

Analytical Techniques for Decision Making in Agriculture

— *Editors* —

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Chapter 25

Unit-level Cost of Cultivation Data: Extraction and Retrieving Procedure

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Cost of cultivation surveys had always been an important data source for decision making on different aspects of crop production in India. The first such survey was conducted in 1954-55 under a scheme entitled "Studies in the Economics of Farm Management in India". Many useful studies were conducted using that data. However, the data lacked the consistency and uniformity in terms of concepts and definition. This led to discontinuation of the scheme. Later on, with a view to collect uniform and representative data on cost of cultivation of major crops, a scheme entitled "Comprehensive scheme for cost of cultivation of principal crops" was launched in the year 1970-71 by Directorate of Economics and Statistics, Government of India. Presently, under this scheme a representative data is collected by conducting field surveys by identified nodal agencies in 17 states using uniform schedule and survey methodology.

The data on different aspects of crop and livestock production is conducted by canvassing 40 different record types (RT). The broad theme of each RT is listed in the Table 25.1. It is to be noted that frequency of data record is different for different RT. Data on some variables are reported even on daily basis and recoded weekly/

monthly basis. The challenge therefore lies in merging RTs with different frequency levels. Further, the data is collected and reported on hard copies of schedules and afterwards recorded digitally using software “FARMAP” developed with the assistance of FAO. Once, the data is entered in FARMAP package, files containing data are encrypted into BIN format.

Table 25.1: List of RT with the Broad Theme Area

<i>RT Number</i>	<i>Theme</i>
RT110	Household members (yearly)
RT111	Household change (monthly)
RT 120	Attached farm servant (beginning of the year)
RT 121	Attached farm servant (Monthly)
RT 210	Land inventory (yearly)
RT 211	Changes in land (seasonal)
RT 230	Annual crop record (beginning and end of season)
RT 231	Perennial crop inventory (beginning and end of season)
RT 310	Animal inventory (yearly)
RT 311	Animal changes (monthly)
RT 410	Building inventory (yearly)
RT 411	Building changes (monthly)
RT 440	Irrigation structure inventory (yearly)
RT 441	Irrigation structures changes (monthly)
RT 450	Machinery and implements inventory (yearly)
RT451	Machinery and implement changes (monthly)
RT 510	Credit outstanding
RT 511	New Loan taken out (Monthly)
RT 512	Loan repayment (Monthly)
RT 610	Receipts and disposal of important crop production (yearly)
RT 710	Crop operation hours (Daily/monthly)
RT 711	Crop operation labour payments (daily/monthly)
RT 712	Crop physical inputs and other payments (monthly)
RT713	Crop outputs (monthly)
RT 714	Crop transport and marketing operations (monthly)
RT 715	Crop transport and marketing operations payments (monthly)
RT 716	Crop marketing cost incurred (monthly)
RT 720	Animal upkeep operation hours (monthly)
RT 721	Animal upkeep operation causal labour payments (monthly)
RT 722	Animal upkeep physical inputs and other payments (monthly)
RT 723	Animal non-milk outputs (monthly)
RT 724	Animal and milk products (monthly)

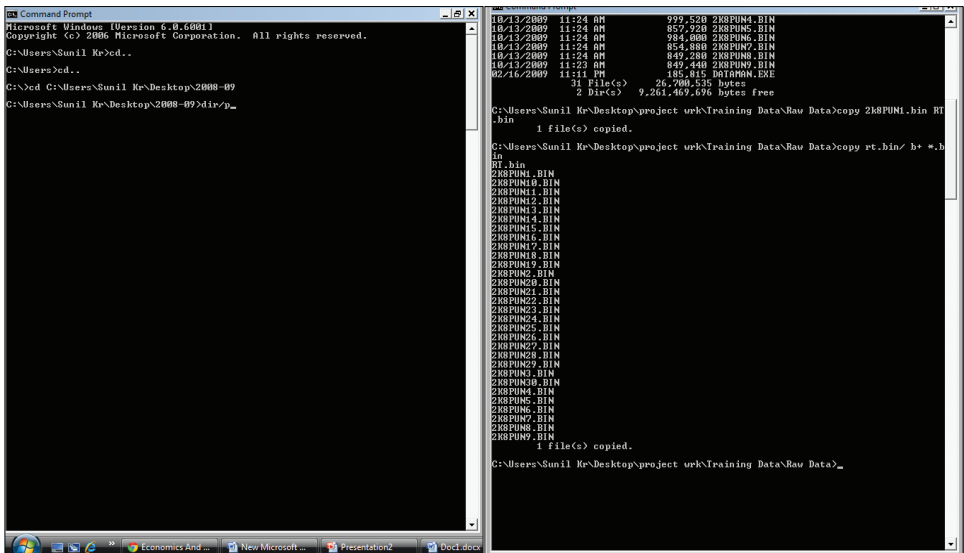
Contd...

Table 25.1–Contd...

RT Number	Theme
RT 730	Special activity operations hours (monthly)
RT 731	Special activity operations payments (monthly)
RT 732	Special activity physical inputs and payments (monthly)
RT 733	Special activity outputs (monthly)
RT 740	Machine upkeep operation hours (monthly)
RT 741	Machine upkeep physical inputs and payments (monthly)
RT 742	Machine upkeep physical inputs and payments (monthly)
RT 743	Machin power provided output farm (monthly)

The procedure of data extraction and retrieving includes following broader steps.

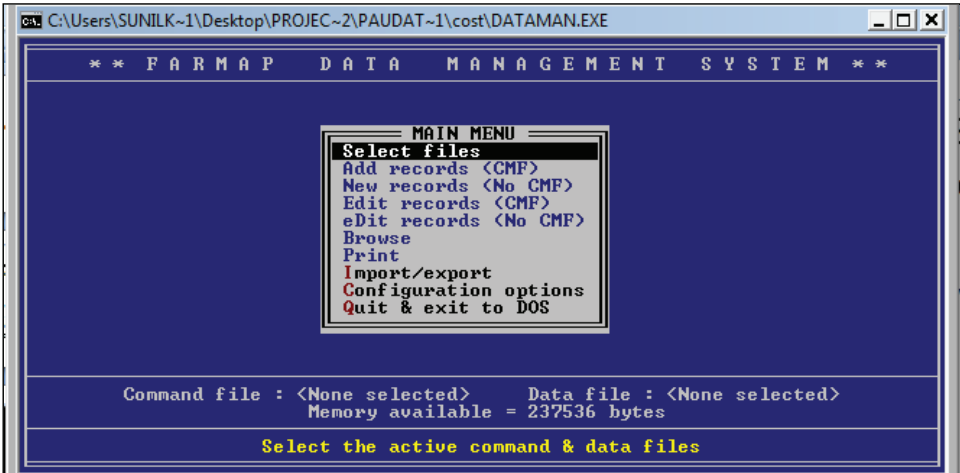
1. The BIN file containing raw data on 40 RTs are accessed using MS-DOS (command prompt) and converted into any usable format (DAT, PRN, etc) recognizable by any data analysis software. For conversion of file format from BIN to PRN, a software “DATAMAN (FARMAP)” is used.
2. PRN files are imported in data analysis software (SAS in our case) and different RTs are extracted individually.
3. Individual RTs are merged together on the basis of requirement of research objectives. We have developed a SAS programme for extracting and merging different RT file and estimating coefficients for different aspects of farm enterprises.



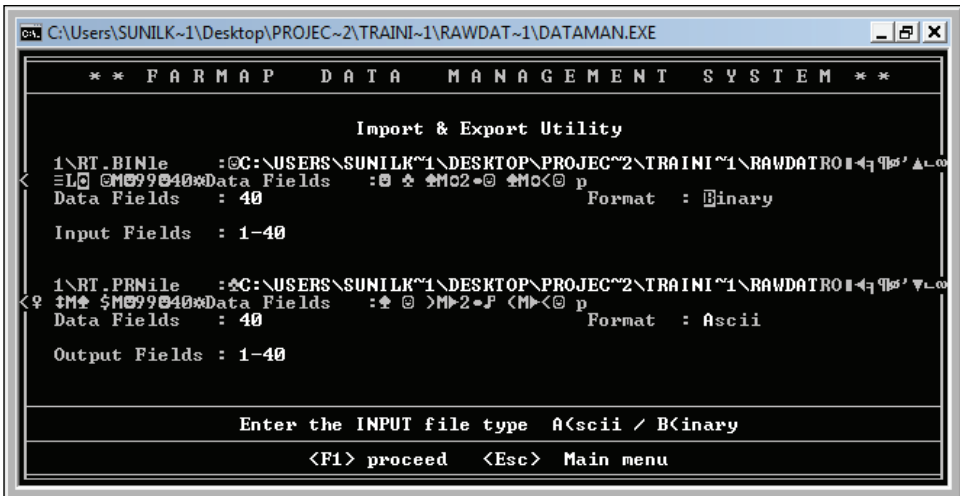
Snapshot 1a and 1b: MS-DOS for merging RT files (BIN format) if they are given separately.

A glimpse of the data extraction and retrieving procedure is shown below by different snapshots.

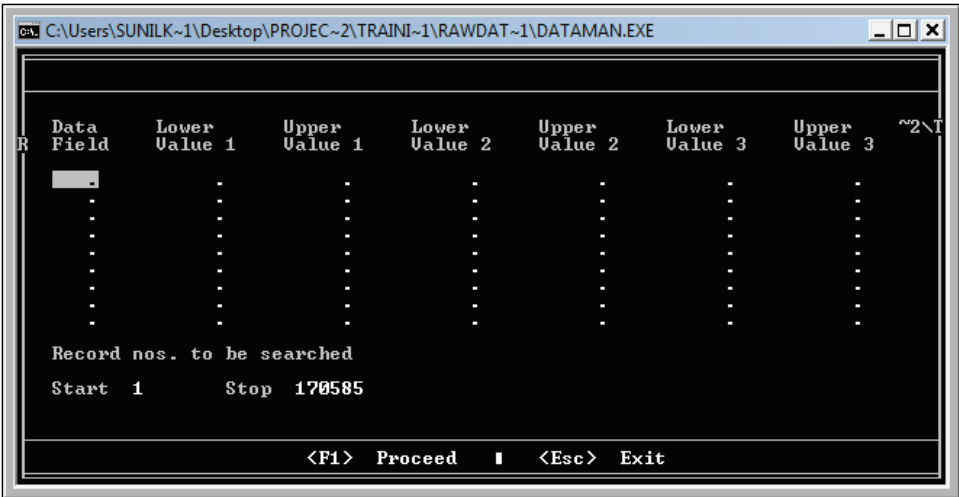
Note: Due to space limitation full SAS code could not be given and can be requested from shivendraiari@gmail.com if needed.



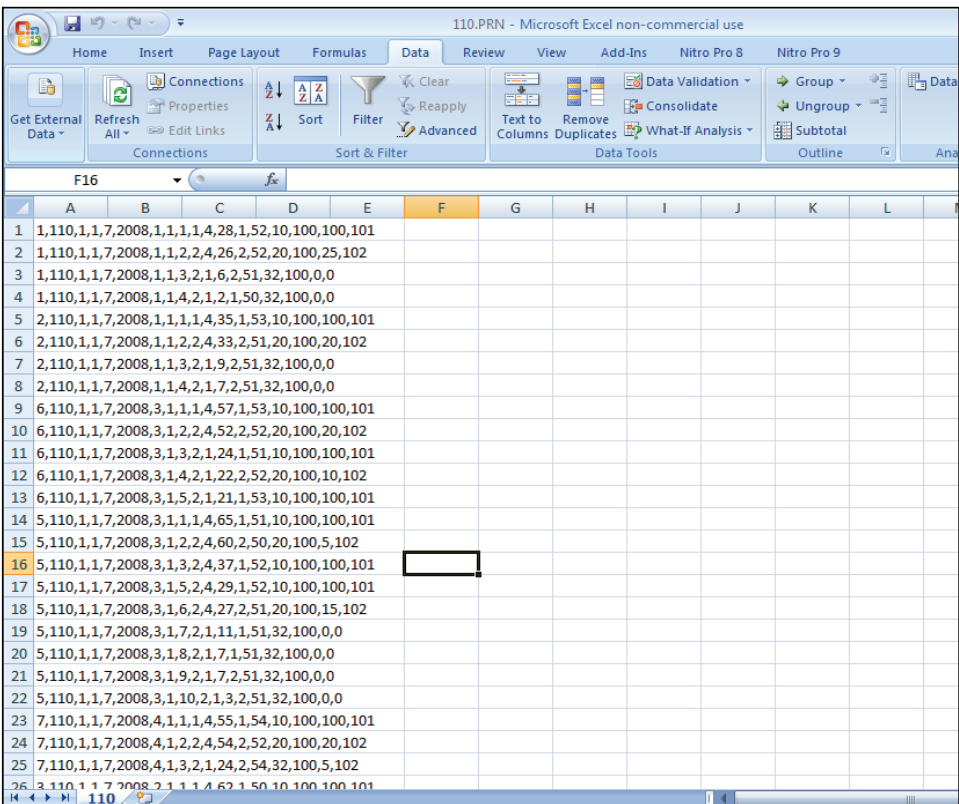
Snapshot 2. Open DATAMNAN and select appropriate option for accessing BIN file.



Snapshot 3: Specify input files path, output file path and data field (1-40 if wish to extract all RTs). Check format and input file (Binary) and opt for output file format (Ascii for PRN format).



Snapshot 4: This wizard is used if wish to extract part of the data. Specify options and precede using F₁ command. Do nothing if wish to extract all RTs. Next step will produce output file in PRN format.



Snapshot 5: If opening file in Excel, data will look like this. The file includes data for all 40 RTs and underlying variables in PRN format.

The screenshot displays the SAS software environment. The main window is a code editor containing the following SAS code:

```

PROC IMPORT OUT= PUNJAB.FUN2008_09
  DATAFILE= "E:\NCAP\Projects\regional_planning\Data\Final Data set_amrit\PRN_files\Punjab\FUN2010.PRN"
  DBMS=TAB REPLACE;
  GETNAMES=NO;
  DATAROW=1;
RUN;

/* housheolds members */

data rt110_1; set PUNJAB.FUN2008_09 ;
if var2=110 then output;
run;

data punjab.rt110 (drop=var1-var40); set rt110_1;
state = var37;
zone = var38;
Tehsil = var39;
Village = var35;
sizeGRD = var40;
Farmer = var1;
RT = var2;
crophyear = var36;

Farmer = var1;
RT = var2;
Maristatus = var6;
hshldmemno = var7;
relation = var8;
sex = var10;
age =var11;
education =var15;

```

The interface includes a menu bar (File, Edit, View, Tools, Run, Solutions, Window, Help), a toolbar, and a taskbar at the bottom with icons for Explorer, Results, Log, Output, Editor, and code. The system tray shows the user name 'C:\Users\skrivastava', the time '17:32', and the date '03-07-2015'.

Sanpshot 6. Use SAS for importing the PRN file and data extraction and retrieving from each RT.