CHAPTER II

THE STUDY METHODOLOGY

In the previous chapter we have reviewed the emerging trends in systems analysis and found that there is a distinct shift from closed mathematical models toward a conception of open systems. This is particularly true of application of Systems Analysis in areas such as health, education and development which constitute of complex systems.

We, primarily derived our framework of analysis of the District Public Health Services System from the earlier mentioned (Chapter I) works of Ackoff,1,2 Katz and Kahn,3 Checkland,4 Jackson and Keys,5 Tenney,6 Kiss and Tomlinson7 and, Scott,8 who demonstrate the value of an open systemic view of complex organizations attempting to achieve given

objectives within specified periods of time. They argue for incorporating **qualitative inputs** from the "soft" social sciences into the Systems Analysis method.

A major problem with the use of this approach is that it assumes cooperation of the organization in identifying key elements, their linkages and the interventions to improve the system. In our case, such an assumption was unrealistic as we could at best hope to present a rational view of the complexity of a district health services system and show what kinds of interventions, alterations and reorganisations can be visualised for improving the working of the system and making it more efficient.

### 2.1 ANALYTICAL FRAMEWORK

In this study, the district public health services system is viewed as an open system with interacting parts or subsystems. The relationships within and between the parts are dynamic. They change with technological, epidemiological, and organisational shifts.

In the systems approach adopted for improving the efficiency of human service organizations, suggested by Miringoff and Srinivasan, the system and its subsystems are analysed as comprising of **inputs**, which when utilised by the **throughputs**, give certain **outputs**. Since the public health services is made up of various programmatic and services (curative and preventive) subsystems which are not totally integrated, the analysis of the system as a whole requires the study of a large number of programmes and services and their interrelations. This was beyond the scope of an individual researcher. We had therefore, chosen six major programmes for our study.

We broke up the district public health services system into its major subsystems and then analysed these subsystems using the inputs, throughputs and outputs framework. The last was


used as a feedback to improve the first two. The interactions of the system with its larger system or environment were viewed as the **external linkages**.

These external linkages were of two types: direct and indirect. The direct linkages were the interactions of the larger system with the district health service system and influenced the latter directly and included those of the State Health Directorate and the local administrative and political set up of the district. The indirect external linkages on the other hand, influenced the system and thus its working indirectly.

These linkages included the influences of the socio-economic backgrounds of the personnel of the health services, the cooperation and coordination of the other sectors than health, the non-government and private organisations working for delivery of health care, and the participation of the local population. The above linkages being interactions of different complex and dynamic systems were bound to overlap.

The interactions between the subsystems within the system were identified as the **internal linkages**. These internal linkages were grouped into two broad categories: the inter-programmatic and the intra-programmatic linkages. The inter-programmatic internal linkages were in turn of two types - the **linear** and non-linear inter-programmatic linkages.

The inter-programmatic linkages were the interactions between the subsystems, which in this study, were the six major programmes of Health and Family Welfare. Among these, some were **linear** in nature, that is, these linkages are without any specific structural unit and, were either acquired straight from the State or were a part of the linear functions of the district level officials. For example, transport and personnel administration which were essentially linked to the State and Supervision and Disease Surveillance which were primarily district's activities.

The other type of inter-programmatic linkages was of the non-linear variety, which incorporated mainly the units concerned with supportive activities. These were sub-systems in themselves as they, had specific structural units, as well as, functional characteristics of their
own. The identified non-linear inter-programmatic internal linkages are: training, the health education cell, the management information and evaluation system and the statistical cell, the stores along with the district reserve store for procurement and distribution of technology, and the epidemiological squad.

The other variety of internal linkages were the intra-programmatic linkages, which were essentially vertical linkages between hierarchical levels of the Public Health Services System in the district and the subsystems or lower level systems at the subdivisions, blocks, sectors and subcentres. These linkages were specific to each of the programmes and services.

We had identified another set of linkages which resulted from the external linkage influences and, went onto influence the internal linkages. This set of the in-between phase of influences, was called the interface and got demonstrated in the work culture of the organization of the district’s public health services. This work culture or the prevailing work climate of the organization formed the boundary of the system of the Public Health Services in the district. Using the above framework we attempted to study the district public health services to grasp the significance of the systemic linkages and understanding its complexity of problems, which provide a key to the improvement of its working.

2.2 CONCEPTUALISATION OF THE DISTRICT PUBLIC HEALTH SERVICES AS A SYSTEM

Even though the performance of the health services is extremely varied across States and each State has its specific problems, there are certain organisational and programmatic commonalities which help learn from each experience. A number of experiments to improve the working of the district health organization had contributed to this learning, which we have already reviewed in the previous chapter.

Using the systems approach we visualised the existing District Public Health Services as an organisational complexity composed of institutions and manpower which together constituted
the infrastructure. The different institutions were at the district and its subordinate subdivision, block, sector and subcentre levels. Similarly, the manpower structure included the positioning of the different categories of personnels for the programmes and services at the five above mentioned hierarchical levels.

At the district level of the public health services a number of Communicable Disease Control Programmes, Family Welfare Programmes including Family Planning, Immunisation and Maternal and Child Health Services and, Nutrition Programmes, and the Blindness Control Programme etc. are coordinated. The major programmes among these are the Family Planning, Child Survival and Safe Motherhood, Tuberculosis Control, Diarrhoeal Diseases Control, Malaria Eradication, and the Leprosy Eradication Programmes.

Each of these programmes though coordinated and supervised by the district is actually implemented through the Primary Health Centres (PHCs) or Community Health Centres (CHCs) and is funded, planned and perceived at the State and Centre levels. So each programme at the district has linear connections with the State above and the PHCs or CHCs below.

Although at the district level the programmes are supervised by single officials each of these are implemented and supervised by the Medical Officer Incharge at the PHC or CHC levels down to the subcentres. Apart from the organisational structure of institutions and manpower we conceptualise external and internal linkages of the public health service system of a district. These linkages have been discussed in the analytical framework section earlier. The interface maintains the boundary and also contributes to the interactions of the system as already mentioned.

Nature of Linkages

The linkages of the system are enumerated as the external and internal linkages below:
(i) the external linkages are -

- the socio-economic and educational backgrounds of the health personnels which form their mind sets and the work culture of the organisation;

- the influences of the Directorate of Health Services, Government of West Bengal as the State level authority determining the funding, Strategies, plans and programmes for the district health services;

- the local administrative and political set up, in the District Magistrate and the Zilla Parishad respectively which constitute the District Level Health Committees that contribute specifically to the functioning of the health services including the six selected programmes;

- the intersectoral coordination with other departments of the ICDS, Public Health Engineering, Education and, the department of Forests;

- the other government, non-government and, private organizations and individuals which delivery health care and programmatic services to the population of the district; and

- the participation of the community in demanding for the required facilities from the district health services.

Among the above six external linkages the influences of the State Directorate and the Local Administration (District Magistrate) and Politics (Zilla Parishad and Panchayats) are taken as direct and the rest as indirect external linkages. This direct external influence from the State combined with the influences of the backgrounds of the personnel and their mind sets, results in the work-culture of the organization of the district public health services. The prevailing work-culture in turn influences the internal linkages of the system and its subsystems. Thus, the existing work-culture of the system is viewed by us as the interface or boundary of the system which demarcates between the external and internal linkages of the system.
the internal linkages of the system are -

the linear internal linkages are those which include the perceptions of the personnels on the goals of the system and the major functions of the district health administrative officers. These functions comprise of supervision and disease surveillance, and personnel administration, and transport.

the nonlinear internal linkages are the supportive activities and their organisations within the health services viz., the training of the various categories of personnels, the recording and reporting subsystem, the health education and mass media cell and, the district reserve stores and, the epidemiological squad.

the intra-programmatic linkages between their respective inputs and throughputs and the techno-organizational or techno-managerial linkages within the various programmes and between the various vertical hierarchical levels.

Enumeration of the above subsystems and the external and internal linkages of the district health services system is necessary to understand the services as a dynamic complexity. It is also mandatory to identify the distortions in the linkages which hinder the desired interactions between the subsystems and cause loss of efficiencies of these and of the system as a whole.

Sub-systems Analysis

The system of the public health services in a district is constituted of several subsystems or elements. In our view the identified main subsystems at the district level are the individual programmes and the supportive activity units.

Each subsystem, whether it is programmatic or supportive activity like the health education cell or the district store etc., has been visualised as a continuously flowing activity. It has therefore been divided into (a) inputs, (b) throughputs, and (c) outputs. These three components of each subsystem include -
Fig. 2.2.1 Conceptualisation of the District Public Health Services as a System with its Boundary and Linkages

INDEX
A = Intra Programmatic or Intra Service Linkages
B = Inter Programmatic Linkages
C = Inter Service Linkages
LOU = Leprosy Control Unit
URB. HOSP. = Urban Hospital

PROGRAMMES:
DIARR. = Diarrhoea
MAL. = Malaria
TB = Tuberculosis
FP = Family Planning
CSSM = Child Survival and Safe Motherhood
LEP. = Leprosy

STATE

INPUTS

EDUCATIONAL 
& TRAINING 
BACKGROUNDS 
of Health Personnel

INTERFACE/BOUNDARY

CMOH

INTERFACE/BOUNDARY

INTERPROGRAMMATIC 
LINKAGES

OUTPUTS

POLITICAL 
STAGES

NGOs

PRIVATE HEALTH 
SECTOR

DISEASE 
SURVEILLANCE

SUPERVISION

TRANSPORT

PERSONNEL 
ADMIN.

Interface/Border

local administration
(Distt. Magistrate)

Local political bodies
(Zilla Parishad and Panchayats)

INTERSECTIOANAL 
COORDINATION

EDUCATIONAL 
& TRAINING 
BACKGROUNDS 
of Health Personnel

COMMUNITY
(a) **inputs**: the infrastructure, personnels with their training, and the technological resources available;

(b) **throughputs**: the processes of functioning and organising the utilisation of the inputs of each subsystem, and the influences of the various linkages on these processes;

(c) **outputs**: the various products which result from the combinations of the inputs and the throughputs specific to each subsystem. The supportive activity subsystems give intermediate outputs which in turn affect the outputs of the main activity subsystems of the different Health and Family Welfare programmes.

These three components of the subsystems help assess the efforts both in quantitative and qualitative aspects. There may be a paucity of inputs but the given inputs if used optimally can give adequate outputs. On the other hand, even adequate inputs if utilised with poor throughputs will result in inadequate outputs resulting in inefficiency of the system and thus an ineffective health services.

It is also important to note that the variety of linkages described earlier influence both the quantum of inputs and the processes of throughputs. But, their immediate and day to day influences are much more on the throughputs. Figure 2.2.1 visually presents the district health services system as we conceptualise it.

### 2.3 OBJECTIVE OF THE STUDY

The study attempts to understand the complexity of the district public health organisation within an open systems framework. Consequently it identifies the key elements of the system and their interlinkages to delineate possible alterations in the structure and the existing inputs to improve the throughputs and the outputs.

The sub objectives of this exploratory study would be, to:

(i) review the strategical inputs of the organisational system and its subsystems,
(ii) enumerate the main external and internal linkages and their influences on the subsystems and the system as a whole,

(iii) analyse the throughput processes of utilisation of the resources of the selected subsystems,

(iv) assess the degrees of inefficiency of the selected programme subsystems in the organizational context or in terms of their outputs against the given targets or the system's objectives, and

(v) locate the main areas of suboptimisation which cause the underachievements.

2.4 DESIGN OF THE STUDY

(A) Pilot Study - was conducted to select the district, build up rapport with the personnels and finalise the tools to be used for data collection, particularly the open-ended schedule.

(B) Intensive Study

(1) Selection of Purulia as the Study District was done purposively due to five reasons:

(i) The Multipurpose Health Programme - with an integrated delivery of programmatic services was in implementation in the State of West Bengal, including the district of Purulia.

(ii) Scrutiny of the past performances of the public health services of all districts in West Bengal showed Purulia to be the second and third highest performing district in the State, in terms of achievements of the Family Welfare and Immunisation programmes for the years 1991-92 and 1992-93 respectively. Such a high performing district was required for the study so that the more obvious shortcomings of inputs resources would not hamper a systems analysis of the services;

(iii) the language spoken of the district is the same as the researcher's;

(iv) there were no medical college hospitals or any other tertiary level health institution which could have significant effects on the performances of the public health services; and
(v) during the pilot study, this district's health officials were found to be cooperative and interested in the main study.

(2) **The study of the district incorporated:**

(a) the Government organisation of health services particularly at the district level and the associated NGOs. The focus of the study was on the Government services mainly and included the evolution; infrastructural developments, special project inputs like IPP-IV and the manpower of the services with their backgrounds and training.

Links of the district with the State on the one hand and with the blocks and peripheral institutions on the other, the other coordinating sectors of Public Health Engineering, Education, Forestry and ICDS, the general administrative bureaucracy of the District Magistrate in Purulia and the local political bodies of the Zilla Parishad and the Panchayats.

(b) For the intensive study of the subsystems, the **six major programmes** being implemented in Purulia were selected, which are the:

(i) National Tuberculosis Control Programme,

(ii) National Malaria Eradication Programme,

(iii) Diarrhoeal Diseases Control Programme,

(iv) National Leprosy Eradication Programme,

(v) National Family Planning Programme, and


(3) **Description of the Study District of Purulia:**

One of the smaller districts of West Bengal, Purulia, is located on the southwest region of the State (Map 2.1). It forms the western most part of West Bengal, with most of its north, south and, all of its Western boundaries are with the neighbouring state of Bihar.
The total geographical area of the district is 6259 sq. km. of which 6189.21 sq. km. is rural and the remain 69.79 sq. km. is urban area. The climate of Purulia is of the humid subtropical type with the temperature varying over a wide range in a year, from around 5°C in winter to 46.6°C in summer. The average rainfall is 1285.15 mm per year.\(^\text{11}\)

The total number of villages in the district is 2689 out of which, 2452 are inhabited. The number of rural households is 347587 and urban households are 36832 in number, i.e., a total of 384419 households are there in the district (1991 census).

Table 2.4.1 : Demographic Features of Purulia ('91 Census)

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population of all age groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>2014571</td>
<td>1032172</td>
<td>982399</td>
</tr>
<tr>
<td>Urban</td>
<td>210006</td>
<td>110599</td>
<td>99407</td>
</tr>
<tr>
<td>Population of 0-6 years age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>381118</td>
<td>193393</td>
<td>187725</td>
</tr>
<tr>
<td>Urban</td>
<td>32485</td>
<td>16674</td>
<td>15811</td>
</tr>
<tr>
<td>Literate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>658624</td>
<td>503090</td>
<td>155534</td>
</tr>
<tr>
<td>Urban</td>
<td>125301</td>
<td>76739</td>
<td>48562</td>
</tr>
<tr>
<td>Scheduled Caste</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>385630</td>
<td>198837</td>
<td>186793</td>
</tr>
<tr>
<td>Urban</td>
<td>44883</td>
<td>23027</td>
<td>21856</td>
</tr>
<tr>
<td>Scheduled Tribe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>423415</td>
<td>215801</td>
<td>207614</td>
</tr>
<tr>
<td>Urban</td>
<td>4351</td>
<td>2219</td>
<td>2132</td>
</tr>
</tbody>
</table>


Purulia district's population number was 22,24,577 in 1991. Of the total, males constitute 51.38 percent and 48.62 percent of the population is females, with a male female ratio of 1000:946. The decennial growth rate of the population is 19.61 and the density of population is 354 per sq. km. The overall literacy rate of the district is 35.24 percent with

literate males being 55.70 percent and literate females only 18.90 percent of the total population (Table 2.4.1).

Out of the total population 91.63 percent are Hindus of which 19.35 percent are Scheduled Castes and 19.23 percent Scheduled Tribe populations. Muslims are 5.45 percent, 0.30 percent are Christians and the remaining 2.62 percent of the district’s population comprise of other religions and communities.

Administratively, the district is divided into 20 community development blocks and 2 subdivisions of Purulia and Raghunathpur. There are 20 police stations and 20 panchayat samities, one in each of the 20 blocks, as well as 3 municipal and 5 non-municipal towns in the entire district (Map 2.2).

The transport facilities to, from and, within the district relies mainly upon the bus and train services. There is one national highway (NH 32) and one state highway (SH 2) running through the district. Other than the two highways, there were 885 surfaced and 482 unsurfaced roads in Purulia in 1991. The Indian Railways has both broad gauge and metre gauge railway lines in Purulia.

All the towns in the district are electrified. But, till 1991-92, only 56.0 percent (1373 out of 2452) of the inhabited villages were electrified. Similarly, the municipal towns of Purulia, Raghunathpur and Jhalda had piped water supply from the Public Health Engg., whereas none of the villages were supplied by piped water. The water supply in the villages was either from shallow tubewells or dug wells. There are approximately 66,000 tubewells in the district in 1993. The total number of dugwells was 18,593 in 1991.

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The number of primary schools in the district were 2942 in 1992-93. There were 113 junior high schools and 130 higher secondary schools, 9 general, 2 training colleges and, 1 polytechnic institution were also in existence in Purulia in 1992-93 (Map 2.2). Non formal centres of education also existed in the district and they were 103 in number in the urban areas and 81 in rural areas. There were 1276 adult education centres also, in the district. The primary school enrolment rates for Purulia were 83.22 percent of boys and 50.93 percent for girls with an overall enrolment rate of 67.68 percent. The dropout rates from primary schools were not accessible.

386 co-operative societies were there in the district in 1991-92 with a total membership of 103,000. The employment exchange register showed figures of 121484 persons registered for employment at the end of 1992. The new registrations every year are around 6500 and placements given every year averaged to around 400. Thus, the unemployment rate in the district are quite high. The problem of unemployment gets highlighted on scrutinising the worker's statistics of the district. 61.73 percent of the population of the district are non workers, 7.17 percent are marginal workers and, 31.10 percent are main workers.

Agriculture is the main occupation of the population of Purulia. 15.68 percent of the population are cultivators and 7.70 percent work as agricultural labourers. About 1.0 percent of the population are employed in household industries and 6.72 percent are employed elsewhere in industries or government offices. Among the cultivators, 54.6 percent are marginal farmers, 25.0 percent are small farmers, 14.8 percent are medium farmers and, 5.6 percent are big farmers.

The land area available for cultivation (in 1989-90) was 290400 hectares, are under non-agricultural use was 97000 hectares and, 87610 hectares and 84538 hectares were forests and

13 5th All India Education Survey, 1986-87 - Summary Report for the State of West Bengal, NCERT, New Delhi.
barren unculturable lands respectively. 18956 hectares of land was used for orchards and plantations.

The land reforms figures till April 1990 for Purulia district showed that 35404.67 hectares of agricultural land was vested, 20744.41 hectares of agricultural land had been distributed and, 1840.94 hectares of agricultural land was yet to be distributed. 22641.84 hectares of non-agricultural land was also vested.\(^\text{14}\)

Culturally, the district of Purulia is known nationally for its "Chau dance". Being the only officially recognised tribal district in West Bengal, its culture is characterised by the tribal community with its Santhal origins. The "Jhumur" and "Tusu" are the other popular dance forms of the district. "Bhadu Sangeet" and the "hunting festival" in the month of July every year in the forest of Ajodhya hill, are traditions and heritages not only popular in the district but attract tourists from outside also.

**Table 2.4.2: Vital Statistics of Purulia Compared to West Bengal and India (1993)**

<table>
<thead>
<tr>
<th></th>
<th>Purulia</th>
<th>West Bengal</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth rate (per 1000)</td>
<td>28.6</td>
<td>25.6</td>
<td>28.5</td>
</tr>
<tr>
<td>Death rate (per 1000)</td>
<td>10.6</td>
<td>7.3</td>
<td>9.2</td>
</tr>
<tr>
<td>Infant mortality rate</td>
<td>68</td>
<td>58</td>
<td>74</td>
</tr>
<tr>
<td>(per 1000 live births)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: District Planning Office, Purulia.

The above description of the district gives the picture of a less developed area in terms of socio-economic and educational indicators and civic amenities. But the vital statistics of the district give a different picture when compared to the state and national level statistics (Table 2.4.2).\(^\text{14}\)

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In fact, the birth rate of the district was almost equal to the national rate though higher than that for the entire State. The death rate of 10.6 per 1000 population was higher than both state and national rates and the infant mortality rate of 68 per 1000 live births in 1993 was in-between the lower state level and higher national level rates (Table 2.2).

(4) Selection of the Blocks

Although the study's focus was on the district level public health services, some understanding of the activities and linkages at the block level was necessary to get a total systemic view of the district's services. So, we selected a purposive sample of two Block PHCs - Kolloli in Kashipur block (BPHC₁) and Bansgarh in Balarampur block (BPHC₂) out of a total of 20 blocks in the district (Map 2.3).

Table 2.4.3: Criteria for Selection of the Two BPHCs

<table>
<thead>
<tr>
<th>BPHCs</th>
<th>Distance from Purulia (kms)</th>
<th>Staff strength (1992-93)</th>
<th>F.W. Programme achievements</th>
<th>UIP achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>91-92</td>
<td>92-93</td>
<td>91-92 92-93</td>
</tr>
<tr>
<td>Kolloli (BPHC₁)</td>
<td>35</td>
<td>77%</td>
<td>101% 103%</td>
<td>104.3% 108.2%</td>
</tr>
<tr>
<td>Bansgarh (BPHC₂)</td>
<td>32</td>
<td>75%</td>
<td>94% 91%</td>
<td>96.5% 89.1%</td>
</tr>
</tbody>
</table>

Source: CMOH and Dy.CMOH-III’s Offices, Purulia.

The two BPHCs were selected on the criteria of their distances from the district headquarters, strength of personnels in position and, the performances of the Family Planning and Universal Immunisation Programmes in the two years preceding the start of the filed work in April 1993 (Table 2.4.3).

For the Leprosy Programme, the LCU at Purulia Sadar was selected for required data collection and observations.
Tools Used for Data Collection -

The various tools used in the study for the required data collection are:

i) **Interviews** - open-ended interview schedules were used to get data on the perceptions of the health service personnels including 2 State health administrators, 8 district health administrators, 8 district health supervisory officers, 10 block medical, officers and 23 blocks health supervisors. Interviews for backgrounds were conducted on the CMOH, the three Dy.CMOHs, the 2 ACMOHs, and 8 district supervisory officers.

Personnels outside the health services who were interviewed included the 2 successive District Magistrates, Sabhadhipati and Karmadhakshya of the Zilla Parishad of Purulia, 2 Executive Engineers of the Public Health Engineering Department, the District Project Officer of ICDS, the District Education Officer and the District Planning Officer.

ii) **Observations** - of the programme officers and supervisors on their jobs in the offices and during their monitoring visits to the blocks, sectors and subcentres. The Dy.CMOH-I, Dy.CMOH-II, the Dy.CMOH-III, ZLO, ACMOH (PH&FW), ACMOH (Med. and Admn.), Dy.DEMOs, Stat. Officer, Distt. Public Health Nursing officer, Asstt. Malaria Officer were accompanied by the researcher on their visits.

iii) **Activity-time analysis** - the key district health administrators, district supervisors and two BMOHs in the blocks were observed at different points of time to measure the proportions of their working time spent for different types of activities. Instead of measuring the durations of the activities (divided programmewise and into managerial, technical, and unproductive activity) we quantified the number of times an officer was observed to be involved in a particular type of activity. On an average the district officers were observed at different points over a total period of three months each.
iv) **Group discussions** - extensive discussions with all categories of the health service personnel in Purulia were undertaken at different points of time.

v) **Meetings** - 8 district level review meetings, 4 district health administrators meetings, 1 meeting of the Jansasthya Sthayee Samiti and 8 block level monthly review meetings were attended by the researcher.

vi) **Stock checking** - of the district reserve store and the stores at the Dy.CMOH-II, Dy.CMOH-III and the District TB Centre were done.

vii) **Records and reports** - Extensive scrutiny of government orders, memoranda, and directives and official reports from the offices of the CMOH, Dy.CMOH-I, Dy.CMOH-II, Dy.CMOH-III, ZLO, Med. Suptdt. of the Distt. Hospital and the Distt. TB officer was undertaken. All available official documents including old records and reports were scrutinised. An inventory of records was also maintained.

(6) **Concepts Used in the Study** -

The key concepts used for formulating the study, undertaking the data collection and analysis of and presentation of the data were:

i) **Public Health Services**: The government health system provide health care to individuals and the population, including a broad spectrum of preventive and curative activities and utilizing, to a large extent, multipurpose health workers.15

ii) **Planning** - it is the orderly process of defining community health problems, identifying unmet needs and surveying the resources to meet them, establishing priority goals that are realistic and feasible, and projecting administrative action to accomplish the purpose of the proposed programmes.16


iii) **Coordination** - is the degree to which each of the various interdependent parts of a system operates according to the requirements of the other parts and of the total system.\(^{17}\)

iv) **Intersectoral Coordination** - is considered to require the ability to plan together with other sectors relevant to but outside the public health sector and to create a climate favourable for formal and informal arrangements in which the responsible bodies and the associated professions can all participate constructively.\(^{18}\)

v) **Integration** - is a complex concept. Integration of the various components of the health services including the programmes incorporates the merger of administrative, organisational (including structural and functional aspects and, technical dimensions of the entire services under one unit.

For example, in an integrated health services, the preventive and curative services are two aspects of the same service and, similarly the programmes are different components of the basic preventive health services for a community.\(^{19}\)

vi) **Regionalisation** (Regional Organization) - the organization and coordination of all the health resources and services within a defined area for the purpose of maintaining the highest possible level of health care and adapting a comprehensive health programme to the characteristics and needs of the area.\(^{20}\)

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17 Ibid, p.42.
18 Adapted from ibid, p.43.
vii) **Decentralization** - dispersion of the same type of work or activity with full executive powers to the responsible authorities of various areas away from the Centre, thereby locating the work close to the source that initiates the activity.21

viii) **Supervision** - it is a process by which designated individuals or groups of individuals oversee the work of others and establish controls to improve the work as well as the worker. Training, guidance, demonstration, individual counselling, and checking are the major components of the concept of supervision.22

ix) **Feedback** - the return of part of the output, or results of a system or programme to be re-introduced as input as basis for further development of the system or programme.23

x) **Goals** - the intended outcome of the system or of a programme.24 For the district level health services, the goals get hierarchically reduced, from the Centre and State, to operational objectives of efficiency and output.25

xi) **Efficiency** - the effects or end-results achieved in relation to the effort expended in terms of the input resources.26

(7) **Data Required for the Study** -

These are enumerated as follows:

- The historical evolution of the health services in the district, the trends of the physical aspects of the services since 1991 including the infrastructure, structure of the

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21 Ibid, p.67.


organisation, personnels in position and, the contributions of the India Population Project-IV, West Bengal;

the socio-economic, educational, and training backgrounds of the fourteen district level health officials in position of key posts (viz., the CMOH, Dy.CMOH-I, Dy. CMOH-II, Dy.CMOH-III, ACMOH (PH&FW), Med. Suptdt., ACMOH (Med. Admn.), ZLO, DPHNO, Dy. DEMO-1&2, S.O., Asst. Mal. Off. and the DHE);

the perceptions of some of the health service personnels (two state health administrators, eight district health supervisory officers, ten block medical officers and, twenty three block level supervisors) numbering to a total of fifty one, on the systemic view of the services in the district, goals of the system, priorities of major programmes and services and, the main functions of the district health administration;

the roles of the State Health Directorate at Calcutta, the District Magistrate, the Zilla Parishad of Purulia, the ICDS, Public Health Engineering department and the departments of Education and Forests in Purulia in coordinating with and, in control and influencing of the district’s health services system;

the structural, functional, organisational, and achievements characteristics of each of the six selected programmes of Family Welfare, CSSM (including UIP and MCH), Tuberculosis, Malaria, Diarrhoea, and Leprosy at the district and at the block or unit levels;

the systemic characteristics of inputs, throughputs and outputs which comprise of the structural, functional, organisational, and achievements of the major supportive activities units for transport, stores, training of personnels, health education, and statistical reporting;

the involvement of the general population of Purulia in participating for the demand of the health service facilities;
the roles of the associated non-governmental organisations of Purulia in delivering the services for the five selected programmes in the district;

functioning of the key district health administrators and supervisory officers and the sample of 2 block medical officers;

formal and informal ways of communication and coordination between the district and block level and at the district and block levels respectively between the different categories of personnel;

the links through supervision, distribution of personnel and technology, training and, transport between the district level and block level health services; and

the links between each of the five integrated programmes selected, and also with the vertical leprosy programme at the district and block levels respectively, and between the two levels.

Before undertaking the main study a pilot study of two months was undertaken to work out the detailed procedures for the main data collection. On the basis of the experiences of the pilot study, the designing of the main study and the preparation of the documents for data collection were done.

(8) Duration of the Field Work for Data Collection

The field work for this study was done in three phases which stretched over a total period of two years, from April, 1993 to July, 1995. However, the data collection for the main study was done in two phases of 6 months each in 1993 and 1995. The different phases were:

(i) Pilot study: April, 1993 to May, 1993 (2 months).

(ii) Intensive study:

(a) District level study, Purulia, Phase I: July, 1993 to December 1993 (6 months).

(b) Block level study of one month each in the two selected BPHCs: February, 1995 to March, 1995 (2 months).
(c) District level study, Purulia, Phase-II: April, 1995 to July, 1995 (4 months).

The data collection from State level offices and officials at Calcutta was done in five stays of a week each in January, 1994; January, 1995; and August, 1995.

(9) Analysis and Presentation of Data

All qualitative data of different types that were collected as mentioned were grouped into four categories as the following:

(a) Physical characteristics of the health services in Purulia;
(b) the external linkages of the environmental factors with the district health services system;
(c) the internal linkages between the different sub-systems and the different levels of the district health services system; and
(d) the characteristics of the six selected programmes per se.

Most of the qualitative data have been quantified using percentages and analysed by either comparisons with similar data as in the case of the activity time analyses of the district and health functionaries where their total working time was divided into programmatic and within each programme into managerial, technical and, unproductive activity time periods. The method of number of observations was used to quantify this data rather than measuring exact time periods spent in each type of activity.

The rank-order technique was used to analyse the perceptions on the priorities of the health personnels about the different functions and programmes of the health services system of Purulia district. The quantified qualitative data along with the other relevant quantitative data have been presented in tables. The quantification of the qualitative information on the key variables of the linkages facilitated the matching of the outputs with the throughputs and inputs.

All data on the subsystems of training, health education, district reserve store, information system and, each of the six programmes studied have been presented in the system's
framework of inputs, throughputs and, outputs. To facilitate the presentation of data in this framework, the chapters on the data have been positioned carefully.

This positioning of first the profile on the evolution and physical aspects of the district health services in Purulia, then the external linkages and their resultant interface of the prevailing work-culture in the system, followed by the linear and non-linear internal linkages gives a good understanding of the various processes which affect and culminate in the delivery of the six programmatic services.

The selected programmes and their internal linkages are then presented in two chapters. The first of these deals with the integrated five programmes and the second is on the separate and vertical programme of Leprosy. This second programmatic chapter ends with a critique of the existing techno-organizational linkages between the programmes. Such a systematic and sequential presentation is expected to enhance the systems understanding to the analysis of the district health services.

(10) Limitations of the Study

i) the study is limited to the district health services and does not encompass the total district health system, as other related developmental systems also affect the health of the district’s population;

ii) simultaneous data generation at various levels vertically and at different offices horizontally could not be undertaken as this study was an individual effort and not a team work,

iii) testing of the suggestions for improvement could not be carried out without the involvement of the services,

iv) we did not include technology as a variable as allopathic medical technologies were taken as a constant component of the system, and
v) There are gaps in the data on the number of personnel in position, the number of subcentres functioning etc. as these figures could not be made available by the district health offices for every year from 1990-91 to 1994-95.

After the description of the research methodology of this study, the data presentation begins from the following chapter.
DISTRICT PURULIA
THE PUBLIC HEALTH SERVICES

INDEX

+ DISTRICT HOSPITAL
+ STATE GENERAL HOSP.
Δ RURAL HOSPITAL
 linea COMMUNITY PRIMARY HEALTH CENTRE
+ BLOCK PRIMARY HEALTH CENTRE
+ PRIMARY/SUBSIDIARY HEALTH CENTRE
 linea SUBCENTRE
~ PURULIA TOWN
-- District Boundary
--- Block Boundary

MAP 3.1