

IDRC - BIS Programme

**Information Resource Centre
Computer Applications Cell**

Final Report



March 1994

**BAIF Development Research Foundation
Kamdhenu, Senapati Bapat Marg, Pune 411016, India**

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EXECUTIVE SUMMARY

Introduction

The geographical spread and increase in the scope and size of the programmes necessitated the use of computers for data processing and management. The computer applications cell was set up as a part of the BAIF Information Resource Centre (BIRC) in order to meet the overall goal of increased information and MIS support to the field and research programmes. The professional team consists of systems analysts, programmers and statisticians.

Objectives

The specific objectives of the computer applications cell are :

- To identify the areas for computerisation within BAIF and develop application systems using conventional programming languages, relational and GIS technologies.
- To analyse research and extension data depending upon the needs of BAIF.
- To impart training to BAIF personnel.

Achievements

The project was initiated as a support service to BAIF programmes. However, as the project progressed, computerisation made a difference in the work culture of the organisation. Whether it is an administrative function or a research project on health behaviour studies, the involvement of computer personnel has become essential. Information Technologies are now being used right from the planning to the implementation stages of projects. This has led to a better planning and faster implementation of the programmes. Application oriented training in software packages has helped in demystifying computer technology. As a result, most of the project leaders and coordination staff are well conversant with various software packages. Computerised outputs like reports, maps and graphs are also being used extensively in project areas.

All the field programmes initiated in various regions have access to the computing facilities. Qualitative and quantitative data analysis for various research studies and experiments in the above areas, are being carried out in-house. The continued data analysis has helped in monitoring the programmes more closely and scientifically. By virtue of the project, most of the administrative and accounting procedures are now computerised. The existing staff in these departments were trained to use computers and the repetitive functions of these departments were reduced by automation. This has also led to better coordination between field staff and the finance and administration personnel.

Project Duration

The project was spread over a period of five years. From 1988 to 1993.

COMPUTER APPLICATIONS CELL

I. INTRODUCTION :

1.1 The Setting

BAIF has volunteered to take up rural development since 1967, the focus of the programmes has been the underprivileged rural families. BAIF initiated work on cattle breeding to improve the quality of the cattle. A Central Research Station (CRS) was established at Urulikanchan near Pune. Research in livestock and agro-forestry is being conducted to support the field programmes. The Artificial Insemination (AI) method was adopted for cross breeding. The semen collected from exotic breeds like Holstein, Freisan and Jersey is tested for quality and used in the field. The operations of BAIF has extended to the states of Uttar Pradesh, Rajasthan, Gujarat, Maharashtra and Karnatak. A large number of centres were established in these states serving the needs of the rural population especially the weaker sections. Simultaneously, other programmes were being added in each of these operational areas like agriculture, horticulture, agro-forestry, renewable energy sources and socio-economic rehabilitation of tribals.

The increase in these multi-disciplinary programmes also increased the work load of the Accounts, Personnel and Administration departments. The reporting to the various sponsors also had increased which took up a lot of time and effort of the programme staff. The success of BAIFs cross breeding programme lies in the good quality semen doses supplied from CRS, Urulikanchan. The data collected from the semen laboratory was being compiled and analysed with the help of the Regional Computer Centre (RCC), Pune. This data was also sent on tapes to Montreal for further analysis. Considering the above requirements it was felt that Electronic Data Processing was the prime need. An 8 bit computer and printer (Zenith Superbrain & TI-810 printer) were procured and a computer programmer was also recruited. It took a long time for the personnel in BAIF to get used to the computer and the only person using the computer was the programmer. Maintaining a personnel database and word-processing was the main work. Later on a few programmes in BASIC were developed to analyse data from field surveys and other reports. The 8 bit computer had severe limitations of storage capacity, memory and software availability. It was during this time that the Personal Computer (PC) was becoming popular because of the wealth of software packages that were being developed on the MS-DOS platform. The desk top solution for data processing seemed more suited to Indian and particularly BAIFs condition because of the cost, the availability of computer professionals and the ease in maintenance of hardware.

1.2 The beginning

It was during this juncture that the BAIF had approached IDRC for a programme support. The BAIF Information Resource Centre (BIRC) was thus formulated into a project idea. The Programme Officer, from the Information Services division of IDRC, had visited BAIF for an assessment. The BAIF Information Resource Centre project was initiated with support from IDRC. It consists of three cells viz.

- Library & Information Services
- Computer Applications Cell
- Communications & Publication Services

The three cells were clubbed together as one entity as there were many inter-dependent relationships in the services provided by the three cells. The outputs of most of the computer systems are disseminated through the Library & Information services after packaging and production by the Communications & Publications cell. The BAIF Information Resource Centre (BIRC) was formed with a well defined plan for each of the cells to meet the overall objectives. The BIRC has an agenda to identify appropriate Information technologies (IT) to provide information support to BAIFs research and development programmes.



Software Development in progress

The Computer Cell has a major responsibility in creating computer literacy in BAIF to make use of these IT as well as study and develop software suitable for rural development programmes.

1.3 Objectives

The Computer Cell has been setup as a part of the BIRC to provide data processing support and information to the management on ongoing programmes. The scope of the Computer Cell grew gradually and apart from developing application systems, data analysis and training, use of computer aided GIS techniques was also added. The general as well as specific objectives are :

- To identify the areas for computerisation within BAIF and develop application systems using conventional programming languages, Relational and GIS technologies.
- To analyse research and extension data depending upon the needs of BAIFs scientists and researchers.
- To impart training to BAIF staff about the use and capabilities of micro computers.

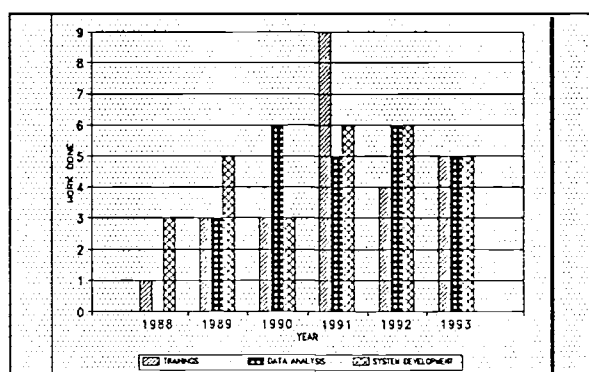
II. ACTIVITIES

The computer cell formed under the Information Resource Centre project was housed in a new building in Pune. Micro-computers and peripherals were procured and installed in the new premises and at the Central Research Station at Urulikanchan. BAIFFs programmes range from cattle development and agro-forestry to wasteland management and women in development. The scope of the activities, the duration and the location vary from project to project. Developing application software for such diverse programmes is different from the conventional programming for administrative, production or financial functions of an industrial or commercial organisation. Rural development programmes are designed and implemented to make a socio-economic impact in the given region. These programmes go through changes during their implementation life cycle, hence, the monitoring and reporting systems also go through changes over the period. These changes effect the software development and the system life cycle. Unlike commercial and production environments, replicable solutions are not readily available. Solutions to such development programmes are given using various software.

The scope of the computer cell got defined and redefined as the years progressed. The increase in computer awareness and the projects benefited the computer section. The major areas of work done during the project duration are :

- Application Systems development
 - *BAIF Specific systems*
 - *Administrative systems*
- Statistical analysis of data
- Training personnel in using computers

Work summary of the Cell



The methodology and the assignments initiated and completed in each of the above area is described in the following sections. The details like flow-charts, inputs and output of each assignment is given a Annexes in this document.

2.1 APPLICATIONS SYSTEMS DEVELOPMENT

Methodology

The requirement for a computer based solution is either from the user or suggested by the computer cell. The personnel from computer cell and the concerned users have a meeting in which they discuss the problem that needs to be solved or the manual system, if one exists. The inputs and outputs required are discussed and finalised. Considering the requirements of the user department a package is recommended if readily available or a systems design is drawn up. The system design is then sent to the user department for approval. After finalising upon the system design, the schedule is intimated to the user.

The Data Flow Diagram, System Flow Diagram and data structures are prepared and shared between programmers. The broad outline of the system giving the main modules, the queries to be provided if any, the outputs to be generated etc. is noted down. In case any complicated procedures are to be written or a programme is to be written which will involve large number of steps of calculation, then an algorithm is written for it on paper first and then it is converted into a programme. Generally most of the systems are developed using Clipper or Foxbase + so that the data file structures and data are readily available for other applications.

After the system is developed and tested for programming errors and bugs, it is demonstrated to the user. Modifications and additions are suggested by the user at this stage. The modifications suggested are taken into consideration and the system is finalised for implementation. The user is then given training on the operations of the system.

In some cases a parallel run is required before switching over to the computerised system. The parallel run ranges anywhere form 30 days to about 3 months. The System and User Manuals are prepared and handed over to the user for reference. The systems are maintained in-house throughout its life cycle. Modifications and additions continue as suggested by the users.

Application systems developed during the project duration is described ahead. The details of each application are given as Annex A1... A20, further in this document.

1. DAIRY CATTLE PROGRAMME MONITORING SYSTEM

Dairy Cattle Programme is operational in five states. Monitoring performance of the centres, is relatively a difficult task. This application was developed to simplify the analysis of centre performance, pertaining to monthly information regarding inseminations, pregnancy diagnosis, confirmed pregnancies and calves born. Field data collected from operational centres, is entered in the system. The data is compiled every month for every state. The performance of each centre is analysed with pre-set targets. The system is installed at all the state headquarters. Centre performance reports are sent to the Centre Coordinators for further perusal. Centre information & conception analysis reports are some of the outputs of the system. Data is sent by floppy disk to Pune Office for centralised storing of data. This system is totally decentralised and time delay in data capturing & reporting has decreased. A summary of the application is given in Annex A1.

2. MOTHER AND CHILD HEALTH CARE MONITORING SYSTEM

The system is designed to assist in monitoring the Mother and Child Health Care (MCH) care programme in 37 villages in Vansda, Gujarat. The activities of the MCH system includes regular clinics for ante-natal cases, post natal cases, immunisation of infants and other primary health services.



A Computer Installation at Vansda.

The data regarding of A.N.C., Births, Immunization, Treatment given, Deaths and the trainings conducted is recorded during every visit. This application has been found to be very useful to the health workers. It is now possible to get the high risk cases, infants born etc.. before the visit to the village. Various useful indicators are calculated for monitoring the programme. There are a number of reports that the application prints. Most of these reports are used by the health workers. The monthly progress reports and Indicator's list are generated and sent to the headquarters. The details of the system is given in **Annex A 2**.

3. 'WADI' PROGRAMME MONITORING SOFTWARE

This system has been developed for the tribal rehabilitation programme of BAIF. Under the tribal rehabilitation project the beneficiaries develop an horticultural orchard (WADI) on their one acre of wasteland. The WADI Project spans 5 years and there are 15 horticultural and agro-forestry activities defined. The system maintains data on every activity taken up by the participant during the five years. This application is very useful to the extension workers as well as the accounting staff. The extension staff is now able to monitor the activities of each family more closely. Processing of payments and report generation are done family-wise. The system is installed in a few regional campuses. At present the systems processes the data of about 6000 tribal families. MIS reports like village summary, amount spent on each activity are some of the outputs of this system. This system has helped the project co-ordinator in monitoring & implementation of the field programme in an organised way. A summary of the application is given in **Annex A3**.

4. NATUROPATHIC DIAGNOSIS & TREATMENT RECORDING SYSTEM

This software has been designed and developed for the Nature Cure Ashram at Urulikanchan. It is developed to maintain computerised record of the patient's past medical history and present medical complaints. The system is linked to the Room allocation and billing system. On admission to the Ashram, the naturopath examines the patient and the treatment, diet and exercises suggested are keyed in the computer. The actual day to day food consumption of the patient is also keyed in. Since diet is considered as one of the main treatment in naturopathy, this system also provides information to the kitchen for planning their daily and weekly procurement and preparation.

At the time of the discharge of the patient the findings by the naturopath are also keyed in the system. This qualitative data will be used in the future to probe into the effectiveness of various treatments suggested to similar cases. A summary of the system is given in **Annex A4**.

The system has helped to maintain important medical information of all the patients in a very systematic manner. The system also retrieves information of all the patients having a particular medical complaint and the treatments given to them. Thus complaint wise and treatment wise analysis can be done through the system.

5. 'NIDAAN', A DIAGNOSTIC SERVICES RECORDING SYSTEM

The Medical Diagnostic system is developed to take care of the day-to-day routines of the laboratory at Community Health Research Centre (CHRC) at Urulikanchan. Sometimes it is required to refer to the past history of the patient if the patient is coming to the ashram after a certain period. To keep records of all the patients manually becomes very time consuming. Also to type the reports for each patient manually itself is a big task. Considering these two points, it was decided to develop a computerised system for this purpose. The system handles the data right from the registration of the patient upto printing the test results. The tests carried out at the laboratory are broadly classified into 8 categories like Biochemistry, Hematology, Radiology etc. Apart from the test results, various other useful statements like Patient Register, Bills etc. can also be printed through this system. The summary of the system is given in **Annex A5**.

6. GASIFIER OPERATIONS DATA RECORDING SYSTEM

There are about 33 Gasifier Systems installed in the villages and BAIF campuses at Vandsa and Kadod in Gujarat and H.D. Kote in Karnatak. These gasifiers are used for a various applications.

The idea behind the computerisation is to record the operational details about the GASIFIERS and compare the performances. Operational data of 22 Systems installed at Vandsa & Kadod, is being recorded and compiled. The details of gasifier running, wood consumed, diesel consumed etc.. are keyed-in every day. On the basis of the operational data the specific diesel consumption (SDC), specific diesel replacement (SDR) and other parameters are printed. A number of new parameters are derived from the raw data using mathematical formulae. These reports indicate the performance of each of the Gasifiers. This application details of the system is given in **Annex A6**.

7. SERICULTURE EXTENSION PROGRAMME MONITORING SYSTEM

Sericulture research programme was introduced with support from the IDRC. The proven races established under this research programme are now being given to the farmers in Vandsa in south Gujarat. The extension programme has been divided into a number of activities that are to be completed by the farmer. On completion of every activity BAIF gives the beneficiary some remuneration. The activities cover the entire scope of the sericulture programme right from mulberry plantation, silkworm rearing to sale of cocoons. To record the details about activities completed by each farmer every month, about the material given to the farmer is a tedious and time consuming task. Also, to process and generate the payment for all farmers depending on the activities completed is a complicated job. To simplify this monotonous and complex task, a computerised system is developed. The system is installed in Vandsa where a family level database of activities completed is maintained. Various reports are printed regularly and are used by the field staff for monitoring the extension programme. The software can be used for any sericulture

extension programme and for any number of families and activities. The payment is processed and the beneficiary is paid through the bank. The summary of the system is given in **Annex A7**.

8. SILKWORM REARING DATA MANAGEMENT SOFTWARE

BAIF has started sericulture in non-traditional areas like Urulikanchan in Maharashtra, and Vansda & Kadod in Gujarat. The aim of this project is to establish pure races which are sustainable and profitable in these states for extension activities.

Considering large volume of data generated from research experiments it is necessary to computerise the data entry and reporting system. The system is developed to smoothen the data entry and reporting of the research data generated at Urulikanchan, Vansda and Kadod. The data generated includes rearing logsheet data, grainage data and feeding data.

The system is menu driven and provides various options for data entry, report generation and system manager. It also generates a cumulative file from the raw data which is to be used for further statistical analysis. Details of the system are given in **Annex A8**.

9. AGROFORESTRY PROGRAMME MONITORING SYSTEM FOR KARNATAK

This system was developed for the Agroforestry project undertaken in Karnatak. The project is similar to the WADI project and has similar activity components. The system has been installed at BAIFs state headquarters of Karnatak. The system monitors the progress of the activities taken up by the beneficiaries. There are two components to the programme, the wage support and the material support. The system processes the data to generate payment lists and also records the materials given to each family. All details of activity completion required for processing the wage support are keyed-in. Family level details of fruit trees and forest trees surviving are also being maintained. Like the Wadi System, this system has helped the project co-ordinator in monitoring & implementation of the field programme in an organised way. A summary of the application is given in **Annex A9**.

10. SALUMBRE AREA DEVELOPMENT REPORTING SYSTEM

This is a unique application system developed for a comprehensive rural development project taken up by BAIF. BAIF is involved in implementing three major components of the project taken up at Mawal Taluka of Pune District. The main components of the project are Dairy Cattle Development, Agriculture Development and Wasteland Development. A reporting system has been developed for monitoring the progress of various centres operating under this project.

The progress of various activities in each of the areas is reported every month. Reports for follow-up are printed and sent to the field staff. This way, the system helps the monitoring staff to control and take appropriate measures in the activities which are not progressing in

proper direction. The system also enables comparing year to year progress of the activities through out the project period. A summary of the system is given in Annex A10.

11. VISICARD SYSTEM (BAIF MAILING DATABASE)

The visiting card system maintains a consolidated database containing office and residence addresses of BAIFs contacts. This multi-user application is installed on the Local Area Network. The user can view addresses by searching the database on name, organization name, city, pin code, area of interest and other fields. The user can also have a small one paragraph note on the person or organisation. The addresses can be printed on mailing labels and also exported to WORDSTAR print documents/letters through mail-merge. This system is useful to project coordinators in maintaining database of addresses useful to them in future. A summary of the system is given in Annex A11.

Presently there are about five different databases, these databases are maintained subject-wise. The system is extensively used by the staff as it gives easy access to global information on contact persons for various subjects at various locations. There is a significant reduction in searching time of the required information.

12. PAYROLL PROCESSING SYSTEM

The payment processing of the staff in BAIF and its associated societies is done by the Accounts section at Pune office. This was the first application that was taken up for development with an objective to eliminate the redundant tasks of the Accounts section. The monthly salary that is processed is paid to the employees through banks. The various reports like society-wise and project-wise debit notes, monthly summary, Provident Fund & Family Pension Fund Summary etc. besides the statutory requirements like Payslips, Paysheet, Bank Statement etc. are printed. It also facilitates direct Cheque Printing. The system was modified once and is now installed in various regional campuses and offices. A summary of the application is given in Annex A12.

Statewise/Divisionwise report generation is possible as the system is installed at various regional campuses. Also, there is a considerable time saving as the important reports such as paysheet, payslips etc. are printed at the decentralised places.

13. PROVIDENT FUND PROCESSING SYSTEM

This system has been developed for the Accounts section to process the Provident Fund of all the employees of BAIF and its associated societies. As a statutory requirement, contribution to the Provident Fund is deducted from the employees salary and deposited into the PF account along with the employers contribution. The system maintains data of every employee. Several reports and statements are printed and submitted to the government authorities, the banks and the employees. Quarterly and half yearly statement of PF are printed and given to the employees. The system also has a provision to sanction

loan to employees based on stipulated rules. The system is installed in the Accounts section. A summary of the application is given in **Annex A13**.

14. PERSONNEL INFORMATION SYSTEM

This system has been developed for the Personnel department of BAIF. The system was developed to automate the procedures of manpower recruitment, transfers, appraisals, increments and terminations/resignations. At the time of recruitment the system maintains a database of applicants for issuing interview calls and appointment letters. After recruitment the Personnel database consists of all employees in BAIF and its associated societies. This database is used for updation of personnel data, yearly increments and generating various statutory reports.

The system is used mainly by the Personnel department for manpower planning, recruitment, transfers, disciplinary action etc. The system also gives information to the management about manpower allocated to various projects. A summary of the application is given in **Annex A14**.

15. PROJECT MONITORING SYSTEM

This system has been designed primarily for the project coordinators and the project leaders. The system can be accessed by the project leader through the computer network. The system maintains data of proposals submitted to sponsors, prints a list of pending proposals, lists proposals sanctioned etc.. The system also monitors sanctioned projects for financial expenditure and manpower allocation. The finance details are imported every month from the accounting system and the manpower details are imported from the personnel information system. Statements on variance, yearly budget vs. expense manpower allocated etc.. are sent regularly to the project leaders. The project leaders can allocate manpower, view expenditure and budgets on the screen. A summary of the application system is given in **Annex A15**.

16. COST ACCOUNTING SYSTEM FOR CENTRAL STORES, CRS

The cost accounting system has been developed for the Central Stores of BAIF at Central Research Station. The system is menu driven and maintains the stock position and cost of the inventory. The receipts, issues and other transactions are keyed in the computer and the latest stock position is available at any given time. Various costing and stores registers are generated for any given period. This system is also used to find out the consumption of various departments, projects and cost centres. Statements giving ABC analysis, XYZ analysis, vendor performance analysis are also generated. A summary of the system is given in **Annex A16**.

The system gives up-to-date stock position of all the items in the central stores, and prints various reports on a monthly or quarterly basis. The important reports are Stock Ledger, Itemwise Stock List, Category wise Consumption Report, Account wise Consumption Summary etc.

17. MATERIALS MANAGEMENT SYSTEM FOR BRIAH, WAGHOLI.

This system has been developed for the BAIF Research Institute for Animal Health. It is being used by the Central stores. The Central Stores is keeping stock of around 7000 items required for the production and other office requirements. To keep track of the receipts and issues manually is a laborious job. Also getting immediate up-to-date information about the status of an item is almost impossible in a manual system. Considering these limitations and problems a computerised Materials Management System is developed. This is an on-line system which raises Purchase Requisitions to maintain optimum level of stocks, records issues, receipts and returns. All details regarding stock of materials, their re-order levels, material consumed by different departments, details of suppliers are maintained through the system. The system also takes care of the material that is declared as scrap. This helps the stores department to take necessary action for the disposal of the scrap as and when necessary. Accordingly necessary reports such as Stock Ledger, Bin Card, Purchase requisitions, Goods Receipt Register are generated. Analysis of Vendors performance, raw material and consumption are used for decision making and production scheduling. The activities of the stores can be monitored by quickly viewing the summary information on the screen as the system provides powerful query feature. The data is also exported to the Purchase and Costing departments. A summary of the system is given in **Annex A17**.

18. ATTENDANCE AND LEAVE RECORDING SYSTEM

This application has been developed for the Personnel and the Accounts departments. A database of leave taken by the staff of the offices in Pune is maintained. This system automates the allocation of leave as per the rules and regulations. The data is also used for processing the monthly salaries.

The user is able to get a detailed as well as summary view of leave acquisitions and leaves taken. The Query module in the system allows the user to obtain information from the system on almost any combination of control parameters. The queries can be printed out as reports also. An on-line help is also provided for employee wise query. A summary of the system is given in **Annex A18**.

The system is on the Local Area Network for leave sanctioning. The system prints leave category-wise report for a specific period. The system also prints reports indicating the frequency of leave taken by an employee in a specific period.

19. ROOM ALLOCATION & BILLING SYSTEM FOR PATIENTS

This system has been developed for the Nature Cure Ashram located at Urulikanchan. Patients intending to undergo naturopathic treatment are required to stay in the Ashram for a minimum period of 8 days. This computerised system helps in allocating rooms on the basis of the preference of the patients and availability at the given period. The system also keeps a record of the patients' period of stay, the treatment expenses and other charges that are billed. At the end of the patients stay, his bill is printed and the room is made available for other patients. Various reports that give information about room availability, room occupancy, Invoice, Invoice register, cash register etc. are printed on a day to day basis. Manual procedures have been simplified using a computer system. A summary of the system is given in **Annex A19**.

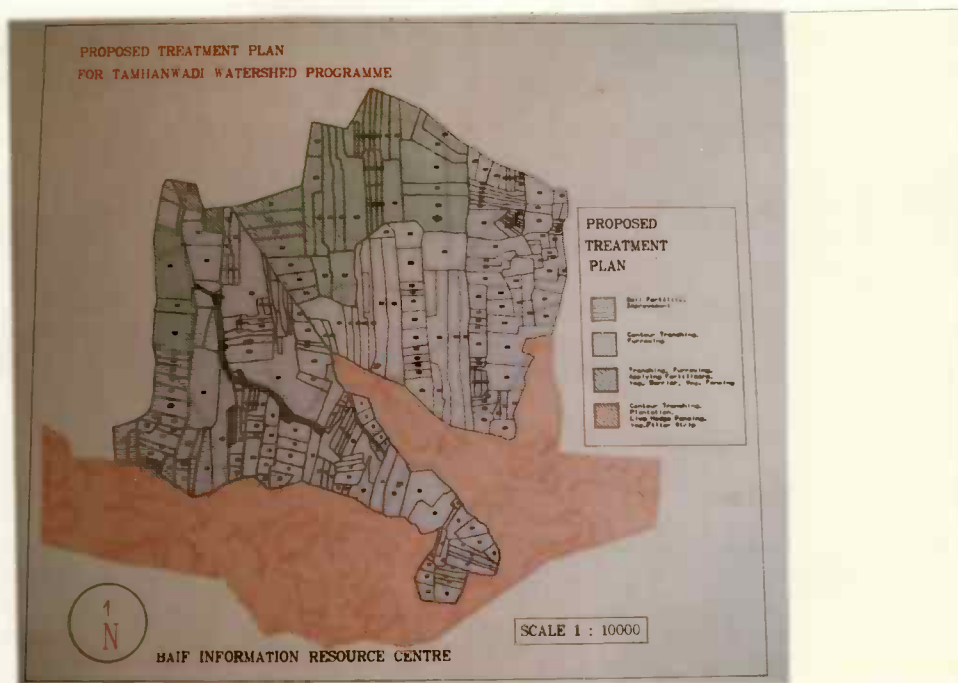
20. USE OF COMPUTER AIDED GIS FOR PLANNING WATERSHED MANAGEMENT PROGRAMME IN AKOLE TALUKA IN MAHARASHTRA

The GIS software and hardware had been procured during the last year of the project. PC/ARC INFO, a plotter, digitiser and a micro-computer were procured. Work was taken up for the Conjunctive water resources development project in Akole taluka of Ahmednagar district. This was a part of the watershed development programme in Ahmednagar district of Maharashtra. A brief description of the GIS application is given in the following section.

Programmes that cover a large geographical area require data to be compiled and presented in the form of maps. This requires software that can process relational and spatial data and then produce maps. PC/ARC INFO is a Geographic Information Systems (GIS) software that is used along with existing databases like DBASE III + .

The requirements of the user departments are analysed carefully and the outputs required are listed down. The inputs required for the system are obtained from various government departments, field surveys and secondary sources. The spatial information that is collected is verified for the scales, the administrative boundaries covered and the source of the map. These maps are then digitised, keeping certain common geographical references, like latitude and longitude which are further used for matching an overlaying maps. The maps are all converted to a common scale. These maps are used as the base maps for producing different outputs in tabular and map format.

The data collected from field surveys, government departments and secondary sources are keyed in as DBASE III data files with common key fields from the digitised maps. All reports that are required are produced through programmes in DBASE III+ and the statistical analysis produced using DBSTAT and SPSS/PC+. Other reports that require calculation to be done on area and volume are obtained using the different modules of PC/ARC INFO. The spatial output that is required is produced by writing procedures in PC/ARC INFO using the OVERLAY, NETWORK and TIN modules. A brief description of the assignment is given in **Annex 20**.



A GIS Output

2.2 STATISTICAL ANALYSIS OF DATA

Methodology

The data generated from the research projects and field programmes are analysed to provide information to the management and programme sponsors. The data from research projects is generated mainly from experiments, field trials and from field surveys. The data from extension programmes is obtained from the recording and reporting of various development activities. The user and the personnel from the computer section discuss and decide the plan of analysis. In case of field surveys the questionnaires are designed and codified. If the analysis is of an extension programme then data collection is discussed and decided. Data collection and capturing it on magnetic media is an important component of the analysis. Computer programmes are written so that data can be verified while it is captured. Before the data is used for analysis it is validated and verified. Preliminary analysis like cross tables, frequency distribution and a listing of exception cases are sent to the user for validation and correction.

On the basis of the analysis plan the data is exported into a suitable Statistical package like QUATTRO PRO, DBSTAT or SPSS/PC+. Procedures required for each of the statistical test that is to be applied are developed and run through the data set. Reports generated are interpreted with the subject specialists and the results are printed for presentation quality statements and graphs. A brief description of the major data analysis done for each of the experiments, studies and surveys analysed is mentioned ahead. A summary of each study is enclosed in **Annex B1 to B12**

1. BASELINE SURVEYS

Baseline surveys are conducted for situational analysis in that area. Various baseline surveys were conducted at different places in Maharashtra, Gujarat and Karnatak. Primary objective of these surveys was to understand the existing situation in that area and use that information for planning of new development programmes for that area. Once the project is completed then impact study data is to be compared with baseline data to examine the changes that have occurred as an impact of the programme. The data collected include village infrastructure, demographic details, cropping pattern, dietary habits and health status data.

Statistical procedures are applied to the data to generate information about the caste structure, education, occupational status and income of the family members. Reports are also generated to find out the land holding, farm and domestic assets and livestock owned, irrigation facilities and income from different sources about each of the families surveyed. The knowledge and awareness of the families about cattle management, agricultural practices and marketing is used for planning training programmes. The details of input parameters and output reports are given in **Annex B1**.

2. STANDARDISATION OF METHODS FOR ESTIMATION OF LACTATION YIELD

This study was taken up as a part of the progeny testing programme in BAIF. Recording the daily milk yield of crossbreds at farmer's house was not possible due to various factors. It was necessary to develop a model which will need only recordings of few months to estimate the lactation yield.

The methods used for estimation were Centering Date, Test interval, Simple average and Multiple regression. The lactation yield for 305 days was estimated for Holstein Friesian and Jersey cross breed cows. Data was collected from various villages in Maharashtra. The details of input parameters and output reports are given in **Annex B2**.

3. STUDY OF GLYCEROL EFFECT

The experiment was conducted to Study the quality of semen of ten crossbred bulls from Urulikanchan farm. Data on different parameters of semen like acrosomal maintenance, motility, live sperm count, normal and abnormal sperm count was collected for three and six hour equilibration periods. Reports were generated to examine the difference between two equilibration periods for all possible pairs of bulls. Depending on the performance of the parameters, ratings for bulls were decided. The details of input parameters and output reports are given in **Annex B3**.

4. STUDY OF 'WAVLI' PRACTICES

This study was conducted in Vansda taluka, Valsad district in Gujarat. 'WAVLI' is a tradition of tribals in Gujarat in which the money earned by the tribal woman is retained by her. A survey was conducted to study the income generated from various 'WAVLI' groups.

The data collected from this survey was analysed to find out the average income earned from Women's activities. The income generated by different groups was also compared to study the individual group. Analysis of the data helped in developing a number of training programmes and new activities for tribal women. The details of input parameters and output reports are given in **Annex B4**.

5. STUDY OF SOCIO-ECONOMIC STATUS OF WOMEN

One of the major causes of the inferior status of rural women is supposed to be their economic dependence. It is also thought that if women become economically independent, their awareness and perception will change. With this background, a study was conducted in two villages - Dalimb and Bharatgaon around Urulikanchan to examine socio-economic status of women. The data was collected about occupation of respondent, problems, economic status of family, decision making power, especially daughters. Various reports, summary statistics were generated. The details of input parameters and output reports are given in **Annex B5**.

6. ANALYSIS OF DATA FROM DIAGNOSTIC CAMPS

As part of health programme activities, number of health camps were conducted at various places in Vansda taluka to study morbidity pattern and to focus on special problems like scabies, goiter etc.

In camp conducted at Titvi village in Vansda taluka, 300 cases were examined and data was collected about sex, age, Haemoglobin percentage, Haemoglobin Electrophoresis, VDRL and urine and stools. Similar camp was also conducted in villages around Vangan where about 190 cases were examined.

Data was analysed to identify anemic cases in different age and sex groups and specially in cases of pregnant women. Villagewise cases who showed positive response for tests were reported to take proper medical action. The details of input parameters and output reports are given in **Annex B6**.

7. STUDIES ON NUTRITIONAL STATUS OF UNDERFIVES & SCHOOL CHILDREN

Four studies were conducted in Urulikanchan, Akole and Vansda to study nutritional status of underfives and the dietary intake of mothers and children.

1. The survey was conducted in 12 villages in Akole area and about 681 underfives were examined. In this study information about dietary habits during antenatal and postnatal periods and other problems were collected on subsample basis.

Along with anthropometric measurements, information about weaning stage, reasons for weaning, age at topfeeding, one day dietary recall and history of recent morbidity was also collected.

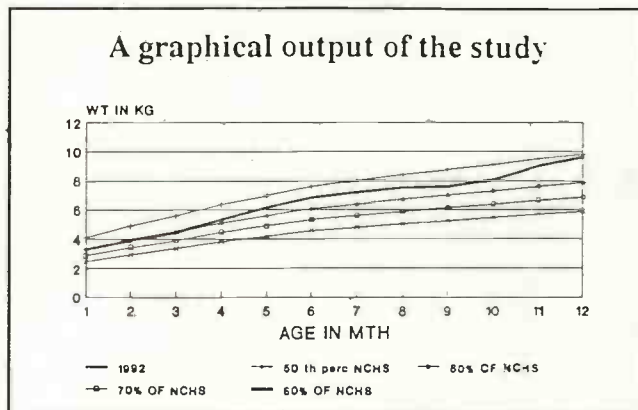
2. The survey was conducted in 18 villages around Urulikanchan covering approximately 1200 children, studying upto seventh standard. The initial objective was to study morbidity pattern in school children. Other objectives were to estimate impact of health education and study nutritional status of the children. Anthropometric data along with information about ENT problems, skin diseases, oral examinations was collected.

3. The survey was conducted in 16 villages around Urulikanchan and about 475 children were examined. Along with anthropometric measurements a twenty four hour recall of dietary history of the child was also taken from the mother. History of breast feeding, weaning and recent morbidity was also analysed.

4. The survey was conducted in 37 villages in Vansda taluka and about 405 underfives were examined. Along with anthropometric measurements, systemic examination, Hb%, blood group, swelling, deformities, anemia etc. was also collected.

Various crosstables and summary reports for anthropometric measurements as well as for other parameters were generated. Age and sex-wise summary of anthropometric measurements was also generated. Calorie intake was calculated from one day diet recalled.

Comparison of weight and height with ICMR and NCHS standards, both age-wise and sex-wise was done to find out prevalence of various grades of malnutrition. The analysis of these studies help in developing training programmes for women specially mothers. The details of input parameters and output reports are given in **Annex B7**.



8. STUDY OF AGRO-FORESTRY PRACTICES

A study was conducted in four different areas of Maharashtra to find out suitable crop and tree combinations which give optimal crop yield as well as tree benefits. Data was collected on trees, crops, direction of tree planting, tree height, diameter and crop yields in 4 plots of 1mX1m from trees planted. Data on irrigation, soil was also collected.

Yields were compared using various parameters and combinations of parameters. T-test was used for comparison. Effect of factors affecting the yield was analysed using Analysis of Variance. The details of input parameters and output reports are given in **Annex B8**.

9. STUDY OF BENEFITS FROM SOCIAL FORESTRY SCHEMES

The survey was conducted in three districts of Maharashtra state and around 54 villages were covered to collect information about 296 respondents. The objectives were to estimate the extent of people's participation in social forestry schemes and factors affecting it. This could help in identifying future strategies to promote people's participation in social forestry schemes.

The data collected include information about place, ongoing schemes of social forestry, implementing agency, family information, employment, educational and occupational status, land holding, livestock and related information, fuel consumption, and benefits from social forestry schemes.

Various reports were generated for village-wise participation in different Social Forestry schemes, Implementing agency, media and motivators for participation and their effect. Relationship of different factors like livestock, land holding, social status and direct/indirect

benefits was tested with ongoing schemes to study people's perception. The details of input parameters and output reports are given in **Annex B9**.

10. STUDY OF MULBERRY TRIALS

The objective of this study was to study suitability of mulberry variety as a tree / high bush in rain-fed condition & identifying best agronomical practices for these varieties.

Three varieties (M-5, LMM-1, LMM-2) were selected with three spacings (3m x 2m, 2m x 2m, 3m x 3m) for different parameters. The parameters considered were total length of branches in meter, number of leaves, wt. per leaf (gm), leaf wt. (gm), wt. of leaves per meter, wt. of 15-21 leaves, wt. of leaves per hectare. Comparison of these parameters was done using T-test and results showed that M-5 is better than LMM-1 and LMM-1 is better than LMM-2. These parameters significantly differ for the spacings for each of the varieties. The details of input parameters and output reports are given in **Annex B10**.

11. STUDY AND COMPARISON OF DIFFERENT MOUNTAGES

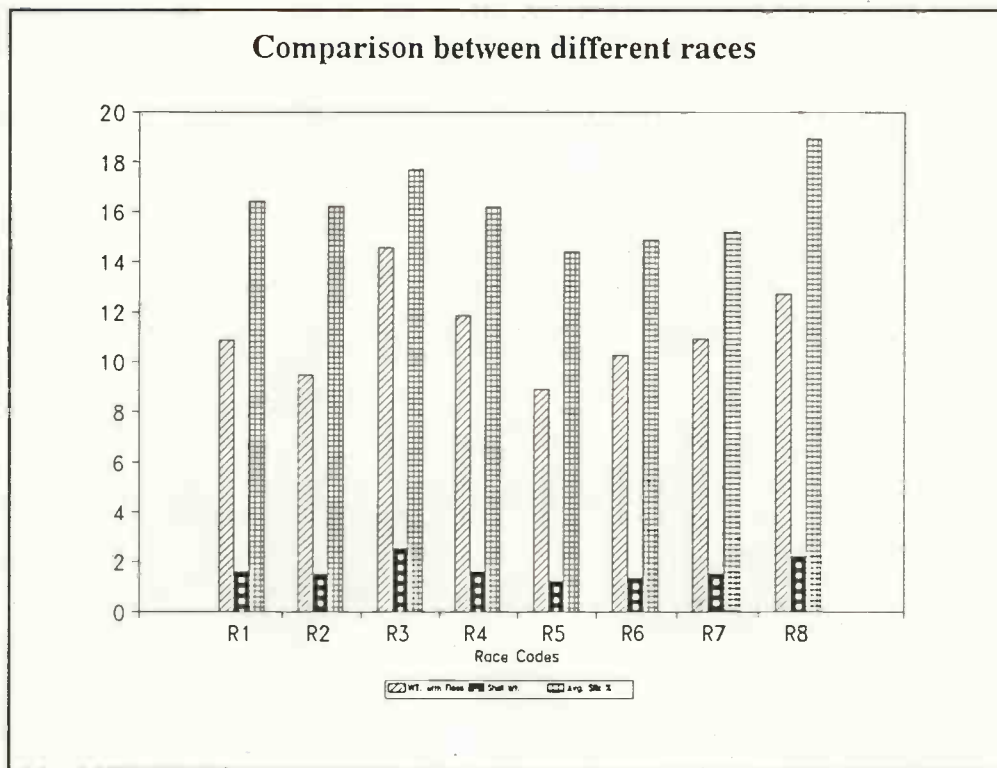
Mountages play a very significant role in cocoon building process. Traditionally, Chandrika Mountage was being used but four other mountages were designed. A study of the advantages and disadvantages of each mountage was taken-up. Cocoon yield, number of good and bad quality cocoons, spacing for each worm and capacity to accommodate number of worms were studied. The four mountages were Bamboo, Chicken mesh, Gunny cloth mountage and Fiber strip mountage.

The mountages were compared with the traditional mountage- 'Chandrika'. Parameters considered were time required for cocoon harvesting, number of good cocoons, number of double, flimsy, urinated, under-sized cocoons etc. The parameters were grouped into two categories : positive characters and negative characters.

T-tests were applied for each parameter and mountages were ranked depending on positive and negative parameters. The ranks were analysed which showed that Gunny cloth mountage was the best of all. Same analysis was done using ANOVA and that also showed Gunny cloth mountage as the best of all. The details of input parameters and output reports are given in **Annex B11**.

12. ANALYSIS OF SILKWORM REARING DATA

At present sericulture programme is being operated in three areas namely Urulikanchan, Vandsa and Kadod. At present rearing data and grainage data is collected which includes egg behaviour, feeding, weight of mature and riped worms, good and defected cocoons and emergence percentage etc.



One of the research objectives of the programme is to decide few stable and promising races from the selected pure and crosses and also to select races which are suitable for extension programme in different states. Data collection started with standardisation of input formats, races were coded and from the raw data a number of new variables were created for analysis. Race-wise, generation-wise and season-wise reports were generated for all important parameters like fecundity, larval duration, cocoon characters, silk percentage etc. The details of input parameters and output reports are given in **Annex B12**.

2.3 COMPUTER TRAINING

Methodology

The Computer cell has conducted a number of training programmes and workshops. The trainings consist of interactive sessions, lectures interspersed with practice sessions. In addition computers, audio-visual aids, manuals are also used as tools. The examples and exercises are chosen from BAIFFs studies and other real life situations. The training subjects ranged from Computer Fundamentals to Desk Top Publishing, Statistical software and GIS tools. Training programmes have been conducted in the following topics :

1. COMPUTER FUNDAMENTALS & INTRODUCTION TO SOFTWARE PACKAGES

Computer Fundamentals training covers the history of development of computer technology, basic structure of the computer and day-to-day commands for operating an IBM compatible system. The training also focuses on different types of input/output devices, data storage and memory management. Operating system (MS-DOS) commands are covered in detail so that easy data handling is possible in future.

A general idea about different languages and software packages is also given to the participants. Awareness about selecting suitable package for specific application is created. These software packages include Wordstar, dBase III Plus and Lotus-123.

Course Contents :

- *History of Computers*
- *Structure of a Micro-computer*
- *Hardware and Software*
- *Input and Output Devices*
- *Concept of Operating System*
- *Dos Commands*
- *Introduction to PC based Software Packages*

2. WORDSTAR 4.0 AND WORDPERFECT 5.1 WORDPROCESSORS

Word-processing is the prime need for any organisation. In order to acquaint everybody in the office with the concept of electronic data processing, a course in Word-processing software has been designed. This training programme gives an idea of basic concepts and advantages of using such wordprocessors in day-today work. The most commonly used wordprocessors Wordstar and Wordperfect are covered. Each and every aspect of commonly required commands of Wordstar is taught in detail. Each class-room session is followed by a hands-on session.

Wordperfect was introduced later for word-processing. Wordperfect is much more powerful software. The training covers all the basic functions of word-processing and also features like 'Line Drawing', Tables, Graphics, Text, Figure Boxes, Thesaurus, Spell Check.

Course Contents :

- *Basic Formatting and Editing*
- *Block Operations*
- *Printing*
- *File Management*
- *Search and Replace*
- *Spell Checker and Thesaurus*
- *Math Operations*
- *Shorthand / Macro features*
- *Table and line drawing*
- *Merge Operations*

3. LOTUS 1-2-3 AND QUATTRO PRO SPREADSHEETS

An extensive training course in QUATTRO Pro has also been designed. Creation and formatting of spread-sheets, copying and moving data from one place to another in the same worksheet, using formulae for calculation, editing and sorting existing data is taught thoroughly. Preparing different types of graphs and using 'Draw & Annotate' features is also demonstrated. The advanced features covered include Querying on specific criteria, linking spreadsheet files, using presentation features like shading, use of various fonts, line drawing etc.

Course Contents :

- *Spreadsheet basics*
- *The Menu Line*
- *Data types*
- *Entering & editing Data*
- *Files and Windows*
- *Using Formulas*
- *Database Management*
- *Building Graphs*
- *Printing*
- *Use of Functions and Macros*

4. A COURSE IN DBASE III +

In almost all computer applications, dBASE III Plus is used. To make more effective use of the existing data a training programme in dBASE III Plus has been designed. It covers creation of databases, data types, file naming conventions, entering and modifying data, organising data. Browsing through the database, searching a particular record is explained in detail. Relating two databases, report format design & creating mailing labels is also demonstrated.

- *Concept of database*
- *Creating and Viewing a database*
- *Searching the database*
- *Sorting the database*
- *Editing and Modifying a database*
- *Creating and printing formatted reports and labels*
- *Managing Dates and Numbers in a database*
- *Introduction to Relational Databases*



A Training in progress

5. A COURSE IN SPSS/PC+ (BASE AND TABLES MODULE)

To give a general idea of the capabilities of the package SPSS/PC+ for data analysis and to train the people in using the BASE and TABLES module.

Course Contents :

- *A brief introduction about SPSS/PC+ modules, software and hardware requirements.*
- *Preparation of data files suitable for SPSS/PC+ (Free & Fixed formats).*
- *Introduction to procedures and commands of SPSS/PC+.*
- *Introduction to BASE module.*
- *Use of procedures using macros in BASE & TABLES module.*
- *Different commands in the TABLES module to make the output more readable and legible.*
- *Explanation and interpretation of the results.*

6. USE OF GIST CARD FOR VERNACULAR DATA PROCESSING

BIRC has been using multi-lingual card in various applications. GIST card allows the use of Indian scripts in software packages like dBASE III Plus, Lotus, Wordstar etc. Data entry can be done through a standard IBM-PC keyboard. The GIST interface works well with the library package viz Micro-CDS/ISIS. This training programme focuses on all the aspects of data and text processing using the GIST card. The commands for activating the GIST card and later on processing and printing are explained in detail. Word-processing using the Script Processor and other wordprocessors is also explained in detail. Transliteration and using software like Dbase, Lotus are taught to the participants.

Course Contents :

- *The Gist mode of Input - Output Operations*
- *Editing and document formatting features*
- *Attribute Control and Printer control features*
- *Transliteration and using multiple languages*
- *The Gist Menu Options*

7. GRAPHICS AND DESK TOP PUBLISHING SOFTWARE

Effective communication is the need for any organisation in the field of rural and tribal development like BAIF. To be able to convey the messages to the field level, BIRC started using the Desk Top Package 'VENTURA' for preparing BAIF Journal, different types of Technology Awareness Bulletins, Newsletters, manuals, leaf-lets etc. In order to strengthen the Communication and Publication Cell it was decided to promote the use of DTP Packages. A seven days training programme has been designed for Ventura and MS-Windows. It covers loading text from wordprocessors, page layout and columns creations, setting margins and paper orientation. Concept of style sheet, creating & assigning tags is explained in detail. Use of Graphic tool and frame setting is also taught.

Course Contents :

- *Personal Publishing using Ventura*
- *Planning and designing publications*
- *Page Layout*
- *Loading and editing text*
- *Formatting text using typography*
- *Using Graphics in design*
- *Printing Tips and Techniques*

III. CONSTRAINTS

3.1 Operational and resource constraints

The idea of an Information Resource Centre, which would not only have the library but also the computer centre and the communications cell, was new in BAIF. The management has not only supported the project but also motivated the field staff located in the project areas to make use of these services. In spite of the support by the management, the computer section faced a little resistance in introducing computers. The Accounts, Administrative and other support staff were accustomed to certain procedures of operation which had to be changed. The change from manual systems to computerised systems created delays due to parallel runs which added to the work. Initially there were few computers which were installed centrally and shared by a large number of users which added to the delays. The computer technology being new in BAIF the user departments had to be given a lot of orientation to make use of the machines for their work.

Analysing data using a computer was new in BAIF and it took quiet a lot of time and effort explaining the importance of codifying questions, validating the data and the importance of planning the analysis before data collection. A number of workshops and seminars conducted by consultants and the computer section has now made a difference.

The equipments and software under the IDRC project was restricted mainly to the head office and the research campus in Urulikanchan. Software has been developed for various field programmes. It would be appropriate if computers and printers are installed at district headquarters.

The cost of computer hardware, peripherals and software packages are quiet high. Legal copies of a few software had to be procured through IDRC administered funds. The procedure was time consuming and the IDRC Delhi office had to do the procurement and ship it to BAIF. Another major constraint was and still is the rapid advances in the hardware and software technologies. A lot of investment is required for upgrading existing facilities.

IV. ACHIEVEMENTS AND IMPACT OF THE PROJECT

4.1 Achievements

A constant interaction with different user groups has helped in overcoming most of the constraints. This has resulted in a number of computer installations in various departments, divisions and campuses. Conventionally the largest users of computers are computer professionals. In BAIF, the number of computers and computer personnel in the Computer section is below ten. The computers are installed where they are meant to be, in the users place of work. This has made a significant difference in the way of working.

Normally, it takes years for management information systems (MIS) to be developed and stabilise in an organisation. In BAIF, nearly all administrative and accounting functions are computerised. This has been a boon to BAIF in being prompt in giving service and information, not only to the sponsors but also to the participants, beneficiaries and the employees. Coordination between extension workers and the project leaders has improved due to faster processing of data and accurate information. Computerised outputs of the progress of the individual projects are maintained by the field functionaries. With the advent of computers even the field staff give suggestions to improve and streamline systems.

From the list of application systems and data analysis it can be seen that the computer section has been providing its services to nearly all the departments of BAIF. A major part of the application systems developed have been for field programmes. Some of these applications have been installed in the computers in the state headquarters and project areas.

4.2 Impact

The project has led to the formation of team of computer professionals. It is due to the project that computerisation is now being taken forward to the state headquarters level. The organisation has the confidence in the systems developed.

There has been a marked difference in the organisation due to the introduction of computers. The project leaders are now able to take informed decisions. The work culture within the organisation has changed considerably. The role of the computer professionals has increased over the years. Whether it is an administrative function or a research project on health behaviour studies, the involvement of computer personnel has become essential. Information technologies are now being used right from planning to the implementation stages of projects. This has led to better planning and faster implementation of the programmes.

The computer section is now capable of taking up turnkey consultancy assignments in Software development, Computer Networking and GIS assignments. The successful implementation of the software systems in various state headquarters has given the confidence to undertake such assignments even in other states of the country.

V. OUTPUTS OF THE PROJECT

5.1 Capacities built

For a voluntary organisation implementing programmes in remote villages, computer services have become essential. A few years back, BAIF had to depend on outside consultants and computing facilities. Today, BAIF has computers and computer programmers not only in the Computer section at Pune but also in the offices and campuses in Gujarat, Uttar Pradesh and Maharashtra. Information technologies are being used in day to day functions even by the project staff. The project has provided BAIF with the infrastructure and technologies to implement programmes that can cover large number of families. The list of hardware procured under the project is given in **Annex 1** and the software procured is given in **Annex 2**. The BIRC is now in a position to provide its services to BAIF programmes and also to other voluntary organisations. The guidance and information given by the IDRC programme officers has helped BAIF in keeping abreast with the advances in information technology.

5.2 Staff Development

Information Technologies (IT) are rapidly advancing every year. In order to make best use of emerging technologies. The BIRC has been sending its staff for short duration training programmes to acquire skills in specialised software. Most of the training programmes that were attended by the computer professionals were within the country. Computer personnel were also deputed to attend a couple of the International Workshops/Seminars. The Computer section has also conducted a number of training programmes for the benefit of BAIFs personnel working in projects, accounts and administration. **Annex 3** gives a list of trainings, workshops and seminars attended by the computer personnel during the project duration.

5.3 Products Developed

Over the past years the work taken up has been mainly to support BAIFs programmes that are operational. While doing this the computer personnel have gained sufficient experience in developing packaged software products. One such packaged software is **NIDAAN**, a software for Diagnostic laboratories and another is **VISICARD**, a software for storing addresses.

5.4 Linkages

The computer section has been involved in development of application software and analysis of data for most of the rural and tribal development programmes. Computers have also been installed in all the state headquarters. This has led it to become a major support service in BAIF. The assignments of the section have directly benefited the programmes in dairy cattle, agro-forestry, tribal rehabilitation, human health, renewable energy sources, social sciences and other support services groups. The computer section has also been approached for support in data analysis, training and GIS from other government and non- government organisations. Consultancy services in GIS and SPSS is being given to other voluntary organisation. The computer section has developed linkages with organisation like National Informatics Centre (NIC), Space Application Centres (SACs) and other national agencies.

VI. CONCLUSIONS

6.1 The Project Experience

The project was initiated as a part of the IDRC-BIS programme support. The BAIF Information Resource Centre (BIRC) was established to provide information services support to the research and development programmes. During the project duration a number of computerised solutions were provided to various user groups. The computerisation initiated during the project is now being extended to all the offices and campuses of BAIF. There are number of application areas that will be taken up now.

There is general feeling that the objectives of the project have been met successfully. The software systems developed have been working satisfactorily and have now stabilised. BAIF is now able to take up larger programmes because of good systems support. The computer section will now also play a major role in bringing about a computer awareness among other voluntary organisations.

6.2 Beyond The Project

The experience gained by the computer personnel will go a long way in taking up new projects. Though the computer section is primarily providing its services to the programmes of BAIF it is now on the verge of generating its own revenue. Consultancy in data analysis was given to government and private sector organisations. These few assignments were taken on an experimental basis to find out the potential of doing it regularly. The training programmes conducted in specialised software were well attended by participants from institutions in and around Pune city. The course contents for various trainings and a schedule of trainings is being developed.

BAIF is already in the process of installation of computing facilities in various state headquarters. The computer section is now working towards a computer network with BAIF. It would then be possible to send messages, files and computer programmes through modems. This will also make it possible for the state headquarters to connect to the NICs to obtain district profiles and other census data.

LIST OF CAPITAL EQUIPMENT

| Sr.No. | Equipment | Quantity |
|---|--|----------|
| <i>BIRC, "Pradeep Chambers", Pune</i> | | |
| 1. | IBM Compatible Computers | 11 |
| 2. | Dot Matrix Printers | 7 |
| 3. | Un-interrupted power supply Unit (UPS) | 3 |
| 4. | Voltage stabilisers | 4 |
| 5. | HP Series II Laser Printer | 1 |
| 6. | Colour Pen Plotter A-2 size | 1 |
| 7. | Telex Link for IBM PC | 1 |
| 8. | Digitising Pad A-3 size | 1 |
| 9. | Transcript Cards for Indian Scripts | 1 |
| 10. | Modems for data communication | 1 |
| 11. | Cartridge Tape Drives | 2 |
| 12. | Hand Held Terminal for data entry | 1 |
| 13. | Computer Furniture | |
| 14. | Window type Airconditioner | 2 |
| 15. | Electronic Typewriter | 1 |
| 16. | IBM compatible Laptop | 1 |
| <i>Central Office, "Kamdhenu", Pune</i> | | |
| 1. | IBM Compatible Computers | 3 |
| 2. | Dot Matrix Printers | 2 |
| 3. | Un-interrupted power supply Unit (UPS) | 2 |
| 4. | Voltage stabilisers | 1 |

LIST OF CAPITAL EQUIPMENT

| Sr.No. | Equipment | Quantity |
|--------|-------------------------------------|----------|
| 5. | Telex Link for IBM PC | 1 |
| 6. | Transcript Cards for Indian Scripts | 1 |
| 7. | Modems for data communication | 1 |
| 8. | Computer Furniture | |
| 9. | Fire proof data storage cabinet | 1 |

Research Campuses in Urulikanchan

| | | |
|----|--|---|
| 1. | IBM Compatible Computers | 3 |
| 2. | Dot Matrix Printers | 2 |
| 3. | Un-interrupted power supply Unit (UPS) | 2 |
| 4. | Transcript Cards for Indian Scripts | 1 |
| 5. | Computer Furniture | |

BRLAH Campus in Wagholi

| | | |
|----|--------------------------|---|
| 1. | IBM Compatible Computers | 1 |
| 2. | Dot Matrix Printers | 1 |
| 3. | Voltage stabiliser | 1 |

VRINDAVAN Campus in Vansda, Gujarat

| | | |
|----|--|---|
| 1. | IBM Compatible Computers | 1 |
| 2. | Dot Matrix Printers | 1 |
| 3. | Un-interrupted power supply Unit (UPS) | 1 |

LIST OF SOFTWARE

- ✧ WORDSTAR 3.3
- ✧ LOTUS RELEASE 2.01
- ✧ CLIPPER SUMMER 87
- ✧ SPSS/PC+ (8 Modules)
- ✧ WUDWS/TAG
- ✧ FOCUS 5.5
- ✧ IWORD 3.0
- ✧ QUATTRO PRO
- ✧ XEROX VENTURA
- ✧ IADSS (Information And Decision Support System)
- ✧ AUTOCODE
- ✧ MS DOS VER 4.0
- ✧ IDAMS (International Data Analysis and Management System)
- ✧ ETHNOGRAPH
- ✧ UNIX FOCUS 5.5
- ✧ UNIX 5.3.2
- ✧ UBRIDGE
- ✧ ZOOMIT
- ✧ WINDOWS VER 3.1
- ✧ NORTON DESKTOP
- ✧ PC ARC/INFO+
- ✧ WORDPERFECT VER 5.1
- ✧ DR DOS 6.0

TRAININGS/ WORKSHOPS/ SEMINARS ATTENDED

| Sr. No. | Topic of the Programme | Duration | Conducted by | Attended by |
|---------|---|----------|-----------------|----------------------------|
| 1. | An Introduction to CDS/ISIS | 5 days | Pune University | V.J. Harris M.S.Gode |
| 2. | Statistical techniques for Planning Monitoring & Evaluation of rural development programmes | 5 days | NIRD, Hyderabad | M.V.Shaligram |
| 3. | Seminar on CASE tools for software development | 1 day | NIIT, Bombay | N.M. Iyer |
| 4. | Systems Analysis & Design | 6 weeks | CSI, Pune | M.S. Gode, U.R. Oswal |
| 5. | A course on UNIX and 'C' | 3 weeks | Datapro, Pune | N.M. Iyer, V.J. Harris |
| 6. | A course on UNIX | 5 days | Wipro, Pune | M.S. Gode, U.R. Oswal |
| 7. | A Seminar on Applications Development using FOCUS | 5 days | NIIT, Pune | V.J. Harris, M.S. Gode |
| 8. | Programming in 'C' | 6 weeks | CSI, Pune | M.V.Shaligram |
| 9. | A Workshop on Use of Microcomputers in GIS | 3 weeks | AIT, Bangkok | M.V.Shaligram |
| 10. | A Seminar on IDAMS PC | 1 week | UNESCO, Paris | V.J. Harris |
| 11. | A Workshop on UNIX/ Internetworking | 2 days | NCST, Bombay | V.J. Harris P.R. Sharma |
| 12. | A Workshop on Use of Computers in Rural Development | 2 days | CSI, IIT Powai | M.S. Gode, G.S. Jadhav |
| 13. | A Workshop on ISM - GIST | 1 day | CDAC | U.R. Oswal |
| 14. | A Workshop on Interoperability (TCP-IP & LAN) | 5 days | Datapro, Pune | V.J. Harris |
| 15. | A Workshop on Village Level Planning | 8 days | NIRD, Hyderabad | P.R. Sharma |

DAIRY CATTLE PROGRAMME MONITORING SYSTEM

OBJECTIVES

To generate the progress reports and short summaries of the activities of various cattle breeding centres.

To generate analysis and variance reports of the cattle breeding activities for various centres.

To prepare a databank of the Artificial Insemination (A.I.) work carried out in BAIF.

To provide a common system of data analysis and monitoring system at all state levels.

SYSTEM DESCRIPTION

The system is used to computerise the monthly progress reports of each centre and generate some information for the monitoring of the programme at state level. The monthly progress reports for cattle development are received from six states where BAIF is operating its Dairy Cattle Development Programme viz. Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Karnatak and Uttar Pradesh. The report gives information about the number of centres in each state, and the performance of these centres.

The targets for the A.I., P.D. etc. are fixed and exception reports based on these will be generated. Reports comparing the present data with previous years data can also be generated for monitoring and evaluation purpose.

INPUTS

State Information

District Information

Centre Information

- Centre Code, Centre Name, Opening Date etc.

- Monthly Artificial Insemination

- Monthly Pregnancy Details

- Monthly Calving Information

OUTPUTS

- Monthly Progress Report

- Summary Report

- List of Centres closed / opened during the year

- Centre Performance Report

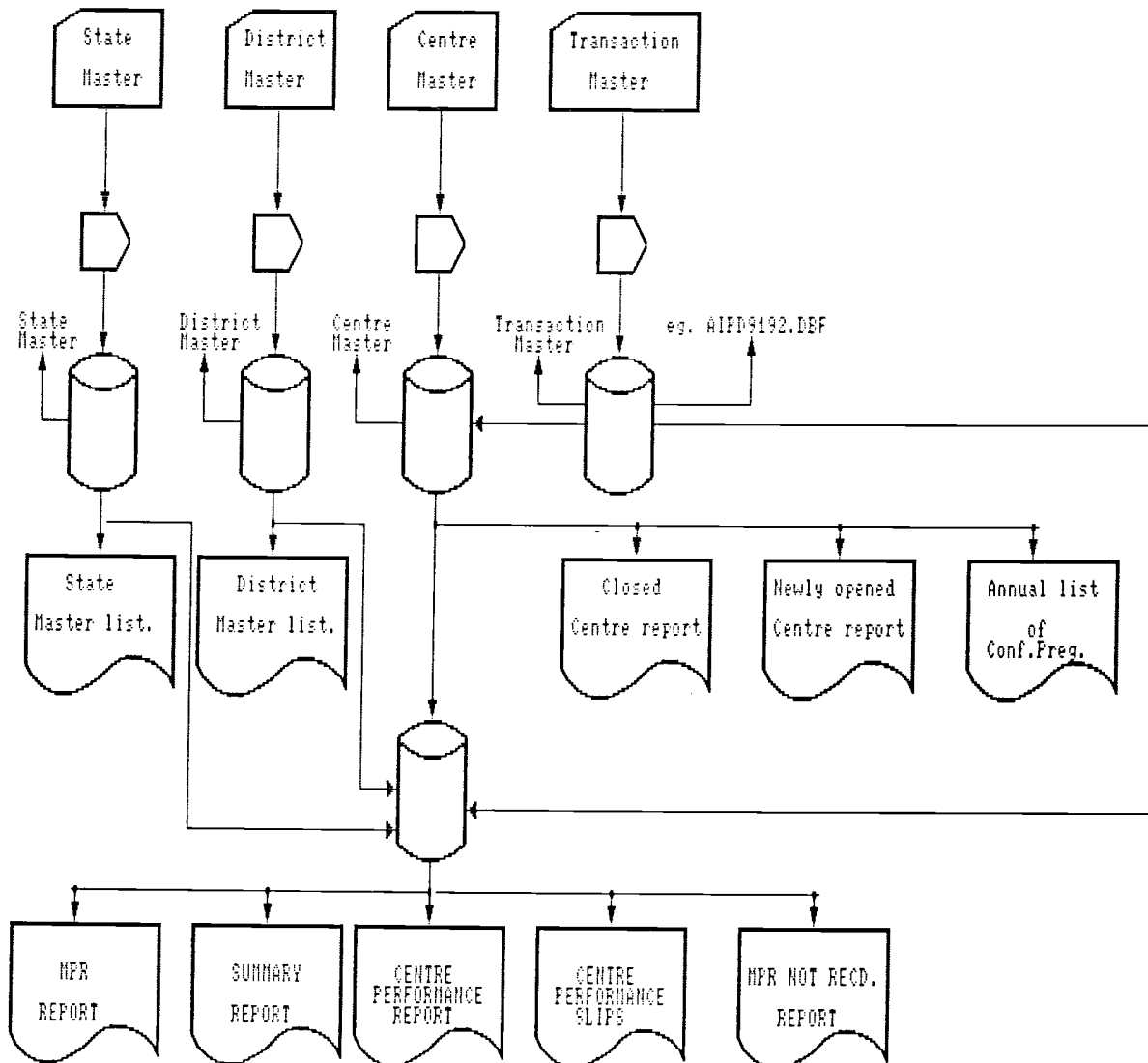
- Centre Performance Slips

SOFTWARE USED : CLIPPER

DAIRY CATTLE DEVELOPMENT PROGRAMME MONITORING SYSTEM

SYSTEM FLOWCHART

DAIRY CATTLE DEVELOPMENT PROGRAM OBJECTIVE IS TO RECORD THE MONTHLY PROGRESS DATA OF INSEMINATION, PREGNANCY & CATTLE STATISTICS FOR ANALYSIS OF PERFORMANCE OF VARIOUS CENTRES IN THE RESPECTIVE STATE.



MOTHER AND CHILD HEALTH CARE MONITORING SYSTEM

OBJECTIVES

- To generate reports for health officers at Vansda for follow-up of high risk cases.
- To cut down on paper work of the staff so that they can concentrate on health activities.
- To generate reports giving indicators on antenatal, infant care and treatments given.
- To find out pattern of morbidity & changes in it over the project period.
- To find out current pattern of highrisks in pregnant mothers and changes in it over the project period.

SYSTEM DESCRIPTION

The system is designed to monitor the Mother & Child Health care programme in 37 villages in Vansda, Gujarat. Data from the field regarding A.N.C., Births, immunisation, treatment given, & deaths are entered & reports are generated about the progress of clinic, follow up on high risk cases, morbidity pattern etc. to find out present detection of high-risk cases categorywise, & yearly indicators of health status.

INPUTS

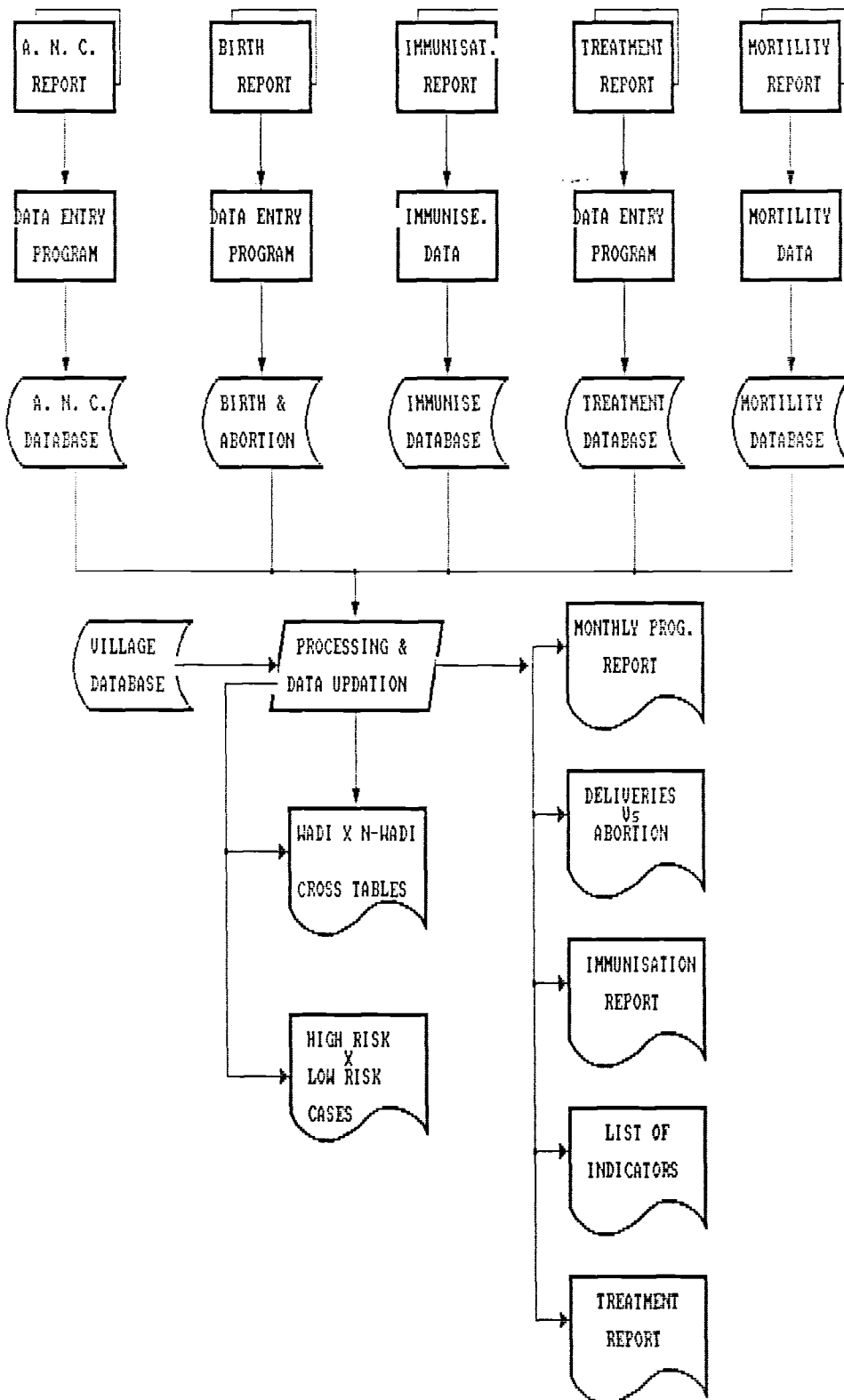
- Data for ANC's
- High Risk Infants data
- Births and Abortions data
- Deaths data
- Immunisation data
- Data about treatment given
- Details of training conducted

OUTPUTS

- Monthly progress report
- List of indicators
- Cross tables of high risk factors Vs identifiers
- Cross tables of deliveries Vs abortions
- Reports on training programmes
- Immunization Report
- Treatment given reports etc.

SOFTWARE USED : CLIPPER

MOTHER AND CHILE HEALTH CARE MONITORING SYSTEM



'WADI' PROGRAMME MONITORING SOFTWARE

OBJECTIVES

To maintain a database of all the WADI participants.

To maintain a database of all the activities completed by the tribals during the project period and to generate various reports such as activity completion report or the payment list etc., using this data.

SYSTEM DESCRIPTION

The WADI System is an activity and payment management system. It monitors the data of villages, in which BAIF is conducting the Tribal Rehabilitation Programme.

Although it does not involve any complex calculations or data manipulation, it is important in the sense that very large quanta of data is stored and payments of large amounts are issued from the system reports.

The system generates various reports for monitoring the project such as a monthly report giving the number of persons who have completed a particular activity. Records of only those families for whom payment is to be given is processed, a validation report is printed and checked by the account staff. The final payment list is generated and sent to the bank for further action. Printing the payment list in regional language has also been programmed. Apart from the above, the system has been implemented for all the WADI projects.

INPUTS

Participant Details

Activity Details

Rate of Activity Details

OUTPUTS

Participant Details

Activity List

Activity Completion Report

Payment Validation Report

Village Summary Report

Activity Summary Report

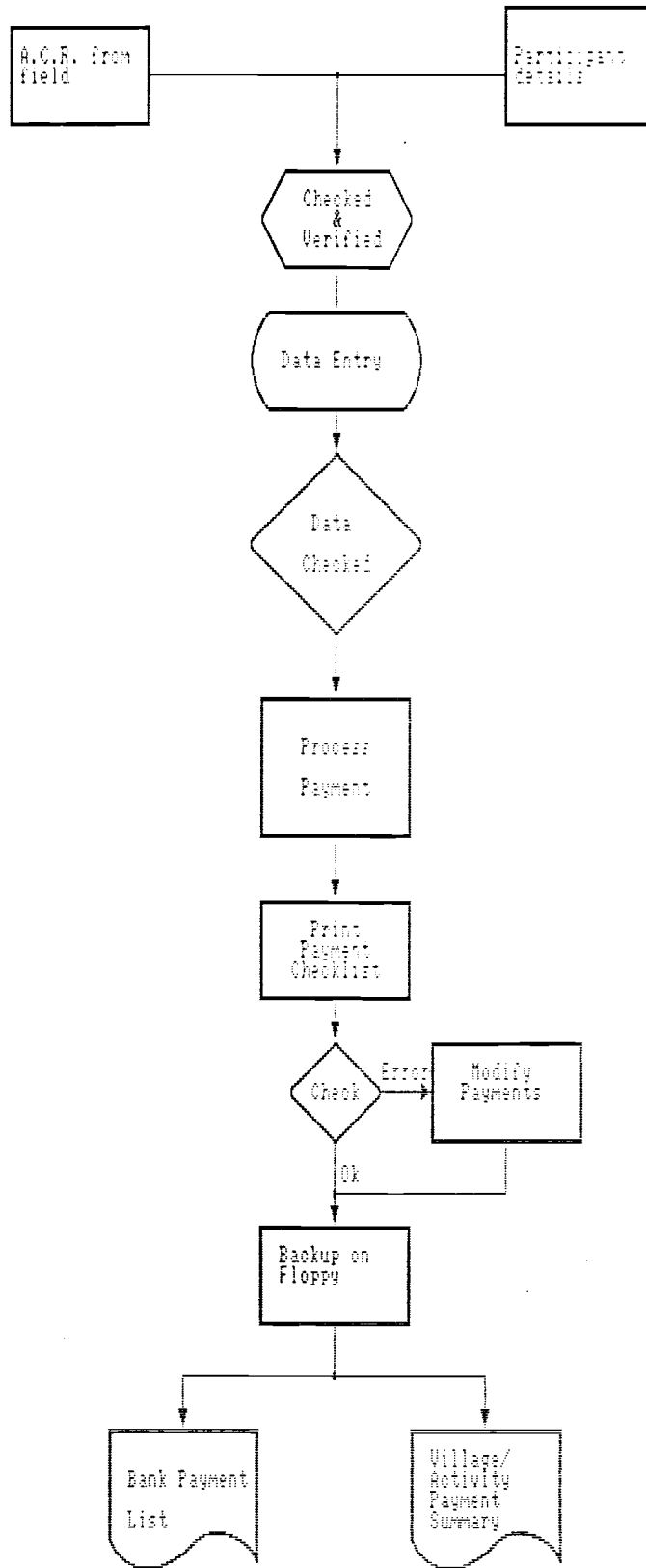
Final Payment List

Blank Formats for initial Family Details

SOFTWARE USED : CLIPPER

'WADI' PROGRAMME MONITORING SOFTWARE

SYSTEM FLOWCHART



NATUROPATHIC DIAGNOSIS AND TREATMENT RECORDING SYSTEM

OBJECTIVES

To automate the recording procedures of patients past medical history. The system also aims at recording the patients present complaints and the general examination results.

To maintain a database of the clinical findings, treatment and diet given and the result at the time of discharge.

SYSTEM DESCRIPTION

At the time of admission to the Ashram various information about the patient like Age, Sex, Weight, Height, family history of ailment etc. is recorded and entered through the system. The clinical findings, treatment given, diet prescription etc. is recorded every time a change is made (weekly). After the patient is discharged a part of the medical history, diet prescription and treatment given is saved in a database for future analysis.

INPUTS

Patient's past medical history
Details of examination / diagnosis by chief naturopath
Treatments data
Details of Follow-ups
Food Master details

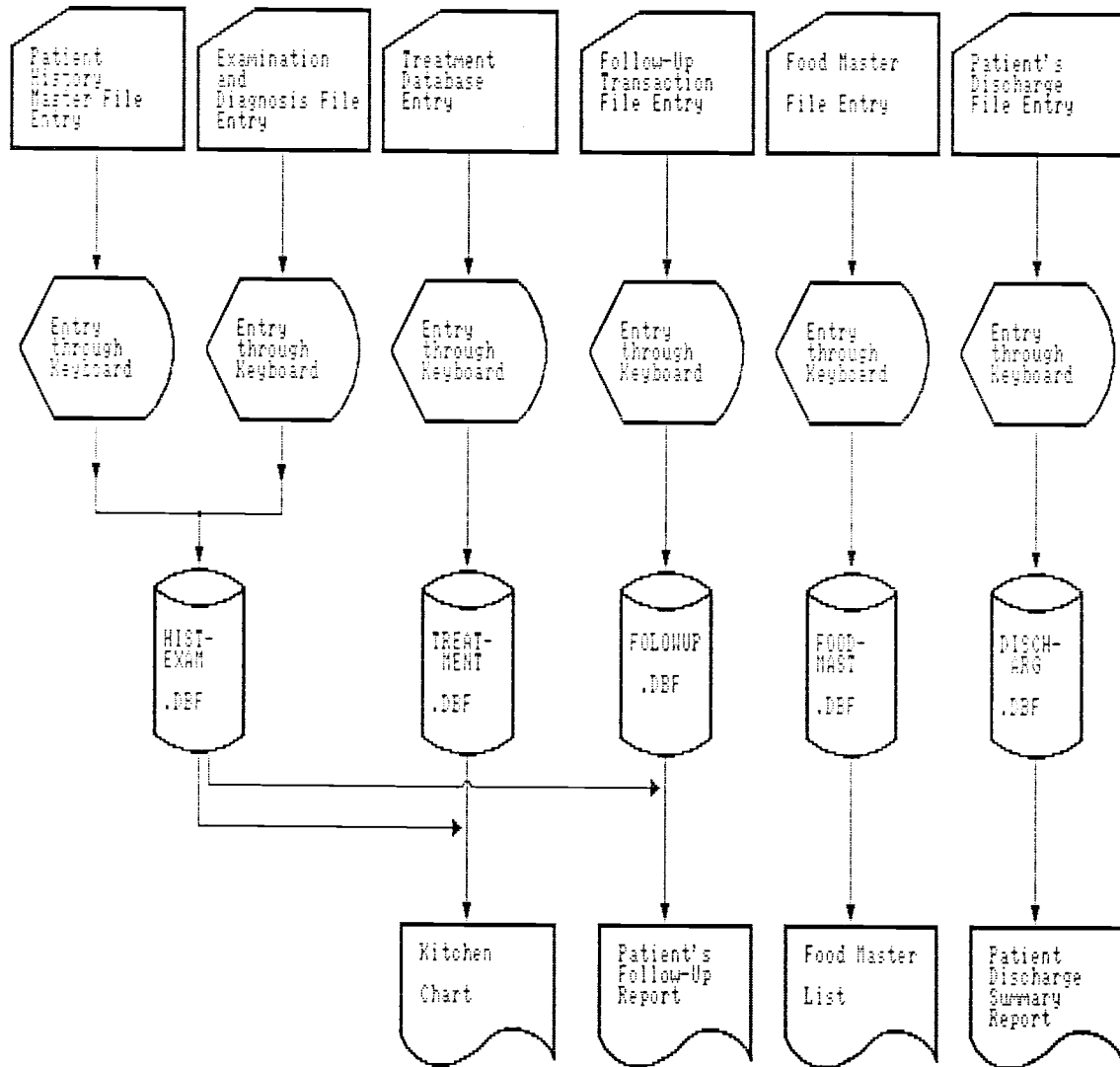
OUTPUTS

Diet chart
Disease-wise report of patient during a period
Weekly report to treatment given
Dietwise list of patients
Treatment-wise list of patients
On-line queries

SOFTWARE USED : CLIPPER

NATUROPATHIC DIAGNOSTIC AND TREATMENT RECORDING SYSTEM

SYSTEM FLOWCHART



'NIDAAN', A DIAGNOSTIC SERVICES RECORDING SYSTEM**OBJECTIVES**

To take care of the day-to-day routines and facilitate the other operations of the laboratory.

To facilitate easy recording and printing of the test results.

To enable back tracing of the old patients history.

SYSTEM DESCRIPTION

The system is a user-friendly, menu-driven. Record of every patient who comes to the laboratory is entered in this system with his master details like name, age, sex etc. and the different tests he has to undergo. A Patient requisition form is printed. After the tests are carried out, the results are entered in the computer and printout is taken. Each of the tests are given relevant codes. On-line help is available for Test codes at each and every point. Each patient is given a unique code by the system which facilitates the search. Password security is provided at every important step like entering standard ranges etc. The eight type of tests are - Hematology, Biochemistry, Urine tests, Stool tests, Semen tests, Microbiology, Serology, Fluid tests

- User can define his own test definitions
- User can add standard ranges for the test codes
- Flexibility while adding new tests

INPUTS

Patient details

Input sheets for various categories of tests viz. Hematology, Biochemistry, Radiology, Clinical Pathology Microbiology, Serology, ultrasonography tests.

Input sheets of Profiles tests

OUTPUTS

Patient requisition form

Bill of the patient

Test results

Testwise no of patients

Daily cash register

Daily Patient register

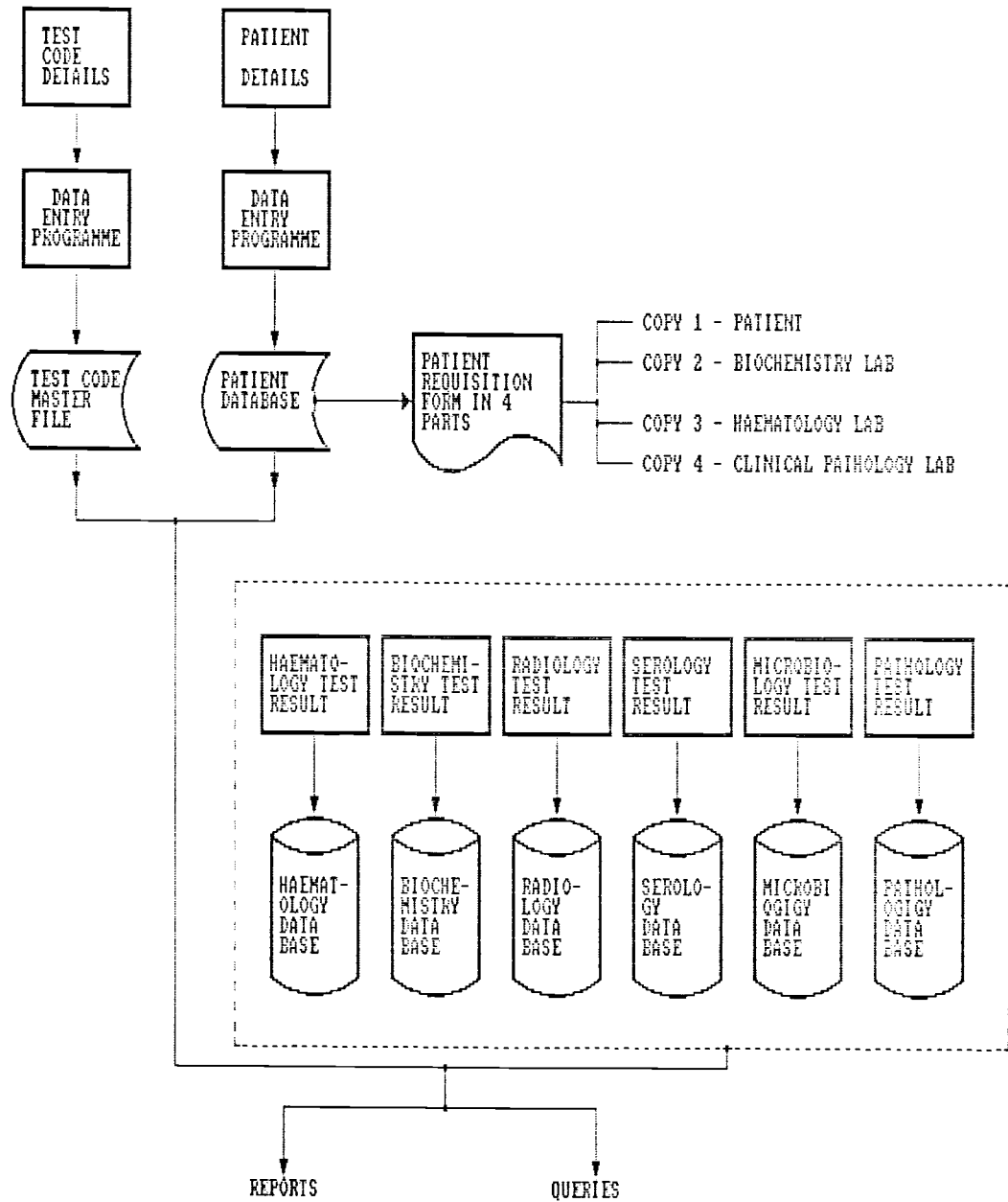
Departmentwise collection report

Testwise collection report

SOFTWARE USED : CLIPPER

'NIDAAN', A DIAGNOSTIC SERVICES RECORDING SYSTEM

SYSTEM FLOW CHART



- | | |
|--|----------------------|
| 1. PATIENT REQUISITION FORM | 1. PATIENTWISE QUERY |
| 2. BILL | 2. TESTWISE QUERY |
| 3. TEST RESULTS | 3. COLLECTION QUERY |
| 4. TESTWISE NO OF PATIENTS | |
| 5. DAILY CASH REGISTER | |
| 6. DEPARTMENTWISE COLLECTION REPORT | |
| 7. REPORTS FOR TESTS CARRIED OUT AT MEDINOWA | |
| 8. LOCATIONWISE LIST OF PATIENTS | |
| 9. TESTWISE COLLECTION REPORT | |

GASIFIER OPERATIONS DATA RECORDING SYSTEM

OBJECTIVE

Compilation and analysis of Field Operational Data of gasifiers installed in the field

SYSTEM DESCRIPTION

The system is designed to computerise the technical information recorded from operational gasifiers. The system provides entry of Gasifier details, operational period, meter reading, wood and diesel consumption. Based on the parameters the system is capable of analysing and monitoring gasifier performance.

INPUTS

- Gasifier Details including Mechanical / Electrical usage
- Operational Details
- Power Generation Details
- Wood Consumption Details
- Diesel Consumption Details

OUTPUTS

Gasifier Master List

Operational Period Reports :

Duration for Daily Operation and Duration for Specific Period Operation

Power Generation Reports :

Average Power Generation for daily operation and average power generation for specific period of operation.

Wood Consumption Reports :

Total Wood Consumption, Specific Wood Consumption and Average Wood Consumption for specific period of operation.

Diesel Consumption Reports :

Total Diesel Consumption, Specific Diesel Consumption and Average Diesel Consumption for specific period of operation.

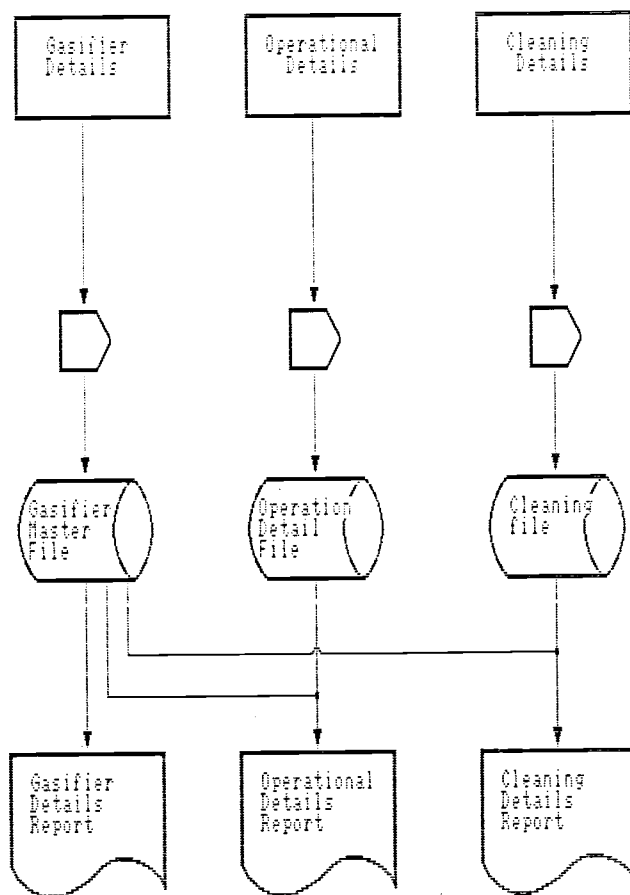
Diesel Replacement Reports :

Diesel Replacement for daily operation and Average Diesel Replacement for Specific Period of Operation.

Diesel Replacement as a function of System Operation.

SOFTWARE USED : CLIPPER

GASIFIER OPERATIONS
RECORDING SYSTEM
SYSTEM FLOWCHART



SERICULTURE EXTENSION PROGRAMME MONITORING SYSTEM**OBJECTIVES**

To monitor the activities in the project and payment made for these activities.

To monitor the supply of material to the farmers.

SYSTEM DESCRIPTION

The data about all the farmers who are participating in the Sericulture Extension Project is maintained in this system. This is a batch processing system i.e. the files are updated monthly. The project spans 2 years and there are 13 activities defined. These activities are divided in 6 periods. Every month data about the activities completed by the farmers, issue of the silkworms and sale of cocoons is entered in the system. After entering the activities completed in a specific period, payment is generated using the rates of the different activities in specific period. First, a rough list of payment made is generated and checked. After the checking, modifications are done if any and then a final payment list is printed. This list is then sent to the banks and the farmers get the payment through the banks. Once the payment is sent to the bank, the final payment file is updated which can not be changed later in any case.

Salient features

- Nearly all reports can be viewed on screen before printing
- On line help for selection of family
- Query on family name
- Query on activity completion and payment done

INPUTS

Activity Completion Report details
New family data
Silkworm issue and Cocoon sale details

OUTPUTS

Master list of farmers
Monthly Activity Completion Report
Bank payment list
Activity wise payment made summary
Material supplied report
Family wise payment details
List of activities
Villagewise summary report

SOFTWARE USED : CLIPPER

SILKWORM REARING DATA MANAGEMENT SOFTWARE

OBJECTIVES

- To streamline the process of data entry and validation.
- To summarise the data with derived parameters for further analysis.

SYSTEM DESCRIPTION

The system is menu driven and provides various options for data entry, report generation and system manager. From the raw data entered, a cumulative file is created summarising important parameters. The summary generated gives the researcher overall view of the performance of the races which helps him in planning for detailed statistical analysis.

INPUTS

- Logsheet data entry : details of egg behaviour, feeding, moulting and mounting
- Grainage data entry : Male female emergence, filament weight, filament length, weight with and without floss
- Rearing abstracts : temperature, humidity and cocoon characteristics.

OUTPUTS

- Creation of cumulative file
- Validation lists
- Reports on Logsheet data, Rearing Data, Grainage Data and Cumulative data
- Reports can be generated for range of rearing serial nos.
- The File Manager option provides general utilities like:
 - Indexing of databases
 - Backup of files to floppy
 - Execution of DOS commands

SOFTWARE USED : CLIPPER

AGRO-FORESTRY PROGRAMME MONITORING SYSTEM FOR KARNATAK**OBJECTIVES**

To maintain a database of all the participants.

To maintain a database of all the activities completed by the tribals during the project period and to generate various reports such as activity completion report or the payment list etc., using this data.

SYSTEM DESCRIPTION

The Agro-forestry System is an activity and payment management system for the project undertaken in Karnatak State, which controls the data of villages, in which BAIF is conducting the Programme.

Although it does not involve any complex calculations or data manipulation, it is important in the sense that very large quanta of data is stored and payments of large amounts are issued from the system reports.

The system generates various reports for monitoring the project such as a monthly report giving the number of persons who have completed a particular activity. Records of only those families for whom payment is to be given is processed, a validation is printed and checked by the account staff. The final payment list is generated and sent to the bank for further action. Material data provided by BAIF to the participant is recorded and printed.

INPUTS

Participant Details

Activity Details

Rate of Activity Details

Material details provided by BAIF

OUTPUTS

Participant Details

Activity List

Activity Completion Report

Payment Validation Report

Village Summary Report

Activity Summary Report

Final Payment List

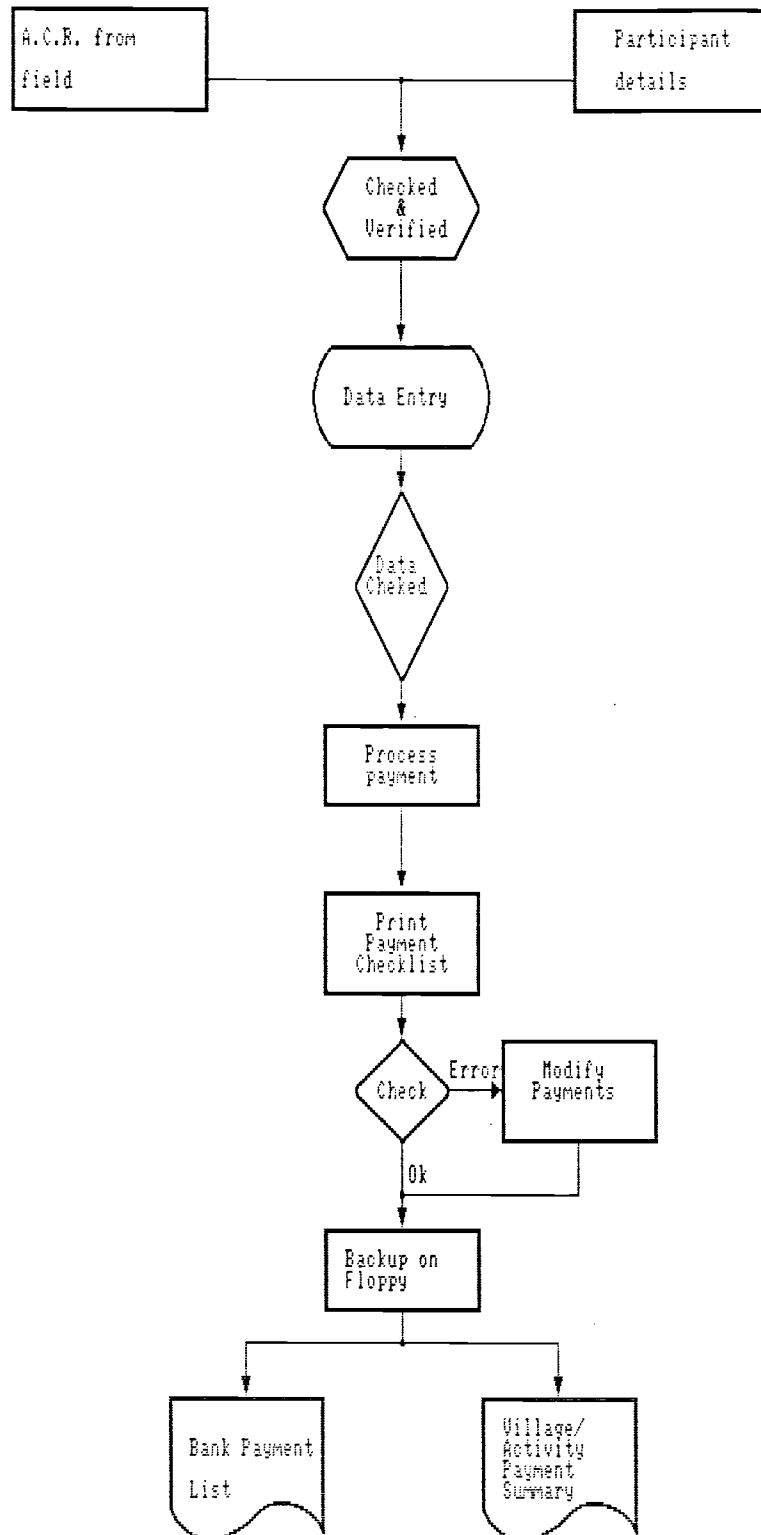
Blank Formats for initial Family Details

Material Report

SOFTWARE USED : CLIPPER

AGROFORESTRY PROGRAMME MONITORING SYSTEM FOR KARNATAK

SYSTEM FLOWCHART



SALUMBRE AREA DEVELOPMENT REPORTING SYSTEM**OBJECTIVES**

To generate summary progress reports of the artificial insemination records and pregnancy follow-up of the dairy cattle in Salumbre area.

To monitor the Agriculture and Horticulture activities undertaken in the area.

To develop a reporting module for multidisciplinary activities project.

SYSTEM DESCRIPTION

This is a unique application system developed for a comprehensive rural development project taken up by BAIF. BAIF is involved in implementing three major components of the project taken up Mawal Taluka of Pune District. The main components of the project are Dairy Cattle Development, Agriculture Development and Wasteland Development. A reporting system has been developed for monitoring the progress of various centres operating under this project. The progress of various activities in each of the areas is reported every month. Reports for follow-up is printed and sent to the field staff.

INPUTS

- Participant Family information
- Monthly recordings of the Cattle breeding activities undertaken in the project area.
- Seasonal recordings of the Horticulture and Agriculture activities completed.

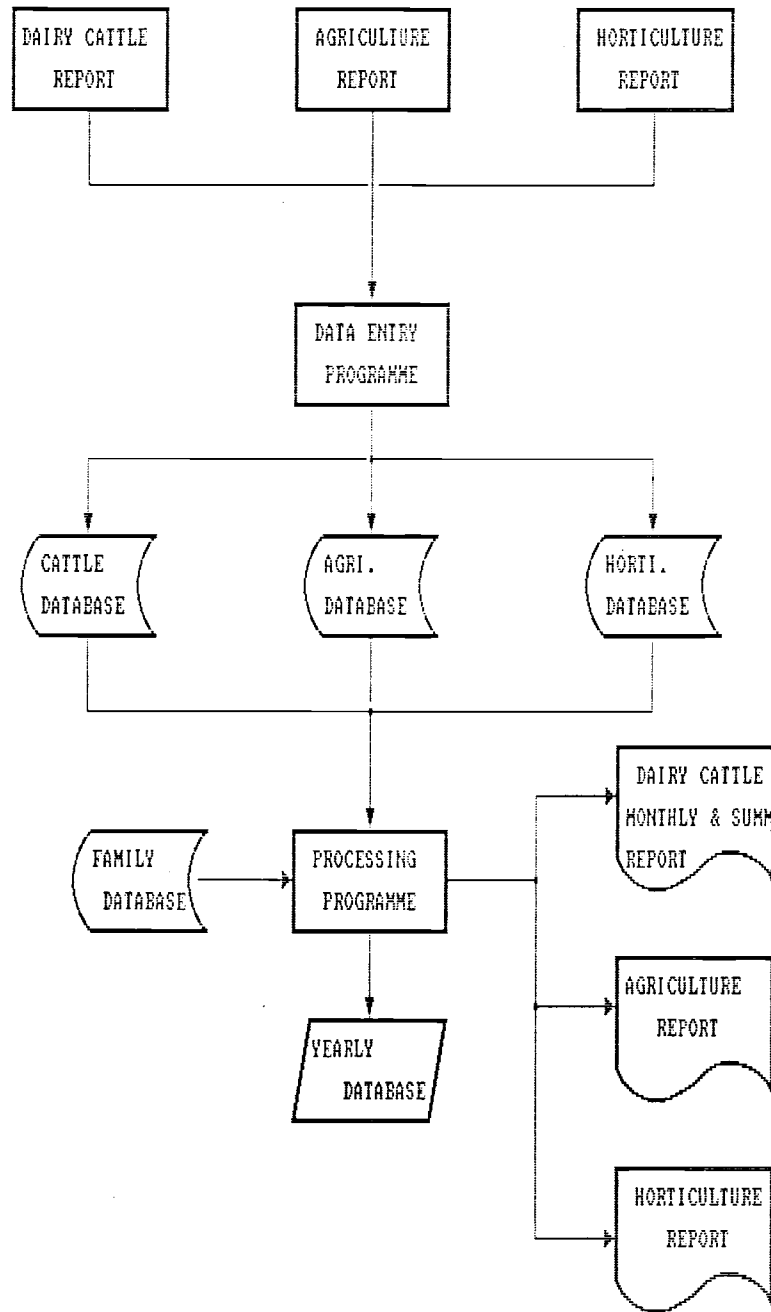
OUTPUTS :

- Master Information List
- Check Lists
- Monthly Reports**
 - Artificial Insemination List
 - Pregnancy Diagnosis Report
 - Calf Born List
 - Dehorning and Castration List
 - Oyster Synchronization List
 - Vaccination List
- Summary Reports**
 - Cattle Development Summary
 - Agriculture Development Summary
 - Horticulture Development Summary

SOFTWARE USED : CLIPPER

SALUMBRE AREA DEVELOPEMENT REPORTING SYSTEM

SYSTEM FLOW CHART



VISICARD SYSTEM (BAIF MAILING DATABASE)

OBJECTIVES

To maintain a consolidated database containing personal as well as official information about the contact persons.

To enable quick retrieval of information about the contact person as desired from this system.

SYSTEM DESCRIPTION

This is a versatile software that automates all mailing list needs. It allows the user to record information of your suppliers, sponsors, Contacts, Customers, Visitors, Prospects etc. These addresses can be stored either a single database or multiple databases of your addresses. These databases together form the organisational memory. These addresses can be viewed on screen, printed on labels or used in Wordprocessors for mailmerge. The system can retrieve all addresses required for mailing payments or remainders etc. Remarks or observations can also be recorded. The data once entered in Visicard can also be exported to any other software by ASCII or SDF files. It has a powerful querying utility. The system is developed to work in stand-alone as well as Multiuser environment.

INPUTS

The 'Data Entry' module allows the entry of contact person's name, organisation name, designation, official address, place, state, country, phone no, telex number, email number as well as personal address. Broad or specific area of interest of the contact person is also recorded. Additional information about the person can also be entered if necessary. The system provides powerful on-screen Query facility. The result of the search can also be sent to the printer or a disk file.

OUTPUTS

On-screen Query based on specified criterion eg.

- Personal name
- Organisation name
- Area of interest
- Place / country

Mailing Labels

Report of all the addresses stored in the system.

Export Data for Mail-merge purpose in other software.

SOFTWARE USED : CLIPPER

PAYROLL PROCESSING SYSTEM

OBJECTIVES

To generate salary of all BAIF employees every month.

To generate various reports related to pay such as paysheets, bank statements and the monthly payslips etc.

SYSTEM DESCRIPTION

This is a menu-driven and user friendly system. Divisionwise data is maintained for all the employees which contains all the financial information apart from his master information such as grade, place of posting etc. The system has following options :

INPUTS

Employee Master Information
Employee Transaction (monthly)
Cost Centre Details
Project Master
Bank / Branch Master
State Master

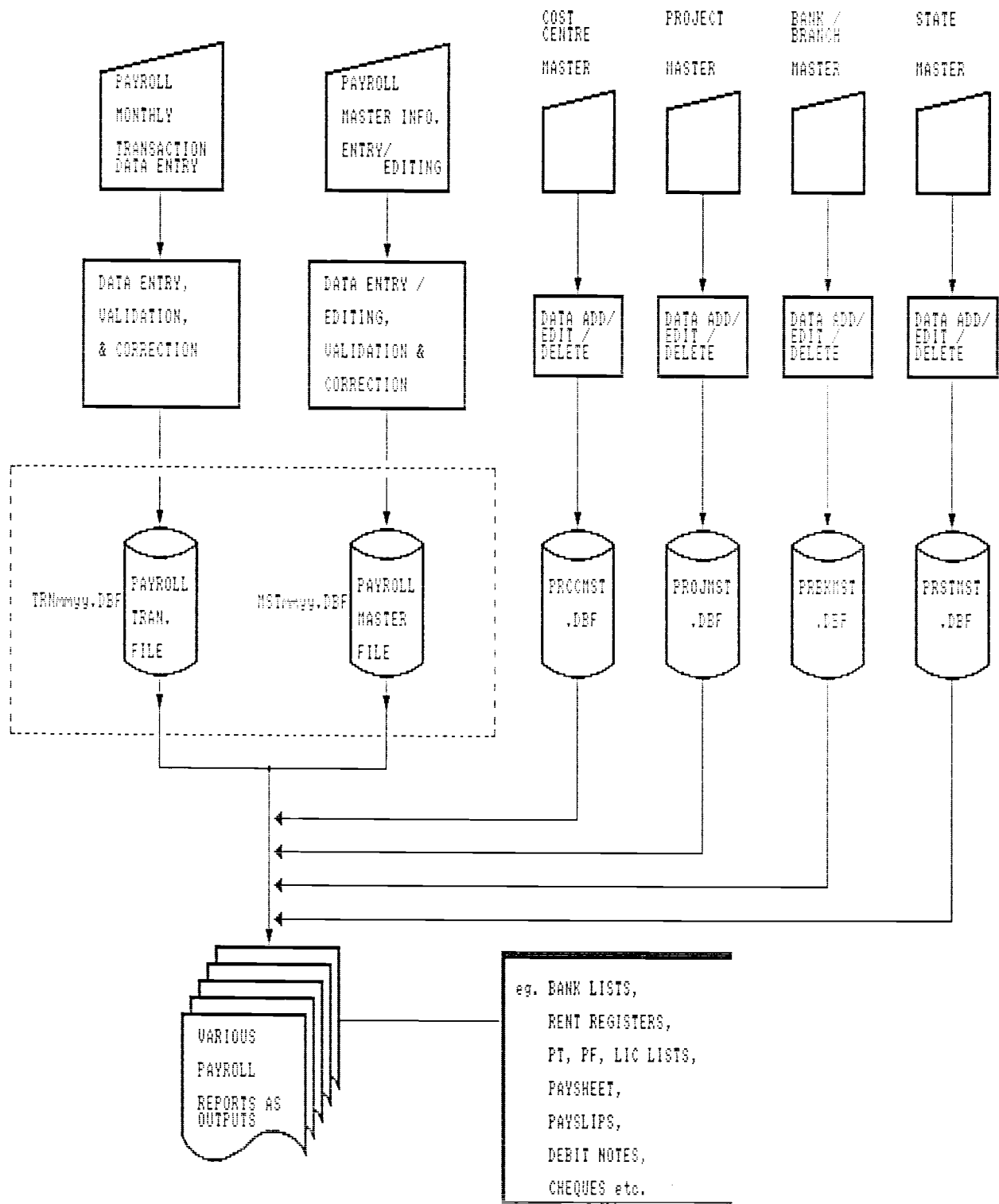
OUTPUTS

Bank list
Rent register/rent details
Provident Fund list
Profession Tax list
Life Insurance premium list
Paysheet printing
Payslips printing
Projectwise debit note
Bank list with cheque numbers
Printing of cheques

SOFTWARE USED : CLIPPER

PAYROLL PROCESSING SYSTEM

SYSTEM FLOWCHART



PROVIDENT FUND PROCESSING SYSTEM

OBJECTIVES

To ease the manual procedure of maintaining the Provident Fund records of the employees.

To provide loan and interest calculations effectively.

To reduce the workload and allow generation of timely reports.

SYSTEM DESCRIPTION

The system has been developed to maintain the Provident Fund Record of the employees in the organisation. Information regarding Employee Salary, PF and Family Pension Fund contribution are obtained from the Payroll System and other details like loans taken by the employee, supplementary earning details, are recorded in the system. Interest Calculations based on the data collected are printed out and proforma's required by the Government are printed for further action.

INPUTS

Employee Master Details

- Employee Code, Employee Name, Salary

PF, FPF Details

- Monthly PF, FPF calculated from salary.

Employee transfer Details

Supplementary Earning Information

Loan Details

OUTPUTS

Monthly statement of PF & FPF recordings.

Government Proformas

- Proforma 6

- Proforma 7

- Proforma 8 etc.

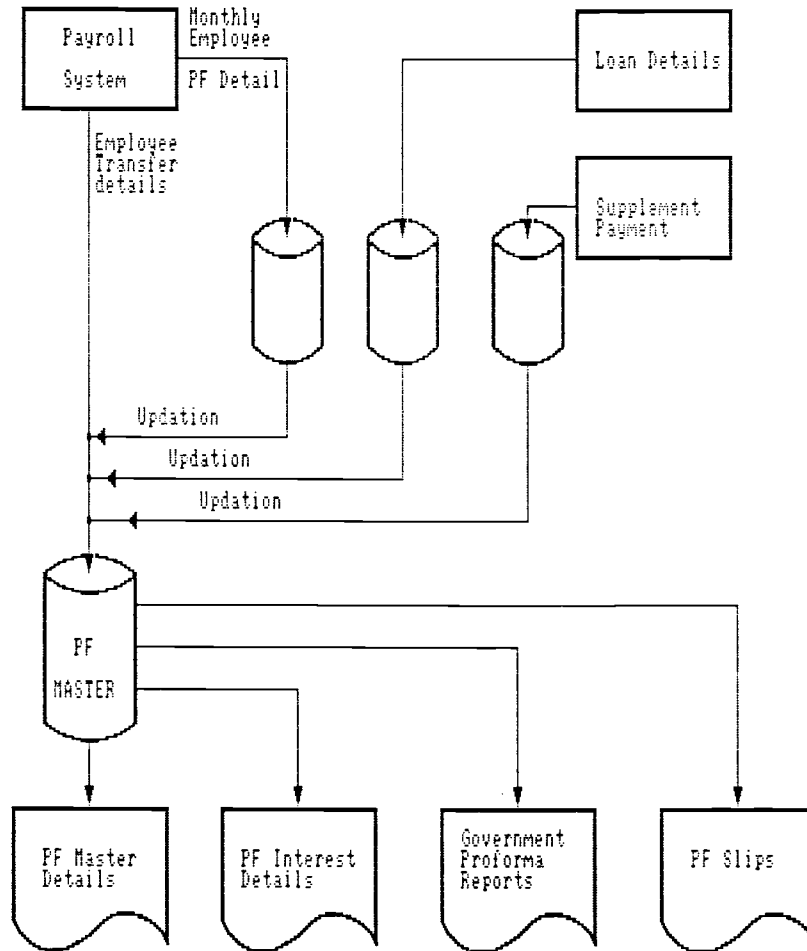
Interest Statement

Provident Fund Ledger

SOFTWARE USED : CLIPPER

PROVIDENT FUND PROCESSING SYSTEM

SYSTEM FLOWCHART



PERSONNEL INFORMATION SYSTEM

OBJECTIVES

To have a user-friendly system which will maintain all personnel records. This system will have databases of personnel in BAIF and its allied societies. The details of each employee from recruitment to retirement will be maintained by this system.

SYSTEM DESCRIPTION

The interview module allows data entry and maintenance of data required to generate call letters for interview and related reports required by personnel for the interview.

The recruitment module has options for creating records of interviews for various posts. The interview call letters, appointment order and joining reports are generated from this module. The data of the new recruits are then transferred to the respective personnel database. Other fields to be updated include code, statecode, place of posting, designation, date of joining, present grade, HRA, DA, date of birth, department, remark (trainee, confirmed, probation), project associated with, date of review. Options to update data in various modules is also given.

The increments module provides options for data entry of salary, HRA, ADA, grade applicable on increment. This module has option to provide reports on present and new status, and financial impact of the increments statewide and gradewise.

INPUTS

Bio-data of applicants
Joining report and service form
Transfers, Resignations and Termination orders
Yearly increments

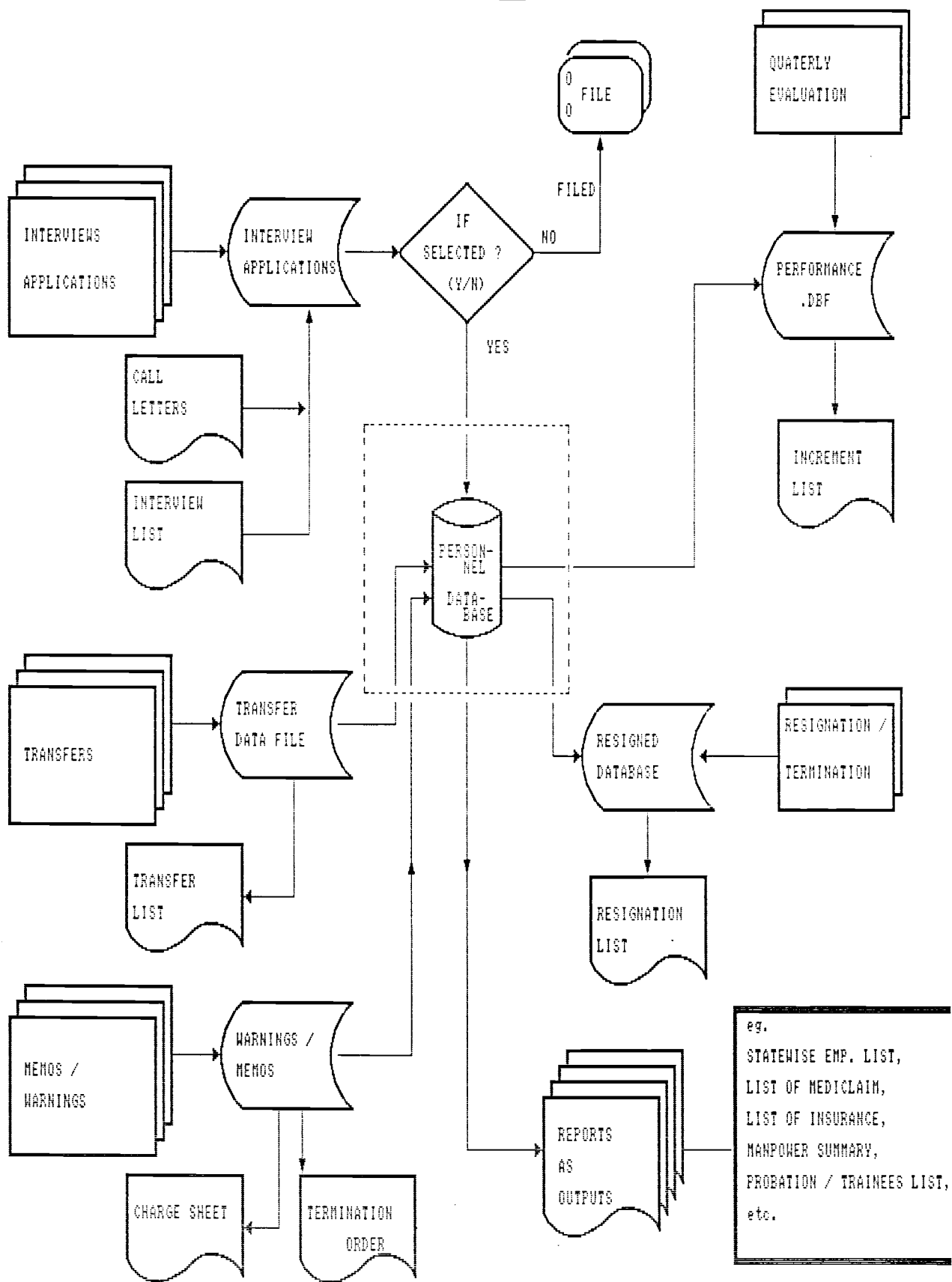
OUTPUTS

Call Letters to applicants
List of applicants for interviews
Society/Division-wise list of employees
List of Trainees, Probationers and Confirmed employees
Statements for Insurance, Provident Fund etc..
Comparative statements for increments
Qualification-wise Statement of employees

SOFTWARE USED : CLIPPER

PERSONNEL INFORMATION SYSTEM

SYSTEM FLOWCHART



PROJECT MONITORING SYSTEM

OBJECTIVE

This system aims to monitor financial, manpower and activity status of ongoing projects. This system also maintains the database of proposed and completed projects for information to the management.

SYSTEM DESCRIPTION

The system enables recording of basic project management information both at the proposal stage and thereafter once the implementation is begun.

The module on ongoing projects has options to allocate manpower to various projects, against the budget for salaries, plan the activity schedule and record monthly expenses in various budgeted account heads. The system is multi-user and has been installed in the LAN at BIRC. The project leaders can either view the reports on the screen or take a print-out. There are a number of reports that give details about the financial status, manpower position, activity details etc.. The yearly statement of expenditure can be printed financial year-wise or project year-wise.

The completed projects module allows one to query on the projects that have been completed. It also allows one to refer to the Wordstar files and the final project reports.

The 'File Manager' module allows the user to transfer projects from proposals database to ongoing projects database and ongoing projects database to completed projects database. It also allows backup of data into floppies & retrieval of the same.

INPUTS

- Details of Proposals
- Details about Sanctioned projects
- Sanctioned Budget in various A/c heads
- Manpower allocation to the project
- Activity schedule of the project

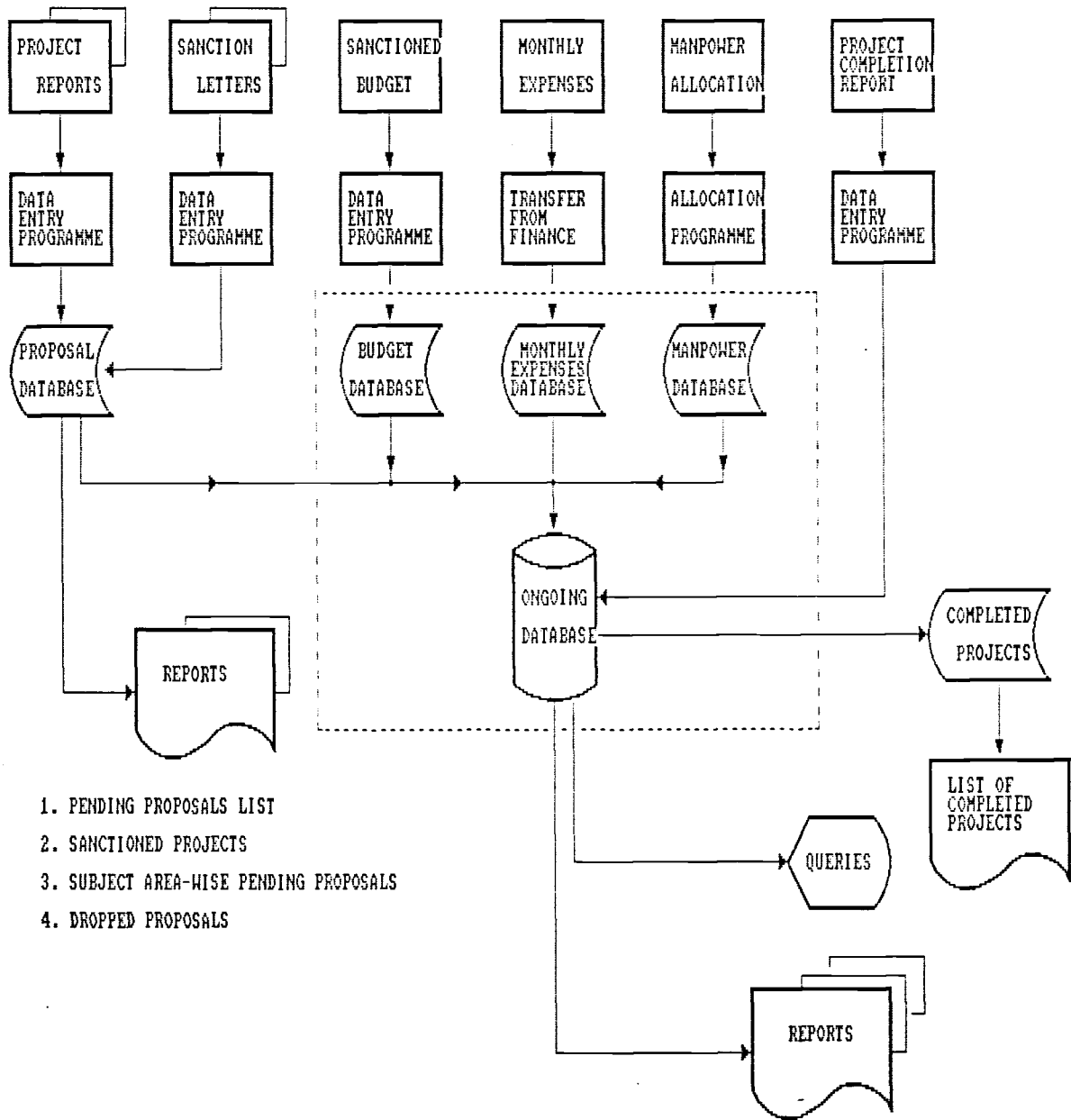
OUTPUTS

- List of sanctioned proposals, pending proposals, Ongoing projects
- Monthly Variance statement of projects
- Yearly expenditure statements
- Project-wise funds received vs. expenditure statement
- Gantt chart of activities
- List of completed projects

SOFTWARE USED : CLIPPER

PROJECT MONITORING SYSTEM

SYSTEM FLOW CHART



1. PENDING PROPOSALS LIST
2. SANCTIONED PROJECTS
3. SUBJECT AREA-WISE PENDING PROPOSALS
4. DROPPED PROPOSALS

1. MONTHLY VARIANCE REPORT
2. ONGOING PROJECT LIST
3. YEARWISE SUMMARY REPORT
4. MANPOWER ALLOCATION REPORT
5. PROJECTWISE FUNDS RECEIVED REPORT

COST ACCOUNTING SYSTEM FOR CENTRAL STORES, CRS**OBJECTIVES**

- To enable the Vendor performance analysis.
- To get the Departmentwise consumption of materials.
- To obtain the Categorywise consumption of materials.
- To Maintain re-order levels of materials.
- To Identify fast and slow moving items etc.

SYSTEM DESCRIPTION

The stores accounting system is a menu-driven and on-line system. The stocks are updated as and when the receipts and issues are made. All details regarding stock of materials, their re-order levels, material consumed by different departments, details of suppliers are maintained through the system. Accordingly necessary reports are generated.

INPUTS

- Item master
- Department master
- Supplier master
- Unit master
- Material Receipt Notes
- Stores Credit Slips (for material deposited in stores and sales returns)
- Material Issue Notes
- Stores Challan (for material returned and material sold)

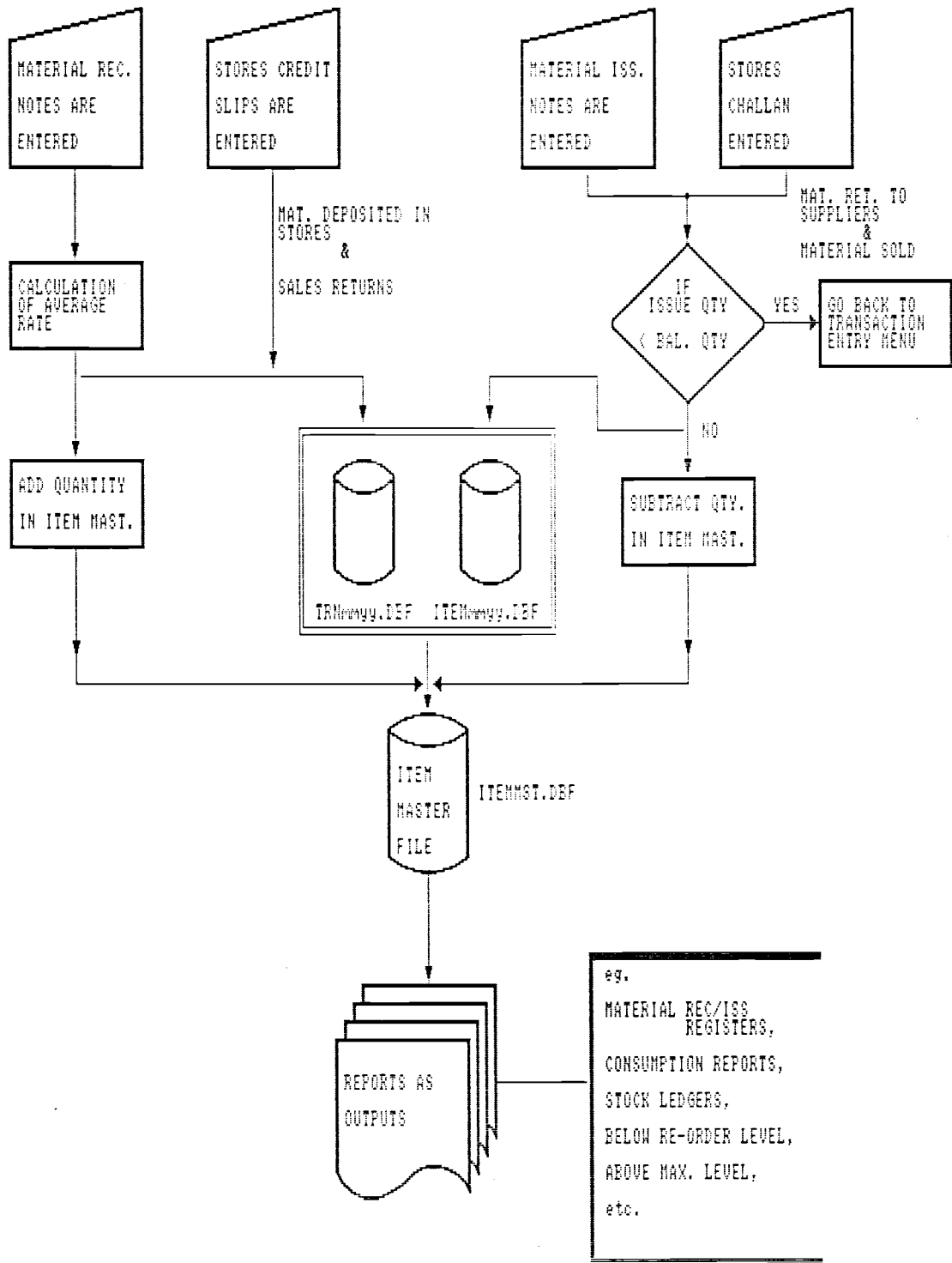
OUTPUTS

- Stock Ledger / Costing Ledger
- Department wise consumption report
- Category wise consumption report
- Items below re-order level
- Items above maximum level
- Fast / Slow moving items etc.

SOFTWARE USED : CLIPPER

COST ACCOUNTING SYSTEM FOR CENTRAL STORES, CRS

SYSTEM FLOWCHART



MATERIAL MANAGEMENT SYSTEM FOR BRIAH, WAGHOLI**OBJECTIVES**

- To maintain optimum level of stocks for avoiding stockouts
- To maintain correct level of inventory of costly materials so as to reduce inventory carrying costs
- To keep close track of all the receipts and issues
- Analysis of Material Consumption, Vendor Performance etc.

SYSTEM DESCRIPTION

The system is a menu-driven and on-line system. The stock levels are updated as and when the receipts and issues are made. All details regarding stock of materials, their re-order levels, material consumed by different departments, details of suppliers are maintained through the system.

INPUTS**Master details**

- Item master
- Department master
- Supplier master
- Unit master

Transactions Details

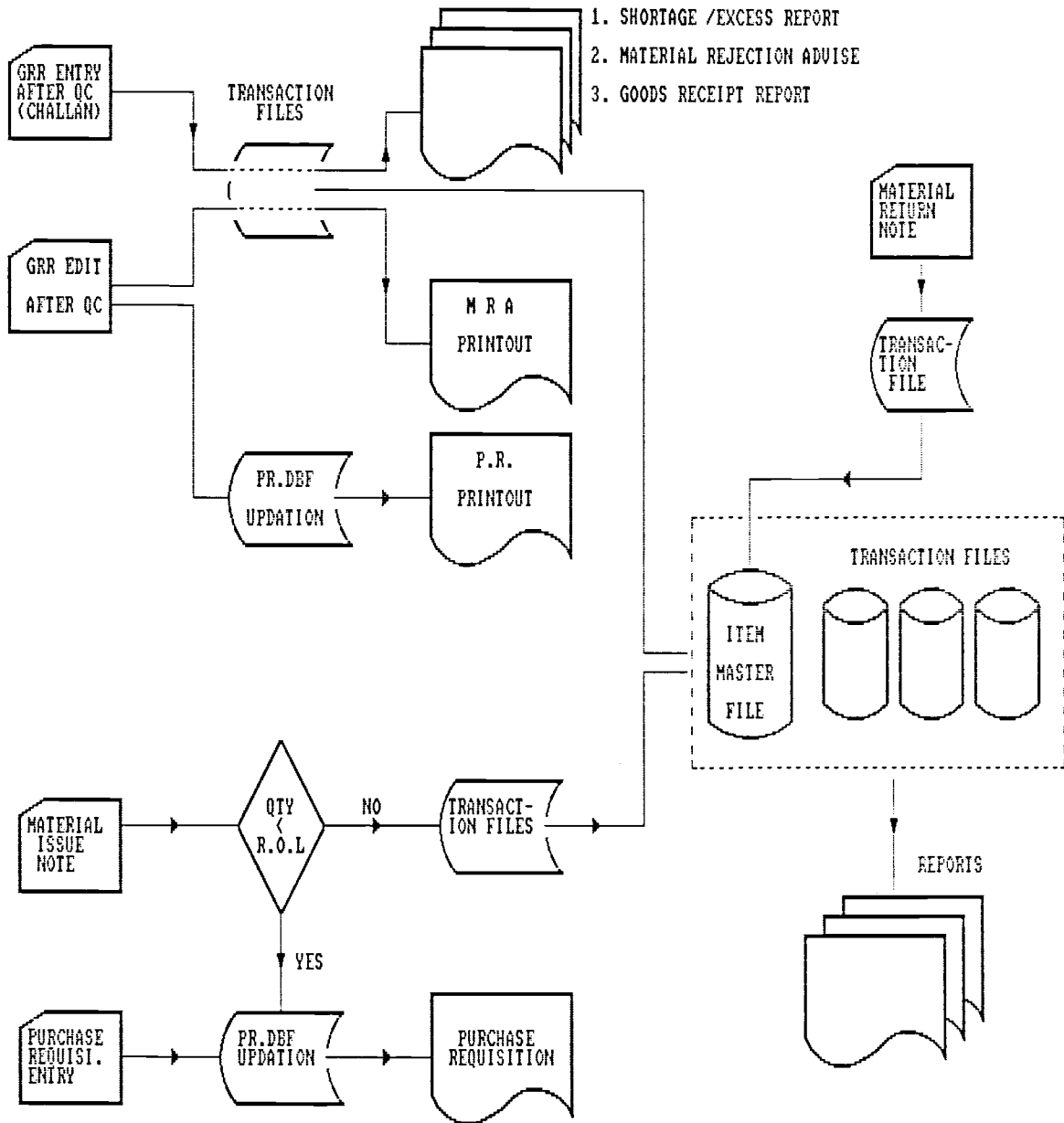
- Material requisition
- Material receipts and issues
- Material rejection and return

OUTPUTS

- Stock Ledger
- Material consumption report
- Items below re-order level
- Items above maximum level
- Fast / Slow moving items
- ABC analysis statement
- Shortage / Excess report
- Statement of Rejected materials

SOFTWARE USED : CLIPPER

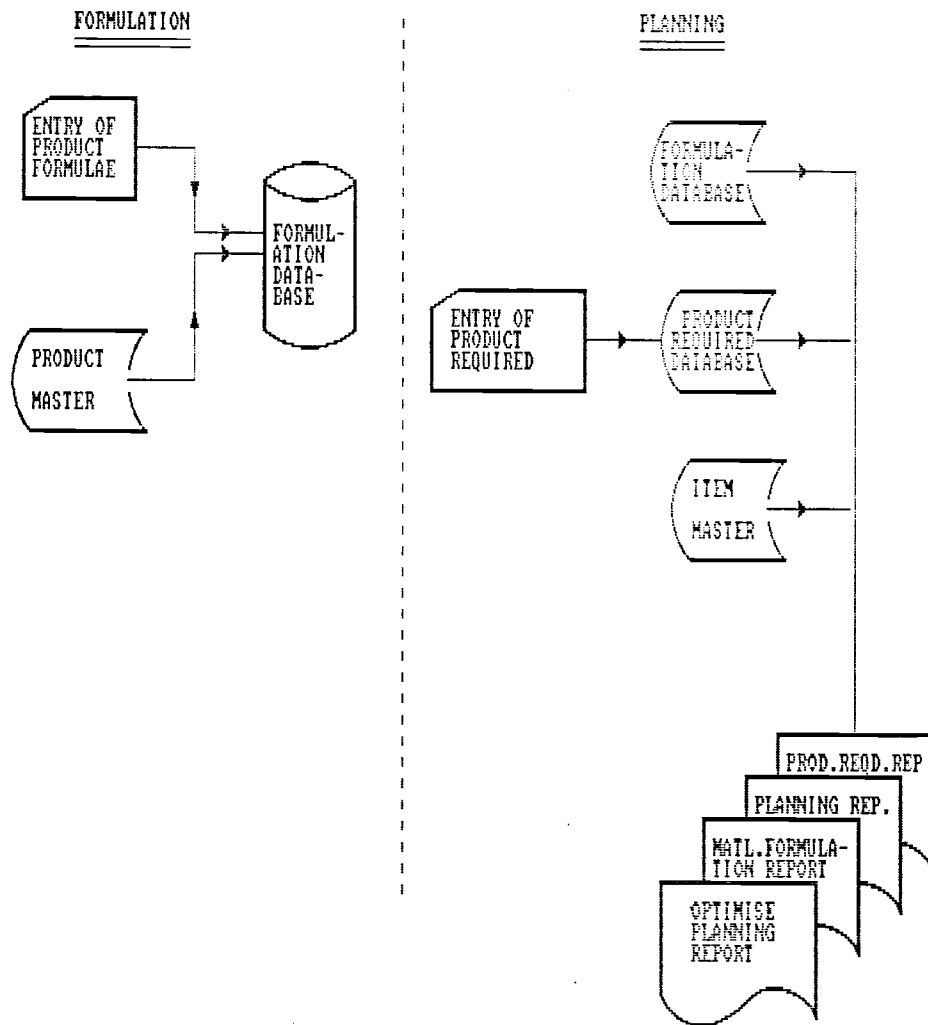
SYSTEM FLOW CHART



REPORTS -

1. MASTER LIST OF STOCK IN HAND
2. FAST/SLOW MOVING ITEMS LIST
3. LIST OF ITEMS - BELOW REORDER LEVEL
4. - BELOW MINIMUM LEVEL
5. - ABOVE MAXIMUM LEVEL
6. RECEIPT REGISTER
7. REJECTION REGISTER
8. ISSUE REGISTER
9. RETURNS REGISTER
10. CONSUMPTION REPORT - COST CENTRE WISE
11. - CATEGORY WISE
12. VENDOR PERFORMANCE REPORT
13. BIN CARD
14. PURCHASE REQUISITION
15. GOODS RECEIPT REPORT
16. MATERIAL REJECTION ADVISE
17. SHORTAGE/EXCESS REPORT

MATERIALS MANAGEMENT SYSTEM FOR BRIAH, WAGHOLI
FLOW CHART FOR FORMULATION AND PLANNING



ATTENDANCE AND LEAVE RECORDING SYSTEM

OBJECTIVES

- To automate the allocation, reporting and MIS information of leave taken by the staff.
- To monitor the leave sanctioning procedure with relevance to the rules and regulations concerning allocation of different categories of leave.
- To enable detailed as well as summary view of leave acquisitions and leaves taken.

SYSTEM DESCRIPTION

This is a menu driven and a user friendly system with powerful querying utility. The system consists of four modules viz. Data entry, Reports, Query and Data maintenance. There are validation checks at different levels of the data entry module. An on-line help is provided through out the system.

The Query module allows the user to retrieve information from the system on almost any combination of control parameters. The queries can be printed out as reports also.

INPUTS

- Employee Information
- Muster entry
- Leave application entry

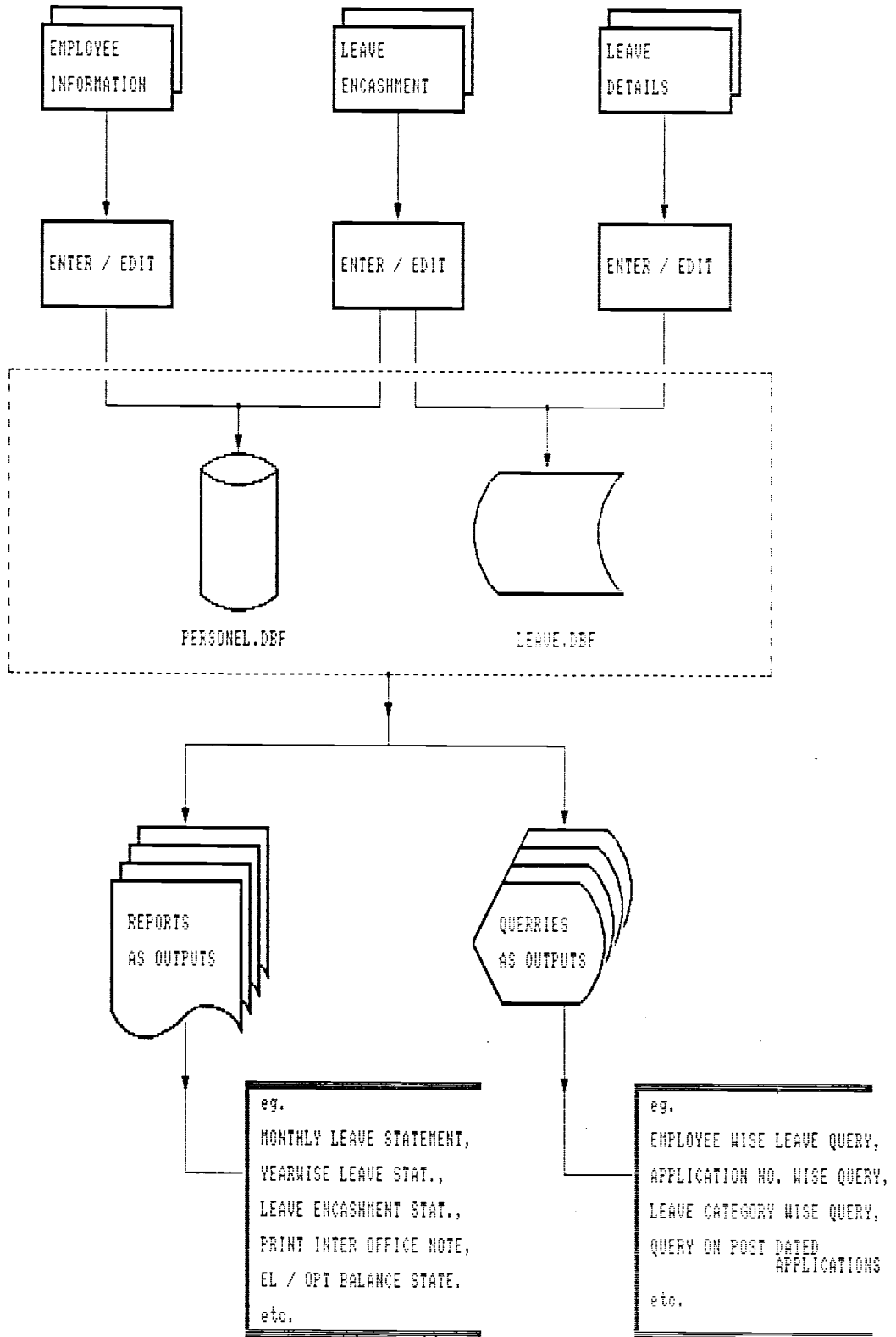
OUTPUTS

- Monthly and Yearly leave statement
- Leave encashment report
- Memo printing
- Inter Office Note printing
- Leave frequency report
- Earned Leave balance report
- On-screen Query**
 - Employee wise
 - Application wise
 - Employee leave balance
 - Post dated applications

SOFTWARE USER : CLIPPER

ATTENDANCE AND LEAVE RECORDING SYSTEM

SYSTEM FLOWCHART



ROOM ALLOCATION AND BILLING SYSTEM FOR PATIENTS

OBJECTIVES

The Nature Cure Ashram has a capacity for accommodating around 200 patients. Since its operations are large, the need for streamlining its operation and computerisation has been felt.

To provide quick information regarding room availability and occupancy.

SYSTEM DESCRIPTION

This on-line system is developed for computerising the correspondence processing. Printing of appropriate letters which are used for conveying to patient his reference no. and availability and non availability depending on his date of admission.

The room allocation system consists of allocating the patient or guest, the room of his choice, when he comes for getting admitted in the Ashram. The system also takes care of preparing a computerised bill of the patient. The system is also capable of providing various reports to the administrative dept. and management.

INPUTS

Patient Details like name, address, age, sex, health problem etc.

Room Details like room number, type of room etc.

Room Rates Master

Billing Charges like consultancy charges, room rent, food charges etc.

Guest Details

OUTPUTS

Waiting list Report

Daily Inward & Outward Register

Occupancy Report

Room Availability Report

Transfer Register

Billing Report

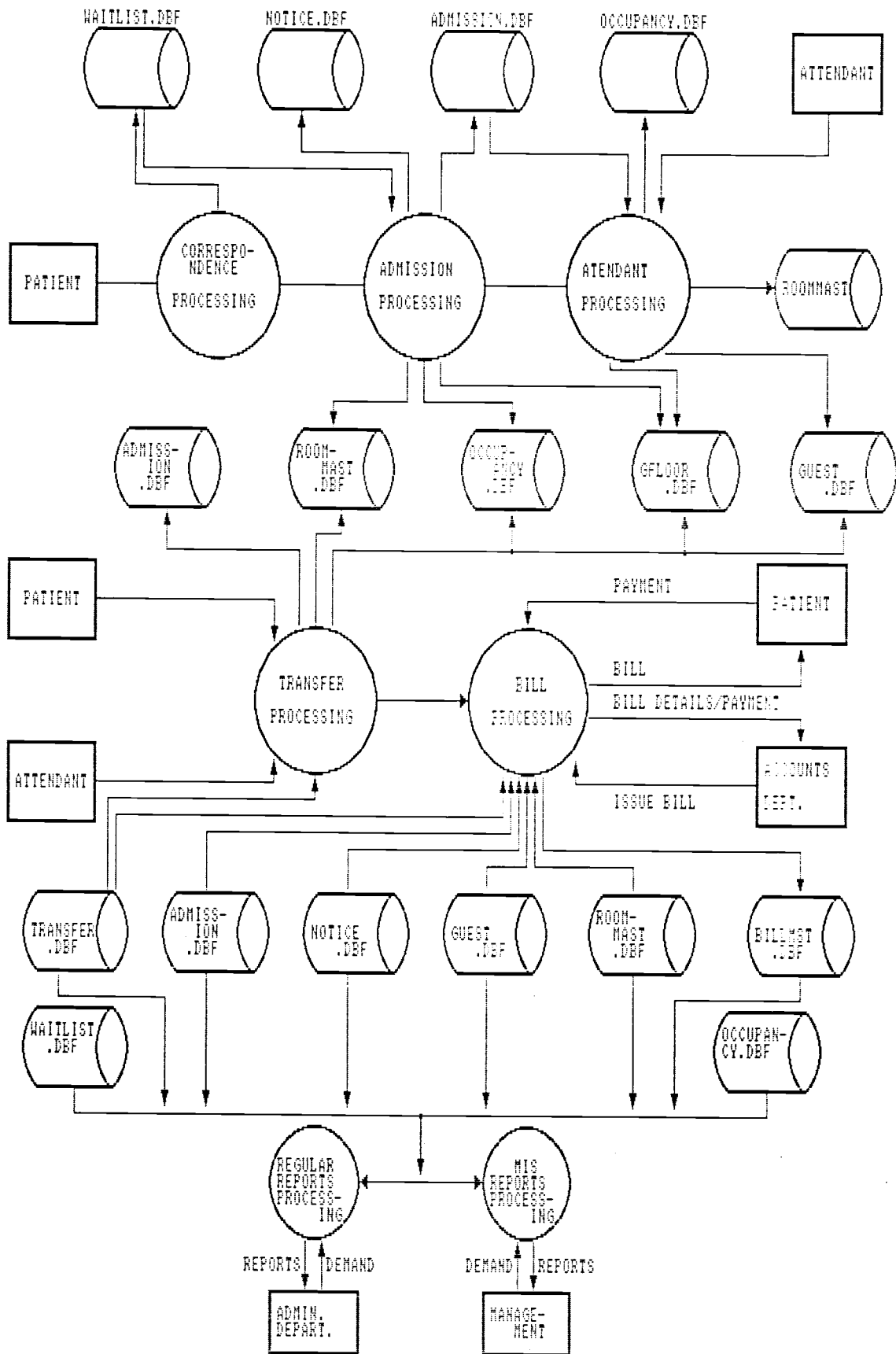
Personal Information of Patient

City wise / Age wise classification of Patients

SOFTWARE USED : CLIPPER

ROOM ALLOCATION AND BILLING SYSTEM FOR NATURE CURE ASHRAM

SYSTEM FLOWCHART



USE OF COMPUTER AIDED GIS FOR PLANNING WATERSHED MANAGEMENT PROGRAMME IN AKOLE TALUKA IN MAHARASHTRA

OBJECTIVES

To analyse spatial and relational data for planning the watershed management programme.

To generate plans for soil and water conservation.

PROJECT AREA

Akole Taluka, Ahmednagar District of Maharashtra in India

Villages in the Watershed Area : Manhere, Ambevangan, Titvi & Kodani

SYSTEM DESCRIPTION

There are two types of data required for GIS. One is the tabular information pertaining to Meteorological, Demographic, Soil Survey and Socio Economic Survey Data. The second information is in the spatial form. The spatial data required for Water & Land Resource Development is Topography, Land Information, Village Boundaries with present infrastructure like communications, river tributaries etc. and the cadastral information of the villages in the identified area of watershed planning.

Climate Data was collected from the Meteorological Department and the local rainguage stations from the area. Soil information was obtained from the Soil Survey Department. The local patwari gave the information of beneficiaries in the watershed programme. Cadastral Maps of the villages in the watershed were obtained from the Survey Department (India), Topography from Revenue Department (India) and BAIF with the help of Space Application Centre (SAC Ahmedabad) interpreted the remote sensing imageries of the area and SAC provided the interpreted information in Map form in the scale 1:25,000.

These Maps were digitised and transformed to a common scale of reference. The lineament features obtained from satellite imageries were correlated to the cadastral information and this helped in narrowing down the area for geophysical surveys. The soil samples collected from potential aquifer in the area using the GPS was linked to the physiographic information (Drainage and Lineaments). This helped in studying the location of existing wells, springs etc and the deviation from the drainage system.

Slope Analysis of the area was done using the TIN module in GIS, from the digitised topography of the area.

INPUTS

Tabular Information

| | |
|------------------------|--|
| Meteorological Data: | Rainfall, Temperature, Humidity, Wind Speed, Sunshine etc. |
| Socio Economic Survey: | Demographic Information, Labour, Income etc. |
| Land Information: | Soil Depth, Texture, Slope, Erosion Status Present Land Use, Well Inventory |

Spatial Information

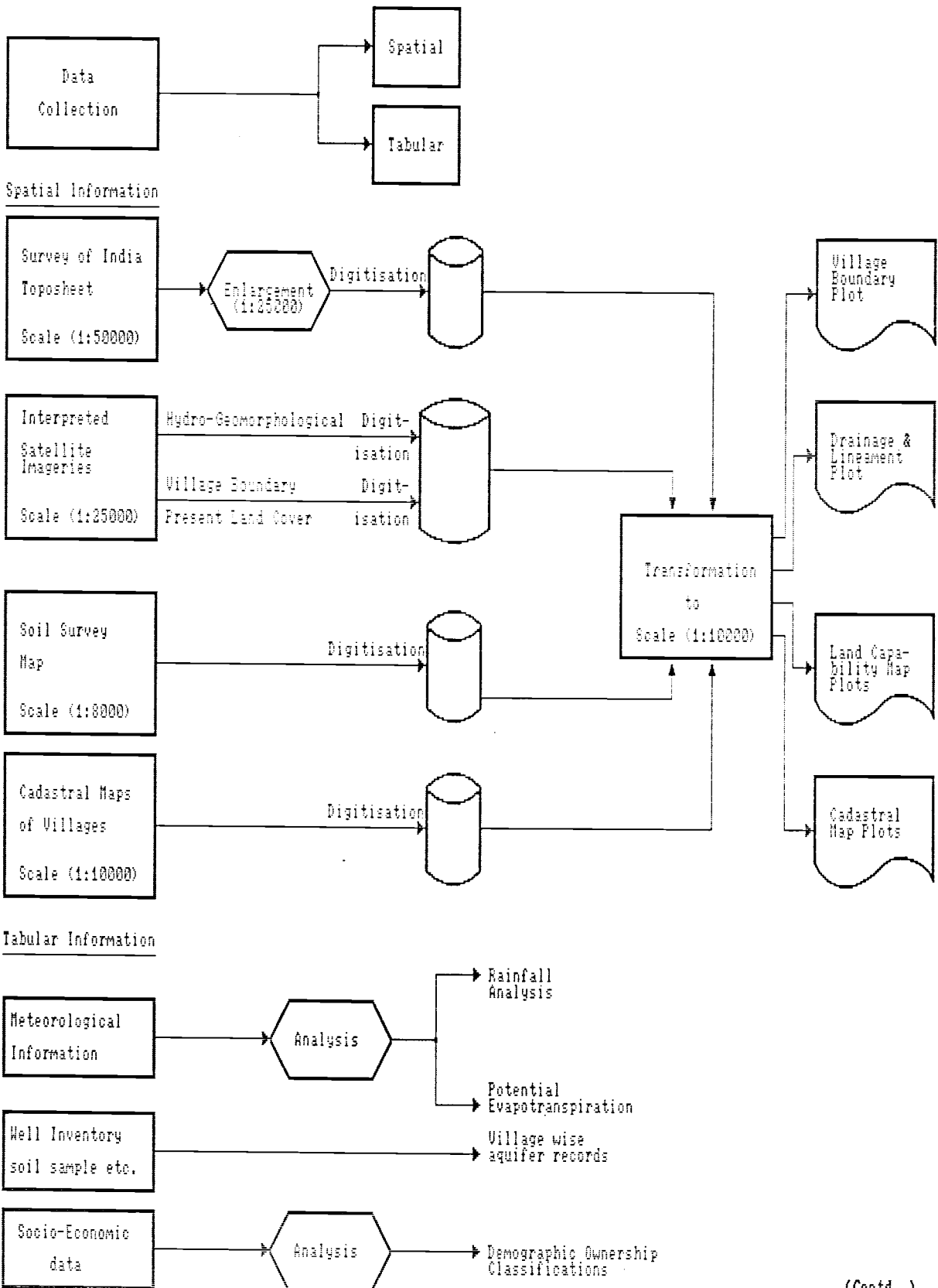
| | |
|--------------------------|------------------|
| 1. Topography Map | (Scale 1:50,000) |
| 2. Village Boundaries | (Scale 1:25,000) |
| 3. Lineament Features | (Scale 1:25,000) |
| 4. Cadastral Information | (Scale 1:10,000) |

OUTPUTS

1. Plotout of Maps with common scale of reference Scale (1:25000), (1:10000)
2. Slope Analysis Map obtained from topography information.
3. Overlay of Drainage & Lineament Features on the Cadastral Map.
4. Land Capability map of the area.
5. The land holding information was put as an attribute to generate the Present Land Use Map in terms of Forest, Shrubs, Cultivable / Cultivated etc.
6. Map showing the stations from which the soil samples collected from sites of springs, dug well etc. overlaid with drainage, lineament and cadastral map.

SOFTWARE USED : PC/ARC INFO 3.4d, QUATTRO-PRO, Foxbase +

USE OF COMPUTER AIDED GIS FOR PLANNING WATERSHED
MANAGEMENT PROGRAMME IN AKOLE IN MAHARASHTRA

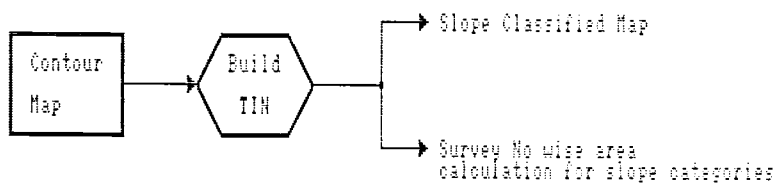


(Contd..)

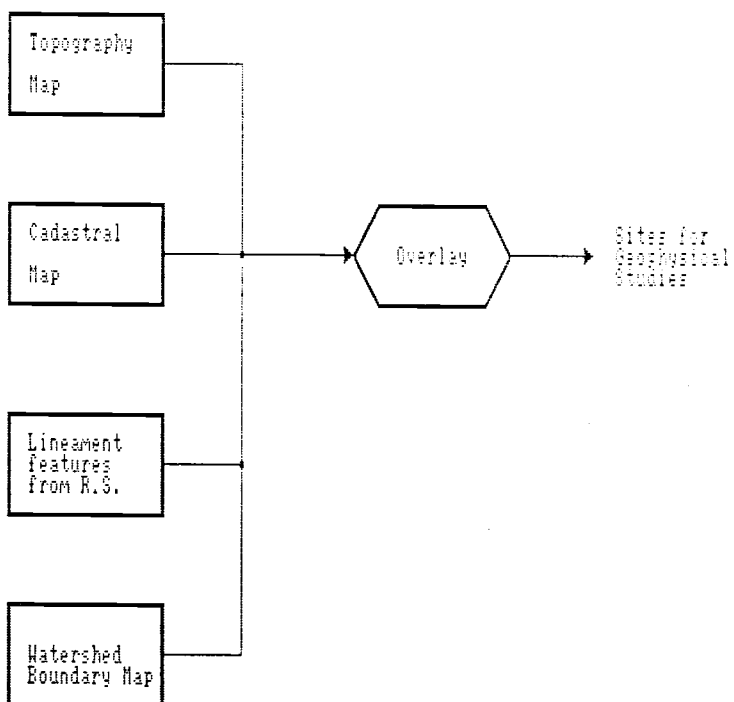
USE OF COMPUTER AIDED GIS FOR WATERSHED MANAGEMENT
IN AKOLE TALUKA IN MAHARASHTRA

Spatial Analysis

a) Topography



b) Geomorphological



BASELINE SURVEYS

OBJECTIVE

To study the socio-economic status of rural families, agricultural practices and different income generating activities in a particular area.

The baseline surveys were conducted at

Vansda, Gujarat

Urulikanchan, Maharashtra

Akole, Maharashtra

Baroda, Gujarat

H.D.Kote, Karnatak

Nagothane, Maharashtra

METHODOLOGY

Questionnaires were developed for family level survey as well as for village profile data. Questionnaires used at all places were very much similar except that in vansda, few special questions relating to agricultural practices and dietary habits were included.

INPUTS

Demographic and infrastructural data about the villages was collected. Family level information included caste, age, sex, education and occupational status, land holdings, livestock, assets, irrigation facility, income from different sources and knowledge about cattle management and maintenance.

For Vansda and Nagothane, data related to cropping patterns, Dietary habits, domestic and farm assets was also collected.

OUTPUTS

Village-wise reports were generated giving details about caste structure, education and occupational status, livestock, land holding capacities and categories. Inter-relationship between the important factors was tested eg. caste with education, literacy status of women, family size and sources of income etc.

CROSS TABLES

Village x Yr. of joining

Wadi Village x livestock

Village x Caste category

Caste x Land holding category

Village x Wadi type

Age x Education

Village x roof type

Age x Occupation

Village x Land holding category

Caste x Education

Irrigated land x Source of irrigation

Caste x Occupation

SOFTWARE USED : SPSS/PC + , Foxbase +

STANDARDISATION OF METHODS FOR ESTIMATION OF LACTATION YIELD

OBJECTIVES

- To study different methods available for estimation of lactation yield.
- To apply these methods for lactation yield estimation.
- To compare these methods for data collected from farms and field level.

INPUTS

Data collected for analysis was in following format.

Animal number, sire code, dam code, daily milk recordings, lactation no, lactation yield, date of milk recording, date of drying, birth wt. of calf and other. From date of calving, four recordings are done on 4th day, 12th day, 20th day and 28th day.

For each method, milk data was recorded in different form.

OUTPUTS

Calculation of lactation yields using different methods.

Breed-wise, Location-wise break-up of animals for yield comparison.

Number of animals lying in 5 percentage confidence interval of lactation yield for different methods for different breeds.

Comparison of estimated yields with actual for each breed.

SOFTWARE USED : dBASE III + , SPSS/PC +

STUDY OF GLYCEROL EFFECT

OBJECTIVE

To compare the effect of glycerolisation on semen of crossbred bulls considering various parameters.

INPUTS

For every bull 10 observations were collected.

The parameters were GOT, Motility, Acrosomal Maintenance, Live and Dead Sperm Count and Abnormality.

Data was collected for two equilibration periods (3 hr. and 6 hr.) after freezing.

OUTPUTS :

Summary statistics was calculated for every parameter.

Means of all the parameters were tested using t-test for two equilibration periods.

SOFTWARE USED : dBASE III + , SPSS/PC +

STUDY OF 'WAVLI' PRACTICES

OBJECTIVES

To study the individual and family profiles and economic status of the participants.

To study the new techniques and skills adopted by the 'Wavli' participants by making use of the training imparted by BAIF.

SYSTEM DESCRIPTION

The data included information about :

1. Current socio-economic status of 'Wavli' participants.
2. Migration in 'Wavli' participant's family.
3. Types of trainings received in BAIF and the effectiveness thereof.
4. Income generated and extent of participation in 'Wavli' activity.

Women participants from five villages from Vansda taluka were selected for this study. The data collected from the individual interviews was coded and subjected to some elementary analysis. This was used largely to generate some frequency distribution and descriptive statistics about the participants and their families.

A few cross-tabulations were also generated to see whether any patterns emerge, showing relationships between types of respondents and perceptions of and attitude towards Wavli activities.

SOFTWARE USED : dBASE III +, SPSS/PC +

STUDY OF SOCIO-ECONOMIC STATUS OF WOMEN

OBJECTIVES

To analyse the causes for the status of women in relation to economic dependency.

To study the role of women in decision making in the family.

INPUTS

A survey was conducted in two villages - Dalimb and Bharatgaon around Urulikanchan. 95 women from the age group 15 to 45 yrs. were selected to collect following information:

- Personal information of the respondent
- Family information of the respondent
- Number of children, education and occupation of the respondent
- Decision making in family matters like marriages
- Role in financial management of the family
- Social participation

OUTPUTS

Frequency tables were generated for important variables.

Since caste plays an important role in women's status, caste-wise tables were generated for parameters like education, occupation and decision making. Similar tables were generated village-wise also.

Association and relationship between following parameters was tested.

- decision making at domestic level and education
- education and economic dependancy
- artisanship, present occupation and decision making
- caste, social participation, decision making

SOFTWARE USED : dBASE III + , SPSS/PC +

ANALYSIS OF DATA FROM DIAGNOSTIC CAMPS

OBJECTIVE

As a part of health programme activities a number of health camps were conducted at various places to study morbidity pattern and to focus on special problems like scabies in children, goitre etc.

To study specific morbidity problems in children, women from villages in Vandsa taluka.

INPUTS

The data was collected in two villages Titvi and Vangan and 300 and 190 cases were examined respectively. Data was collected about sex, age, Hbpercentage, Hb Electrophoresis, VDRL and urine and stools.

OUTPUTS

Reports were generated to compare age and sex-wise differences in cases. Frequency distributions for important variables showing clinical findings were also generated.

SOFTWARE USED : dBASE III+ , SPSS/PC+

STUDIES ON NUTRITIONAL STATUS OF UNDERFIVES AND SCHOOL CHILDREN

The surveys were conducted in the villages around Akole, Vansda and Urulikanchan to study prevalence of malnutrition in the underfives and school going children.

OBJECTIVES

- To find out prevalence of various grades of malnutrition in underfives.
- To find out prevalence of other nutritional deficiencies associated with P.E.M.
- To study dietary habits of mothers during ante-natal and post-natal periods.
- To find out morbidity pattern in school children and to estimate impact of health education.

INPUTS

Data collected which include anthropometric measurements, weaning stage, reasons for weaning, age at topfeeding and one day dietary recall etc. Along with this, history of recent morbidity was also collected. Since mother and her health as well as diet plays important role in child health, data about food intake and food avoided during antenatal and postnatal period was also collected. In case of school children data about ENT problems, skin diseases, oral examinations was also collected.

OUTPUTS

1. Age and sex-wise summery reports for anthropometric measurements were generated. PEM grades were decided by comparing the observed data with NCHS standards.
2. Age-group-wise and sex-wise micro-nutrient intake.
3. Reasons for weaning with gender preference.
4. Area-wise, Castewise differences in topfeeding, weaning and dietary habits.
5. Frequencies of important variables like ENT findings , skin diseases, oral examination findings and systemic examinations findings were generated.

SOFTWARE USED : dBASE III +, SPSS/PC +

STUDY OF AGRO-FORESTRY PRACTICES

OBJECTIVE

To study agro-forestry practices and to find suitable crop and tree combinations which gives optimal crop as well as tree benefits.

INPUTS

Uruli, Junnar, Baramati areas were selected from Maharashtra

Four tree species were selected namely :

- Neem
- Bakan
- Subabul
- Shevari

Data was collected on tree, crop, direction of tree planting, tree height, diameter and crop yields in 4 plots of 1mX1m from trees planted. Data on irrigation, soil was also collected.

OUTPUTS

Summary statistics was calculated for all parameters for tree and crop combinations.

Yields were compared using various parameters and combinations of parameters. T-test was used for comparison. Factors affecting the yield were analysed using Analysis of Variance.

SOFTWARE USED : dBASE III + , SPSS/PC +

STUDY OF BENEFITS FROM SOCIAL FORESTRY SCHEMES

OBJECTIVES

To estimate the extent of people's participation in social forestry schemes and factors affecting it.

To identify future strategies to promote people's participation in social forestry schemes.

INPUTS

A schedule was developed to collect information about place, ongoing schemes of social forestry, implementing agency, family information, employment info, educational and occupational info, land holding, livestock and related information, fuel consumption, and benefits from social forestry schemes.

after validation and codification for different variables, various reports were generated for this data. Some of them were as below.

1. Villagewise participation in different Social Forestry schemes
2. Ongoing Schemes X Implementing agency
3. Medias and motivators for participation X Effect
4. Ongoing scheme X Place
5. Ongoing scheme X Land holding
6. Ongoing scheme X Livestock
7. Ongoing scheme X Educational status
8. Ongoing scheme X occupational status
9. Ongoing scheme X Family size
10. Ongoing scheme X Indirect benefits
11. Ongoing scheme X Direct benefits
12. Ongoing scheme X Choice of different tree species
13. Ongoing scheme X Social status

SOFTWARE USED : dBASE III +, SPSS/PC + (BASE and TABLES Modules)

STUDY OF MULBERRY TRIALS

OBJECTIVE

To study the growth of mulberry tree species in Urulikanchan area and to decide the best variety.

INPUTS

Data collection was done on different observations and pruning dates. Input data included variety, tree spacings, total length of branches, number of leaves, weight of 15-21 leaves and total leaf weight along with other parameters.

OUTPUTS

Variety-wise summary statistics was generated for all input parameters. Comparison of all the parameters was done using t-test between the three varieties. Results show that M-5 is better than LMM-1 and LMM-1 is better than LMM-2.

Software used : dBASE III + , SPSS/PC +

STUDY AND COMPARISON OF DIFFERENT MOUNTAGES

OBJECTIVE

To study and compare different mountages with the traditional mountage (Chandrika) considering various positive and negative characters in silkworm rearing.

INPUTS

Data was collected for different races from five harvests with four replications per harvest.

The parameters selected were :

- Time required for cocoon harvesting
- Number of good cocoons, deformed cocoons
- Number of double, flimsy, urinated, under-sized cocoons
- Weight of floss

The mountage were :

- Chicken Mesh Mountage
- Fiber Strip Mountage
- Gunny Cloth Mountage
- Cellular Mountage
- Bamboo Mountage(Chandrika)

OUTPUTS

Performance of mountages was analysed generating summary statistics for above mentioned parameters and derived parameters.

T-tests were applied for each parameter and mountages were given ranks for positive and negative parameters. The ranks were analysed which showed that Gunny cloth mountage was the best of all. Analysis of Variance also proved Gunny cloth Mountage as best of all.

SOFTWARE USED : dBASE III + , SPSS/PC +

ANALYSIS OF SILKWORM REARING DATA

OBJECTIVE

To study performance of pure races and crosses in Urulikanchan and select promising races for extension programme.

INPUTS

The data was collected in three formats.

Rearing Logsheet : contains data about egg behavior, feeding, weights of mature. ripe worms.

Rearing Abstract : contains temperature, humidity information, total cocoons, number of defected cocoons, cocoons sent for grainage etc.

Grainage Data : contains information related to selection of eggs, characteristics like size, shape and color of cocoons, mating date, number of males and females emerged, emergence percentage, filament length, weight etc.

Environment Data : daily temperature and humidity data was collected.

OUTPUTS

Races were coded as below.

Pure Races - YDC1, YBC2, WBC1, GCS3, GWA1, YWA1, WCS1, WCS2
 Cross Races - GCS3XWCS2, GWA1XWCS2, GWA1XWBC1, YWA1XWCS2
 GCS3XYWA1, WCS2XYWA1

From the data a number of new variables were created which are listed below.

Total larval feed, Expected Rearing Rate, Total cocoons, Season codes (generated using brushing and mounting date), Season codes, hatching percentage, Larval period, larval feed, Silk percentage, Leaves per kg. of cocoon, Floss percentage, Reliability index, Effective rearing rate, Denier.

Using brushing date and mounting date, seasons were generated and then race-wise, season-wise performance of races was analysed.

Effect of season and generations on parameters was tested using ANOVA techniques. A summary report was generated for all the Races. Then all the parameters were ranked according to type of characters and from the sum of the ranks was used for grading of the pure races.

SOFTWARE USED : dBASE III + , SPSS/PC +