

283

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# Working Paper

FRAMEWORK  
FOR  
ORGANISING  
DISTRICT INFORMATION SERVICE CENTRES  
(D I S C)

by

Mohan Kaul

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ABSTRACT

In order to strengthen district level administration for implementing various developmental schemes, it would be necessary to develop proper information systems at the district level. A framework for developing and organising District Information Service Centres has been developed. These information systems are suggested to be developed using a mini or micro computer. The nature of computer based information systems and the organisational set up needed to develop the District Information Service Centres, is also discussed

## 1.0.0 INTRODUCTION

1.1.0 Considerable effort is being made in strengthening District Level Administration for implementing various developmental schemes. The expenditure on these schemes is allocated to various districts and these schemes are being implemented by the District Level Machinery. Number of structural changes at the district level have been made to make the district as an administratively viable unit. Though there is a variation in district level structure from state to state, most of the development schemes are either administered by the District Collector or District Development Officer. The Administrative head of the district, ie., Collector, is helped by a number of district level officers from various departments, in implementing these schemes.

1.2.0 In order to help the district level machinery in the task of planning and monitoring district level schemes, it is necessary to provide them the support in terms of information needs for this purpose. Number of studies (1,2,3) have been made in developing the framework for designing information system

for monitoring or planning developmental activities. However, not much work has been done in reorganising district level information machinery to cater to the demand of the officers involved in the operations of the district level schemes. In this paper some thoughts regarding the organisation of district level information service centres are being discussed.

2.0.0 NEED FOR DISTRICT INFORMATION CENTRES (DISC)

2.1.0 Efforts are being made to strengthen the information systems at the Centre and State levels through the use of computers. National Information Centre in the Department of Electronics is set-up at the National level to help various Ministries to develop information systems at the national level. Planning Commission has recently acquired a large Computer System for developing data base for various sectors of Economy. Similarly, some states like Gujarat, Tamil Nadu have started using computers for processing statistical information. Though these changes might help to improve the quality of information for planning at Centre and State levels, it is unlikely that these systems will help in generation of information for monitoring of development activities especially at the operational levels namely the district and taluka levels.

- 2.2.0 As the district forms the first level of processing and analysis of information for most of the planning decisions, it would be necessary to develop proper machinery which could match the sophistication in information systems at the Centre and State levels. The machinery at the Centre and State would still depend on the generation of information from operational units such as districts. Therefore, the availability and quality of such information will also depend on the quality of information generated and the machinery available to generate such information in time at the districts. Therefore, the streamlining of information generation, processing and analysis at the unit level would be the first task in creating any national or state level data bases. Otherwise, the efforts in developing such systems would not result in proper information because of the delays in the data generation and data flow.
- 3.0 Given the characteristics of the environment in India (Geographical distances, communication facilities, uncertainty in weather conditions, differences in soil conditions, differences in infrastructural facilities, etc.) any centralised system without developing support systems at the district level would

not help in the strengthening of planning and decision making process at the centre, state and district levels. It is, therefore, necessary that the district level machinery in relation to information processing is carefully studied with the objective of improving the decision making process at each level.

### 3.0.0 INFORMATION SYSTEM FOR DEVELOPMENT ACTIVITIES

3.1.0 The district level developmental activities are aimed at improving the quality of life in that district. The information on various planning indicators related to population therefore, becomes very important to be organised in a meaningful manner so that analysis could be made on a continuous basis to understand the benefits achieved as a result of the developmental activities. If benefits have to be monitored on a continuous basis, it will become difficult to organise a large volume of data at the state and centre levels. Therefore, district becomes the only possible unit wherein individual unit level data on planning indicators such as agricultural holdings, occupational pattern, agricultural outputs, etc., can be organised. In order to make it possible, an information processing machinery has to be provided at the district level.

3.2.0 The monitoring of benefits as a result of development activities also becomes difficult as these are not easily quantifiable. Also the ultimate benefit of the population may be as a result of a number of developmental activities being implemented at a particular time. Therefore, to understand the benefits of each developmental activity, it would be necessary to carefully understand its nature so that monitoring of the scheme could be done in a meaningful manner. The nature of governmental schemes also demand a different monitoring system in contrast to a commercial organisation wherein the relationship of inputs and outputs can be easily monitored at regular intervals of time. In developmental activities the government generally does not undertake the work of production, etc., directly. These development schemes are primarily aimed at assisting the population such as farmers in developing better methods for increasing agricultural produce, developing infrastructural facilities for procurement of agricultural inputs, developing infrastructural facility for industrial development and general services such as health, water, etc.

3.3.0 In order to implement these schemes effectively, it is necessary to modify the procedures and systems by organising information as a centralised resource for all the agencies. It will not only



help in faster implementation of the schemes but also facilitate the monitoring of the benefits from these schemes.

3.4.0 The characteristics of these schemes are such that the benefits of these schemes will be known over a longer period of time, i.e., once the developmental schemes are in operation for a number of years, then only the significant changes in relation to certain over all benefits to the population can be quantified. This has an impact on monitoring of developmental activities. Once a developmental activity has been planned with an objective of achieving a certain benefit, it is necessary to monitor the scheme carefully so that the assumed benefit would be achieved.

3.5.0 Developing information systems for monitoring of developmental schemes, therefore, will demand breaking of developmental schemes into identifiable tasks that involve a scheme. It would be necessary to monitor each individual task and identify the agencies involved in carrying out these tasks. As each scheme consists of a set of tasks monitoring on the basis of aggregate annual or quarterly reports may not result in actual monitoring of schemes even if the targets are fixed. For example, in the soil conservation scheme under Action Programme for water management 'Contour bunding' (4) consists of the following tasks:

- 1 To select proper site for the block and to prepare list of cultivators in the block (A block is a geographically contiguous area for bunding)
- 2 To obtain consent of 51% of cultivators
- 3 To prepare survey estimate and submit to Sub-Divisional/ Divisional officer for sanction
- 4 To prepare rough contour-map for approval to Sub-Divisional/ Divisional Officer
- 5 Submit plans and estimates for administrative and technical sanction to Sub-Divisional Officer/Divisional Officer
- 6 Completion of bunding work
- 7 Prepare recovery statements

It can be seen that the task No.3 can be taken-up only if the tasks 1 and 2 have been completed in time. Therefore, the time period for each of these tasks has to be indicated in the first place and subsequently monitored with respect to its schedule.

3.6.0 Such monitoring will be possible only if the information is collected on each activity from the implementing sources. Analysis of such an information would be useful only if it is processed nearer to the implementing agencies so that suitable action can be taken after reviewing the performance of the schemes at regular intervals. Given the nature of developmental activities, the volume of data to be processed and the importance

of analysis in the planning and monitoring of development schemes, it is necessary to create a Data Bank and organise the information as central resource at the district level.

3.7.0 Table-I gives the total budget for development activities in the 4th plan and its allocation on some of the major activities in various sectors in some of the districts of Gujarat. This expenditure is likely to have considerably increased over the past few years.

TABLE - I

Name of District	Outlay on developmental schemes (4th plan) (Rupees in lakhs)				
	Total	Agriculture	Health	Education	Transport
Valsad	2158.66	834.65	315.16	183.19	390.99
Kheda	2475.87	829.28	305.45	227.92	570.04
Mehsana	2338.20	911.87	206.98	148.75	572.32
Surat	2337.76	710.70	320.23	181.87	408.57
Panchmals	2492.88	1084.80	239.34	287.17	403.69

Source (Reference No.5)

Given the value of expenditure it is evident that the monitoring of development activities becomes important with respect to the investments made in these activities. Comparing the expenditure

on district level development schemes, the number of activities, the volume of data to be processed and the number of persons involved in operations with a commercial organisation, one would observe that commercial organisations with less expenditure, number of activities, volume of data and number of persons are using formal information systems based on computers for managing the operations.

#### 4.0.0 COMPUTER BASED INFORMATION SYSTEMS

4.1.0 Recent developments in computer technology have made it possible to acquire mini and micro computers at lower costs. These computers have considerable processing capabilities and provide storage devices such as discs, diskettes, magnetic tapes and terminals for data entry. Many of these computers are available indigenously from public and private manufacturers. Their cost ranges from about 3 lakhs to 15 lakhs depending upon the capability of processing and storage of data. It would now be possible to use these computer systems for processing and analysis of information at the district level. Given the volume of data and the nature of processing and analysis needed for planning and monitoring of development activities, it would be difficult to develop meaningful systems without the use of computers.

4.2.0 The major Computer based systems to be developed at district level would consist of the following:

- (1) Information system for Monitoring of Development activities - organised sectorwise, schemewise, village/taluka wise.
- (2) Land record (Land holdings) System
- (3) Agriculture Information System (Area under cultivation, yield, crop mix, inputs)
- (4) Information system for small and rural industries
- (5) Information system for infrastructural facilities (Health, Education, Power, Water)
- (6) Information system for livestock
- (7) Revenue collection system

The above systems cover the major activities at the district level. However, detailed study would have to be conducted before deciding the actual systems to be computerised.

4.3.0 Monitoring system for developmental activities would contain information on detailed activity wise information on each scheme. The information on land holdings is an important factor in designing development schemes. This information is used by different agencies for various purposes such as sanctioning loan, providing agricultural inputs, providing infrastructural facilities, etc. At the same time the same information

may be used for settlement of disputes. The revenue collection information would be very useful in expediting pending payments and for analysis of various sources of income.

Table-II gives some indication of data involved in some of the factors such as number of land holders in two districts.

TABLE - II

Name of the District	Population	No. of villages	No. of land holders	No. of primary schools
Valsad	14.20 lakhs	823	1.41 lakhs	1220
Kheda	24.51 lakhs	957	2.96 lakhs	1720

Source (Reference No.5)

4.4.0 The volume of data at the district level would determine the nature of configuration needed for developing information systems at the district level. For the districts in Table-II a rough estimate of computer configuration would be

- (1) CPU (8 or 16 bits)
- (2) Memory 64 K BYTES
- (3) Disc 2 Drives (5-10 M BYTES EACH)  
Alternatively  
DISKETTE 4 Drives (1 M BYTES EACH)  
( These may be used only if DISCS are not available)
- (4) Magnetic Tapes 2 Drives

- (5) PRINTER 300/600 Lines Per Minute
- (6) 4 to 6 data entry terminals

The cost of such a system would roughly be of the order of Rupees 8 to 10 lakhs with the operating cost of about one and half lakhs (excluding personnel). In a smaller district, it might be possible to organise such data with smaller computer system demanding an investment of less than 5 lakhs. It is possible to get smaller computer systems even for districts having larger data volume and expand these gradually as the number of computer applications increase. The expandability of the Computer has to be ensured at the time of buying a particular system. The proposed investment on computer based systems at the district level is far below the investment on information processing systems by commercial organisations with comparable data volumes.

#### ORGANISATION SET-UP AND OBJECTIVES OF DISC

District Information Service Centre therefore could be set-up to develop a centralised information services under the District Collector. These centres can be developed after making changes in existing set-up of district statistical and planning officers. These offices should be merged to form one office of DISC. This would help in creating these centres without major investment. The officers and staff would have to be trained in helping them

to develop Computer based systems. Training requirements would be in the design of Information Systems, Software, System Design and Programming.

5.2.0 The broad objectives of the district information centres could be stated as follows:

- (1) Developing information systems for Planning and monitoring of District level development schemes.
- (2) Collection, organisation processing and analysis of data on key economic factors of the district.
- (3) Providing information processing services on a centralised basis at the district level to various functional departments.

Developing Computer based systems at the district level would not only help the district level officers but also the State Planning body to get up-to-date processed information much faster. At present the consolidation of data is done at various levels starting from village Talati to the State level Officers. This process sometimes takes about a year for data to reach from village to state. The time taken in this process is so long that the value of data is lost and it serves only a historical purpose. With the computer based systems, it would be possible to collect data from the sources of its generation,



ie., the offices of Talati and that of operating agencies and processed directly at the district. This would help not only in the reduction of delays but also in conducting proper analysis which would help in review of programs and in taking remedial actions in time.

5.4.0 However, such information service centres would need a continuous support from the State Planning Departments. This support would be needed in the areas of developing a model for information system, Software design and training. As it would not be possible, nor necessary, to develop all possible skills at the district level, the support from the state cannot be avoided for strengthening these centres. The computer based systems are likely to be the same in each district. Therefore, the tasks of development of system design and software could be organised by the State level organisation. Apart from the one time development support DISC will need continuous technical support from the state.

#### 6.0.0 CONCLUSION

6.1.0 We have presented here a framework for organising district level information service centre which would go a far way in helping the developmental activities and strengthening the district level machinery in implementing the development pro-

grammes and monitoring the benefits of such programmes meaningfully. The next step would be to develop detailed specifications of the computer based information systems and work the computer configuration for each district.

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## REFERENCES

1. Camillus, J.C., Asopa V.N., and Kaul Mohan, "Information Systems for Control of Developmental Activities : A Conceptual Framework, Technical Report No.78, IIMA, 1975.
2. Camillus, J.C., Kaul Mohan, "Information Systems for Economic Development", SEARCC-76, North-Holland Publishing Company (1976), pp. 179-188.
3. Bhatnagar, SC, Kaul Mohan, "A Framework of Information System for Development Planning", Working paper No.221, IIMA 1978.
4. Bhattacharya AM, Wable YB, Gupta VC, "District Level Information System", Project report, 3 Month Advanced Programme on Computer Based Information Systems Analysis and Design, 1977, IIM, Ahmedabad.
5. District Planning Machinery, Report by a Team of Senior Officers, General Administration Department (Planning), Government of Gujarat, 1973.