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**AFRICAN WORKSHOP ON STRATEGIES FOR ACCELERATING THE IMPROVEMENT  
OF CIVIL REGISTRATION AND VITAL STATISTICS SYSTEMS  
ADDIS ABABA, ETHIOPIA, 5 TO 9 DECEMBER 1994**

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**STATISTICAL DIVISION  
UNITED NATIONS**

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**ECONOMIC COMMISSION  
FOR AFRICA**

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**AUTOMATION OF CIVIL REGISTRATION  
HAND OUT ON A DEMONSTRATION OF A PC-BASED SYSTEM  
TO REGISTER, STORE AND RETRIEVE CIVIL REGISTRATION:  
THE BOTSWANA CIVIL REGISTRATION SYSTEM**

BY

**UNFPA CST - ADDIS ABABA/ECA**

AW/CRVS/94/28

28 November 1994

~~42~~ **Automation of Civil Registration**  
**Hand-out on a demonstration of a PC-based system**  
**to register, store and retrieve civil registration information:**  
**The Botswana Civil Registration System**  
~~24~~

BY

UNFPA CST II / ECA

The Phase I of the application consists of four major tasks:

1. Capturing data from birth and death notices and creating two batch ASCII files: one for births and another one for deaths.
2. Editing of the batch files:
  - range and consistency checks
  - duplication checks.

This can be carried out in two modes: batch mode or interactive mode. The editing programme is very well documented and displays detailed error messages.

No automatic imputation is performed. Correction of errors are to be done on the screen using CENTRY with CONCOR.

3. Issuing of births and deaths certificates.
4. Producing over 60 distribution and percentage tables from both births and deaths files for any selected period.

The tables are stored in a table retrieval system for easy reference and dissemination.

## **Presentation of the application**

The description made below applies to the Notice of birth. The same procedures are followed when dealing with information on death, the difference being the files used.

### **1) Data Capture**

a) Dictionary is in file BIRTHX.DD. It contains the meta-information of the Notice of birth. A notice is identified by 4 items:

- type of declaration
- serial number
- record number
- registration number

These items are defined in the COMMON segment of the dictionary with the view of avoiding duplicate identifications during data entry.

b) The data entry application for births is BIRTHX.AP. It contains 5 data entry screens, the first being for identification variables. The next four correspond to the structure of the Notice of birth. They are for information on:

- the Declarant
- the new born baby
- the mother
- the father

c) Rectangular files are created during data entry, one for each year. The output file names are BIRYYMMX.BCH where YY represents the last two digits of the year of birth, MM the month of data entry, X the operator code.

## 2. Editing

a) The editing programme is BIRTHX.CN and can be run over the concatenated and sorted data file (batch mode). However, since no automatic correction is performed, it is recommended to use the interactive mode for editing, that is data entry (ENTRY) with editing (CONCOR).

The CONCOR programme is automatically executed after information relating to a form has been completely captured. A window displays detailed messages of detected errors.

Corrections of the errors are made on-line by the operator and/or the supervisor.

The output file can be created with the same name and extension OUT. It is the tabulation file.

b) The edit rules for alphanumeric items (names) are as follows:

- redefinition of the first character of the field in two different variables: one alphabetic and the other numeric.

The rule is a test of non-numericity of the numeric variable.

### **3. Issuance of Certificates**

Two types of certificates are produced: birth and still-birth certificates. A CONCOR programme has been developed for this purpose. However, the output which is an ASCII file can be imported to a desktop publisher or a word processing packages for better formatting and printing.

### **4. Production of tables**

Tables production done using the CENTS module. For births 30 distribution and percentage tables are produced. The names of the files are:

BIRTHX.TAB for the programme

BIRTHX.FMT for the table formats

BIRTHX.TBL and BIRTHX.TBF for the tables

The tables are then stored in a table retrieval system using TRS module. This special application is in a different directory VISTATS.

**SUMMARY OF PROGRAMMES AND DATA FILES**

IMPS Modules	BIRTH	DEATH
DISTRICT	BIRTHX.DD	DEATH.DD
CENTRY application output	BIRTHX.AP *.BCH	DEATHS.AP *.BCH
CONCOR programme Input Output	BIRTHX.CN BIRTHX.BCH BIRTHX.QST BIRTHX.SUM	DEATH.CN *.BCH *.QST *.SUM
CENTS Formats programme output	BIRTHX.FMT BIRTHX.TAB BIRTHX.TBL BIRTHX.TBF	DEATHS.FMT DEATHS.TAB DEATHS.TBL DEATHS.TBF
TRS	VIBTATS.MNU VISTATS.TS VISTATS.TI VISTATS.nnn	

REPUBLIC OF BOTSWANA  
BIRTH AND DEATH REGISTRATION ACT  
NOTICE OF BIRTH

2.1 Name of the Mother  
=====

Forename: [REDACTED]

Surname: [REDACTED]

Other name: [REDACTED]

2.2 Age of Mother: [REDACTED]

2.3 I.D. Number: [REDACTED]

2.4 Marital Status: [REDACTED]

Place marriage: [REDACTED]

Date marriage: [REDACTED]

2.5 Usual residence: [REDACTED]

Ward/Street: [REDACTED]

2.6 Level of education: [REDACTED]

2.7 Occupation: [REDACTED]

2.8 Nationality: [REDACTED]

2.9 No of Children Born Alive: [REDACTED]

2.10 No of Children Still Alive: [REDACTED]

screen 4.

3.1 Name of the Father  
=====

Forename: [REDACTED]

Surname: [REDACTED]

Other name: [REDACTED]

3.2 Age of Father: [REDACTED]

3.3 I.D. Number: [REDACTED]

3.4 Marital Status: [REDACTED]

Place marriage: [REDACTED]

Date marriage: [REDACTED]

3.5 Usual residence: [REDACTED]

Ward/Street: [REDACTED]

3.6 Level of education: [REDACTED]

3.7 Occupation: [REDACTED]

3.8 Nationality: [REDACTED]

screen 5.



REPUBLIC OF BOTSWANA  
BIRTH AND DEATH REGISTRATION ACT  
NOTICE OF DEATH

Type of declaration :

Serial number :

Record Number :

Registration NO :

screen 1.

District:

Name of Declarant: Forename:

Town/Village:

Surname:

Relation to the Deceased:

Address:

screen 2.

1.1 Name of the Deceased

Forename:

Surname :

Othername:   
ddmmyy

ddmmyy

1.2 Sex:

1.3 Date of Death:

1.4 Age at Death:

1.5 I.D. Number:

1.6 Place of death:

Name of health facility:

1.7 Marital Status:

Place of marriage:

Date of marriage:

1.8 Usual residence:

Ward/Street:

1.9 Level of Education:

1.10 Occupation:

1.11 Nationality:

1.12 Symptoms before death:

1.13 Duration of illness:

1.14 Hospitalisation Period:

1.15 Causes of Death:

screen 3.

2.1 Name of the Mother

=====

Forename:

Surname:

Othername:

2.2 Age of Mother:

2.3 I.D. Number:

REPUBLIC OF BOTSWANA

BIRTHS AND DEATHS REGISTRATION ACT

BIRTH CERTIFICATE  
( Regulation ... )

Birth Identity Number....

1. Full name of child :

**Karabo**  
Forename

**Zanisani**  
Other names

**Mahochi**  
Surname

2. Sex : **Female**

3. Date of birth : Time Day **10** Month **June** Year **1992**

4. Place of birth: Village/Town: **Francistown** District: **Francistown**  
Country: **Botswana**

5. Mother's Name(s): **Elinah** Surname : **Mahochi**  
Nationality: **BOTSWANA**

6. Father's Name(s): Surname :  
Nationality:

7. Date of registration

I hereby certify the above to be a true and correct extract from the Births Register kept in Gaborone in the Republic of Botswana.

Dated this day ..... of month ..... year .....

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REGISTRAR OF CIVIL REGISTRATION

VITAL STATISTICS FROM BOTSWANA CIVIL REGISTRATION : DEATHS

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- TABLE 1: NUMBER OF DEATHS IN PILOT AREAS BY PLACE OF DEATH  
TABLE 1A: PERCENTAGE OF DEATHS IN PILOT AREAS BY PLACE OF DEATH  
TABLE 2: NUMBER OF INSTITUTIONAL DEATHS BY AGE AND SEX  
TABLE 2A. PERCENTAGE OF INSTITUTIONAL DEATHS BY AGE AND SEX  
TABLE 3: NUMBER OF NON-INSTITUTIONAL DEATHS BY AGE AND SEX  
TABLE 3A. PERCENTAGE OF NON-INSTITUTIONAL DEATHS BY AGE AND SEX  
TABLE 4: NUMBER OF DEATHS BY PLACE OF DEATH , SEX , MARITAL STATUS AND AGE GROUP  
TABLE 4A: PERCENTAGE OF DEATHS BY PLACE OF DEATH , SEX , MARITAL STATUS AND AGE GROUP  
TABLE 5: NUMBER OF DEATHS BY PLACE OF DEATH , SEX AND LEVEL OF EDUCATION  
TABLE 5A. PERCENTAGE OF DEATHS BY PLACE OF DEATH , SEX AND LEVEL OF EDUCATION  
TABLE 6: NUMBER OF DEATHS BY OCCUPATION AND SEX  
TABLE 6A. PERCENTAGE OF DEATHS BY OCCUPATION AND SEX  
TABLE 7: NUMBER OF DEATHS BY AGE OF MOTHERS FOR CHILDREN DECEASED BELOW AGE 16  
TABLE 7A: PERCENTAGE OF DEATHS BY AGE OF MOTHERS FOR CHILDREN DECEASED BELOW AGE 16  
TABLE 8: NUMBER OF DEATHS BY PLACE OF DEATH, NATIONALITY AND SEX  
TABLE 8A. PERCENTAGE OF DEATHS BY PLACE OF DEATH, NATIONALITY AND SEX  
TABLE 9: NUMBER OF DEATHS AGE, SEX AND CAUSES OF DEATH  
TABLE 9A. PERCENTAGE OF DEATHS BY AGE, SEX AND CAUSES OF DEATH  
TABLE 9: NUMBER OF DEATHS AGE, SEX AND CAUSES OF DEATH (Francistown area)  
TABLE 9A. PERCENTAGE OF DEATHS BY AGE, SEX AND CAUSES OF DEATH (Francistown area)  
TABLE 9: NUMBER OF DEATHS AGE, SEX AND CAUSES OF DEATH (Kanye area)  
TABLE 9A. PERCENTAGE OF DEATHS BY AGE, SEX AND CAUSES OF DEATH (Kanye area)  
TABLE 9: NUMBER OF DEATHS AGE, SEX AND CAUSES OF DEATH (Serowe area)  
TABLE 9A. PERCENTAGE OF DEATHS BY AGE, SEX AND CAUSES OF DEATH (Serowe area)  
TABLE 9: NUMBER OF DEATHS AGE, SEX AND CAUSES OF DEATH (Gomare area)  
TABLE 9A. PERCENTAGE OF DEATHS BY AGE, SEX AND CAUSES OF DEATH (Gomare area)  
TABLE 10: NUMBER OF INSTITUTIONAL DEATHS BY SEX AND HOSPITALISATION PERIOD  
TABLE 10A. PERCENTAGE OF INSTITUTIONAL DEATHS BY SEX AND HOSPITALISATION PERIOD  
TABLE 11: NUMBER OF INSTITUTIONAL DEATHS BY AGE, SEX AND DURATION OF ILLNESS  
TABLE 11A. PERCENTAGE OF INSTITUTIONAL DEATHS BY AGE, SEX AND DURATION OF ILLNESS  
TABLE 12: NUMBER OF NON-INSTITUTIONAL DEATHS BY AGE, SEX AND DURATION OF ILLNESS  
TABLE 12A. PERCENTAGE OF NON-INSTITUTIONAL DEATHS BY AGE, SEX AND DURATION OF ILLNESS  
Table 13. Number of deaths by place and month of death  
Table 13A. Percentage of deaths by place and month of death

VITAL STATISTICS FROM BOTSWANA CIVIL REGISTRATION : BIRTHS

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- Table 1. Number of births by age of mother (13 to 55) and place of birth
- Table 1A. Percentage of births by age of mother (13 to 55) and place of birth
- Table 2. Number of live births by sex and sex ratio.
- Table 2A. Percentage of live births by sex and sex ratio.
- Table 3. Number of still births by age of mother and place of birth
- Table 3A. Percentage of still births by age of mother and place of birth
- Table 4. Number of births including still births by place of delivery
- Table 4A. Percentage of births including still births by place of delivery
- Table 5. Number of births by marital status of the mother
- Table 5A. Percentage of births by marital status of the mother
- 5A. Percentage of births by marital status of the mother
- TABLE 6: Number of births by usual place of residence of mothers
- TABLE 6A: Percentage of births by usual place of residence of mothers
- Table 7. Number of births by level of education of mother
- Table 7A. Percentage of births by level of education of mother
- Table 8. Number of births by occupation of mothers
- Table 8A. Percentage of births by occupation of mothers
- Table 9. Number of mothers and births by nationality of mother
- Table 9A. Percentage of mothers and births by nationality of mother
- Table 10. Number of children ever born alive (including the last born) by age of mother
- Table 10A. Percentage of children ever born alive (including the last born) by age of mother
- Table 11. Number of children surviving (including the last born) by age of mother
- Table 11A. Percentage of children surviving (including the last born) by age of mother
- Table 12. Number of live births by gestation period
- Table 12A. Percentage of live births by gestation period
- Table 13. Number of children born alive by weight
- Table 13A. Percentage of children born alive by weight
- TABLE 14. Number of live births by status of birth
- TABLE 14A. Percentage of live births by status of birth
- Table 15. Number of births by place and month of birth
- Table 15A. Percentage of births by place and month of birth