STRATEGIC RESEARCH AND EXTENSION PLAN (S.R.E.P.) OF HAZARIBAGH DISTRICT (JHARKHAND)

Prepared By:

Agricultural Technology Management Agency (ATMA)

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Under the guidance of

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BLOCK OF HAZARIBAGH DISTRICT

I INTRODUCTION

The agricultural technology since the last decade, has not been communicated to the grass-root level inspite of the presence of various extension schemes and agencies. Extension agencies had been addressing the needs of farmers, but in an isolated manner with less coordination among themselves. Lack of sound feedback mechanism has been resulted into to be inefficient delivery. One mechanism of all extension agencies is that they basically follow top-down approach as a result of which planning is lacking at the bottom level envisaging false realities. This approach resulted in limited success in rain fed areas due to large heterogeneity and complexity in farming conditions. Ultimate success lies in the context where farmers are the centered point in the whole system and profit should reach farmers without the intervention of middle man. It is therefore; felt to develop a mechanism to increase the farmers participation in programme planning and implementation by involving different stakeholders at the grass root level.

A number of new enterprises have been adopted by a few innovative farmers in their overall farming system. There is need to analyze such existing success stories in the district for mass replication in similar situation. Farmers have to adopt the working pattern of groups because group approach not only helps in evolution of market but also helps to create good adoption opportunity at grass root level.

It is becoming increasingly evident that extension by itself can go no longer respond to the multifarious demand of different farming systems. There is need for reappraisal of the capacity of existing agricultural extension systems to address future needs of the farming community effectively. Public funding for sustaining the vast infrastructure is also under much strain.

Under Extension Reforms Project in addition to existing NATP-ATMA districts, 4 new ATMA district have been selected in Jharkhand based on Agro-Climatic Zones (ACZ) & other factors These aim towards integrated extension delivery, adopting bottom up planning procedure, establishing of linkage among Research-Extension-Farmer-NGO-Market, making the technology dissemination farmer-driven and farmer accountable, ensuring women participation in agriculture and create information resource connectivity to all blocks with district level ATMA through the Farm Information and Advisory Centre.

The district has state Government Organization like Dept. of Agriculture, Horticulture, Soil Conservation, Animal Husbandry, Fishery, Plant Protection, District Rural Development Agency, Soil Conservation Research & Training Centre (SCRTC). The district also has a number of Non-Government Organizations including Holy Cross Welfare Society

under which Krishi Vigyan Kendra of the district is working. However these institutions are directly or indirectly involved in running parallel extension systems. Hence it is imperative that these forces are organized and coordinated through ATMA, Hazaribagh under implementing the new institutional arrangement.

ATMA Governing Board (AGB) and ATMA Management Committee (AMC) have been constituted with representation from different departments, progressive farmers, horticultural farmers, women, banks, input dealers, NGOs, Marketing Associations and fisherman at the district level. Similarily, at Block level, Farmers Advisory Committees (FAC) have been constituted. At Village level, commodity wise Farmer Interest Group (FIGs) and Farmers Organization (FOs) are being organized to introduce a new form of extension delivery system which is decentralized, demand driven, farmer accountable, location specific, participatory, well integrated with Research-Farmer-Market linkage and technically and financially sustainable in its orientation.

It is planned to involve persons responsible for extension delivery either directly or indirectly in capacity building towards new technologies so as to meet not only the challenges emerging from globalization but also to explore newer ways of developing the agricultural sector. This is proposed to be done though Demonstration, Training, Kisan Ghosthis, Field Days, Exposure Visit, training in Information Technology to all the stakeholders through SAMETI(as per SEWP),

This document has emerged through participatory rural appraisal from all the 3 agro-ecological situations of the district by selected and trained research and extension officers of the district and old ATMA district. The bottom-up approach associate not only farmers but also market about demand and supply of input, credit institutions like NABARD, Bank which were earlier left out when top-down approach was followed. Success of bottom-up planning would however depend not only on the interest of bureaucracy in general and Chairman (ATMA) in particular but also on the general agreement of all the stakeholders involved in development of farming community.

II METHODOLOGY

The Strategic Research & Extension Plan (SREP) of Hazaribagh district was prepared following the participatory methodology to reflect the issues and needs of the farming community. The main steps followed in preparation of SREP are as follows:

Training : -

1. A state level orientation workshop on Extension Reforms was organized for new ATMA district from 1-2 July' 2005 at SAMETI, Ranchi to Develop Specific skills in preparation of Strategic Research and Extension Plan. Following topics were discussed in the workshop.

i. Extension Reforms-an Overview.
ii. Xth Plan Scheme – Support to State Extension Programmes for Extension Reforms.
iii. Experiences of ATMA Model.
iv. Orientation on SREP.
   - ❖ Content
   - ❖ Methodology
   - ❖ Operationalization
v. Farmers Organization & Federations.
vi. Research-Extension-Farmer Linkages

2. SAMETI in collaboration with MANAGE, Hyderabad organized a 5-days Master Trainers Training Programme from 30th Nov-6th Dec' 2005 at SAMETI, Ranchi. In this training programme following topics were covered.

I. Farming System Approach
II. Participatory Rural Appraisal
III. Farming System based Extension.

Following participants participated in the Master Trainers training from Hazaribagh District.

i. Sri. Bimal Baxla, DAO-cum-PD, ATAM
ii. Sri. Lal Ramkrishna Nath Shahdeo, General Manager, District Industries Centre
iii. Sri. Umesh Prasad, DDA (General)
iv. Sri. Anil Kumar, SCO (Survey), Soil conservation Office, Krishi
v. Dr. Surendra Kumar Asst. Poultry Officer, DAHO Office
vi. Sri. Shyama Nand Choudhary, Training Asst. (Agronomy)
vii. Sri. Benedict Toppo, Holy Cross, KVK, Hazaribagh
viii. Sri. arbind Kumar, Industry Extension Officer, District Industry Centre
ix. Sri. Rabindra Kumar Singh, coordinator, NGO, Support

3. SAMETI in collaboration with EEI, Nilokheri organized a state level workshop on "Extension Reforms" for the officers of ATMA districts from May 8-12 ' 2006. Following topics were discussed in depth and sample data collection through field visit. In the training a field visit was organized to demonstrate primary data collection in Pithoria village.

- Concept of Farming System Approach (FSA).
- Concept of Farming Situation Based Extension (FSBE)
- Concept of PRA
- Field Visit for collection of Primary and Secondary data through PRA

3.1 Selection of Members

Selection of members of multi-disciplinary team (MDT) of 24 officers and 4 farmers representing different government departments' viz. Agriculture, Veterinary, Fishery, Soil Conservation, Horticulture and scientists from KVK, Hazaribagh & NGO was made to provide them basic training / orientation about he concept of Extension Reforms for preparation of SREP.

3.2 Training of MDT:

These selected scientists and officers of MDT were given training on theoretical aspects of SREP from 4-7 July' 2006 at Holy Cross Welfare Society, Hazaribagh by Technical Experts on the following aspects.

- Present Extension System & ATMA Model
- Extension Reforms
- Roles and Responsibilities of Stakeholders
- Orientation on SREP
- Concept of Participatory Rural Appraisal (PRA) & Tools
- Farming System Approach
- Farming System Based Situation
- Gender Participation
- Field Exercise on Participatory Data Collection.

Besides conceptual clarity on SREP, relevant management tools & techniques and methodological approaches were discussed at length.

3.3 Identification of major agro-ecological situations (AES)

On the basis of important factors like topography, type of soil, rainfall, types of crop grown, and sources of irrigation, 3 different agro-ecological situations (AES) were identified in the district for the preparation of situation specific, farmers' demand oriented SREP.

3.4 Identification of representative villages for each AES

During the course of AES training, four major Agro-Ecological situations (AES) were identified and representative villages based on various agro-ecological factors were identified.

3.5 Formation of Multi-Disciplinary Groups:

For each AES, a Multi-disciplinary group comprising 6-7 members from different line departments, Scientists from KVK, leading NGO and one progressive farmers from the identified village was constituted as AES team. These groups were given the task of collecting of primary information from the representative village's using PRA tools and techniques for the preparation of SREP. The revised format for the collection of field data through participatory method was also given to each AES team members.

3.6 Conducting field survey:

Field survey were conducted in Hazaribagh district from 8-18 July' 2006 during which members of the inter-disciplinary group collected data and information for the preparation of SREP. The primary data collected during field survey was checked with various farmers groups in the village through triangulation.

The collected data were summarized and presented by each AES team in the presence of scientists from BAU, Ranchi along with the senior level officers from all concerned departments and farmers from representative villages.

3.7 Collection of Secondary Information

Secondary data used for preparing SREP were collected from different publications from the records of the district offices of Agriculture, Horticulture, Soil Conservation, Animal Husbandry, Statistical office and database prepared by SRI and NIC Website.

3.8 Summarization and Presentation of Data

A core team comprising 3 members from the AES teams facilitated by BAU Facilitators undertook the job of tabulation, analysis of data collected by various AES teams and preparation of the first draft of SREP was presented before MANAGE Consultant during 24-26 July' 2006. The data from each representative village was discussed in details with the scientists of BAU, Ranchi before its summarization. During the presentation and review before MANAGE Consultant, agro-processing, post harvest management of the produce, public –private partnership, formation of FIG so as to make the SREP of Hazaribagh district a useful document for the different stakeholders.

IMPORTANT INFORAMTION FOR DIFFERENT TEAM DURING FIELD SURVEY

Particulars	AES-I	AES-II	AES-III
Village	Bharajo	Karso	Tapen
Distance from ATMA office	30 KM	35 KM	26 Km
Block	Ichka	Barhi	Mandu
Team Leader	Sri. Raghunandan Azad (B.A.O)	Sri. Kanta Singh, BAO	Sri. Sanjay Panda, BAO
Farmers Involved	Sri. Sukhdev Mahto	Shiv Prasad Yadava Sarju Singh	Sanjay Soha Badi Gaju
Facilitator involved.	Sri. Gokul Mehra, Ex- Project Director (ATMA), Dumka Sri. Ranjay Kumar Singh,Ex- DPD, ATMA, Palamau Dr. Sudhir Kumar Jha, Ex-DPD, ATMA, West Singhbhum Dr. Basant Kr. Jha, Asst. Professor (Extension), BAU, Ranchi.		

III BACKGROUND INFORMATION OF THE STATE AND THE DISTRICT

General Features of the State:

The State of Jharkhand was created in November' 2000 after carving 79 lakh hectares geographical area from the State of Bihar for better planning and execution of development activities of a ecologically different zone (Hills & Plateau region compared to Bihar plains). The agricultural scenario of the State is not very good since the cropped area is only 22 lakh hectares with average productivity of 1.0 t ha-1

Jharkhand is basically a rural economy. A state of 27 m people has 80 pc of the population living in rural areas for whom agriculture and allied activities is the mainstay of the livelihood.

The state has 30 lakh ha of cultivable area, out of which about 40 pc is upland. It has got hardly 2 lakh ha area under assured irrigation and the main crop is paddy. Farmers operate with some of the most primitive farm technologies and only limited extension services are accessible to them.

Small land holdings, negligible farm mechanization, biophysical factors like soil acidity and low soil organic matter, negligible flow of institutional credit, small coverage under assured irrigation and limited extension services are some of the factors that, working in tandem, leads to very low productivity and production. The productivity of the cereal crops in Jharkhand is 1.2 to 1.3 tons/ ha which is far below the national average. The productivity is still less in the uplands.

This emphasizes the need for diversification in agriculture. The diversification has been acknowledged to enhance the profits generate additional employment for rural masses and to conserve national resources.

Diversification to horticultural crops is a viable option as these crops are adapted to wide range of climate, produces higher biomass per unit area and are more remunerative and ergo are capable of raising farm income and alleviating poverty in rain fed hilly ecosystem, characteristics of Jharkhand.

The state of Jharkhand is endowed with climatic conditions that are conducive for successful cultivation of a variety of horticultural crops. The strategic geographical location of the state, the wide product base, high volume of round the year production, high domestic demand, abundant sunlight and easy availability of labor at comparatively low cost makes horticulture a very handy and potential area of growth in the State.

In this scenario when the horticulture has the potential of becoming the driving force of agriculture sector in Jharkhand it is essential that the goals are set and priorities be defined so that an objective approach can be adopted for the holistic growth and the development of the horticulture in the State.

The few areas of priority have been identified. These are to be worked and worked rigorously so that so that to provide a much needed impetus and momentum to the horticulture sector.

India has only about 8 pc of its cultivable area under horticultural crops with 150 millions tons of production. However the shore of the horticulture to the total contributions of agriculture sector to the national GDP is 25 pc. Still more significant is the fact that horticulture brings about 54 pc of the total export earnings of the agricultural sector. This clearly emphasizes the importance of the horticulture in general and its potential is generating the foreign exchange in particular.

The region is characterized by hot climate, undulating plateau, hills & mountains, non-existence of perennial rivers, initially high forest cover which is depleting fast due to mineral and industrial exploitation and encroachment, concentration of tribal population in many areas with a life style geared to forest ecology, pockets of chronic drought conditions, erratic rainfall, low ground water table, high soil erosion, generally inefficient agricultural, dairy and fishery activities except in command areas of major irrigation projects, rising agricultural unemployment and acute rural poverty.

Soil Resources

Out of 79 lakh hectares geographical area of Jharkhand state, the net sown area is around 20 lakh hectares. Area under forest is 29 percent (23 lakh hectares). The state comes under agro climatic zone 7 and in zone 12 & 13 as per agro-ecological characterization of the country. The region mainly comprises soils developed on granite gneiss (32.6%) and granite schist (14.2 %). There is practically no problem of soil salinity or flooding. The region has a major problem of slight (52 %) to moderate (36 %) soil erosion since about 43 % soils are located on very gentle slopes (1 to 3% and 31 % soils on gentle slopes (3 to 8%).

Water Resources

About 9 percent of the area in the state is irrigated. The state receives rainfall 1200-1600 mm/annum at both the monsoon. Precipitation is rather variable. Winter season precipitation is meagre and highly variable. There are no an average 130 rainy days in a year and 75 days, rainfall is below 2.5 mm. On 55 rainy days evaporation level is more than 2.5 mm per day. As per estimate out of the average annual precipitation of 10 million hectare meter in the state about 20 % is lost in the atmosphere, 50 % flow as surface runoff and balance 30% soaks into the ground as soil moisture and ground water.

Climatic Resources

The climate of the region is influenced by geographic location and physical features. Located on an elevation of 300 to 610 meter above sea level, the climate ranges from dry semi humid to humid semi-arid types.

The annual rainfall in the plateau and sub-plateau region is 1400 mm, on an average of which 82.1 % is received during the periods June to September and the rest 17.9 % in remaining months. (Fig 1)

Biodiversity

Biodiversity refers to variation and abundance of species in their living environment. Tribal population (27.6 %) dominate the state and are scattered in small and large villages close or inside the forest. The tribal people are solely dependent on forest for firewood, fodder, food and timber.

The vast list of plant species found in Jharkhand state is diminishing at a fast rate due to deforestation. Over grazing by livestock and loss of wetland due to siltation and exploitation of forest are putting pressure on plant biodiversity.

Forest Resources

Out of about 23 lakh hectares forest area, the maximum forest cover is in Palamau and minimum in Sahebganj. More than 1/3rd area is covered with forest in Singhbhum east, Palamau, Garwha, Hazaribagh, Chatra, Koderma, Girdih and Bokaro districts.

Animal Resources

Animal Husbandry has a good prospect in the state due to availability of vast stretches of grazing land and limited agricultural activities. The livestock population in Jharkhand reveals improvement in cattle, goat and pig during the last 10 years. The live stock production is a family operation and is an important source of employment generation and supplementary income.

Food grain production

Analysis show the requirement of 46 lakh tonnes of food grains for a population of 26 million against the current production of 22 lakh tonnes. The short fall in food grain production is highest in sub zone IV (Central north eastern plateau) followed by that in western and south eastern plateau zone.

3.1 General Features of the District

The district of Hazaribag is situated in the north east part of North Chotanagpur Division. The boundary of this district consists of districts of Gaya and Koderma in the north, Giridih and Bokaro in the east, Ranchi in the south and Palamu and Chatra in the west. The districts of Koderma, Chatra and Giridih have been bifurcated from this district. The district of Hazaribag is a part of Chotanagpur plateau. This area is full of several plateaus, mountains and valleys. There are three natural divisions of this district - Medium Plateau, Lower Plateau and Damodar Valley. The district headquarter is a part of medium plateau, which is situated at the height of about 2,000 ft from the sea level. Except the western part of the medium plateau, the whole area is surrounded by the lower plateau. The height of lower plateau is about 1,300 ft above the sea level. Damodar Valley is in the southern part of this district where Ramgarh town is situated which is about 1,000 ft below the districts headquarter. The main mountains of Hazaribag are Chandwara and Jillinja and their heights are about 2816 and 3057 ft respectively. Th e main rivers of this district are Damodar and Barakar.

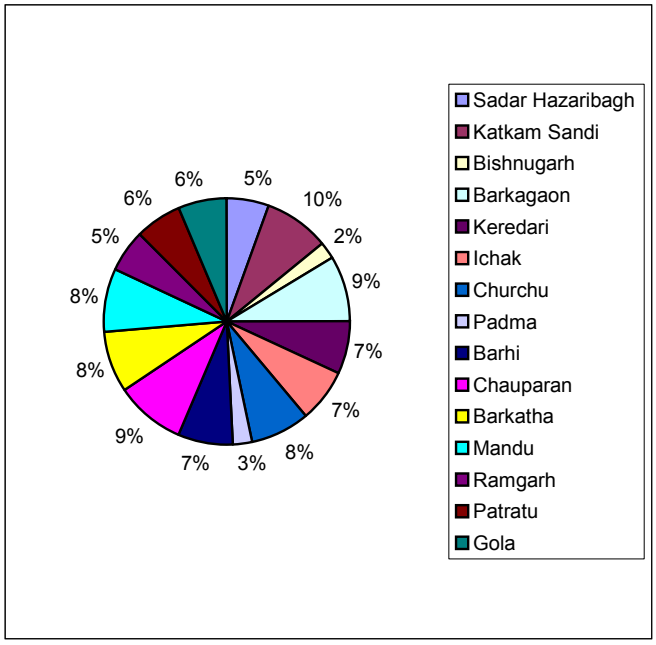
3.2 Socio-economic features

Demographic Pattern

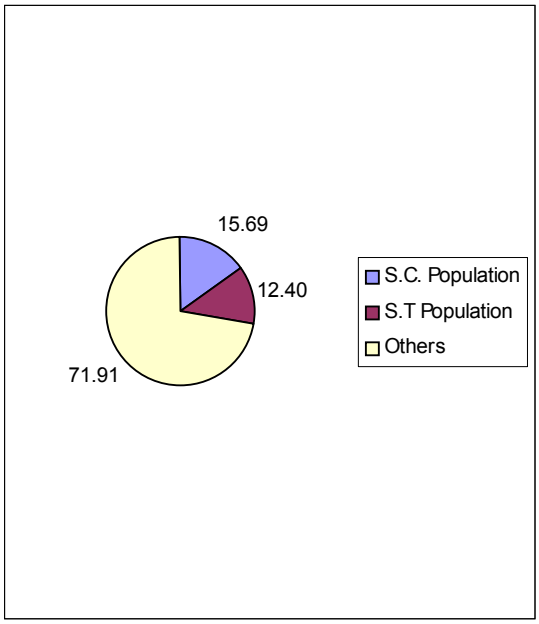
The total area of the district is 1304422.42 acre and total population of the district is 1615204 as per 2001 census, of which 75.70 (%) live in rural areas. The population density per square km. is 387.70 with sex ratio of 950 per 1000 males. The S.C. and S.T. population constitute 239765 and 191903 as 15.69 and 12.40 percent of the total population of the district. The block wise area and demographic pattern of the district is given in the Table. The total male and total female are 1167793 and 1109682 as ……% and ……% of total population of district.

Table 3.1 Block wise area & demographic pattern of Hazaribagh district

Sl. No.	Block	Area (in Acres)	Total Population	S.C. Population	S.T Population	Others
1	Sadar Hazaribagh	70657	104521	20919	4553	79049
2	Katkam Sandi	115914	113158	25533	5791	81834
3	Bishnugarh	27432	30597	5180	723	24694
4	Barkagaon	113470	87151	15894	9735	61522
5	Keredari	88160	74596	-	-	-
6	Ichak	91364	106064	18258	3213	84593
7	Churchu	100972	101970	14726	25932	61312
8	Padma	34635	36238	6469	195	29574
9	Barhi	91364	105367	18358	3113	83896
10	Chauparan	120163	101989	22439	1019	78531
11	Barkatha	106280	100719	12523	4870	83326
12	Mandu	108675	181960	33187	30378	118395
13	Ramgarh	71440	151910	12356	26787	112767
14	Patratu	80910	213696	25702	45753	142241
15	Gola	82981	105268	8221	29841	67206
Total :		**1304422**	**1615204**	**239765**	**191903**	**1108940**



Percentage of Area covered by different blocks



Percentage of SC/ST Population against total population

Table 3.2 Block wise Male, Female, Sex ratio

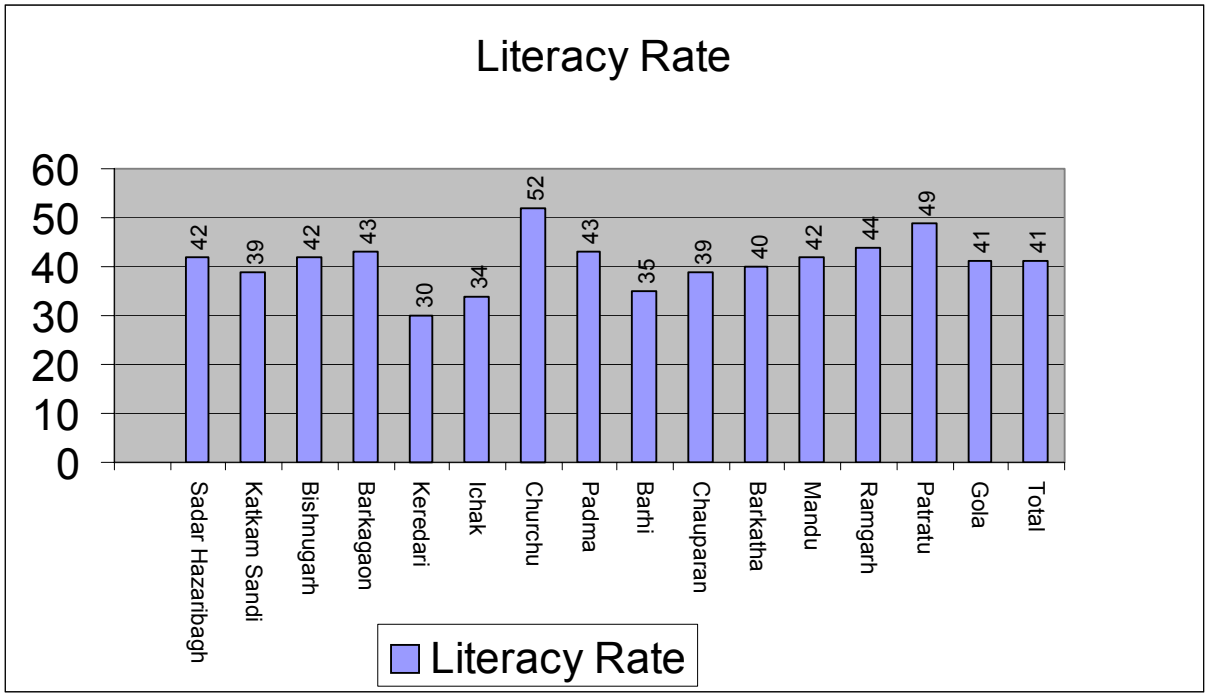
Block	Male	Female	Total Population	Sex Ratio (F/1000 male)	Density per Sq. Km.
Chauparan (Rural)	81790	85456	167246	1044	346
Barhi (Rural)	43432	45414	88846	1045	181
Padma (Rural)	21650	21761	43411	1005	–
Ichak (Rural)	57017	58760	115777	1030	295
Barkatta (Rural)	59114	66754	125868	1129	–
Bishungarh (Rural)	69185	73677	142862	1064	275
Hazaribagh (Rural)	66191	60453	126644	913	450
Katkamsandi (Rural)	70126	67869	137995	967	299
Keraderi (Rural)	46119	45122	91241	978	210
Barkagaon (Rural)	56694	54264	110958	957	2477
Patratu (Rural)	42695	39671	82366	929	328
Churchu (Rural)	48779	46142	94921	945	241
Mandu (Rural)	74460	68620	143080	921	385
Ramgarh (Rural)	78296	73419	151715	937	577
Gola (Rural)	63552	61924	125476	974	374
Total (Rural)	**879100**	**869306**	**1748406**	**988**	
Urban	288693	240376	529069	832	
Total (Rural + Urban)	**1167793**	**1109682**	**2277475**	**950**	

Literacy :

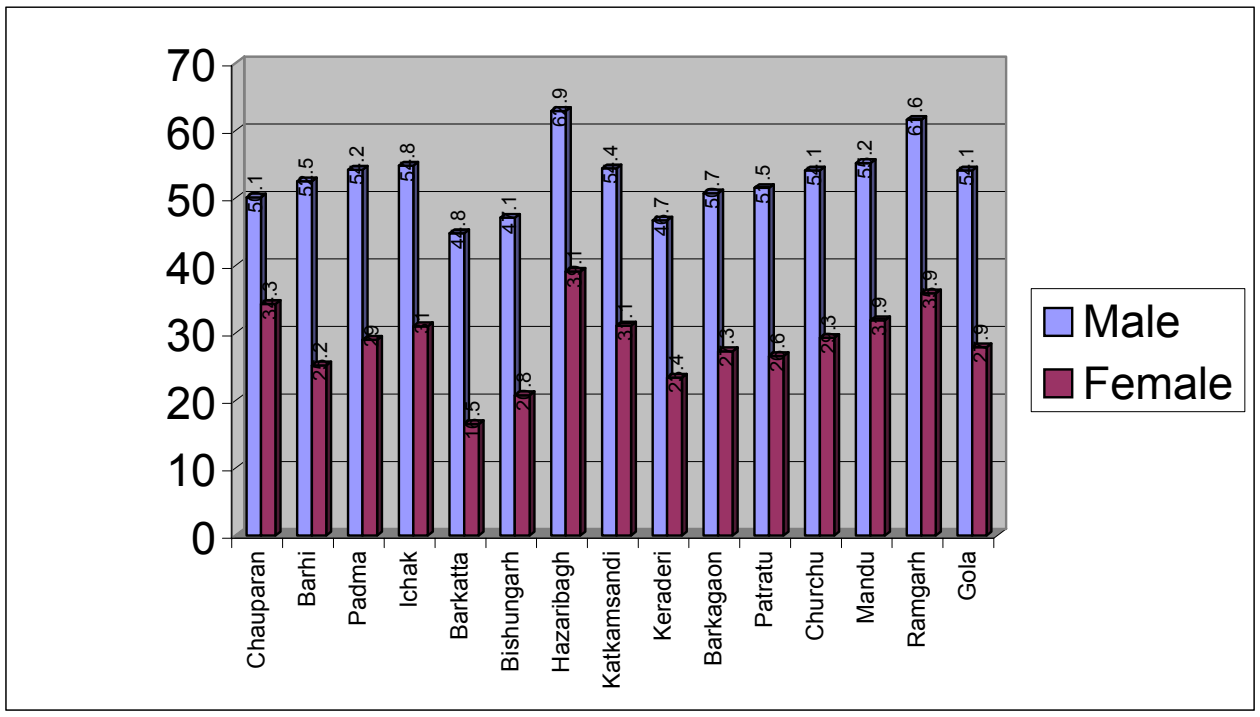
The Literacy rate of district is 41.10% in which male literacy rate is 53.20% and female literacy rate is 28.90%

Table 3.3 Block wise literacy status

Block	Number Literate			% of Respective Population		
	Male	Female	Total	Male	Female	Total
Chauparan	40966	29338	70304	50.1	34.3	42.0
Barhi	22782	11443	34225	52.5	25.2	38.5
Padma	11737	6314	18051	54.2	29.0	41.6
Ichak	31273	18212	49485	54.8	31.0	42.7
Barkatta	26472	11015	37487	44.8	16.5	29.8
Bishungarh	32599	15329	47928	47.1	20.8	33.5
Hazaribagh	41610	23664	65274	62.9	39.1	51.5
Katkamsandi	38136	21120	59256	54.4	31.1	42.9
Keraderi	21515	10542	32057	46.7	23.4	35.1
Barkagaon	28772	14838	43610	50.7	27.3	39.3
Patratu	21969	10536	32505	51.5	26.6	39.5
Churchu	26385	13514	39899	54.1	29.3	42.0
Mandu	41124	21907	63031	55.2	31.9	44.1
Ramgarh	48263	26366	74629	61.6	35.9	49.2
Gola	34402	17268	51670	54.1	27.9	41.2
Total :	**468005**	**251406**	**719411**	**53.2**	**28.9**	**41.1**



Average Literacy % of block of the district



Male-Female Literacy Ratio of different blocks of the district

Occupation

The percentage of main workers and marginal workers to total population of the district are 15.32 and 12.05 and the percentage of cultivators to total main and marginal workers is 27.36. The percentage of non workers as percentage of total population is 62.54

Table 3.4 -Block wise workforce engaged in different occupations

Block	Type of work (Main)			Type of work (Marginal)			Total			Non Workers	Non Workers as % of Population
	Cultivator	Agri. Labour	Main Agri. worker as % of Population	Cultivator	Agri. Labour	Main Agri. worker as % of Population	Cultivator	Agri. Labour	Workers as % of Population		
Chauparan	20429	5901	15.74	13441	8391	13.05	33870	14292	28.80	105286	62.95
Barhi	13609	2701	18.36	7853	5023	14.49	21462	7724	32.85	53765	60.51
Padma	6876	1393	19.05	3973	1501	12.61	10849	2894	31.66	25627	59.03
Ichak	17293	4178	18.55	9833	4267	12.18	27126	8445	30.72	70305	60.72
Barkatta	19481	3231	18.04	23059	8586	25.14	42540	11817	43.19	65211	51.81
Bishungarh	20200	4627	17.38	13629	8435	15.44	33829	13062	32.82	87185	61.03
Hazaribagh	5909	1839	6.12	2480	3546	4.76	8389	5385	10.88	91077	71.92
Katkamsandi	12980	3286	11.79	8226	5360	9.85	21206	8646	21.63	90963	65.92
Keraderi	14861	2717	19.27	5658	6108	12.90	20519	8825	32.16	55255	60.56
Barkagaon	17730	3624	19.25	8227	4155	11.16	25957	7779	30.40	67251	60.61
Patratu	8755	1876	12.91	4756	3781	10.36	13511	5657	23.27	52656	63.93
Churchu	9563	1320	11.47	8736	4068	13.49	18299	5388	24.95	60401	63.63
Mandu	9357	2721	8.44	6641	4105	7.51	15998	6826	15.95	98103	68.57
Ramgarh	20930	3079	15.83	8142	4315	8.21	29072	7394	24.04	98181	64.71
Gola	24140	3172	21.77	11177	3172	11.44	35317	6344	33.20	72189	57.53
Total	**222113**	**45665**	**15.32**	**135831**	**74813**	**12.05**	**357944**	**120478**	**27.36**	**1093455**	**62.54**

Source : Census

Block wise information on village : There are 1601 villages with 1431 inhabited and 170 Un-inhabited villages in the district.

Table 3.5 Block Wise information on Villages & Households

Sl. No.	Block	No. of Village		Total
		Inhabited	Un-inhabited	
1.	Chauparan	221	48	269
2.	Barhi	101	23	124
3.	Padma	40	03	43
4.	Ichak	125	37	162
5.	Barkatta	115	08	123
6.	Bishungarh	38	02	40
7.	Hazaribagh	102	14	116
8.	Katkamsandi	124	6	130
9.	Keraderi	73	03	76
10.	Barkagaon	81	03	84
11.	Patratu	80	02	82
12.	Churchu	86	04	90
13.	Mandu	79	06	85
14.	Ramgarh	80	06	86
15.	Gola	86	5	91
	Total	**1431**	**170**	**1601**

Land Utilization : Hazaribagh district has a reported geographical area of 512981.6 acre out of which only 190945.4 acre area as 37.22% of total geographical area is net potential area for agriculture. The area under forest is 43.43 % of geographical area which includes reserved forests, demarcated protected forest, undermarcated protected forest and unclassified forest. The land utilization pattern of different blocks of Hazaribagh district is given below :

Table 3.6 Land Use Status

Block	Total	Forest	Not available for agriculture	Gross potential for agriculture	Culturable waste including pasture Graze	Net potential for agriculture
Couparan	48327.87	27330.37	3002.26	17995.24	1664.57	16330.67
Keradari	43441.26	22421.80	3292.85	17727.61	3091.68	14635.93
Barkagaon	4478.78	25687.68	2844.13	24053.03	350.22	24403.25
Katkansandi	46204.52	21418.77	3047.99	21737.76	119.96	21617.8
Barhi	49200.01	17045.21	7483.86	24676.94	4477.26	20193.68
Ichak	39290.08	16190.30	6019.49	17080.29	1317.68	15762.61
Bishungarh	51954.55	24022.58	6001.87	21930.1	6844.55	15085.55
Hazaribag	28169.04	9070.98	9572.79	9525.27	2567.29	69.57.98
Churchu	39435.62	22485.92	3127.24	13822.46	1068.66	12753.8
Mandu	37191.21	17181.27	4824.91	15185.03	1753.87	13431.16
Patratu	25118.37	8668.36	4746.26	11703.75	2471.74	9232.01
Ramgarh	26278.6	4573.94	6156.34	15548.32	1726.48	13821.84
Gola	33582.72	6695.49	8332.17	18555.06	2338.41	16216.65
District	**512981.6**	**222792.67**	**68451.16**	**221737.77**	**30792.37**	**190945.4**

Operational Holding :

According to 2001 census, there are 171100 no. are belongs to marginal, small, medium, large and extra large land holding farmers pattern and rural house holding size is 5.91. The details of family size and land holding pattern are given in the following tables :

Table 3.7 : Family Size (Land Holding & Common Farming basis)

Total Rural People	Total Rural HH	Rural HH Size
1748406	295988	5.91

Land Holding Pattern

Class of Farmer	Percentage	Number
Marginal farmers, holding less than 1 ha.	39.49	67560
Small farmers, holding 1 ha to less than 2 ha	37.18	63610
Medium farmer, holding 2 ha to less than 4 ha	16.93	28960
Large farmer, holding 4 ha to less than 10 ha	5.90	10090
Extra large farmer, holding more than 10 ha.	0.51	880
Total	**100**	**171100**

Climate

The Climate of the districts is warm and humid with mean maximum and minimum temperature of 31.4^{0}C and 13.7^{0}C respectively. April, May and June are the hottest months and December, January and the coldest month. The maximum and minimum relative humidity recorded are 67.44% and 36.26% respectively. Mean daily sunshine is about 8.56 mm in the district. The month wise temperature, sunshine and humidity are indicated in the given table :

Table 3.8 : Month wise Mean Temp for last 5 years (2001-2005)

Month	2001		2002		2003		2004		2005	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
Jan	22.5	4.9	24.9	8.7	20.7	5.2	21.1	6.8	21.0	9.0
Feb	27.9	8.9	26.7	11.4	25.2	11.3	25.0	9.3	25.1	12.5
Mar	30.2	13.3	31.3	15.8	28.3	13.4	31.7	15.7	29.5	16.1
April	34.7	19.3	36.4	21.2	35.7	18.8	34.6	19.4	34.9	18.9
May	35.9	21.9	37.6	23.8	38.2	21.7	34.8	22.3	37.5	22.0
June	30.0	24.0	31.8	23.7	34.7	22.2	32.3	22.9	36.2	24.0
July	28.4	23.6	29.7	23.8	29.2	22.2	29.3	22.1	28.7	21.9
Aug	29.6	24.2	28.3	22.9	28.4	22.0	28.4	22.2	28.8	22.2
Sept	30.3	23.6	27.8	21.7	28.3	21.8	28.7	21.3	29.1	21.9
Oct	29.4	20.7	27.8	17.7	26.4	18.8	27.1	16.7	26.8	19.1
Nov	26.6	13.9	24.3	10.7	24.8	11.9	24.9	10.1	24.9	10.4
Dec	25.8	8.5	23.5	7.3	22.2	6.8	22.6	8.0	22.8	6.4
Mean (Total)	30.3	13.7	31.4	16.2	29.6	14.1	29.4	14.7	29.6	15.7

Table 3.9 : Month wise Av. Humidity for last 5 years (2001-2005)

Month	2001		2002		2003		2004		2005	
	Max RH	Min RH	Max RH	Min RH	Max RH	Min RH	Max RH	Min RH	Max RH	Min RH
Jan	83.1	55.6	83.5	40.5	74.8	29.3	84.9	46.0	81.1	67.8
Feb	73.7	40.6	86.1	41.5	76.3	30.0	80.3	30.1	75.3	57.8
Mar	64.5	26.7	69.5	22.8	63.7	30.4	49.4	23.4	65.3	47.0
April	54.7	18.2	70.9	23.6	47.4	21.4	45.5	29.6	47.0	33.8
May	69.7	38.8	75.6	47.3	52.9	30.9	53.7	37.5	57.6	36.3
June	85.4	72.5	79.0	54.1	64.5	49.8	72.5	55.2	69.5	50.3
July	89.1	81.0	73.7	61.9	84.4	60.1	83.8	72.1	86.7	78.8
Aug	89.3	76.8	85.3	75.1	86.8	69.1	89.3	84.8	87.2	81.2
Sept	88.4	69.6	87.2	75.3	84.0	68.0	85.7	78.0	86.5	83.8
Oct	89.8	61.2	81.8	49.8	81.5	65.9	82.9	68.5	85.1	79.1
Nov	88.4	44.8	78.1	41.2	79.6	39.9	74.2	62.6	68.5	63.8
Dec	85.3	55.1	77.8	32.7	83.2	42.5	81.5	65.4	68.7	67.1
Mean (Total)	69.1	36.0	77.1	35.1	63.0	28.4	62.8	33.3	65.2	48.5

Table 3.10 : Month wise Av. Sunshine for last 5 years (2001-2005)

Month	2001	2002	2003	2004	2005
	Sunshine	Sunshine	Sunshine	Sunshine	Sunshine
Jan	8.9	7.3	8.4	8.3	6.6
Feb	9.5	8.5	8.3	9.0	8.1
Mar	8.8	9.4	8.6	9.4	8.1
April	9.4	8.5	9.1	8.3	8.2
May	8.5	8.9	9.1	7.8	8.8
June	3.2	5.4	4.9	6.0	6.5
July	1.0	4.8	4.5	4.3	3.4
Aug	3.9	3.8	4.6	3.6	4.2
Sept	4.9	5.2	4.6	5.0	6.4
Oct	6.4	7.8	7.9	6.9	4.9
Nov	8.3	8.0	9.0	8.6	9.2
Dec	9.0	9.0	7.9	6.8	8.1
Mean (Total)	9.0	8.5	8.7	8.6	8.0

Rain-fall

The normal rainfall of the district is 1083.92mm. June to September are usual monsoon month where 79% of rainfall is recorded. The rainfall status of different blocks of Hazaribagh district from the year 2001 to 2005 are given below in the table.

Table 3.11 : Month wise Rainfall for last 5 years (2001-2005)

Month	2001	2002	2003	2004	2005
	RF	RF	RF	RF	RF
Jan	0.0	0.0	0.0	8.0	49.0
Feb	4.2	28.2	19.0	0.0	45.0
Mar	39.4	3.5	34.0	52.5	13.0
April	13.6	0.0	20.0	83.0	10.5
May	11.4	36.0	32.0	25.0	13.5
June	256.8	147.0	119.5	171.5	121.2
July	273.1	183.5	204.0	210.5	295.7
Aug	252.2	143.7	276.9	322.5	297.7
Sept	127.3	191.5	214.5	200.4	170.5
Oct	124.0	72.0	245.4	138.0	60.2
Nov	0.0	2.0	19.5	0.0	0.0
Dec	0.0	0.0	26.2	11.5	0.0
Mean (Total)	**1102.0**	**807.4**	**1211.0**	**1222.9**	**1076.3**

Soil

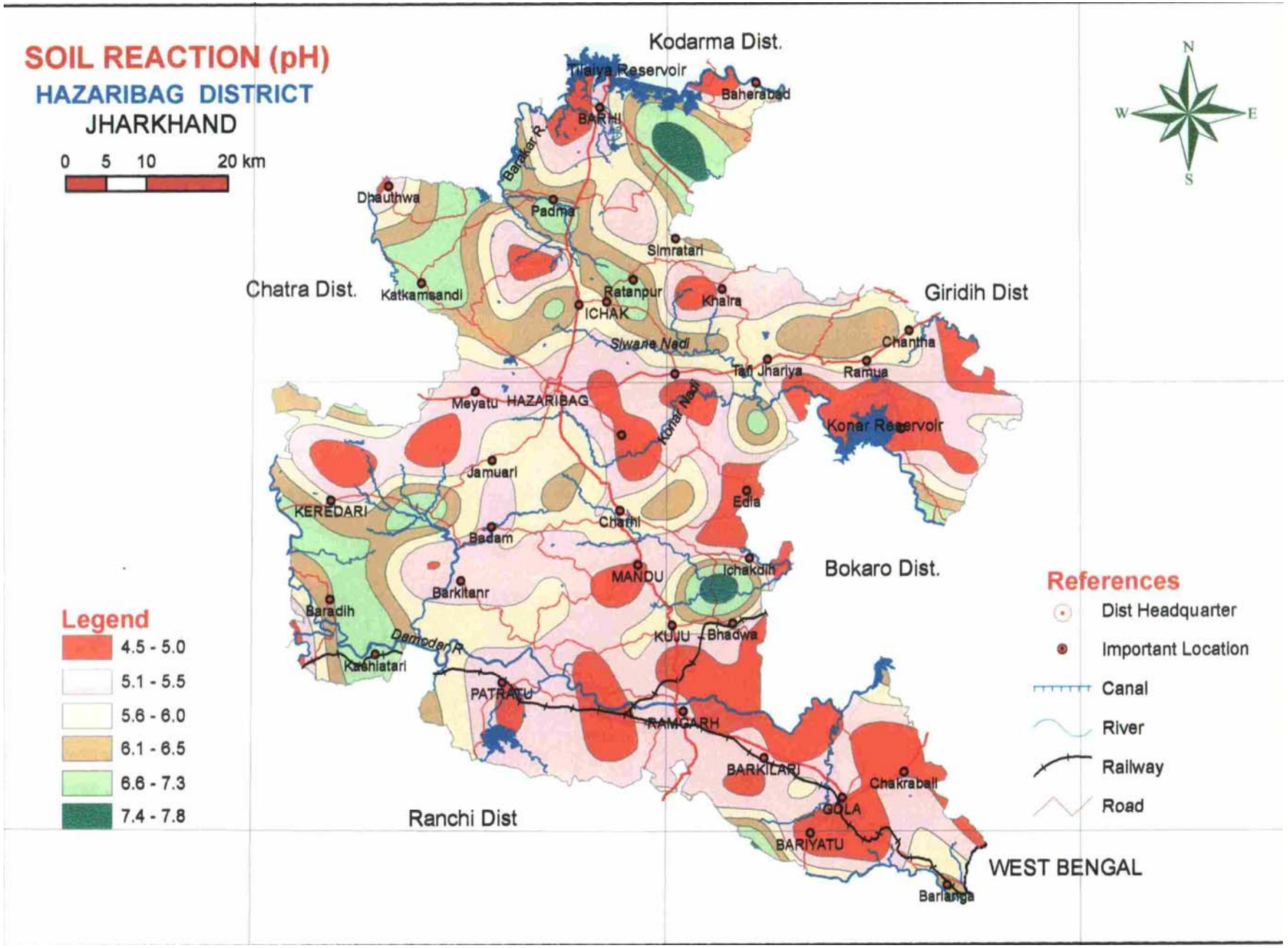
The soils occurring in different lanforms have been characterized during soil resource mapping of the state on 1: 250, 00 scale and three soil orders namely Entisols, Inceptisols and Alfisols were observed in Hazaribagh district (Fig. 1 and Table 1). Alfisols were the dominant soils covering 71.9 percent of TGA followed by Entisols (18.1 %) and Inceptisols (7.8%).

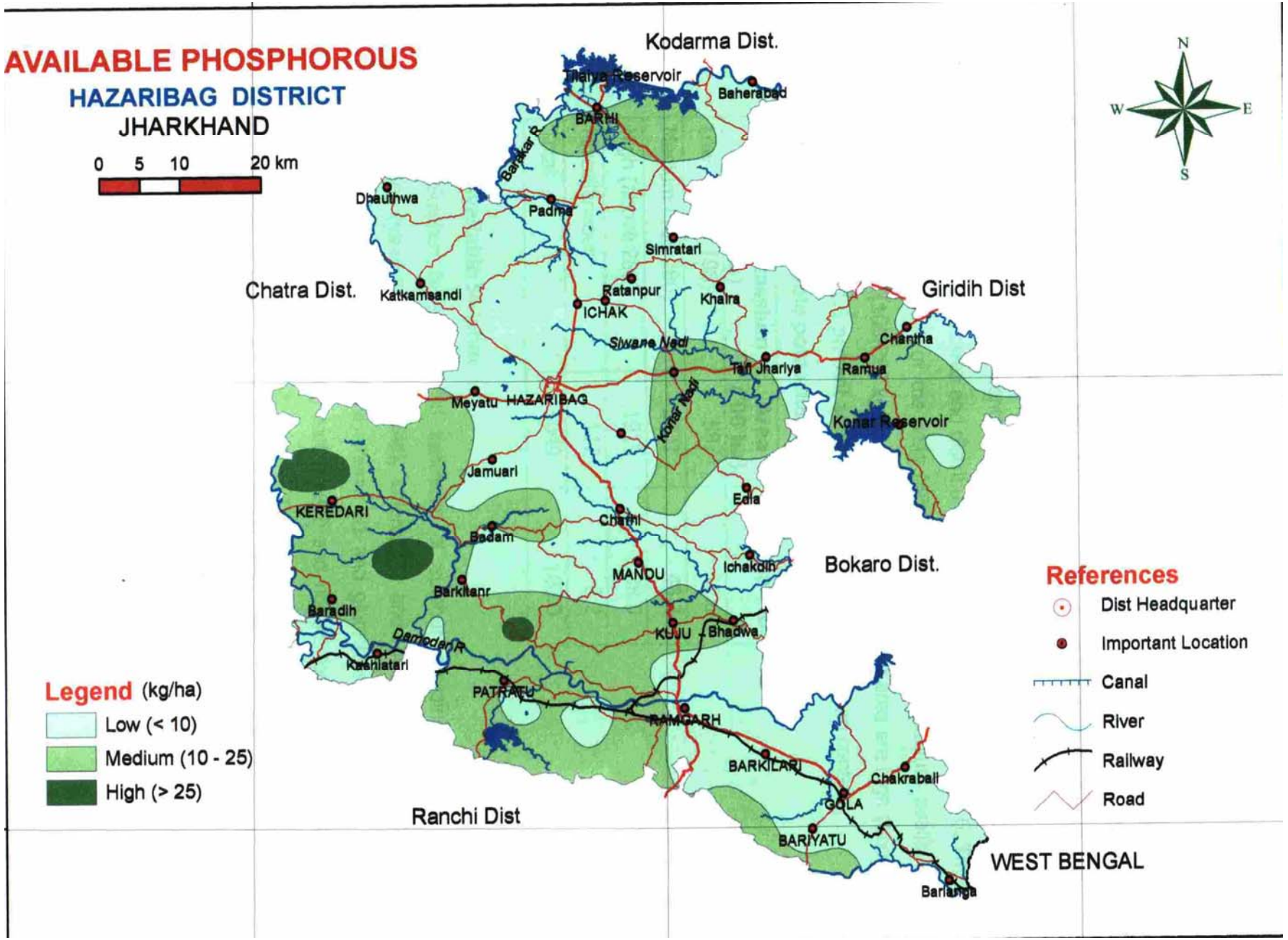
The soil pH ranges from 4.5 to 7.8. Majority of soils (88.2% of TGA) of the area are acidic in reaction. The organic carbon content in the soils ranges from 0.08 to 5.54 percent. Soils of 64.5 percent area have high surface organic carbon content. Medium and low organic carbon content constitute 17.4 and 15.9 percent area respectively.

Available nitrogen content in the surface soils of the district ranges between 68 and 710 Kg/ha. Soil of majority of area (69.4% of TGA) of the district have medium availability status of available nitrogen (280-560 kg ha-1) and 17.9 percent area have low available nitrogen content (<280 kg ha-1). Available phosphorus content in these soils ranges

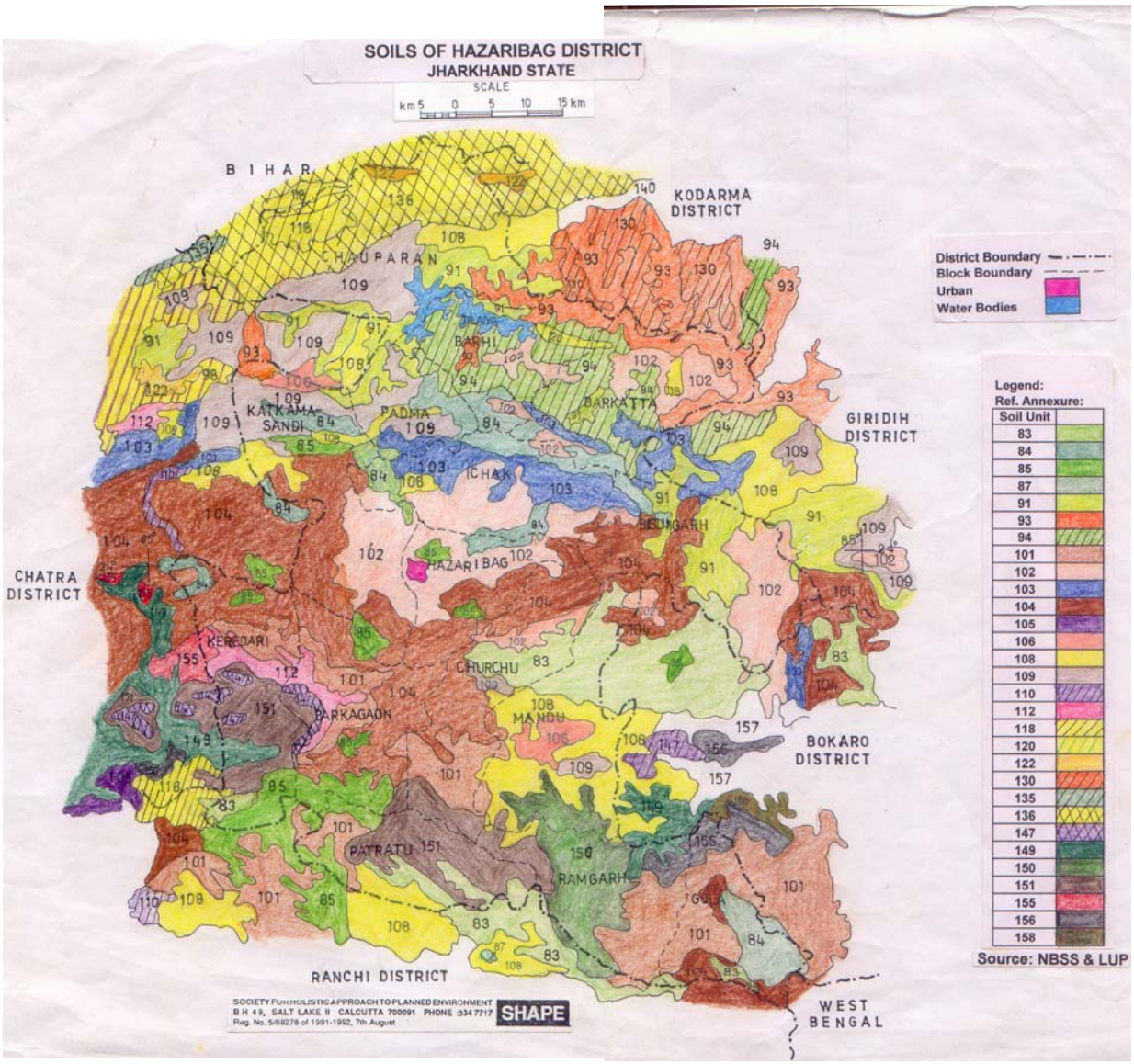
between 0.5 and 27.2 kg/ha. Soils of the 57.8 percent are low (below 10 kg ha-1) in available phosphorous content. Available potassium content in these soils ranges between 65 and 952 kg/ha. Most of the soils (48.2% of TGA) have medium (108-280 kg ha-1) available potassium content. Soils of 38.0 percent area are high (above 280 kg ha-1) and 11.6 percent area are low in available potassium content. The available sulphur content in the soils ranges from 0.54 to 106.5 mg kg-1). Soils of 33.8 percent of the are low (<10 mg kg-1) whereas soils of 30.4 and 33.6 percent area are medium (10-20 mg kg-1) and high (>20 mg kg-1) in available sulphur content respectively.

Soils are analyses for available (DTPA extractable) micronutrients and seen that all the soils are sufficient in available iron and manganese whereas soils of 4.2 and 5.5 percent area are deficient in available zinc and copper respectively. Soils of 38.9 percent area of district are deficient (<0.50 mgka-1) whereas 58.9 percent area are sufficient (>0.50 mgkg-1) where as 58.9 percent are sufficient (> 0.50 mg kg-1) in available boron content.


SOIL REACTION (pH)
HAZARIBAG DISTRICT
JHARKHAND
0 5 10 20 km
Kodarma Dist.
Tilaiya Reservoir
Baherabad
BARHI
Barakar R.
Dhauthwa
Padma
Simratari
Chatra Dist.
Katkamsandi
Ratanpur
ICHAK
Khaira
Giridih Dist
Siwane Nadi
Chantha
Tati Jhariya
Ramua
Meyatu
HAZARIBAG
Konar Nadi
Konar Reservoir
Jamuari
KEREDARI
Chatni
Edla
Badam
MANDU
Ichakdih
Bokaro Dist.
Barkitanr
Baradih
KUJU
Bhadwa
Damodar R.
Kashiatari
PATRATU
RAMGARH
BARKILARI
Chakrabali
GOLA
BARIYATU
Ranchi Dist
WEST BENGAL
Barlanga
N
W
E
S
Legend
4.5 - 5.0
5.1 - 5.5
5.6 - 6.0
6.1 - 6.5
6.6 - 7.3
7.4 - 7.8
References
Dist Headquarter
Important Location
Canal
River
Railway
Road


AVAILABLE PHOSPHOROUS
HAZARIBAG DISTRICT
JHARKHAND
0 5 10 20 km
N
W
E
S
Kodarma Dist.
Chatra Dist.
Giridih Dist
Bokaro Dist.
Ranchi Dist
WEST BENGAL
Thaiya Reservoir
Baherabad
BARHI
Barakar R.
Dhauthwa
Padma
Simratari
Katkamsandi
Ratanpur
ICHAK
Khaira
Siwane Nadi
Chantha
Tati Jhariya
Ramna
Meyatu
HAZARIBAG
Konar Nadi
Konar Reservoir
Jamuari
KERENDARI
Chatni
Badam
Edla
MANDU
Ichakdih
Barkitanr
Baradih
KUJU
Bhadwa
Damodar R.
Kashiatari
PATRATU
RAMGARH
BARKILARI
Chakrabali
GOLA
BARIYATU
Barianga
Legend (kg/ha)
Low (< 10)
Medium (10 - 25)
High (> 25)
References
Dist Headquarter
Important Location
Canal
River
Railway
Road

Soil Map


SOILS OF HAZARIBAG DISTRICT
JHARKHAND STATE
SCALE
km 5 0 5 10 15 km
BIHAR
KODARMA DISTRICT
CHATRA DISTRICT
GIRIDIH DISTRICT
BOKARO DISTRICT
RANCHI DISTRICT
WEST BENGAL
CHAUPARAN
BARHI
KATKAMA-SANDI
PADMA
BARKATTA
ICHAK
BELUGARH
HAZARIBAG
KERODARI
CHURCHU
BARKAGAON
MANDU
PATRATU
RAMGARH
GOLA
District Boundary
Block Boundary
Urban
Water Bodies
Legend:
Ref. Annexure:
Soil Unit
83
84
85
87
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158
Source: NBSS & LUP
SOCIETY FOR HOLISTIC APPROACH TO PLANNED ENVIRONMENT
B H 49, SALT LAKE II CALCUTTA 700091 PHONE 334 7717
Reg. No. S/68278 of 1991-1992, 7th August
SHAPE

Soil Erosion

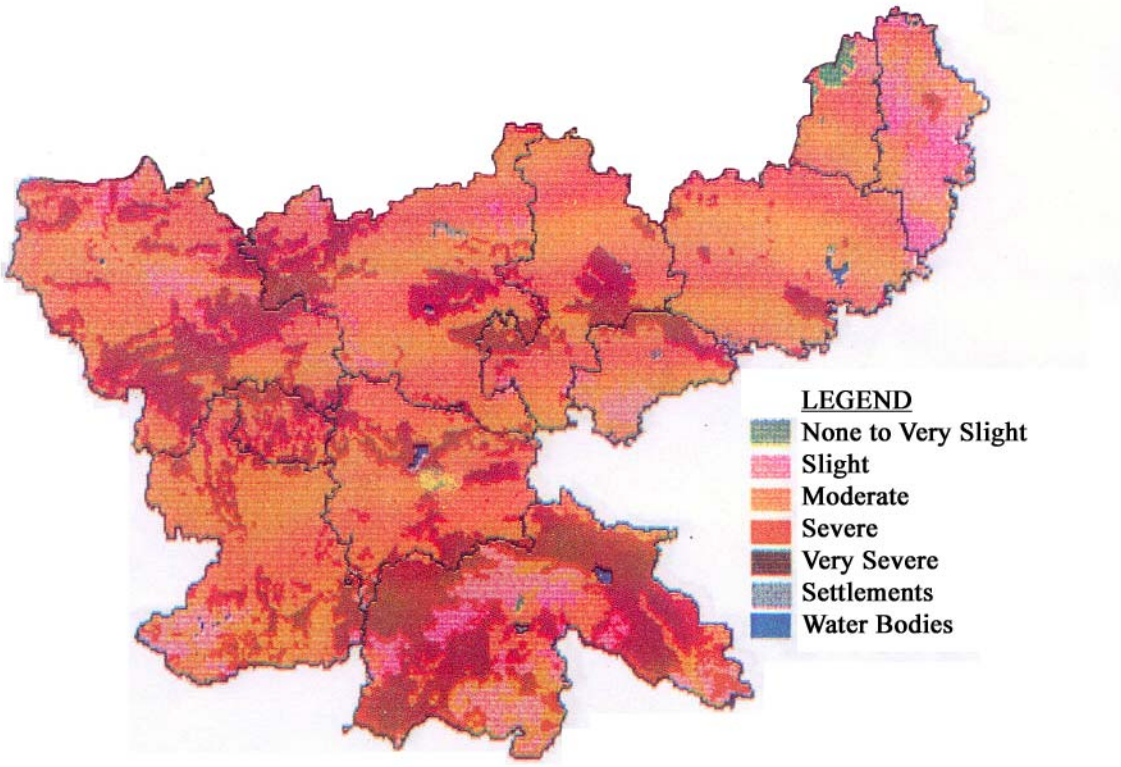


Table 3.11 : Soils under Different Reaction classes

Soil Reaction	Area ('00 ha)	% of the TGA
Very Strongly acidic (pH 4.5 to 5.0)	911	18.0
Strongly acidic (pH 5.1 to 5.5)	1753	34.7
Moderately acidic (pH 5.6 to 6.0)	1134	22.5
Slightly acidic (pH 6.1 to 6.5)	654	13.0
Neutral (pH 6.6 -7.3)	439	8.7
Slightly alkaline (pH 7.4 – 7.8)	46	0.9
Miscellaneous	112	2.2
Total	5049	100.00

Table 3.12: Organic Carbon Status

Organic Carbon (%)	Area ('00 ha)	% of the TGA
Low (Below 0.50 %)	803	15.9
Medium (0.50 -0.75%)	878	17.4
High (Above 0.75)	3256	64.5
Miscellaneous	112	2.2
Total	5049	100.00

Table 3.13 : Available Nitrogen Status in the surface soils

Available nitrogen (kg/ha)	Area ('00 ha)	% of the TGA
Low (below 280)	904	17.9
Medium (280-560)	3502	69.4
High (Above 560)	531	10.5
Miscellaneous	112	2.2
Total	5049	100.00

Table 3.14 : Available Phosphorous status in the surface soils

Available Phosphorous (kg/ha)	Area ('00 ha)	% of the TGA
Low (below 10)	2919	57.8
Medium (10-25)	1942	38.5
High (Above 25)	76	1.5
Miscellaneous	112	2.2
Total	5049	100.00

Table 3.15 : Available Potassium status in the surface soils

Available Potassium (kg/ha)	Area ('00 ha)	% of the TGA
Low (below 108)	587	11.6
Medium (108-280)	2431	48.2
High (Above 280)	1919	38.0
Miscellaneous	112	2.2
Total	5049	100.0

Sources: NBSS & LUP (2006)

Table 3.16: Available Sulphur status in the surface soils

Available Sulphur (kg/ha)	Area ('00 ha)	% of the TGA
Low (<10)	1709	33.8
Medium (10-20)	1533	30.4
High (>20)	1695	33.6
Miscellaneous	112	2.2
Total	5049	100.0

Sources: NBSS & LUP (2006)

Table 3.17 : Available Iron status in the surface soils

Available Iron (mg kg-1)	Area ('00 ha)	% of the TGA	Rating
< 15	413	8.2	Sufficient
15-25	672	13.3	
25-30	2544	50.4	
50-100	1308	25.9	
Miscellaneous	112	2.2	
Total	5049	100.0	

Table 3.18 : Available Manganese status in the surface soils

Available Manganese (mg kg-1)	Area ('00 ha)	% of the TGA	Rating
< 10	37	0.7	Sufficient
10-25	817	16.2	
25-50	3643	72.2	
50-100	440	8.7	
Miscellaneous	112	2.2	
Total	5049	100.0	

Table 3.19 : Available Zinc status in the surface soils

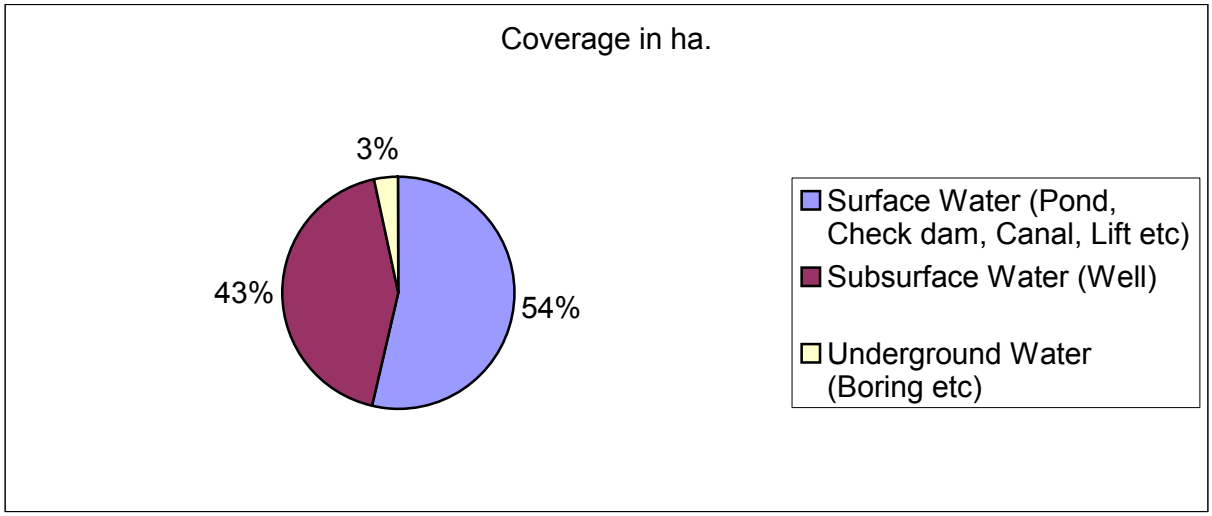
Available Zinc (Mg kg-1)	Area ('00 ha0	% of the TGA	Rating
< 0.5	213	4.2	Deficient
0.5-1.0	402	8.0	Sufficient
1.0-2.0	1941	38.4	
2.0-3.0	1207	23.9	
3.0-5.0	858	17.0	
5.0-10.0	316	6.3	
Miscellaneous	112	2.2	
Total	5049	100.0	

Table 3.20 : Available Zinc status in the surface soils

Available Boron (mg kg-1)	Area ('00 ha)	% of the TGA	Rating
< 0.25	1055	20.9	Deficient
0.25 -0.50	909	18.0	
0.50 -0.75	901	17.9	Sufficient
> 0.75	2072	41.0	
Miscellaneous	112	2.2	
Total	5049	100.0	

Irrigation

54% of total irrigated area in Hazaribagh district is irrigated by surface water



such as pond, check dam, canal, lift etc. 43% area is irrigated by subsurface water i.e. well and 3% area is irrigated by underground water such as boring, pump set etc. The irrigation status of Hazaribagh district is given below :

Table 3. 21 : Irrigation Facility & Status

Source	Coverage in ha.
Surface Water (Pond, Check dam, Canal, Lift etc)	20090
Subsurface Water (Well)	16180
Underground Water (Boring etc)	1280
Total	37550

Table 3.22 : Irrigation Status of Hazaribagh District (Area in Acre)

Block Name	Source of Irrigation												Total Irrigation	
	Dug Well		Ahar/Pond		Check Dam		Deep Boring		Major Irrigation Canals		Mini Irrigation Schemes			
	No.	Area Irrigated	No.	Area Irrigated	No.	Area Irrigated	No.	Area Irrigated	No.	Area Irrigated	No.	Area Irrigated	No.	Area Irrigated
Chauparan	1850	8486.84	185	4440.78	05	77.52	-	-	01	35.20	06	450.00	2047	13,490.34
Barhi	2460	3075	77	1356	17	510	-	-	-	-	02	400	2556	5,341.00
Padma	227	309.50	118	1470	22	319	-	-	12	175	-	-	379	2,273.50
Ichak	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barkatta	1928	1928	311	2473.22	03	77	-	-	-	-	-	-	2242	4,478.22
Bishungarh	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hazaribagh	683	552.33	257	1986.90	12	230.90	-	-	-	-	15	270.00	967	3,040.13
Katkamsandi	146	5480.88	95	688	15	250	-	-	2	750	14	707.45	272	7,876.33
Kerader i	3535	1398	191	506	34	305	-	-	1	310	20	232	3781	2,751.00
Barkagaon	4500	8000	200	3000	20	1000	-	-	-	-	60	1800	4780	13,800.00
Patratu	38	76	96	336	22	543	-	-	-	-	02	80	158	1,035.00
Churchu	1682	665.30	94	276.60	33	97.1	-	-	-	-	-	-	1809	1,039.00
Mandu	2669	1372	224	327	32	160	-	-	-	-	-	-	2925	1,859.00
Ramgarh	6750	7795	75	3525	10	850	-	-	-	-	05	392	6840	12,562.00
Gola	3766	1754.65	73	901.46	8	324.12	-	-	-	-	13	353.14	3860	3,333.37
Total	**30234**	**40893.5**	**1996**	**21286.96**	**233**	**4743.64**	**-**	**-**	**16**	**1270.2**	**137**	**4684.59**	**32616**	**72,878.89**

Rainfed Area :

Information on Land Based Systems

Agriculture

Agriculture is the mainstay of the economy of the district. Since the population of SC and ST is 28.09% of the total population and literacy rate of the district is 41% so that most farmers take up agriculture as subsistence enterprise.

The actual area and the area used for different kharif and rabbi crops are given in the below table 3.23

Table 3.23 : Land Use

Total Land Use			Kharif Land use		Rabi Land Use	
Item	**Area, ha.**	**Percentage w.r.t. Rural area**	**Item**	**Area, ha.**	**Item**	**Area, ha.**
Total Geographic area	562960	109.74	Total used land	152395	Total Irrigated Land	24995.00
Total Rural area	512982	100.00	Paddy	118495	Total area under Rabi	20714.00
Total Forest area	222790	43.43	Pulses	6795	Wheat	9146.00
Area not available for agri.	68450	13.34	Oilseed	1090	Vegetable	1064.00
Total fallow land (cultivable waste+unused land)	69350	13.52	Maize	18840	Oilseed	385.00
Total actual cultivated area	152395	29.71	Marua	1075	Pulses	2987.00
Total irrigated area	25000	4.87	Vegetable	3845	Gram	378.00
Total unirrigated area	127395	24.83	Sugar cane	0	Others	6755.00
			Others	2255		
			Total left fallow	38555		
			Total Land owned	190950		

Table 3.24 : Area & Productivity of Crops

Area – In Hec. Production – In M.T.

Sl. No.	Name of Crop	1997-98		1998-99		1999-2000		2000-01	
		Area	Production	Area	Production	Area	Production	Area	Production
1.	*Dhan*	94384	240556	89314	211150	94364	216557	71256	114493
2.	*Makai*	8474	9864	11563	16895	10226	18151	12488	19606
3.	*Genhu*	7850	13644	7631	17317	8246	17190	4916	9731
4.	*Chana*	4030	4466	4003	3903	4172	4339	1965	2061
5.	*Rai Sarso*	3506	1227	3513	1637	3599	2681	1984	898
6.	*Arhar*	2699	1746	3016	2310	3195	2942	3247	2974

Table 3.25 : Consumption of Fertilizer in Kharif Season

Consumption – In M.T.

Year	Urea	D.A.P.	Potash	S.S.P.	Amonium Sulphate	IFFCO	Others
1997-98	6840.00	1928.00	27.50	340.00	71.00	173.00	--
1998-99	6344.00	1921.00	8.00	322.00	--	--	--
1999-00	7376.00	2983.00	26.00	545.00	--	139.00	--
2000-01	6444.00	2830.00	45.50	208.00	--	264.85	15.00
2001-02	8135.85	4208.00	37.50	148.00	--	267.85	17.00

Table 3. 26 : Consumption of Fertilizer in Rabi Season

Consumption – In M.T.

Year	Urea	D.A.P.	Potash	S.S.P.	Amonium Sulphate	IFFCO	Others
1997-98	2393.00	722.00	35.00	174.00	--	8.00	60.00
1998-99	1833.00	858.00	95.00	28.75	--	94.00	98.00
1999-00	2617.00	989.00	35.00	102.00	--	--	10.00
2000-01	1849.00	453.00	13.50	96.00	--	63.00	16.50
2001-02	2930.00	2223.00	81.50	83.20	10.00	146.50	--

Information on Market

Due to poor socio economic condition the tribal farmers, marketed surplus often exceeds marketable surplus. Exploitation of village money, lenders and middle men and exchange of commodities in the barter system are discernible in the district. Basically agricultural products, forest products, livestock, fish etc. are sold in the primary market. Unregulated weight and measures, lack of grading and standardization, lack of storage

capacities & lack of farm organization are key features of existing market system in the district. Information on market infrastructure in the district are given below :

Table 3. 27 : AGRICULTURE PRODUCTION MARKET SAMITI IN HAZARIBAGH

Name of Haat/ Market	Days	Block	Distance from Block	Distance from Main Market	Land for hatt	Guaranty Money for 2005-06
Maharajganj	Every Thursday	Chouparan	3 K.M.	60 K.M.	2.98 Acre	3,45,000.00
Jhumara	Every Thursday	Sadar Hazaribagh	15 K.M	18 K.M	1.79 Acre	1,06,507.00
Tatijharia	Every Tuesday	Bishnugarh	10 Km	40 KM	0.69 Acre	28,215.00
Parasi Echak	Every Monday/ Friday	Echak	0.5 KM	15 KM	0.53 Acre	64,100.00
Katkamsandi	Every Sunday/ Wednesday	Katkamsandi	0.30 KM	25 KM	1.03 Acre	13,932.00
Charhi	Every Monday/ Thursday	Churu	15 KM	25 KM	0.40 Acre	49,157.00
Dadhi Haat	Every Thursday	Churchu	40 KM	55 Km	0.19 Acre	47,725.00
Gidhi Haat	Every Wednesday/ Saturday	Churchu	50 KM	60 Km	--	41,308.00
Raligarha	Every Sunday	Churchu	50 KIM	63 KM	1.70 Acre	57,099.00
Barkatta	Every Monday	Barkatta	1 KM	61 KM	0.95 Acre	63,000.00
Datto Haat	Every Monday	Katkamsandi	10 KM	35 KM	2.00 Acre	15,473.00
Belsagra	Every Thursday	Churchu	40 Km	60 KM	0.90 Acre	3,364.00

Table 3.28 : Information on Major Vegetables traded on daily basis

Quantity – In M.T.

Sl. No.	Name of Vegetables	Barkagaon Haat			Jhumra Haat			Maharajganj Haat			Daily Market, Hazaribagh		
		Arrival quantity			Arrival quantity			Arrival quantity			Arrival quantity		
		Lean	Average	Peak	Lean	Average	Peak	Lean	Average	Peak	Lean	Average	Peak
1.	Cauliflower	2.50	3.84	10.62	3.33	3.84	10.00	3.33	5.76	16.25	1.25	3.46	9.58
2.	Peas	1.25	1.92	7.50	2.50	1.53	5.83	0.50	2.88	10.83	3.57	2.73	9.78
3.	Cabbage	1.87	2.88	8.43	2.50	2.52	6.87	3.75	3.84	10.62	6.00	2.73	7.43
4.	Carrots	0.87	0.76	2.75	0.62	0.53	1.91	1.25	0.90	3.08	0.41	0.45	1.55
5.	Cucurbits	0.25	0.11	0.50	0.12	0.05	0.25	0.25	0.11	0.50	0.40	0.26	1.14
6.	F. Beans	1.12	0.96	3.41	0.62	0.78	2.83	1.25	1.34	5.00	0.90	1.41	5.73
7.	Okra	-	-	-	-	-	-	-	-	-	-	-	-
8.	Tomato	8.75	14.42	42.50	6.87	11.53	34.06	12.50	21.15	62.50	1.11	2.87	7.78
9.	Brinjal	0.93	0.96	2.91	0.55	0.78	2.50	1.05	1.55	5.00	0.13	1.58	4.29
10.	Chilli	0.56	0.96	2.66	0.55	1.01	3.00	0.90	1.59	4.50	0.20	0.30	0.52
11.	Capsicum	-	-	-	-	-	-	-	-	-	0.03	0.03	0.14
12.	Ginger	-	-	-	-	-	-	-	-	-	0.25	0.58	1.58
13.	Leafy Vegetables	0.53	1.25	2.50	0.39	1.11	2.35	0.60	1.86	4.00	1.54	0.33	0.38
14.	Others	0.65	1.34	2.85	0.55	1.11	2.35	0.95	2.19	4.75	0.32	0.57	0.64

Table 3.29 : Information on Potato/Onion/Garlic traded on daily basis

Quantity – In M.T.

Sl. No.	Name of fruit	Barkagaon Haat			Jhumra Haat			Maharajganj Haat			Daily Market, Hazaribagh		
		Arrival quantity			Arrival quantity			Arrival quantity			Arrival quantity		
		Lean	Average	Peak	Lean	Average	Peak	Lean	Average	Peak	Lean	Average	Peak
1.	Potato	20.31	30.76	59.37	31.25	48.07	93.75	37.50	57.69	112.50	3.26	8.49	12.64
2.	Onion	2.81	9.32	24.68	3.75	9.61	23.75	5.00	12.69	25.00	1.86	3.09	6.73
3.	Garlic	-	-	-	-	-	-	-	-	-	0.34	0.80	2.17

Table 3. 30 : Information on Major fruits traded on daily basis

Quantity – In M.T.

Sl. No.	Name of fruit	Barkagaon Haat			Jhumra Haat			Maharajganj Haat			Daily Market, Hazaribagh		
		Arrival quantity			Arrival quantity			Arrival quantity			Arrival quantity		
		Lean	Average	Peak	Lean	Average	Peak	Lean	Average	Peak	Lean	Average	Peak
1.	Banana	-	-	-	-	-	-	-	-	-	0.26	0.68	0.98
2.	Mango	-	-	-	-	-	-	-	-	-	1.66	0.82	4.09
3.	Apple	-	-	-	-	-	-	-	-	-	0.14	0.40	6.65
4.	Orange	-	-	-	-	-	-	-	-	-	0.11	0.21	0.66
5.	Guava	-	-	-	-	-	-	-	-	-	0.04	0.03	0.08
6.	Litchi	-	-	-	-	-	-	-	-	-	0.03	0.03	0.16
7.	Lime	-	-	-	-	-	-	-	-	-	-	-	-
8.	Jackfruit	0.50	0.23	1.00	0.37	0.19	0.87	0.62	0.28	1.25	0.32	0.60	2.19
9.	Grapes	-	-	-	-	-	-	-	-	-	0.11	0.37	0.90

Information on Credit

Finance is the basic need for any economic activity concerned with agriculture. Due to rising cost of agricultural inputs and poor socio-economic condition of the SF/MF, agriculture credit assumed importance for agriculture development. Various credit institutions functioning in the district for agriculture finance are Regional Rural Banks and Co-operative Banks. The banking profile and block wise bank branch position of Hazaribagh district is given as follows :

Table 3.31 : BANKING PROFILE OF HAZARIBAGH DISTRICT

Name of the Bank	Number of Branches
Commercial Bank	90
Kshetriya Gramin Bank	17
Central Co-operative Bank	10
Land Development Bank	3
Total	120

Table 3.32 : BLOCK WISE POSITION OF BANK BRANCHES

S No.	Name of Block	Commercial Bank	Gramin Bank	Co-op/LDB Bank	Total
1	Barhi	6	1	2	9
2	Barkatha	3	3	-	6
3	Barkagaon	2	2	1	5
4	Bishnugarh	4	2	1	7
5	Chouparan	3	1	1	5
6	Churchu	7	-	1	8
7	Gola	3	1	-	4
8	Hazaribagh	21	2	2	25
9	Ichak	3	2	-	5
10	Katkamsandi	4	--	--	4
11	Keredari	3	--	--	3
12	Mandu	9	1	1	11
13	Patratu	7	-	1	8
14	Ramgarh	14	2	3	19
15	Padma	1	--	--	1
	Total	90	17	13	120

The total SHG target of different bank in Hazaribagh district is 2430 during 2005-06 which details is given below as follows :

Table 3. 33 : SHG TARGET FOR THE YEAR 2005-2006

S No.	Name of Banks	No. of A/Cs
1.	State Bank of India	600
2.	Bank of India	600
3.	United Bank of India	70
4.	Central Bank of India	70
5.	Union Bank of India	70
6.	Allahbad Bank	70
7	Punjab National Bank	70
8	Canara Bank	70
9	Bank of Boroda	100
10	Syndicate Bank	30
11	Indian Overseas Bank	100
12	Oriental Bank of Commerce	40
13	UCO Bank	30
14	Punjab & Sind Bank	30
15	Andhra Bank	30
16	Hazaribagh Kshetriya Gramin Bank	450
	Total	2430

TABLE 3.34 : LIST OF PRIVATE ORGANIZATION, NGO & THEIR ACTIVITIES DURING 2005-06

Name of NGO	Specialization	Activities during 2005-06	Working Block
Jai Prakash Seva Sansthan, Lohandi, Chouparan	Wastershed Dev., Microfinance,	SHG Promotion, Non-formal education, Dynamic Training to SHG, Skill Development	Chouparan
Jan Jagran Kendra P.T.C. Chowk, Kanhari Hill Road, Matwari, Hazaribagh	Watershed Management, Entrepreneurship Dev, Food Processing, Women Empowerment, Agriculture Development	RACHANA, IWDP watershed Dev., EDP on Food Processing, Upland Agril. Dev., Piggery,	Bishnugarh, Churchu, Sadar, Barkagaon, Mandu, Barhi, Barkatha, Ichak, Keredari, Gola, Padma, Ramgarh.
Holy Cross Social Service Centre, Hazaribagh	SHG, Agriculture Watershed, Horticulture, Education, Health	SHG Formation, Watershed Development, Irrigation, Horticulture, Farmers Club, Income Generation Programme, Entrepreneurship dev.	Barkatha, Ichak, Ramgarh, Gola, Padma, Sadar Barhi, Bishnugarh, Katkamsandi
SUPPORT (Society for up liftment of people with People Organization and Rural Technology)	SHG Promotion (537 SHG) Watershed Development Sustainable Agriculture Entrepreneurship Development Programme	SHG Promotion and Linkage with Bank, Facilitation in RSVY, Implementation of watershed programme, Entrepreneurship training, food processing training, Fishery Dev. Prog.	Mandu, Churchu, Sadar, Patratu, Barkagaon, Barkatha.
Sri. Ramakrishna Sarada Math & Mission, Hazaribagh	Agriculture, Horticulture, Floriculture, Bee Keeping, Natural Resource Management, Women Empowerment	Farmer Promotion, Training for Entrepreneurship development, Undertaking Women Empowerment	Katkamsandi, Gola, Ramgah, Ichak, Mandu, Padma

Communication System:

The communication system and the total no. of that system in the Hazaribagh district are given below:

(a)	Post Office	-	203
(b)	Post Box	-	963
(c)	Telephone Exchange	-	39
(d)	Telephone Connection	-	28797
(e)	No. of P.C.O.	-	1033
(f)	No. of Radio Station	-	01
(g)	No. of Doordarshan Centre	-	01
(h)	No. of Railway Station	-	11
(i)	No. of City Booking Office	-	01

Table 3.35 : List of Educational Institution & Rural Health Facility available in the Hazaribagh district are as follows

Type of School/Institution	No.	Health Centre	No.
Primary School	953	Hospital	29
Middle School	180	Mat. & Child Welfare Centre	12
High School	39	Maternity Homes	3
H. S. School	0	Child Welfare Centre	9
Colleges	2	Primary Health Centre	21
Type of School/Institution	No.	Health Centre	23
Adult Literacy Centre	0	Primary Health Sub-Centre	81
Industrial School	1	Type of Health Centre	No.
Training Institute	1	Dispensary	22
Others School	41	Family Planning Centre	30
		Nursing Home	2
		Regd. Private Practitioner	76
		Subsi. Medical Practitioner	5
		Other Centre	15
		TB Centre	2

Table 3. 36: Hazaribagh : At a Glance

1.	**Area**		
	(a) Urban	- 231 sq. km.	
	(b) Rural	- 5745 sq. km.	
	Total	**- 5976 sq. km.**	
2.	**Educational Institute**		
	(a) No. of University	- 01	
	(b) No. of College	- 10	
	(c) No. of Technical Institute	- 01	
	(d) No. of Inter College	- 02	
	(e) No. of 10+2 School	- 07	
	(f) No. of High School	- 67	
	(g) No. of Middle School	- 239	
	(h) No. of Primary School	- 964	
3.	**Administration**		
	(a) No. of Sub Division	- 03	
	(b) No. of Group Develop Block	- 15	
	(c) No. of *Rajsava* Circle	- 15	
	(d) No. of P.S./O.P.	- 29	
	(e) No. of *Rajasva Halka*	- 137	
	(f) No. of *Gram Panchayat*	- 330	
	(g) No. of Town	- 02	
5.	**Electricity**		
	(a) No. of Electrical Village	- 411	
	(b) No. of Electrical Town	- 02	
	(c) No. of Electrical Pump Set	- 400	
	(d) No. of Electrical Nalkop	- 21	
	(e) No. of Electric Connection		
	For domestic work	- 38029	
	For business work	- 5223	
	Others	- 214	
6.	**Agriculture Department**		
	(a) No. of Animal Hospital	- 01	
	(b) No. of Animal Meidcal Hall	- 43	
	(c) No. of Artificial *Garbadhan* Centre	- 07	
	(d) Group development block centre	- 14	

7.	**Co-operative Details**		
	(a) No. of primary agri. *Sakh samiti* - 122 (b) No. of managers - 17 (c) Total Demand - 470.28 lacs (d) Total *Vasuli* - 28.05 lacs (e) % *Vasuli* against demand - 6 % (f) No. of Business *Mandal* - 12 (g) No. of primary customer *bhandar* - 67 (h) No. of central customer *bhandar* - 02 (i) Others & other committee - 507 (j) K.C.C. & Credit Card distribution - Target - 3000 No. of Member - 2115 Amount - 171.33 lacs Distributed loan – Kharif - 439 Rabbi - 338		

TABLE 3. 37: WATER AREA

Sl. No.	Name of Block	Water Area (In Hectare)
1.	Sadar Hazaribag	66.25
2.	Ramgarh	45.30
3.	Gola	28.20
4.	Patratu	18.00
5.	Mandu	33.50
6.	Churchu	35.00
7.	Katkamsandi	73.00
8.	Bishnugarh	88.40
9.	Ichak	48.25
10.	Barkatha	50.00
11.	Barhi	76.35
12.	Chouparan	125.00
13.	Barkagaon	57.20
14.	Keredari	42.10
Total :		**786.50**

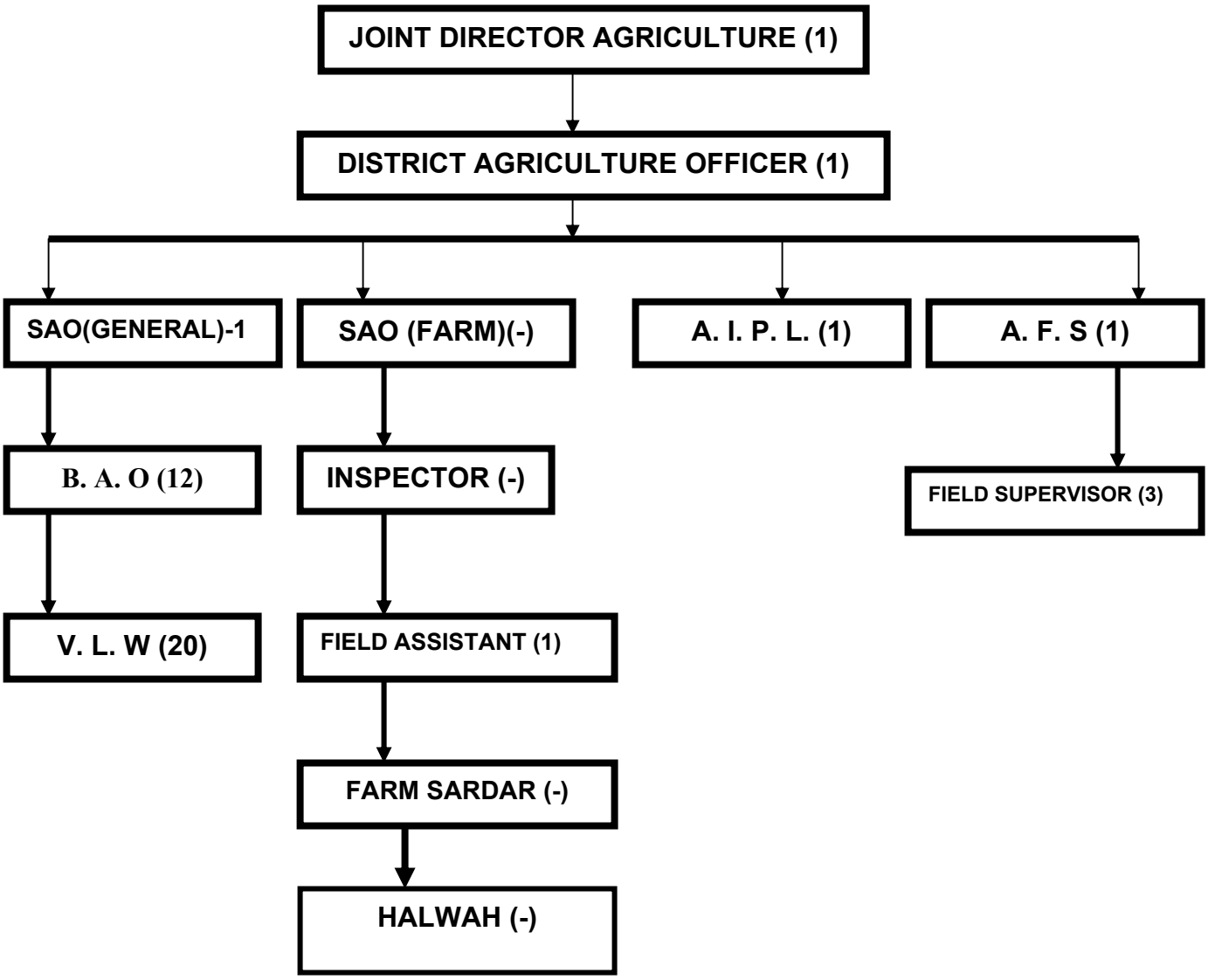
IV DESCRIPTION OF ONGOING EXTENSION AND DEVELOPMENT ACTIVITIES IN THE DISTRICT

Information on Infrastructure

Agriculture and line departments such as horticulture, animal resource development, fisheries, soil conservation, sericulture & KVK have their own infrastructure facilities such as office building, nursery, storage godown, veterinary hospitals etc. The details of such infrastructure are given in the below tables :

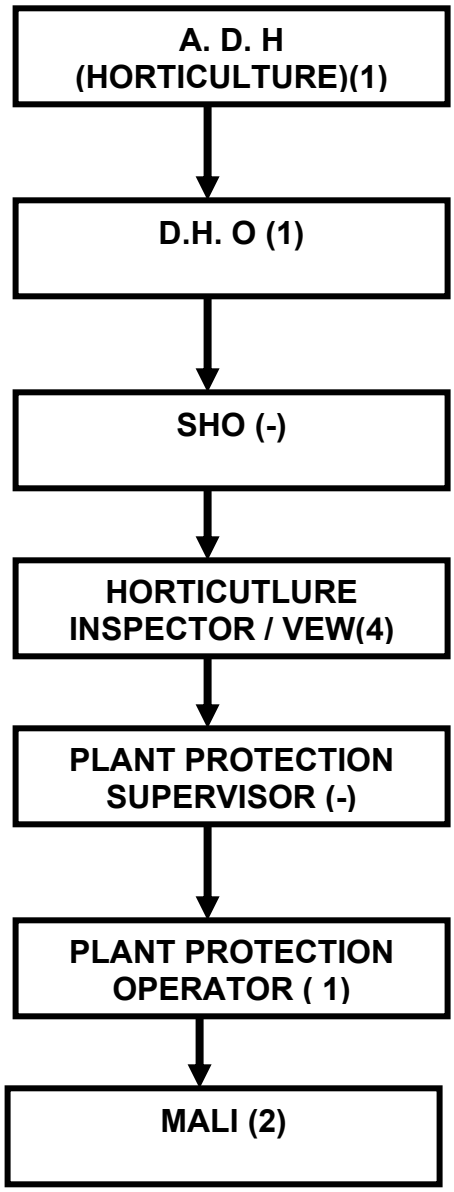
(A) DEPARTMENT OF AGRICULTURE, HAZARIBAGH

Sl. No.	Sector (Central/ State)	Name of Scheme	Allocation for the year 2005-06 (Rs. in lakh)	
			Extension	Development
1	State Plan	Seed Exchange Programme	--	15.98564
2	State Plan	Oilseeds, Pulses, Jowar Hybrid	--	5.99784
3	State Plan	Seed Production	--	0.1248
4	State Plan	Training, Demonstration, Extension	3.19567	--
5	State Plan	Demonstration on new Technology	1.92510	--
6	Central	ICDP Rice	--	--
7	State Plan	Strengthening of Seed multiplication farm	--	10.799
8	State Plan	Agriculture Mechanization	--	37.50


JOINT DIRECTOR AGRICULTURE (1)
DISTRICT AGRICULTURE OFFICER (1)
SAO(GENERAL)-1
SAO (FARM)(-)
A. I. P. L. (1)
A. F. S (1)
B. A. O (12)
INSPECTOR (-)
FIELD SUPERVISOR (3)
V. L. W (20)
FIELD ASSISTANT (1)
FARM SARDAR (-)
HALWAH (-)

(B) DEPARTMENT OF HORTICULTURE, HAZARIBAGH

S No.	Sector (Central/ State)	Name of Scheme	Allocation for the year 2005-06	
			Extension	Development
1	State Plan	Pilot Project	--	5.04187
2	State Plan	Integrated Upland Horticulture (Fruit Development)	--	20.78993
3	State Plan	Nutritional Garden for B.P.L family.	--	4.948
4	State Plan	Commercial flower production	--	30.000



C. SOIL CONSERVATION DEPARTMENT

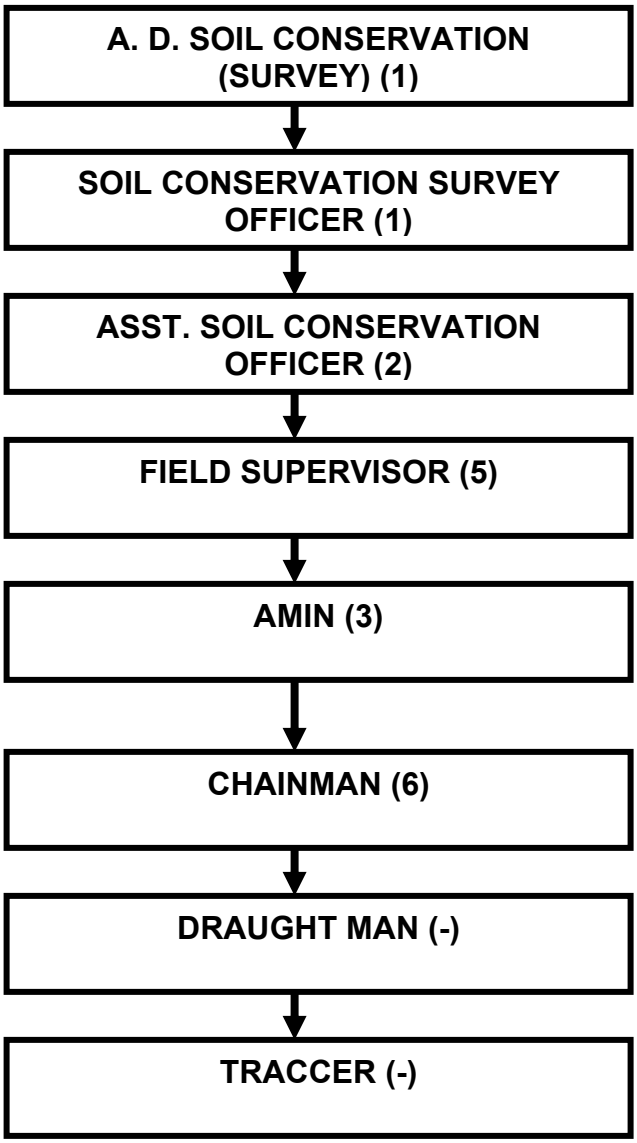
Work implemented in previous year 2005-06 :

Sl. No.	Activities	Target		Achievement	
		Physical	Financial	Physical	Financial
(A)	**Other Regional Sub-Project**				
1.	*Medhbandi*	866 acre	21,65,000	866 acre	21,58,800
2.	Demonstration	315 No.	3,15,000	315 No.	3,14,250
3.	*Paudhshala*	2 No.	5,20,000	2 No.	4,99,650
4.	*Medh Par Banaspati lagana*	866	5,26,000	866	5,26,000
(B)	**D.P.A.P. (Land & Water Conservation Work)**				
5.	Water *Sanchayan* Structure (WHS)	29 No.	29,00,000	29 No.	28,96,231
6.	Dobha Structure	20 No.	4,00,000	20 No.	4,00,000
7.	*Medhbandi*	145 Hec.	7,54,000	145 Hec.	7,51,360
(C)	**D.P.A.P. (Vermi Compost)**				
8.	Vermi Compost Structure	15 No.	7,50,000	15 No.	7,49,800
9.	Natural Fertilizer	1500 Acre	15,00,000	1500 Acre	15,00,000
10.	National Water Conservation Development Project (Cluster Project) - 10 No.	-	45,94,250	-	45,94,250 (Work is continue..)
11.	National Water Conservation Development Project (Cluster Project) – 1 No.	-	5,04,400		5,04,400 (Work is continue ..)

Infrastructure Availability Required:

Sl. No.	Type of Infrastructure	Utility	Required	Present Position
1.	Computer with printer & scanner	For record keeping typing	1 set	No
2.	Table & Chair	For office use	-	Available
3.	Diesel Jeep	To visit field	01	Petrol jeep is available
4.	Digital Camera	For photography of executed work	01	No
5.	Almirah	For store office document, file etc.	-	Available

SOIL CONSERVATION DEPARTMENT, HAZARIBAGH



(D) District Fishery Department

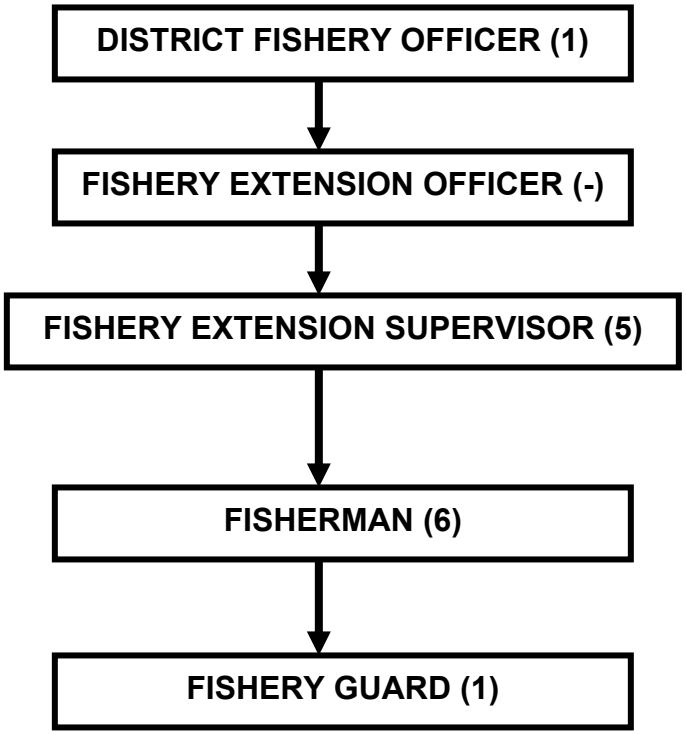
Work implemented in previous year 2005-06 :

S No.	Sector (Central/ State)	Name of Scheme	Allocation for the year 2005-06 (Rs. in lakh)	
			Extension	Development
1	State Plan	Fry Distribution		26.00
2	State Plan	30 D Tunnel Construction		15.00
3	State Plan	Fishery Training	1.56	
4	State Plan	Tank Settlement		5.43
5	State Plan	Machine Awareness		0.30

Infrastructure Availability Required:

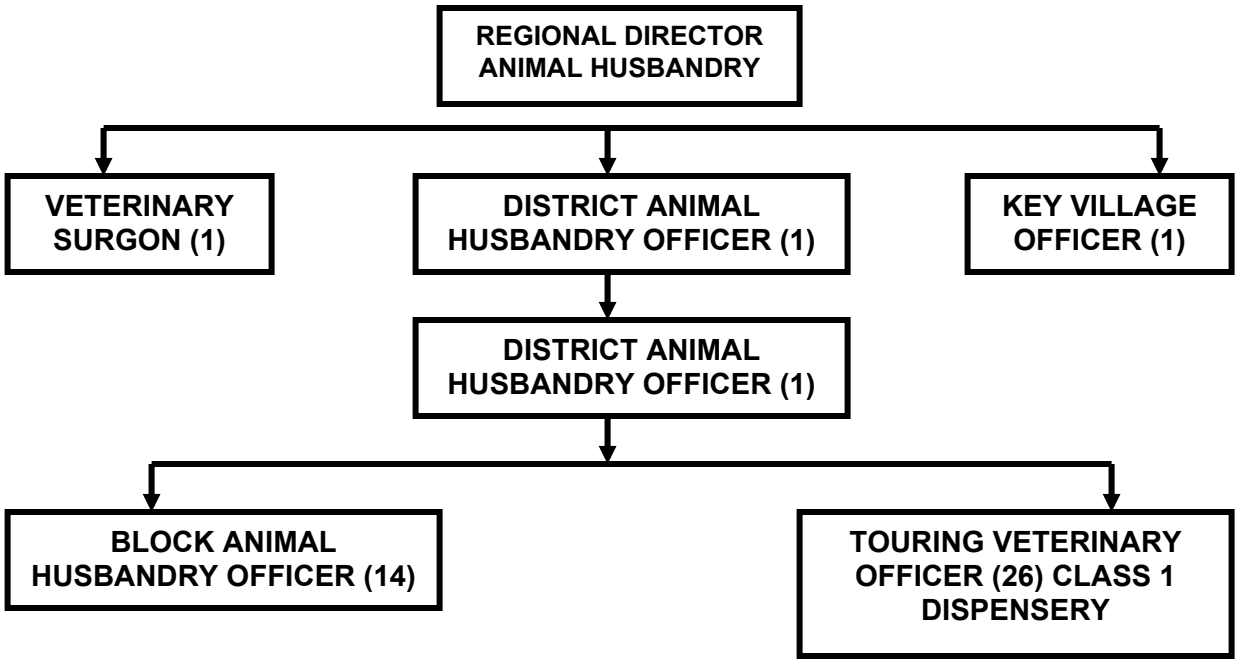
Sl. No.	**Type of Infrastructure**	**Utility**	**Required**	**Present Position**
1.	Office building	Working Place		Available
2.	Fish Farm, Noora	Seed rearing	Renovation Required	
3.	Fish Farm JHEEL	Seed rearing	Renovation Required	
4.	Fish Farm, Bijulia, Ramgarh	Seed rearing and fish production	Renovation Required	
5.	Fish Farm, Magarpur	Settled to fisherman cooperative society	Renovation Required	
6.	Fish Farm, Nagarpur	Seed rearing	Renovation Required	
7.	Vehicle	Field Visit	No	Available
8.	Tube well deep boring	Water facility	No	Available
9.	Pump Set	Water facility	No	Available
10.	Dragnet	Fishing	No	Available
11.	Generator	Electricity	No	Available

FISHERY DEPARTMENT, HAZARIBAGH



E. DEPARTMENT OF ANIMAL HUSBANDRY

S No.	Sector (Central/ State)	Name of Scheme	Allocation for the year 2005-06	
			Extension	Development
1	Central Scheme	Pasupalak	66000	--
2.		Training	--	--
3.	Central Scheme	National Project on Rinderpest	Survey	-
4.	Central Sector	ASCAD	24500	-
5	Central Sector	FMD	24300	-
6	Central Sector	Anti Rabise	--	22500
7	State Scheme	Medicine	--	800000
8	State Scheme	HS& BQ	--	50000



(F) HOLY CROSS KRISHI VIGYAN KENDRA, HAZARIBAGH

Holy Cross Krishi Vigyan Kendra is sponsored by **Indian Council of Agricultural Research (ICAR), New Delhi.** It is located 5 km. Away in the N-E from Hazaribagh town at the foot of Kanary Hill. The operational area of Krishi Vigyan Kendra is Hazaribagh district which comprises of 15 blocks.

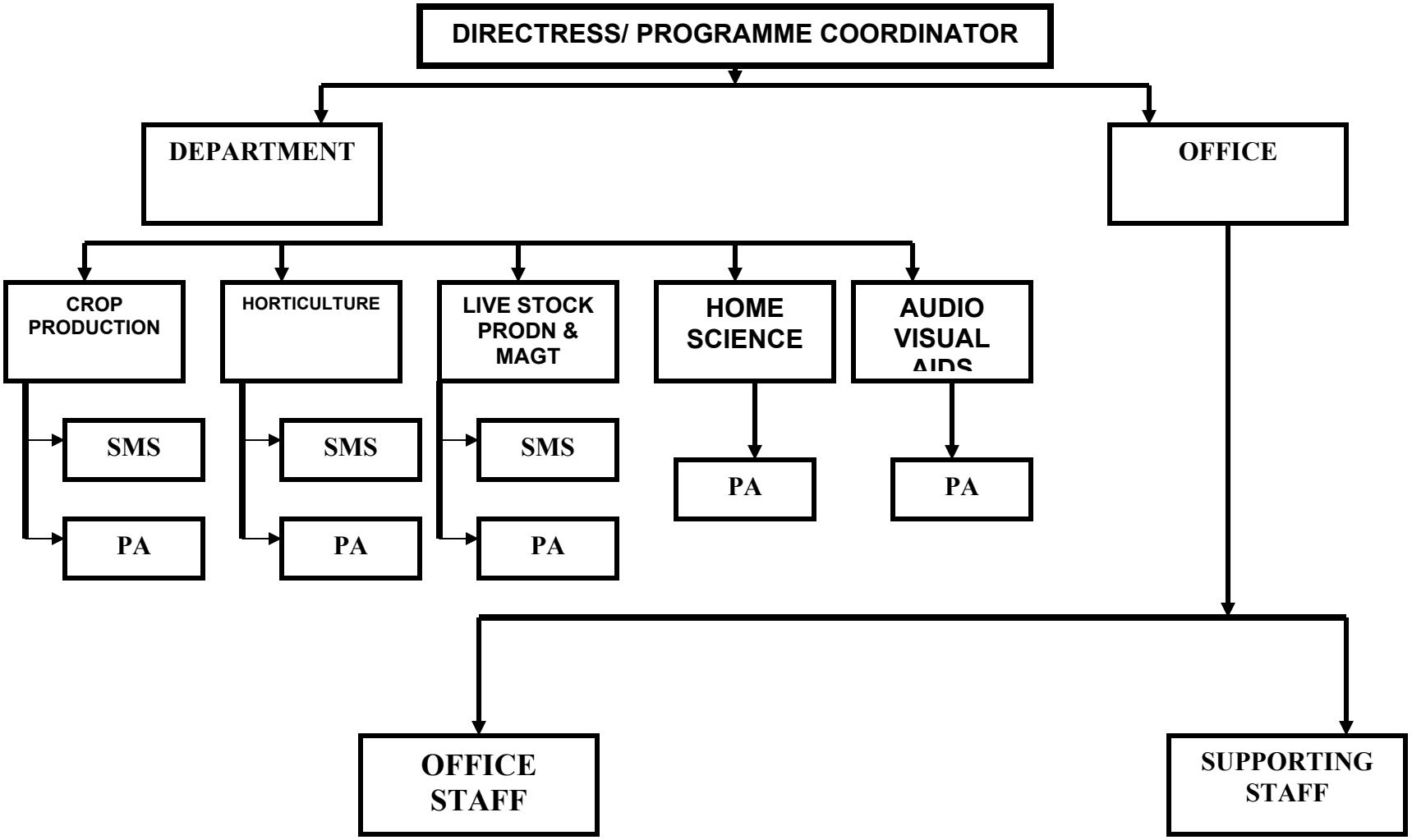
The different programs conducted by KVK are as follows :

1. **Vocational training** for practicing farmers and rural youths and extension functionaries.
2. **Frontline demonstration** on oilseed, pulses, vegetables, nutritional garden, livestocks and adaptive trials both at KVK farm and in farmer's field.
3. **Organize other extension activities** like field day, kisan mela, agricultural exhibitions, women in agriculture day, ex-trainees' meet, farmers' meet, diagnostic services, advisory services, animal health services, vaccination camps, radio talks, television programme etc.
4. **Formation** of **TTC's** for farmers & **SHG's** for women farmers.

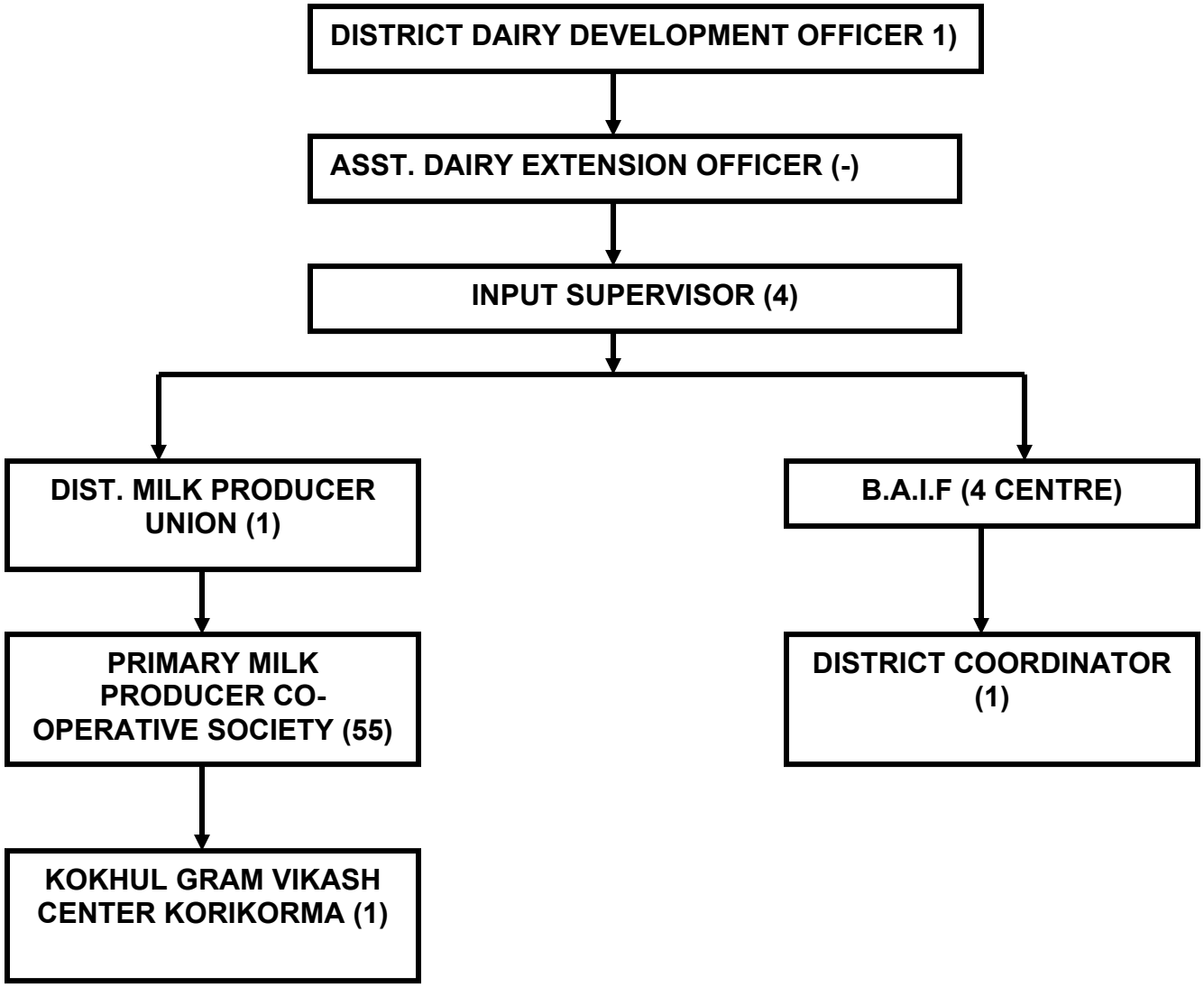
In order to conduct various trainings, demonstrations, adaptive trails and other extension activities KVK functions in close collaboration with Govt. agencies, training & research institute, public sector and other voluntary agencies.

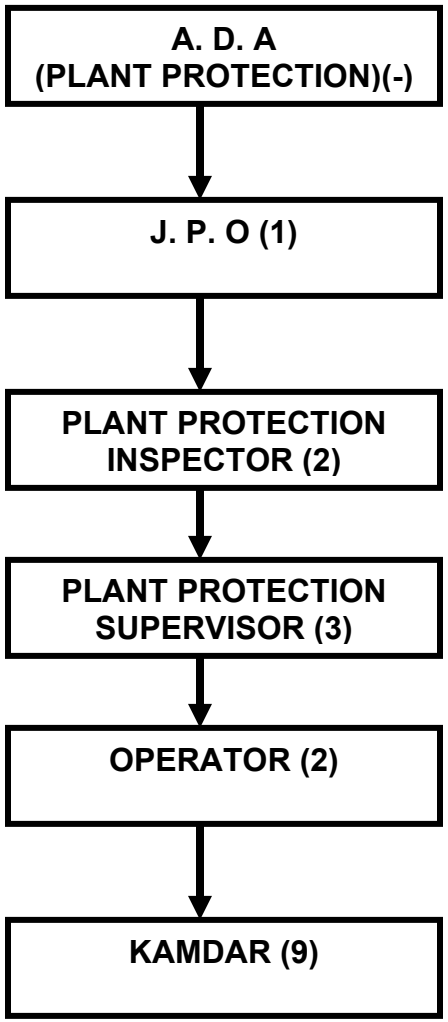
Extension Activities completed by KVK, Hazaribagh :

Sl. No.	Activities	No. of Training	No. of Participants		
			Male	Female	Total
1.	Field Day	15	1265	89	1354
2.	Women in Agri. Day	1	580	1500	2080
3.	World Food Day	1	350	650	1000
4.	Farmer's Meeging	54	532	1209	1741
5.	International Women's Day	1	50	300	350
6.	Self Help Group	38	27	218	245
7.	Video/Film Show	48	642	375	1017
8.	Slide Show	45	648	426	1074
9.	Radio Talk	13	-	-	-
10.	T.V. Programme	37	-	-	-


DIRECTRESS/ PROGRAMME COORDINATOR
DEPARTMENT
OFFICE
CROP PRODUCTION
HORTICULTURE
LIVE STOCK PRODN & MAGT
HOME SCIENCE
AUDIO VISUAL AIDS
SMS
SMS
SMS
PA
PA
PA
PA
PA
OFFICE STAFF
SUPPORTING STAFF

DAIRY DEVELOPMENT DEPARTMENT, HAZARIBAGH




A. D. A
(PLANT PROTECTION)(-)
J. P. O (1)
PLANT PROTECTION
INSPECTOR (2)
PLANT PROTECTION
SUPERVISOR (3)
OPERATOR (2)
KAMDAR (9)

DEPARTMENT OF COOPERATIVE, HAZARIBAGH