year t) growth indicators from STS - for production, prices, wage- and employment data.

For variables like intermediate consumption, private household consumption etc. there are no direct observations in STS. A future solution to QNA data requires other approaches - most likely analytical approaches using several sources of information from ANA, business accounts etc. combined with STS information.

For the next years the STS statistics requires time to settle and to prove that the system can work efficiently on a regular basis. Some efficiency indicators is found in measuring how the survey data capture routines works, the ability to keep the nonresponse rates low, precision in estimates etc.

**3. The national account approach to measuring prices**
Basic principle is: To measure the pure price change - for a constant basket of products having fixed quality in time.

Some relations between price, quantity and quality:

(5) Value = price * quality * quantity
(6) Unit value price = price * quality
(7) Volume = quantity * quality

As seen from (7) the volume indicator should comprise both the quantities as well as all quality changes in the products. On an aggregate level the volume indicator should also comprise all changes in structures e.g. changes in the composition of products from one year to another or

from one quarter to another, any changes in the way of organising the work in the enterprises, the introduction of new technology in the enterprises etc.

An example: In the monthly manufacturing survey INE is observing the production value and quantities for broad groups of commodities e.g. classified according to the CNBS. From the observed data a unit value price is estimated:

Unit value price = Production value / produced quantities.

As is seen from (6) above the unit value price will contain quality changes - volume components that in fact should be included in the volume component.

**4. The producer's price (PPI) in the STS system**

The purpose is mainly measuring the price change of the producer i.e. a deflator. This indicator will be used in national accounts. The indicator should also add information to the analysis of inflation in the country.

The NA price principle commented in part 3 above is adopted for the observation of prices i.e. measuring the pure price change - for a basket of products having fixed quality over time.

For a given definition of the product - the basic task is to observe the prices of that specific sample of products - selected by the respondent over time. This requires a close follow-up of the respondent focusing on keeping the product quality stable in time. This is the recommended approach for price data capture within manufacturing.

This system should be considered as the start of a new Producer's Price Index (PPI) mainly developed for deflation purposes, but should also serve as an indicator for analysing inflation in the country. The statistic covers the manufacturing sectors i.e. the main goods producing industry.

For measuring producers price and changes in the non-manufacturing industries basically a qualitative approach is used. This is likely not a long run solution but seems in fact to be the only feasible for the forthcoming years when having restricted funds in producing statistics.

It should be added that a cost price approach is recommended for the construction sector - though on a quarterly basis. It is further strongly recommended that resources should be put into a development project for the CPI - especially focusing on improvements for measuring services.

For all NA-sectors a Paasche price formula having current weights will be used.

**5. Production in the STS system**

Measuring production from physical products is complicated. Experience from the current STS has shown that observing quantities might work for food production. This is enabled due to that the products are fairly homogeneous. For most other production activities (in the industry in general) the products are rather complex. Due to this measuring quantities will not in practise function.

Instead a value-based approach is recommended for measuring production activities. Using turnover data or other relevant production concepts are recommended as production indicators.

A production index will be estimated using the value figures (turnover) and the estimated deflators for each of the sectors concerned. Deducting the volume indicator this way implies producing a Laspeyre volume indicator based on fixed weights from year t-1.

## Appendix 6. Draft questionnaires for the revised surveys

The questionnaires drafted during this mission are presented below. When designing the drafts the focus has been on the targets set up for improving response rates, defining variables easy to be filled in, using relevant definitions etc. The drafts have in general a common structure though methodological approaches might differ somewhat across the surveys. The blocks F (information and definitions), G (respondents comments) and H (confirmation) were left out of the drafts. Block D Prices and price change are new in all surveys. See chapter 5.7 for more about the blocks C, D and E.

## Inquerito Mensal a Producao Industrial

**Return: 15 days after end of month**

**Mes de referencia _____ de 200 _____**

**Este questionario e dirigado aos empresas cuja actividade principal pertence ao ramo de Producao Industrial**

**A Identificacao e localizacao de empresa / foretak eller en-flere bedrifter i foretaket**

| | | | | | |
|---|---|---|---|---|---|
| **Nome** | | | | | |
| **Localizacao: Av, Rua ou Praceta** | | | | | |
| **Provincia** | | **Distrito** | | **Localidade** | |
| **Telefone** | | **Fax** | | **Email** | |

**B Activity during the current month**

**1 Has the enterprise had periodes of full stop or considerable reduction in production during the month? Please specify the total number of working days having full stop (maximum is the number of days in month):**

| **No. of days** |
|---|
| |

**C Key variables**

| | **Total** |
|---|---|
| **1 Turnover, total this month, valor Sem Impostos. 1000 MT** | |

| **Mao de obra ao Servico durante o mes** | **Homens** | **Mulheres** | **Total** |
|---|---|---|---|
| **2 Numero de trabalhadores** | | | |
| **3 Renumeracoes mensais, 1000 MT** | | | |

**D Producers prices.**

**We ask for price information on a detailed product level. For the three (3) most important products in sales in the current month, we ask you to specify: sales value and price for the current month and price last month Prices should be given excl. taxes, special discounts, VAT**

| **The 3 most important products in sales (1000 MT). Specify each product in text** | **Unidade** | **Sales value current month** | **Price per unit current month** | **Price per unit last month** |
|---|---|---|---|---|
| Example product. Estab. prod. no. 15413 | Kilo | 24555000 | 98220 | 96295 |

| | **Specify the 3 most important products here** | **Unidade** | **Sales value** | **Current price** | **Price last month** |
|---|---|---|---|---|---|
| **1** | | | | | |
| **2** | | | | | |
| **3** | | | | | |

**E Use of energy for production purposes, current month**

| | **Total** | |
|---|---|---|
| **1 Hours worked** | | **Hours** |
| **Consumption of energy** | | |
| **2 Use of electric power** | | **kWh** |
| **3 Use of oil and gasoline** | | **Liter** |

## Inquerito Mensal a Construcao

**Return: 15 days after end of month**

**Mes de referencia _____ de 200 _____**

**Este questionario e dirigado aos <u>empresas</u> cuja actividade principal pertence ao ramo de Producao Industrial**

**A Identificacao e localizacao de empresa / foretak eller en-flere bedrifter i foretaket**

| | | | | | |
|---|---|---|---|---|---|
| **Nome** | | | | | |
| **Localizacao: Av, Rua ou Praceta** | | | | | |
| **Provincia** | | **Distrito** | | **Localidade** | |
| **Telefone** | | **Fax** | | **Email** | |

**B Activity during the current month**

**1 Has the enterprise had periodes of full stop or considerable reduction in sales activities during the month? Please specify the total number of working days having full stop (maximum is the number of days in month):**

| **No. of days** |
|---|
| |

**C Key variables**

| | **Total** |
|---|---|
| **1 Turnover, total this month, valor Sem Impostos, 1000 MT** | |

| **Mao de obra ao Servico durante o mes** | **Homens** | **Mulheres** | **Total** |
|---|---|---|---|
| **2 Numero de Pessoas ao Servicio** | | | |
| **3 Renumeracoes mensais, 1000 MT** | | | |

**D Price change**

**Has the enterprise changed its prices compared with last month?**
**Please indicate the average change compared with last month by selecting one of the boxes below (use X)**

| | |
|---|---|
| **1 Increased with more than 5 per cent . . . . . .** | |
| **2 Increased with 3-5 per cent . . . . . .** | |
| **3 Increased with 1-3 per cent . . . . . .** | |
| **4 Prices are unchanged . . . . . .** | |
| **5 Reduced by 1-3 per cent . . . . . .** | |
| **6 Reduced by 3-5 per cent . . . . . .** | |
| **7 Reduced by more than 5 per cent . . . . . .** | |

**E Other indicators**

| **Type of construction projects. Valor de custos** | **Projeto nueve** | **Projete de rehabilitacao** | **Valor total 1000 MT** |
|---|---|---|---|
| **1 Residential buildings** | | | |
| **2 Non-residential building** | | | |
| **3 Civil engineering** | | | |
| **4 Total costs (1 +2 +3)** | | | |

| **Value of new orders received, in 1000 MT** | |
|---|---|
| **5 Buildings (residensial and non-residensial)** | |
| **6 Civil engineering** | |
| **7 New orders, total (5 + 6)** | |

## Inquerito Mensal ao Comercio e Servicios

**Return: 15 days after end of month**

**Mes de referencia _____ de 200 ____**

**Este questionario e dirigado as empresas cuja actividade principal pertence ao ramo de Comcercio e/ou de Prestacao Servicios**

**A Identificacao e localizacao de empresa / foretak eller en-flere bedrifter i foretaket**

| | | | | | |
|---|---|---|---|---|---|
| **Nome** | | | | | |
| **Localizacao: Av, Rua ou Praceta** | | | | | |
| **Provincia** | | **Distrito** | | **Localidade** | |
| **Telefone** | | **Fax** | | **Email** | |

**B Activity during the current month**

**1 Has the enterprise had periodes of full stop or considerable reduction in sales activities during the month? Please specify the total number of working days having full stop (maximum is the number of days in month):** _____ **days**

**C Key variables**

| | **Total** |
|---|---|
| **1 Turnover, total this month, valor Sem Impostos. 1000 MT** | |

| **Mao de obra ao Servico durant o mes** | **Homens** | **Mulheres** | **Total** |
|---|---|---|---|
| **2 Numero de Pessoas ao Servicio** | | | |
| **3 Renumeracoes mensais, 1000 MT** | | | |

**D Price change**

**Has the enterprise changed its prices compared with last month?**
**Please indicate the average change compared with last month by selecting one of the boxes below (use X).**

| | |
|---|---|
| **1 Increased with more than 5 per cent . . . . . .** | |
| **2 Increased with 3-5 per cent . . . . . .** | |
| **3 Increased with 1-3 per cent . . . . . .** | |
| **4 Prices are unchanged . . . . . .** | |
| **5 Reduced by 1-3 per cent . . . . . .** | |
| **6 Reduced by 3-5 per cent . . . . . .** | |
| **7 Reduced by more than 5 per cent . . . . . .** | |

## Inquerito Mensal ao Alojamento e Restauracao

**Return: 15 days after end of month**

**Mes de referencia _____ de 200 _____**

**Este questionario e dirigado aos empresas cuja actividade principal pertence ao ramo de Producao Industrial**

**A Identificacao e localizacao de empresa / foretak eller en-flere bedrifter i foretaket**

| | | | | | |
|---|---|---|---|---|---|
| Nome | | | | | |
| Localizacao: Av, Rua ou Praceta | | | | | |
| Provincia | | Distrito | | Localidade | |
| Telefone | | Fax | | Email | |

**C Key variables**

| | Total |
|---|---|
| 1 Turnover, total this month, valor Sem Impostos, 1000 MT | |

| Mao de obra ao Servico durant o mes | Homens | Mulheres | Total |
|---|---|---|---|
| 2 Numero de Pessoas ao Servicio | | | |
| 3 Renumeracoes mensais, 1000 MT | | | |

**D Price change**

**Has the enterprise changed its prices compared with last month?**
**Please indicate the average change compared with last month by selecting one of the boxes below (use X).**

| | |
|---|---|
| 1 Increased with more than 5 per cent . . . . . | |
| 2 Increased with 3-5 per cent . . . . . | |
| 3 Increased with 1-3 per cent . . . . . | |
| 4 Prices are unchanged . . . . . | |
| 5 Reduced by 1-3 per cent . . . . . | |
| 6 Reduced by 3-5 per cent . . . . . | |
| 7 Reduced by more than 5 per cent . . . . . | |

**E For hotels - please specify**

| Rooms and beds | Simples | Duplo | Casal | Suite | Total | Sales value (1000 MT) |
|---|---|---|---|---|---|---|
| 1 Number of rooms | | | | | | |
| 2 Number of beds | | | | | | |
| Type of accomodation | | | | | | |
| 3 Number of guests - domestics | | | | | | |
| 4 Number of guest - foreigners | | | | | | |
| 5 Number of guest nights - domestics | | | | | | |
| 6 Number of guest nights - foreigners | | | | | | |
| 7 Total receipts from the hotel | | | | Sum 3 + 4 +5 + 6 | | |
| 8 Services in restaurant | | | Total sales value (1000 MT) | | | |
| 9 Other services | | | Total sales value (1000 MT) | | | |
| 10 Total for hotel, restaurant and other | | | Total sales value (1000 MT), (7 + 8 + 9) | | | |

## Inquerito Mensal aos Transportes

**Return: 15 days after end of month**

**Mes de referencia _____ de 200 _____**

**Este questionario e dirigado aos empresas cuja actividade principal pertence ao ramo de Producao Industrial**

**A Identificacao e localizacao de empresa / foretak eller en-flere bedrifter i foretaket**

| | | | | | |
|---|---|---|---|---|---|
| **Nome** | | | | | |
| **Localizacao: Av, Rua ou Praceta** | | | | | |
| **Provincia** | | **Distrito** | | **Localidade** | |
| **Telefone** | | **Fax** | | **Email** | |

**C Key variables**

| | | Total |
|---|---|---|
| **1** | **Turnover, total this month, valor Sem Impostos, 1000 MT** | |

| **Mao de obra ao Servico durant o mes** | **Homens** | **Mulheres** | **Total** |
|---|---|---|---|
| **2 Numero de Pessoas ao Servicio** | | | |
| **3 Renumeracoes mensais, 1000 MT** | | | |

**D Price change**

**Has the enterprise changed its prices compared with last month?**
**Please indicate the average change compared with last month by selecting one of the boxes below (use X).**

| | | |
|---|---|---|
| **1** | **Increased with more than 5 per cent . . . . . .** | |
| **2** | **Increased with 3-5 per cent . . . . . .** | |
| **3** | **Increased with 1-3 per cent . . . . . .** | |
| **4** | **Prices are unchanged . . . . . .** | |
| **5** | **Reduced by 1-3 per cent . . . . . .** | |
| **6** | **Reduced by 3-5 per cent . . . . . .** | |
| **7** | **Reduced by more than 5 per cent . . . . . .** | |

**E Volume indicators measured in physical units**

| | **Type of transports** | **Volumes / numbers** | **Sales value (1000 MT)** |
|---|---|---|---|
| **1** | **Passengers - distance driven, in kilometers** | | |
| **2** | **Passengers - number of persons transported** | | |
| **3** | **Passengers - number of vehicles used** | | |
| **4** | **Merchandise - distance driven, in kilometers** | | |
| **5** | **Merchandise - total transport in tons** | | |
| **6** | **Merchandise - number of vehicles used** | | |
| **7** | **Total receipts for transports (2 + 5)** | | |

| | **Stock of vehicles owned by empresa** | **No. of vehicles** |
|---|---|---|
| **8** | **Total number of vehicles for passenger transports** | |
| **9** | **Total number of vehicles for merchandise transports** | |
| **10** | **Total (8 + 9)** | |

| | | **Liter** |
|---|---|---|
| **11** | **Use of gasoline, total of month** | |

## Inquerito Mensal aos Portos e Aeroportos

**Return: 15 days after end of month**

**Mes de referencia _____ de 200 _____**

**Este questionario e dirigado aos empresas cuja actividade principal pertence ao ramo de Producao Industrial**

**A Identificacao e localizacao de empresa**

| | | | | | |
|---|---|---|---|---|---|
| **Nome** | | | | | |
| **Localizacao: Av, Rua ou Praceta** | | | | | |
| **Provincia** | | **Distrito** | | **Localidade** | |
| **Telefone** | | **Fax** | | **Email** | |

**C Key variables**

| | **Total** |
|---|---|
| **1 Turnover, total this month, valor Sem Impostos, 1000 MT** | |

| **Mao de obra ao Servico durante o mes** | **Homens** | **Mulheres** | **Total** |
|---|---|---|---|
| **2 Numero de Pessoas ao Servicio** | | | |
| **3 Renumeracoes mensais, 1000 MT** | | | |

**D Price change**

**Has the enterprise changed its prices compared with last month?**
**Please indicate the average change compared with last month by selecting one of the boxes below (use X).**

| | |
|---|---|
| **1 Increased with more than 5 per cent . . . . . .** | |
| **2 Increased with 3-5 per cent . . . . . .** | |
| **3 Increased with 1-3 per cent . . . . . .** | |
| **4 Prices are unchanged . . . . . .** | |
| **5 Reduced by 1-3 per cent . . . . . .** | |
| **6 Reduced by 3-5 per cent . . . . . .** | |
| **7 Reduced by more than 5 per cent . . . . . .** | |

**E Indicadores do volume de Producao Comercial**

| **Type of transports** | **Servicio National** | **Servicio International** | **Total** |
|---|---|---|---|
| **1 Passageiros, embarcados** | | | |
| **2 Passageiros, desembarcados** | | | |
| **3 Passageiros, total (1 +2)** | | | |
| **4 Carga Manuseada, embarcados. Toneladas** | | | |
| **5 Carga Manuseada, desembarcados. Toneladas** | | | |
| **6 Carga Manuseada, total (4 +5)** | | | |

| **Navio ou aeronave (unidade)** | **Total** |
|---|---|
| **7 Entrada** | |
| **8 Salida** | |
| **9 Total (7 + 8)** | |

## Appendix 7. Some issues for the seminar in Bilene - December 2003

**The new statistics - in brief**

- **Revised short-term statistics (STS) - produced on a regular basis**

  **Monthly survey**
  **Returned from respondent on the 15th each month**
  **Data should be entered, edited and validated for each month**
  **Processing each month - quarterly estimation**
  **Publishing 45 days after the end of reference quarter**

- **New statistics - business confidence surveys (BCS)**

  **Monthly survey**
  **Returned from respondent on the 1st each month**
  **Data should be entered, edited and validated for each month**
  **Processing each month**
  **Separate estimation and publishing by INE?**
  **Publishing 30 days after the end of reference month (?) / quarter**

**The new business register**

- **New sampling plans are prepared**

  **Mainly covering the medium-sized (more than 30 employees) and large units (more than 50 employees)**
  **Samples from smaller units only when this part of the unit population is large**

- **The enterprise - the main sampling unit.**

  **The enterprise is the legal unit - formally responsible for nonresponse and poor quality in responding.**
  **Involve the enterprise when deciding on where to collect data**

**The variables**

- **The key variables**

  **Turnover - as a production indicator**
  **Employment and wage costs**

- **Prices - price changes**
  **All questionnaires have a block D containing questions on prices. Different solutions across industries.**

  **Manufacturing: Samples of specific products - collecting sales value and price for current month, and price last month**

  **Other industries: A qualitative method asking for changes in prices.**

  **Construction: Developing cost price statistics is recommended using data from the MOPH or from separate INE surveys.**

  **Develop the CPI (Consumer Price Index) coverage for services. An extended coverage also including business-to-business service transactions should be considered.**

- **Other volume indicators - differs across the surveys**

**The questionnaires**

- **Simplify - reduce the number of variables in the monthly surveys**

- **Use concepts and definitions that are consistent with the overall target for the new surveys**

- **In December at latest - test the questionnaires on a small number of respondents in Maputo area**

**Motivating the respondents**

- **Close contact with the enterprise managements**

- **Prepare the provincial delegations.**
  **This should be a special subject for discussion in the seminar.**

**Developing the new programs in Access**

- **For data entry, editing, validation and estimation.**

  **For use in Maputo Central**
  **An Excel-program should be developed for use in the provincial delegations.**

  **Using internal IT-resources only**
  **Use the current system and programs as templates.**

  **User support on the applications will be required**

**Data collection**

- **Extended involvement of the DPINEs in data capture, editing and validation.**

  **Collecting questionnaires - checking the contents**

  **Time schedule / limits for responding:**
  **BCS questionnaires should be delivered at 1st each month**
  **STS questionnaires should be delivered at 15th each month**

  **Data entry and validation of data**

  **Identify changes in the surveyed unit - for the maintenance of the business register**

  **Controlling / handling nonresponse - high priority tasks.**
  **Fill in the nonresponse questionnaire**
  **Adequate tools are required - information, fining**

  **Time schedule / limits for sending files / questionnaires to Maputo:**
  **BCS questionnaires transmitted on the 15th each month**
  **STS questionnaires transmitted on the 30th each month**

  **Email the complete files containing data and the complete nonresponse questionnaire to Maputo Central**

  **Detailed plans for the data collection work in DPINEs should be developed / improved. A subject for discussion during the seminar.**

- **Administration of the units - data**

  **Receiving questionnaires / files containing data from the provincial delegations**
  **Information about changes in the identification of the sampled units e.g. names, addresses etc., sent to the business register.**

  **Identify units not responding - check nonresponse questionnaire**
  **DPINEs must contact the not responding unit immediately**

- **In case of nonresponse - the routines for handling nonresponse must be activated.**

  **Tools for handling non-responding units should be prepared. Information, legal basis for fining etc.**

  **Routines for handling nonresponse should be developed / improved. A subject for discussion during the seminar**

**Other data entry, editing and validation**

- **For the provinces only collecting the questionnaires and handling nonresponse Data entry, editing will be done in Maputo Central.**

- **Validation - imputation.**

  **For estimating national results the validation will be a task for Maputo Central only.**

  **The validation of data will be based on a macro approach i.e. the control starts on the aggregate level results (and not the details). If irregularities are found in aggregates - the details are checked.**

  **Imputation is performed using a program developed for this purpose.**

**Estimation**

- **Indices, value figures.**

  **The results will be distributed using indexes - for all aggregates having a common reference year.**

  **In general the estimation procedures comprises routines for:**
  **-- aggregating group totals for the medium-sized and large units**
  **-- aggregating group totals for sampled unit**

  **Estimate indexes using the estimated totals. The estimation procedures are described in the mission report from last September.**

**Data storage - output database**

- **Develop a common database for storing time-series from all surveys**

- **The common database for distribution of statistics to user**

**Building time-series**

- **Bridging old and new surveys**

  **Use the factors estimated when correcting the aggregate quarterly results from 2001, 2002 and 2003.**

  **Perform a macro validation of the corrected series**
  **Make the adjustments needed**
  **These operations requires judgemental adjustments by INE staff**

**Publishing statistics**

- **Publishing statistics**

  **Prepare price- and volume indicators for all surveys**
  **Use the same reference year e.g. 2002 = 100**

  **Present indices and growth rates (quarter $^{q,t}$ / quarter $^{q,t-1}$)**

- **Prepare updated metadata about statistics**

  **Update the metadata documentation - About the statistics**

Mr Francisco Nuvunga and Ms Maria Teresa Tovela