FOREIGN TRADE STATISTICS (FTS)

Report from a mission to the National Statistical Institute of Mozambique, Maputo Mozambique

8-18 September 2009
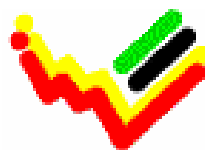
within the frame work of the

AGREEMENT ON CONSULTING ON INSTITUTIONAL CAPACITY BUILDING, ECONOMIC STATISTICS AND RELATED AREAS

between

INE and Scanstat

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List of abbreviations

CO	Scanstat Coordination Office in Statistics Denmark
Danida	Danish International Development Assistance
DKK	Danish Kroner
DSt	Statistics Denmark
EUR	European Euro
INE	Instituto Nacional de Estatística, Mozambique
INE-P	Instituto Nacional de Estatística, Portugal
MZM	Mozambique Meticais
NOK	Norwegian Kroner
Scanstat	Consortium between Statistics Denmark, Statistics Norway and Statistics Sweden
SCB	Statistics Sweden
SEK	Swedish Kronor
SSB	Statistics Norway
USD	US Dollars
ZAR	South African Rand

CONTENT:

1 EXECUTIVE SUMMARY

1.1 *Major reason for the mission*

This report is based on documentation in the previous mission report Ref. no. 104.Moz.98, July 2007

The 2007 report explains the structure in the new pilot system, and will not be repeated in this report. This report should not be used without a careful study of the content of the July 2007 report.

The reason for this mission is to continue the 2007 training of the Foreign Trade Statistics staff in data processing & file treatment techniques and to modify and to run SPSS syntax / programs, to repeat the main important problems related to work to improve the coverage and to apply recommended methods / definitions for the FTS system.

After the pilot system in SAS was made in June 2007, the FTS staff at INE could not continue training, since SAS has shown difficult to get in use. Instead, SPSS has been chosen. During November and December 2007 the SAS programs were converted to SPSS-13 by Rahel Ghebregziabiher, Head of FTS at the NSO in Asmara. In January 2008 these prototypes were quality-checked and sent to INE.

In 2009 INE has managed to obtain SPSS-17 licences and all three FTS staff should have access to this software. Finally, it was time to get started with the practical work to train FTS staff in making a production system.

The preparatory work and plans made before the mission is in the document *LFA_Action_PLAN_ver01_DETAILS.doc*, which is annexed this mission report (Appendix 3). Appendix 1 gives an overview over persons met. Appendix 2 includes a copy of the *Terms of Reference*.

1.2 *Major progress/achievement duing the mission*

The preparatory plan proposed a training programme including 6 activities. This mission covers activity 2 in this plan. The mission actions were:

Action 2.1 Training the FTS staff
The 1st week was mainly used for lectures focusing on how to make *production systems*, how to do professional *file processing* in a step-wise manner and *FTS coverage and definition* matters especially related to the Customs procedures and how to distinguish between *general trade* and *special trade*.

During the 2nd week we focused on transforming the syntax and how to run the SPSS programs. It showed to be smaller differences between the SPSS-13 and the SPSS-17 syntax and also a need for some adjustments in the programs. Mainly the programs and the steps in each program are the same.

Action 2.2 Meetings
A meeting with the National Bank and the National Accounts was arranged during the afternoon the 16th of September and another meeting with Customs, the National Bank and National Accounts the 17th in the morning. An introduction meeting with Mr. Azarias Nhanzimo was held the 8th of September and a closing meeting on the 16th.

Action 2.3 On-job training

Practical work executing SPSS programs was integrated in the work during the 2nd week. The functionality of the 2 main programs were discussed and tested in details, see overview in chapter 3 below.

Conclusion
The FTS staff has now a genuine chance to learn professional data processing techniques and develop skills as light programmers. They seem to be really interested to take the efforts and shows personal initiatives to start this work, and willingness to succeed in such challenges.

However, this is probably not possible without conscious support and contribution from INE's leaders and top management. Such personal efforts have to pay off. The old salary system with a fixed compensation without taking into consideration what a staff manage to do, and which contribution that staff do for the team, -is a safe way to kill progress. An active staff needs technical support and moral encouragement.

Practically INE's management can change current situation step by step:

- For staff who shows skills and initiative, extra salary or bonus or whatever it might be, should be a tool in the future to promote development of good statisticians

- Staff and teams who show ability to develop systems, should be given extra attention on technical support, e g help to develop systems on common file servers, care for good backup facilities and good virus protection, priority to IT courses domestic and abroad

- Such staff should over time be given other rewards like personal PCs (laptops), giving them a chance to work with system / program development home or on travels

- This staff should get active support to attend English courses. English is a must for statisticians who will work with international contacts

- INE's leaders should keep an eye on promoting such staff and treat them as an institutional asset of great value.

The activity 2 (this mission) was executed according to the plan. The 2 main SPSS programs prog01 and prog02 were tested and explained in details and test run done together with the staff. The remaining work agreed to, see Major recommendations below.

We did not agree in very details how to proceed with the proposed **remaining actions 3-6**. However, it was proposed that the SPSS course might be the last action (change from action 4, to be an action 6), and that the next action will be a follow-up mission by Hans K Ostereng. In any case INE stated that such mission can't take place before after New Year, in the beginning of 2010.

Action 3, how the FTS staff and the expert should organise a long-distance training was also not discussed and agreed to in details. However, the expert promised to do a help-desk function and to assist the FTS staff by emails and phone, until the mext mission can take place.

Also, this mission report propose a programme for further jobs to do, both for the FTS staff and the expert, see Major recommendation below.

1.3   *Major recommendations*

The FTS staff will have a big job to work with the pilot system, to train how to use it, and to contribute on improvements further on. All available data for 2009 should be processed as soon as possible. If time allows, then process 2008 and 2007 data. Even the solution has been made as simple as

absolutely possible there are many details, which has to be paid attention to. The FTS staff is not used to work with IT systems and programming, and need to do trials & failures before work and principles are in a routine.

1.3.1 Work (task list) INE / IT management should do

A. Short-term period (4th quarter 2009)

1. Create a FTS/ - folder in a file-server and give the 3 FTS staff read/write permission to all files in this folder structure (Which also includes right to create new sub-folders)

2. Secure full access to SPSS for all 3 staff (both on PCs and on the server)

3. Run proper backup systems

4. Develop more the cooperation with the National Bank and eventually involved companies (importers and exporters) about Standard Format for EXTRA-data (EXCEL-file) and integrate this in existing cooperation Agreements

5. Complete the Agreement with Customs about Data deliveries, Quality work and Practical daily cooperation about system Metadata (update of Pauta-commodity numbers, changes in Customs Procedures, Historic Corrections of already accepted declarations etc…)

B. Long-term tasks (2010)

6. Support FTS in English-courses and/or IT courses about data processing / programming

7. **Approve a plan for completing the FTS pilot system and organised it into a production system; Goal:** The FTS staff produce FTS monthly according to a preset system and the data controls are all executed by computerized data processing. All output (tables and data extractions) are done by running programmes and not by manual operation / extractions.

1.3.2 Work the FTS staffs should do

A. Short-term period (4th quarter 2009 and as soon as possible)

1. Produce the EXTRA-data files for 2009 so far it is possible

2. Re-produce EXTRA-data files for 2008 (and if time also for 2007)

3. Contact Customs and agree on what are the correct and valid list of reg-cpc (Customs Procedure codes) and discussed with Customs that ALL codes are coded correctly according to Special trade and General trade or not FTS. This work has to be done BEFORE finally executing the 2009-data. Discuss with experts (Customs Procedures) what kind of reason there are, for the invalid reg-cpc, which we found in the 2009 data and in the 2006-data, presented at the meeting with Customs during the mission.

4. Contact Customs and get a copy of all commodity numbers for 2009 in the Customs declaration system. Get and electronic copy of the Pauta. Verify what VERSION of the Harmonized System is used as basis for the 2009-Pauta. Get information on what commodity numbers have been changed durinf the years 2007 and 2008.

5. Start to work in a common FTS – folder in the server. Only training should take place on the pc and using the C:\-drive

B. Long-term tasks (2010)

6. Learn how to do data-correction on the ERRORLIST file and complete correcting all data in this manner. This monthly correction system is a Current-revision system (**Current-revision** means to correct data which never has been published before)

7. Train SPSS syntax editing, and to modify programs and to create new programs

8. Start creating Table-programs and prepare the system for regular publishing

9. Make a strategy for Historic-revision of data; -including how to deal with >Customs and corrections which can be done in the Customs declaration system (**Historic-revision** means a system handling changes in data *that already have been published*)

1.3.3 Work the expert (Statistics Norway) should do

A. Short-term period (4th quarter 2009 and as soon as possible)

1. Produce a **new Commodity Catalogue** (ComCat, after a design similar to the Country-catalogue), when the basic information collected by point 1.3.2-4 above is available

2. Communicate with the FTS staff on SPSS programs producing this **catalogue (ComCat)**

3. **Quality secure** that prog-03, the data control programs are functioning in all details, before a final run on the 2009 data start

4. Complete a next program which produce the **final output file**, ready for publishing

5. Communicate with the FTS staff on SPSS programs producing **tables**

B. Long-term tasks (2010)

6. Contribute to make a strategy for Historic-revision of data; -including how to deal with >Customs and corrections which can be done in the Customs declaration system, see 1.3.2-9 above

1.3.4 LFA principles applied on the training /FTS development project

Based on proposed tasks in points 1.3.1, 1.3.2 and 1.3.3 above, it would be smart to make a small LFA based plan with a time schedule?, see draft Appendix 3

2   INTRODUCTION & information

My thanks to the friendly FTS staff, who managed to sit long hours and listen to so much new information in such a short period of time. Also thanks to Mr Cirilo, Mrs Júlia and Mr. Azarias for good meetings and understanding of the work and their positive attitude to find solutions about the development challenges concerning future Foreign Trade Statistics.

2.1   The report and writer

The report is written by Mr. Hans Kristian Ostereng. He is senior adviser at Statistics Norway, Division for Development Cooperation.

From September 2004 to September 2007 he was the Project leader for a Norad-funded cooperation project with the Ertitrean National Statistical Office and permanently settled in Asmara. During last half of 2007 until February 2009 he was Project leader for the EuropeAid financed TACIS project named Statistics-10 with Uzbekistan. He also took position as Project leader for an Eurostat project[1] in the period January 2008 until June 2009.

2.2   Background and earlier missions

A first short-term mission on FTS took place in *November 2001* with support from the Twinning Arrangement *(MOZINE 2001:10)*. The objective of this mission was to review the current production routines and suggest the basic actions for how to improve.

The second short-term mission on FTS took place during *28 April - 9 May 2003*. This mission was to review the status and to give advises about how to proceed.
MZ:2003:08 Ref. no. 104. Mozambique.1.MFS.1-5 June 18, 2003

The third short-term mission took place during *12 April - 25 May 2004*. A trial to create an Eurotrace-based system (Eurotrace is a a software financed by Eurostat, tailor made for Foreign Trade Statistics).
MZ:2004:20   Ref. no. 104.Moz.98   June 2004.

A fourth short-term mission took place during *14 - 17 November 2006.* The start of a new pilot production system was made using the SAS software.
MZ:2006:16 Ref. no. 104.Moz.98   November 2006.

A fifth short-term mission took place during *14 - 17 June 2007.* The pilot production system started in 2006 was completed to include necessary metadata files and prototype of full data controls.
Moz:2007:05 Ref. no. 104.Moz.98   July 2007.

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[1]   Phare - Multi-beneficiary statistical co-operation programme in 2006 for Bulgaria Croatia Romania Turkey Lot 1, Contract EuropeAid/125264/C/SER/multi.

3 FTS pilot system: Program functionality and files

These tables explain the main steps in the programs and what files are read and which output files are created.
The programs should be executed in the sequence below. All error messages or wrong record-count should be
checked and eventually corrections done, before to start the next program.

*There are some **obligatory quality checks**, which has to be analysed and result approved, before you continue the processing and to run the next program. **See Notes under each table***.
*In addition, all programs-steps produce frequency tables – counting number of in-out-records. **It is obligatory** to keep track on the number of records processed all the way through the data processing.*

All source-files are stored as Excel-files. These files are converted to text-files; semicolon-separated files. The SPSS-programs store output files at semicolon-separated text-files. Manual operations in the files will be done in Excel-files, e.g. Error-list files. Output files for quality checks can be read directly in Notepad etc., or analysed in Excel.

SPSS program: 01_INE-EXTRAdata_intoSPSS.sps

Steps	Activity description – in/out files
Step 01	read text-data SEMICOLON separated file into SPSS **Input file**: FTS2009TEST\data\INE\EXTRA_IMP_EXP_jan2009.csv
Step 02	Concat variables, introduce new variables (split old). Make freq statistics. **Output file:** FTS2009TEST\data\INE\FTS_EXTRA_200901jan.sav
Step 03	Merge the reg_cpc catalogue, classify imports exports flows and general - special trade **Output LIST**: -A- CASE: regcpc codes in the DATA is NOT in regcpc Cat -B- CASE: DATA in regcpc-Cat, BUT -trade- not G,S,B:- NOT per def FTS-data (reg_cpc is Customs Procedure Code. Trade = G general trade, S special trade B both types of trasde)

Note: The LIST: -A- and –B-   MUST be empty, before running next program 02
This test prevent invalid reg_cpc codes <u>and</u> not-FTS records, to be merged with the Customs-data

SPSS program: 02_Step1-5_INEdata_intoSPSS.sps

Steps	Activity description – in/out files
Step 01	Read text-data SEMICOLON separated into SPSS **Input file**: FTS2009TEST\data\INE\2009mar.csv
Step 02	SELECT / split the items from Customs RAW data, which should be replaced by EXTRA data **Output file:** FTS2009TEST\data\INE\CustomsDELETE200903mar.sav
Step 03	merge the reg_cpc catalogue, classify imports exports flows and general - special trade **Output file:** FTS2009TEST\outFTS\regcpc_INVALID200903mar.txt
Step 04	NEW variables, check values, ERRORS classification and error checks. Common variables for imports and exports: *value* and *country*
Step 05	Display statistics and error list
Step 06	Write out files as text-files (produced in steps 02 and 03). Split final data in FTS data (for further control-processing) and NOT FTS data **Output file:** FTS2009TEST\data\INE\FTS200903mar.sav **Output file:** FTS2009TEST\outNOTFTS\notFTS_200903mar.txt

Note: The selection criteria in step 02 needs quality refinements, -try to improve this step.
Check output files in step 02 and 03 carefully before proceeding. If wrong, correct and re-run.

SPSS program: 02_Step6_Table_CustDelete_ExtraADD.sps

Steps	Activity description – in/out files
Step 01	table 01-A SUM up EXTRAdata ADDED to the FTS file
Step 02	table 02-B SUM up CUSTOMS-data DELETED from the FTS file **Output file**: FTS2009TEST\outFTS\TABLE-01B_EXTRAdata_DELETED_FTS_200903mar.txt

Note: The content of these two tables should be investigated (values by commodity numbers, the size of the value added and deleted etc. When something seems suspicious, investigate input data in more details. If errors, correct and run all from the beginning.

SPSS program: 03_FTS_IMP_PRICE_validity_control_03mar_IMP.sps

Steps	Activity description – in/out files
Step 00	Merge PRICEMASTER into data **Input file**: FTS2009TEST\data\INE\FTS200903mar.sav
Step01a	New variables for marking Price Control results initiating these variables - DEFAULT
Step01 b	prepare price limits for the PRICE CONTROLS, using global factors
Step 03	PRICE CONTROL FOR ITEMS
Step 04	Check and substitute Quantity & Weight for com no which ARE in the Price master
Step 05	VALIDITY CHECKS FOR COM. NO AND COUNTRY CODES
Step 06	PRODUCE OUTPUT LISTS: ERROR LISTS + READY CHECKED DATA **Output files**: FTS2009TEST\outFTS\FTS_ERRORLIST_IMPORT200903mar.txt FTS2009TEST\data\INE\FTS_OK_export200903mar.sav
	ERRORLIST file will be read into ECXEL and formatted /prepared for manual correction work FTS_OK is saved as SPSS-file. A copy in text-format is available, if necessary.

Note: The price control has to be experimentally fine-tuned: The middle-price in the master-file has to be manually quality-approved, -eventually corrected, before using it. Prog-03 has (near top of program) variables which is used to expand limits, and so increase or reduce number of warnings. ALSO, choose a proper MAX-VALUE limit, where error-items above this limit should be checked more strictly that the ones below.

SPSS program: 03_FTS_IMP_PRICE_validity_control_03mar_EXP.sps
In principle same as as for imports, but the price-control fine-tuning has to be done separately for imports and exports. Run imports first!
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Already made Ad-hoc programs:
11_CPC-REG_CAT_intoSPSS.SPS
12_Country_CAT_intoSPSS.SPS

Programs missing (in SPSS) which still need to be made/transformed:
13_Commodity_CAT_intoSAS.sas
21-import_remove_extremes_HB-method.sas
22_import_make_pricemaster.sas

Table programs:
91_TABLE-01-A-B-C-TOTAL_COM-Country.sas

92_Table-02_A_SITC_IMPORT_Table.sas
93_Table-03_A_Country_IMPORT_worldparts.sas
99_FREQ_TABLE_REG-CPC_raw-data.sas

How to organized folders, errormessages etc. in described in the June 2007-report or in the system documentation file: FTS_FILE_Descriptions.xls

4 APPENDIX 1. Persons met

Participants during the FTS course and the SPSS training sessions:
Mr. Geraldo Adriano Timbe, Mr. Afonso Soberano Uate, Ms Monica Manchonhane, Mr. Cirilo Tembe

Participants in the meeting with the National Bank
Mr. Geraldo Adriano Timbe, Mr. Afonso Soberano Uate, Ms Monica Manchonhane, Mr. Cirilo Tembe, Mrs Júlia Cravo, Mr (National Bank)

Participants in the meeting with Customs and the National Bank
Mr. Geraldo Adriano Timbe, Mr. Afonso Soberano Uate Ms Monica Manchonhane Mr. Cirilo Tembe Mrs Júlia Cravo,

Participants in the welcome meeting and the closing meeting:
Mr. Cirilo Timbe, Mrs. Júlia Cravo, and director Mr.Azarias

Others: Mr. Lars Carlsson

NB.. To be completed: Cirilo, could /another person complete with all names, the persons from Customs + National Accounts, I did not write down the names

5 APPENDIX 2. Terms of Reference

INSTITUTO NACIONAL DE ESTATÍSTICA
DIRECÇÃO DE ESTATÍSTICAS SECTORIAIS E DAS EMPRESAS

**TERMS OF REFERENCE
Short Term Mission (2 weeks)
For
Strengthen the capacity for the use of the system developed for Foreign Trade data (project no 1.3.5)**

Introduction

During the year 2007 a pilot system was developed to help foreign Trade staff on data validations from different sources.

This Pilot system was developed in SAS, however for INE was not possible to have a SAS license due to the lack of financial resources. So under the Scandinavian assistance program it was asked assistance to convert SAS pilot system to SPSS software.

The conversion has been finalized by the end of 2007, however at that time INE hasn't yet the SPSS licences.

Since July last year INE has already serves SPSS licenses and the pilot system has been installed. In meanwhile 2 foreign trade staff left INE. Only by the end of 2008 was possible to have another person

in foreign trade statistics. Actually there are two people and both of them need to be trained in the routines of the pilot system.

Objectives of the mission:

With that mission it is intend the consultant:

- Explain the main objectives of foreign trade statistics
- Explain the main nomenclatures that are usually used under this project
- Explain the objective of the system in general
- Teach how to work with the system
- Do some examples with the available data for 2007 and 2008.

Benefactors of the mission

The benefactors of the mission will be Directorate of Sectorial and Enterprise Statistics Staff and at the end all INE users.

Consultants and counterpart

Main counterpart at INE: Azarias Nhanzimo
Consultants: Scanstat

Timing of the mission

The mission should take place in June 2009

Things to be done by the Counterpart before the mission

In order to make the mission more productive, one mounth before the mission, the consultant should recommend what should be done by the beneficiary, in preparation of the mission. In addition the consultant must indicate the entities that he will need to consult in order the give time to the counterpart to prepare meetings with those institutions.

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 structure of the report should be according to Danida-format.

The Counterpart has to ensure that the final printed report is translated into Portuguese according to the existing procedures.

These Terms of Reference were prepared by

Day   /   /   ....

Approved by/in the name of the President of INE

Day /   /   ....

6   APPENDIX 3. Programs – FTS production system

To be added after the rest is OK