

Report of the Joint Inspection Team on their inspection visit to Ranchi, Ramgarh , Hazaribagh and Deograh districts of Jharkhand during March, 2014 (3<sup>rd</sup> March ,2014 to 8<sup>th</sup> March, 2014).



National Horticulture Mission  
Department of Agriculture and Cooperation (DAC),  
Krishi Bhavan, New Delhi

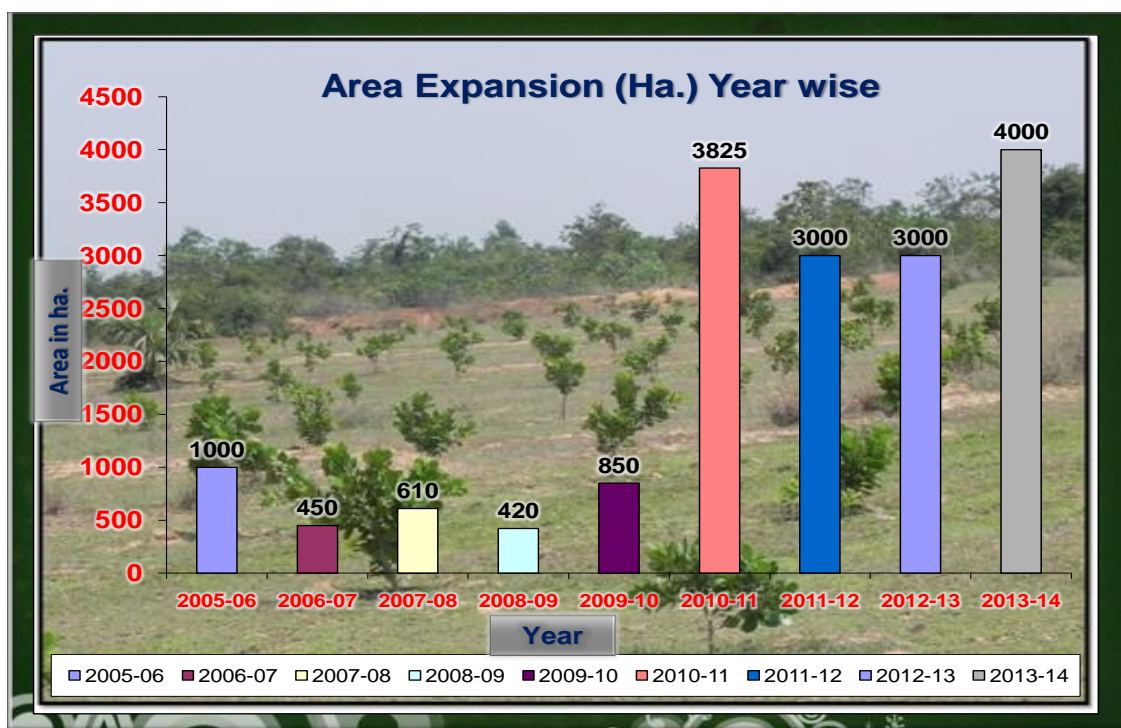
The joint Inspection Team (JIT) consisting of the following members visited during 3<sup>rd</sup> March, 2014 to 8<sup>th</sup> March, 2014 to Ranchi, Ramgarh, Hazaribagh and Deograh districts of Jharkhand for monitoring NHM, RKVY, and NMMI, progress for the state of Jharkhand.

- ### Components of NHM, RKVY, NMMI, and other programmes:

- ## Financial Status - 2013-14

Year	Approved Plan	Opening Balance	GOI Release	Available Fund	Expenditure	Unspent
2012-13	7500.00	2137.17	4781.00	6918.17	5122.58	1795.59
2013-14	8000.00	1795.59	5004.41	6800.00	6507.530	292.47

Total expenditure during 2013-14	=	Rs. 7655.92 lakhs
Central share expenditure	=	Rs 6507.53 lakhs



### Ranchi District:

Ranchi, the capital of Jharkhand State, is located at 23.35°N latitude and 85.33°E longitude. The total geographical area of the State is 5231 sq. km. According to the 2011 census Ranchi district has a population of 2,912,022. It is located in southern part of Chotanagpur pleatu. The main rivers flowing through Ranchi District are Subarnarekha, South Koel and its tributaries.

There are three well-defined seasons: the hot-weather season, lasting from March to mid-June; the season of southwest monsoon rains, from mid-June to October; and the cold-weather season, from November to February. May is the hottest month. Generally, the climate of Ranchi is moderate due to hilly region and dense deciduous forest. The covered forest area of Ranchi District is 159.14 hec. District has 18 blocks and soil is formed from the disintegration of rocks and stones (Laterites). Ranchi consists of tabular landmass. It has even flat surface with isolated hillocks known as Tongri. Hills lying on west have elevation above 800 metres and those lying in east have elevation less than 75 meters. The average elevation of the district is 650 metres but western portion is relatively higher than eastern part. The entire area is full of tanrs and Dons on account of rolling topography. Tarns are the comparatively highlands and Dons are lower lands. Geologically the area is comprised with Archean granites; gneisses and schists.



## Climate:

Ranchi has a humid subtropical climate. However, due to its position and the forests around the city, it is known for its pleasant climate. Its climate is the primary reason why Ranchi was once the summer capital of the undivided State of Bihar. Ranchi used to be a preferable hill station in the past. Temperature ranges from maximum 42 to 20 °C during summer, and from 25 to 0 °C during winter. December and January are the coolest months with temperature getting to freezing point in some places of the city. The annual rainfall is about 1430 mm (56.34 inches). From June to September the rainfall is about 1,100 mm. Agro climatic zone of Ranchi comes under Central And North Eastern Plateau Zone (BI-4).

Loam soil soils

Fine Loam soils

Fine mixed Loam soils

Ranchi											
Climate chart ( <u>explanation</u> )											
J	F	M	A	M	J	J	A	S	O	N	D
23	30	27	32	55	199	346	329	282	89	8.7	6.1
23	26	31	36	37	34	29	29	29	28	26	23

4	13	17	22	24	24	23	22	22	19	14	4
Average max. and min. temperatures in °C											
Precipitation totals in mm											
Source: <u>IMD</u>											
Imperial conversion											
J	F	M	A	M	J	J	A	S	O	N	D
0.9	1.2	1	1.2	2.1	7.8	14	13	11	3.5	0.3	0.2
73	78	88	96	99	92	84	83	84	83	78	73
39	55	63	71	74	75	73	72	71	66	57	39
Average max. and min. temperatures in °F											
Precipitation totals in inches											

### Agriculture and Land Use

The lower areas provide suitable condition for paddy cultivation. The higher elevations provide condition for orchards and cultivation of pulse, millet and vegetables. The forest covers 20.99 % of total area of the district. Major crops grown in the district are rice and pulses. Only 8.30 percent area of agricultural use have irrigation facility and major source of irrigations are well and canals. The total Geographical area (TGA) of the Ranchi district. is 758250 ha. The area under forest cover is 20.9 % of TGA (1, 59,140 ha) which is less than State average of 29 percent. The net sown area is 33.7 % of TGA (1, 61,750 ha) which is higher to the state average of 22.7 percent. The fallow land is about 25 % (1, 90,210 ha). The cultivable wasteland is 3.5 % of the TGA ie 26,320 ha.

### Soils:

Ranchi soils are classified as red lateritic, loam, fine Loam and fine mixed loam soils. The soil pH ranges from 4.2 to 7.6. Majority of the area is acidic (96.4 % of TGA) in reaction. Soils of 1.2 percent area of the district are neutral whereas 0.2 percent area is slightly alkaline in reaction. The organic carbon content in the district ranges from 0.14 to 3.76 %. Soils 43.8 percent areas of the district have high organic carbon content. Medium and low organic carbon content constitutes 28.7 and 25.3 percent area respectively. Available nitrogen content in the surface soils of the district ranges between 109 and 638 kg/ha. Majority soils (67.2 % of TGA) of the district have medium availability of nitrogen (280-560 kg ha<sup>-1</sup>) whereas soils of 26.1 percent area have low available nitrogen content (<280 kg ha<sup>-1</sup>). Available phosphorus content in these soils ranges between 0.5 and 26.6 kg/ha. Majority of the soils are medium (56.2 % of TGA) in available phosphorous content. Soils of 40.1 percent area are low and 1.5 percent area

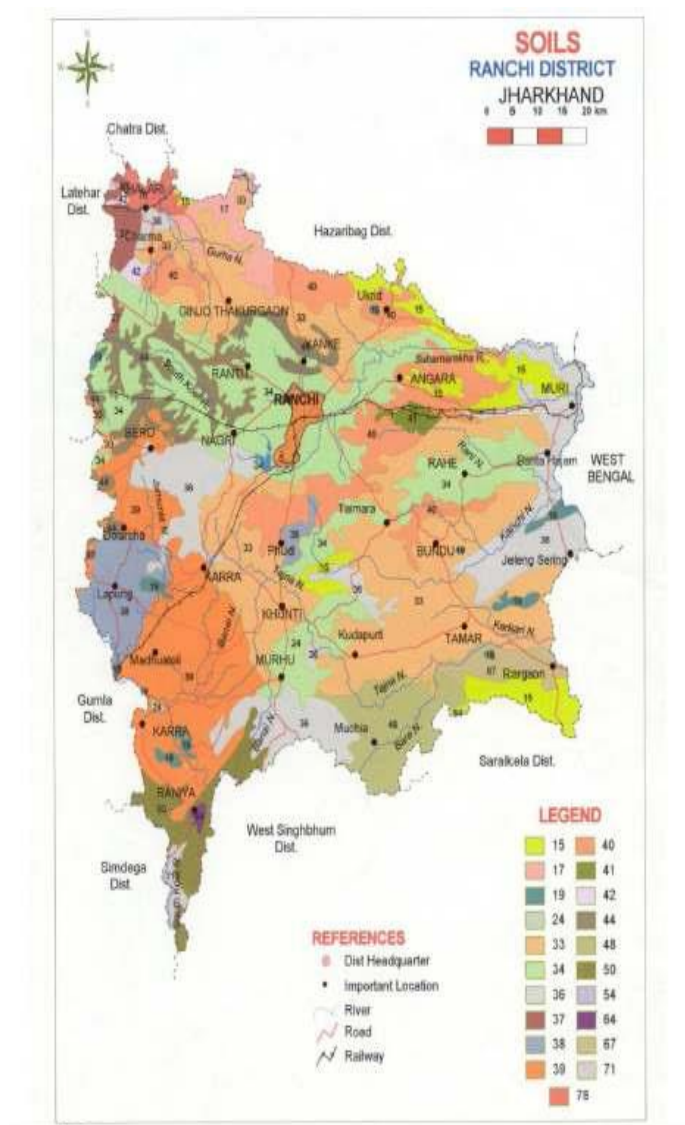
are high in available phosphorous content. Available potassium content in these soils ranges between 49 and 941 kg/ha. Majority of the soils (57.1 % of TGA) have medium available potassium content (108-280 kg ha<sup>-1</sup>). Soils of 27.7 percent area are high (above 280 kg ha<sup>-1</sup>) and 13.0 percent area are low (below 108) in available potassium content.

Soils are sufficient in available iron and manganese whereas soils of 4.1 and 5.6 percent area are deficient in available zinc and copper respectively. Available boron content in the soils ranges between 0.02 and 3.52 mg kg<sup>-1</sup> and 42.8 percent area of district is deficient (<0.50 mg kg<sup>-1</sup>).

**Major Horticultural crops (Crops identified based on total acreage):**

	Total	
	Production(000tons)	Productivity(kg/ha)
Cauliflower	44192	16.0
Potato	52894	8.9
Cabbage	31232	16.0
Tomato	36340	20.0
Brinjal	54660	20.0
Chilli	23196	12.0
Ladies finger	50442	14.0
Bitter gourd	1122	6.0
Ridge gopurd	6066	6.0
Sponge gourd	8172	12.0





#### Legend Information:-

- 15- Shallow excessively drained gravelly loamy soils
- 17- Shallow well drained loamy soils
- 19- Shallow, excessively drained, gravelly loamy soils
- 24- Deep imperfectly drained fine soils
- 33- Very Deep moderately well drained fine loamy soils
- 34- Very deep, well drained, fine loamy soils with severe erosion
- 36- Very deep moderately well drained fine soils
- 37- Shallow well drained, loamy soils
- 38- Very deep well drained, fine loamy soils
- 39- Deep moderately well drained fine soils.
- 40- Deep, moderately well drained, fine loamy soils
- 41- Very deep, well drained, coarse loam soils
- 42- Deep moderately drained, fine soils
- 44- Very deep poorly drained fine soils
- 45- Very Deep poorly drained fine soils
- 50- Shallow, well drained, loamy soils
- 54- Shallow moderately well drained loamy soils
- 64- Shallow well drained loamy soils
- 67- Very deep well drained coarse loamy soils
- 71- Very deep poorly drained fine soils
- 78- Very Deep moderately well drained fine soils

#### Observations of Dr. Pramod Rai, I/c PFDC:

The rain water harvesting component should be promoted as part of fruit/vegetable cultivation and it should harvest in plastic lined pond.

The mulching should be used with drip irrigation in cultivation of vegetables. The organic or plastic mulch should be used for growing of fruits.

The solar power should be utilized for energy need of drip irrigation system/running water pump.

The state level technical committee should be formed from scientist from the field of soil science, horticulture, plant pathology, plant entomology, plasticulture expert and post harvest expert to suggest/ monitor the development of horticulture in state. The

committee will helpful in training manpower and identifying the future research need of state.

The various stake holder meet should be organized once in year by National Horticulture Mission, Jharkhand to discuss the progress and future plan of action for development of horticulture in state.

### **Progress of PFDC centre, Ranchi, Department of Agricultural Engineering, Birsa Agricultural University, Kanke, Ranchi**

#### **Trial conducted and concluded at centre:**

1. Effect of Black plastic mulch in promising varieties of okra.

#### **Recommendation:**

The maximum okra yield of 20.21 t/ha was obtained for variety sonal under black plastic mulch (25 micron) with drip irrigation system. There is a significant influence of black plastic mulch on vegetative growth of the plant, quality and yield. The harvesting was advanced by 10 days with black plastic mulch. The proper water and fertilizer scheduling played important role in cultivation of Okra. The suitable mulch must be used with drip irrigation system for vegetable cultivation

2. Study on crop water requirement through drip irrigation and Fertigation in Okra.

#### **Recommendation:**

The highest yield was observed at drip 0.8 ET +80% Fertigation for Okra in comparison to other treatments including conventional method of irrigation (Furrow) and fertilizer application (Basal). The yield was found to be 17 t/ha which is higher than 13.2 t/ha, which was found for conventional method. The application of fertigation with drip irrigation system increase the productivity and fertilizer use efficiency.

3. Effect of Drip irrigation and plastic Mulch on yield, water use efficiency of Cauliflower.

#### **Recommendation:**

The highest yield was observed in the treatment Drip at 1.0 ET with mulch (T5) which was significantly superior to all other treatments. However water productivity was highest for 0.6 ET with mulch (T1) followed by 0.8 ET with mulch (T3) at 0.66 and 0.64



kg/litre of water. Mulches have effected moderation of soil temperature across all treatments. Soil temperature was increased by an average degree in month January and February while there was a reduction on around 2 degree in March. The suitable mulch must be used with drip irrigation system for vegetable cultivation.

#### 4. Different nursery growing techniques for Cauliflower

##### **Recommendation:**

The highest percentage of survival of seedlings was found in portray (98.09) followed by formaldehyde treated soil (87.8), soil solarized (86.2) and control (81.33). There was no significant difference in yield between t1 and t2 and it was found to be around 16.5 t/ha. It was found that seedlings grown in portray were healthy and it can be used for further plant growing.

#### 5. Effect of Drip Irrigation and black plastic mulch on yield, WUE of Potato

##### **Recommendation:**

The highest yield was observed at drip irrigation of 0.8 ET with mulch (T3) followed by Drip irrigation at 1 ET with Mulch (T5). The water productivity was highest for 0.6 ET with mulch (T1) followed by 0.8 ET with mulch (T3) and 1.0 ET with mulch at 0.065 and 0.058 and 0.045 kg/ltr respectively. The average moisture availability of mulched crops was 1.64% higher than non mulched crop. The highest yield was found to be 28.6 t/ha. The suitable mulch must be used with drip irrigation system for vegetable cultivation.

#### **New Trial Proposed form 2014-15**

1. Effect of drip irrigation and fertigation on yield and quality of Tomato under NV Poly house.
2. The selection of plastic mulch for cultivation of Tomato.
3. To determine the quantity of water and its application in drip and mulched tomato.
4. Development of protocol for fertilizer application under Fertigation.
5. The selection of plastic mulch for cultivation of Okra.
6. To determine the quantity of water and its application in drip and mulched Okra.

**National Horticulture Mission State-Jharkhand, District-Ramgarh**  
**NGO-Gramin Seva Sangh, Sukarigarha, District-Ramgarh**

Sl. No.	year	Name of Cluster/Village	Panchayat	Block	Area in ha.	No. of plantation	Total Farmers	Activity	Irrigation Development
1	2009-10	Dadidih	Koto	Patratu	28.30	2830	15	Mango Plantation	Micro Lift
2	2010-11	Sahitand	Koto	Patratu	35.00	3500	35	Mango Plantation	Bore well
3	2010-11	Dadidih	Koto	Patratu	25.01	2501	15	Mango Plantation	
4	2011-12	Dadidih	Koto	Patratu	22.50	2250	10	Mango Plantation	Bore well
5	2012-13	Sahitand	Koto	Patratu	34.00	3400	13	Mango Plantation	
					<b>144.81</b>	<b>14481</b>	<b>88</b>		
6	2010-11	Dadidih	Koto	Patratu	7.29	7.29	6	Mango Plantation	Bore well
7	2010-11	Rochap	Palu	Patratu	3.40	340	2	Mango Plantation	Well 20'x30'
				<b>Total</b>	<b>10.69</b>	<b>347.29</b>	<b>8</b>		
8	2013-14	Devariya	Devariya	Patratu	15.50	1550	28	Mango Plantation	Bore well

**National Horticulture Mission State-Jharkhand, District-Ramgarh**  
**NGO-Gramin Seva Sangh, Sukarigarha, District-Ramgarh**

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3	2011-12	Dadidih	Koto	Patratu	22.50	2250	10	Mango Plantation	Bore well
				<b>Total</b>	<b>75.81</b>	<b>7581</b>	<b>40</b>		
4	2010-11	Sahitand	Koto	Patratu	35.00	3500	35	Mango Plantation	Bore well
5	2012-13	Sahitand	Koto	Patratu	34.00	3400	13	Mango Plantation	
				<b>Total</b>	<b>69.00</b>	<b>6900</b>	<b>48</b>		
6	2010-11	Dadidih	Koto	Patratu	7.29	7.29	6	Mango Plantation	Bore well
7	2010-11	Rochap	Palu	Patratu	3.40	340	2	Mango Plantation	Well 20'x30'
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**Performa for use by Joint Inspection Team**

**Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Kal Mohan Mahato S/o Lalji Mahato, Vill:- Lupunga, Panchyat:-Tunda Toli, Block-Ormanjhi Distt:-Ranchi
2	Total land available with the beneficiary (ha).	0.4
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation system
4	Crop(s) covered	Pea & Tomato
5.	Total area covered (ha)	0.4
6	Crop Spacing (for drip)	1.2m X 0.4m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs.62426, Dt. 16.03.13
10	Mode of payment	By cheque
11	Status of crop	Harvesting Stage
12	General upkeep (Very good/ Good/ Average/ Poor)	Average
13.	Any other relevant observation by JIT.	Needs to keep pipes properly when not used.

**Performa For use by Joint Inspection Team**

**Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Manraj Mahato S/o Kamal Nath Mahato, Vill:- Dhanijvan, Panchyat:-Kuchhu Block-Ormanjhi Distt:-Ranchi
2	Total land available with the beneficiary (ha).	2.8
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation system
4	Crop(s) covered	Watermelon
5.	Total area covered (ha)	2.416

6	Crop Spacing (for drip)	1.2m X 0.4m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs.258458, Dt. 21.03.13
10	Mode of payment	By cheque
11	Status of crop	Field Preparation
12	General upkeep (Very good/ Good/ Average/ Poor)	good
13.	Any other relevant observation by JIT.	Keep pipes properly

**Performa For use by Joint Inspection Team**  
**Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Mantosh Mahato S/o Bodhanath Mahato, Vill:- Hendevilli, Panchyat:- Hendevilli, Block-Ormanjhi Distt:-Ranchi
2	Total land available with the beneficiary (ha).	1.1
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation system
4	Crop(s) covered	Tomato
5.	Total area covered (ha)	0.4
6	Crop Spacing (for drip)	1.2m X 0.4m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs.62426, Dt. 11.12.13
10	Mode of payment	By cheque
11	Status of crop	Flowering Stage
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa For use by Joint Inspection Team**  
**Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Suresh Munda S/o Sukhuwa Munda, Vill:- Lupunga, Panchyat:-Tunda, Block-Ormanjhi Distt:-Ranchi
2	Total land available with the beneficiary (ha).	0.32
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation system
4	Crop(s) covered	Cabbage & Tomato
5.	Total area covered (ha)	0.32
6	Crop Spacing (for drip)	1.2m X 0.4m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs.36601, Dt. 11.12.13
10	Mode of payment	By cheque
11	Status of crop	Flowering & Harvesting Stage
12	General upkeep (Very good/ Good/ Average/ Poor)	good
13.	Any other relevant observation by JIT.	Used properly

**Performa For use by Joint Inspection Team**  
**Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Tulsi Mahto S/o kallu Mahato, Vill:- Kulhi, Panchyat:-Kuchhu, Block-Ormanjhi Distt:-Ranchi
2	Total land available with the beneficiary (ha).	1.2
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation system
4	Crop(s) covered	Cauliflower
5.	Total area covered (ha)	0.44
6	Crop Spacing (for drip)	1.2m X 0.4m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	Jain irrigation system Ltd.

9	Total subsidy paid & date of payment	Rs.60755, Dt. 16.03.13
10	Mode of payment	By cheque
11	Status of crop	Harvesting Stage
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa For use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Manay Munda S/o Lt. Kopaya Munda, Vill:- Sotya, Panchyat:- Limda, Block-Karra Distt:- Khunti
2	Total land available with the beneficiary (ha).	0.4
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation system
4	Crop(s) covered	Tomato, Pea, Bitter Gourd
5.	Total area covered (ha)	0.4
6	Crop Spacing (for drip)	1.2m X 0.4m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs.62426, Dt. 25.03.13
10	Mode of payment	By cheque
11	Status of crop	Harvesting Stage Done & Field Preparation
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	



## Ranchi District Photographs



Gerbera cultivation under poly house



Poly house for production of cut flower in farmers field



Open cultivation of annual cut flowers



Open cultivation of gerbera in farmers field



Mary gold cultivation in open at farmers field



Gerbera cultivation in open for cut flowers.





Gladiolus cultivation for cut flowers in open



Water harvesting with polythene lining



Drying of turmeric in processing unit.



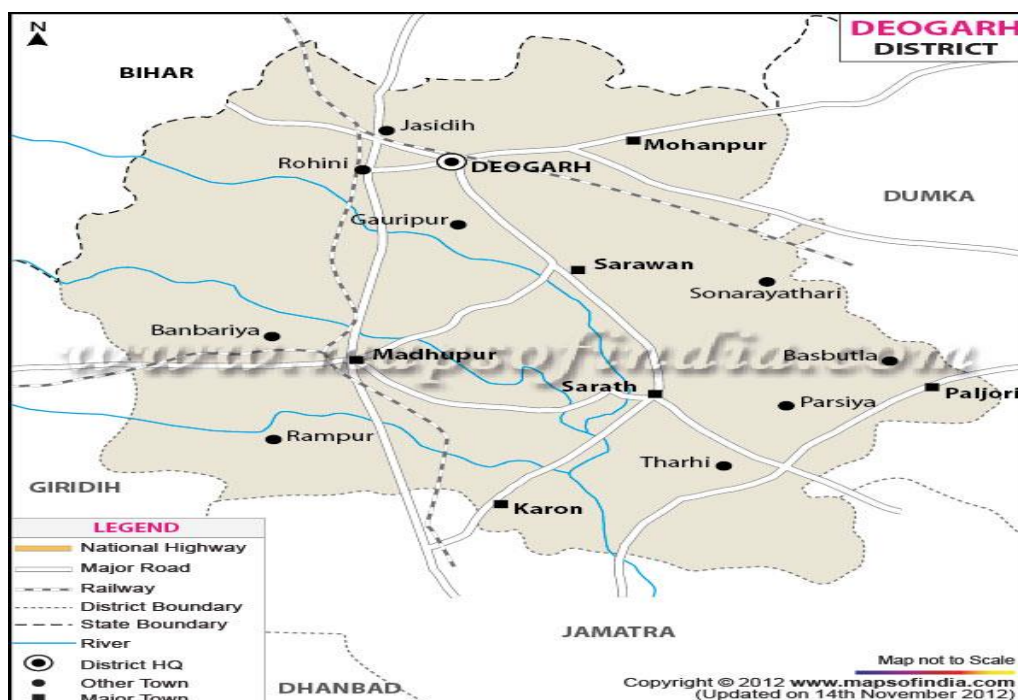
Grinding unit of turmeric processing unit



## Deoghar districts:

Deogarh district is located in the western portion of Santhal paraganas. It is bounded by Bhagalpur district in north, Dumka in south and east and Giridih in west. The district extends from 24 0 03' and 23 0 38' N latitude and 86 0 28' and 87 0 04' E longitude and comprises 2481 km<sup>2</sup> area. According to the 2011 census Deogarh district has a population of 1,491,879. The district is composed of 7 community development blocks namely Deogarh, Madhupur, Mohanpur, Sarwan, Palolori, Sarath and Karon.

The district contains several clusters of rocky hills covered with forest, but series of long ridges with intervening depressions. Most of the rolling uplands are cultivated by highland crops. The average elevation of the district is 247 m above msl, However hill ranges like Phuljari (750 m), Teror (670 m) and Degaria (575 m) break the monotony of the landscape. The general slope of the district is from North West to south east. Geologically the district is mainly covered by chhotanagpur granite gneiss of Archean age with patches of alluvium, sandstone and shale of Gondawana formations. Important rivers flowing in the district are the Ajay, the Paltro etc. These rivers gather a large number of tributaries which form the land scape full of Tanrs and Dons.



**Climate:**

The district experience hot summer (March to May) heavy monsoon rains (June to September) and cool dry winters (October to February). Average annual rainfall is 1239 mm, mean summer maximum temperature is 43 °C and mean winter minimum temperature is 8 °C.

The main economic activity in the district is agriculture. Paddy, Wheat and Maize are the main crops in the district. The agro climatic condition of the district is suitable for cultivation of a variety of fruits like mango, guava, jack fruit and vegetables like cauliflower, tomato, brinjal etc. There are some good clusters of vegetable cultivation in Deoghar, Sarwan, Sarath and mohanpur blocks in the district. However, in the absence of assured irrigation facility, agriculture in the district is primarily rainfed and as a result, mainly mono-cropping and subsistence farming is practiced in the district. Absence of effective extension services and lack of backward and forward linkages have made the scene worse.

**Agriculture and Land Use:**

Nearly 44 per cent of the total area of the district is utilized for cultivation, out of which only 10.55 per cent is irrigated. The most common sources of irrigation are dug well, surface flow water, lift irrigation etc. Rice is the main crop followed by maize, sugar cane and wheat and vegetables are also grown in a limited scale.

**Soils:**

Most of the soils of Deoghar districts are acidic in reaction. Organic carbon content in these soils ranges from 0.1 to 3.23 percent and 47.9 percent soils have high organic carbon content (>0.75 per cent). Available nitrogen content in surface soils ranges between 47 to 756 kg ha<sup>-1</sup>. Available phosphorous content ranges between 6.0 to 126.4 kg ha<sup>-1</sup>. Majority of the soils of the district (85.5 percent of TGA) have medium to high in available phosphorous whereas soils of 12.8 percent area are low in available phosphorous (below 10 kg ha<sup>-1</sup>). Available potassium content ranges between 101 and 1137 kg ha<sup>-1</sup>. Soils of 87.6 per cent area have medium to high available potassium content. are medium (10-20 mg kg<sup>-1</sup>) and high (>20 mg kg<sup>-1</sup>).

Soils are sufficient in available iron and manganese whereas soils of 6.6 and 7.5 percent area are deficient in available zinc and copper. The available boron content in

the soils ranges from 0.03 to 1.94 mgkg<sup>-1</sup>. Soils of 45.1 percent area of district are deficient (<0.50 mgkg<sup>-1</sup>) whereas 53.2 percent area are sufficient (>0.50 mgkg<sup>-1</sup>) in available boron content

**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
Rachna Deoghar**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Bolock- Deoghar
2	Total land available with the beneficiary (ha).	10 hac
3	Crop Cluster under which covered.	Mango
4	Name & variety of crop planted.	Mango- Amarpalli, Maladha,
5	Source of planting material.	Accredited Nursery by NHM
6	Number of planting material.	1000 plant
7	Number of plants planted/ rejuvenated.	1000 plant
8	Date of plants which survived (also indicate percentage survival).	95% survival
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	99000/-
10	Amount paid and date of payment.	49500/-
11	Mode of payment.	
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	
13.	Whether Drip/ Sprinkle System in use.	
14.	Other inputs provided.	
15.	Whether assistance available for Organic Farming	No
16	If so, area covered	10 ha
17.	Assistance available	
18.	Available marketing facility for the crop.	Yes
19.	Other infrastructure available in the vicinity.	Yes
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	Yes- very bed
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Water Resources Development  
Rachna Deoghar**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name of the project	NHM

2	Year of Implementation	2011-12
3	Project Period	3 Year, 2011-12
4	Name of Implementing Agency	Rachna Deoghar, Jharkhand
5	Location of Project	Pandanber
6	Total Project Cost	2,38000/-
7	Amount Released by DAC	Total
8	Expenditure incurred Status	Total expenditure
9	<b>Current Status of Project</b>	
	• Dimension (L x B x W)	<b>20' x 30' well</b>
	• Capacity	
	• Command Area	3 hac
	• Whether linked with new plantation or old plantation	Mango 300
	• Whether funds disbursed	No

**Proforma for use by Joint Inspection Team**  
**Water Resources Development**  
**Harijan Adiwashi Khadigramodhyog Sang Deoghar (Hakgs)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name of the project	NHM
2	Year of Implementation	2012-13
3	Project Period	2012-13
4	Name of Implementing Agency	Harijan Adiwashi Khadigramodhyog Sang Deoghar (Hakgs)
5	Location of Project	Andhri Gadhar
6	Total Project Cost	17,25000/- unit
7	Amount Released by DAC	Total
8	Expenditure incurred Status	Total expenditure
9	<b>Current Status of Project</b>	
	• Dimension (L x B x W)	
	• Capacity	
	• Command Area	30 hac
	• Whether linked with new plantation or old plantation	Mango 300 plant
	• Whether funds disbursed	No



**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
(Hakgs- Deoghar)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Karim Miya-42, At Jorwo Deoghar
2	Total land available with the beneficiary (ha).	30
3	Crop Cluster under which covered.	Mango
4	Name & variety of crop planted.	Mango- five varieties
5	Source of planting material.	Accredited Nursery by NSC
6	Number of planting material.	
7	Number of plants planted/ rejuvenated.	
8	Date of plants which survived (also indicate percentage survival).	94% 26.12.2013
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	
10	Amount paid and date of payment.	Total amount paid
11	Mode of payment.	
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Bore Well
13.	Whether Drip/ Sprinkle System in use.	No (Only pipe line)
14.	Other inputs provided.	Yes
15.	Whether assistance available for Organic Farming	Yes
16	If so, area covered	Yes
17.	Assistance available	Yes Vermi Composting
18.	Available marketing facility for the crop.	
19.	Other infrastructure available in the vicinity.	
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
(Hakgs- Deoghar)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Murai Thakue- Aid-At-Jormo PO+PS Andharigar Block Deoghar
2	Total land available with the beneficiary (ha).	15

3	Crop Cluster under which covered.	Haidency Guava
4	Name & variety of crop planted.	K.G. Guava
5	Source of planting material.	Accredited Nursery by NSC
6	Number of planting material.	
7	Number of plants planted/ rejuvenated.	
8	Date of plants which survived (also indicate percentage survival).	95% 26.12.2013
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	
10	Amount paid and date of payment.	Total amount paid 31.12.2013
11	Mode of payment.	
12	Source of Irrigation Water (Bore well/ Tube well/ Canal)	Bore Well
13.	Whether Drip/ Sprinkle System in use.	No (Only pipe line)
14.	Other inputs provided.	Yes
15.	Whether assistance available for Organic Farming	Yes
16	If so, area covered	Yes
17.	Assistance available	Yes Vermi Composting, polly house
18.	Available marketing facility for the crop.	
19.	Other infrastructure available in the vicinity.	
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
(Hakgs- Deoghar)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Trilochan Yadav and (35) Farmers Andharigarder Block Deoghar
2	Total land available with the beneficiary (ha).	10 hect.
3	Crop Cluster under which covered.	Lemon
4	Name & variety of crop planted.	Lemon
5	Source of planting material.	Accredited Nursery by NSC
6	Number of planting material.	
7	Number of plants planted/ rejuvenated.	
8	Date of plants which survived (also indicate percentage survival).	80% 26.12.2013

9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	50% amount paid 31.12.2013
10	Amount paid and date of payment.	Tenkar
11	Mode of payment.	No
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	yes
13.	Whether Drip/ Sprinkle System in use.	yes
14.	Other inputs provided.	Yes
15.	Whether assistance available for Organic Farming	Yes
16	If so, area covered	Yes
17.	Assistance available	Yes Vermi Composting
18.	Available marketing facility for the crop.	
19.	Other infrastructure available in the vicinity.	
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
(Hakgs- Deoghar)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Sandip Roy and-17 Beneficiaries Andharigarder Block Deoghar
2	Total land available with the beneficiary (ha).	100 hect.
3	Crop Cluster under which covered.	
4	Name & variety of crop planted.	
5	Source of planting material.	Accredited Nursery by NSC
6	Number of planting material.	17800 plants
7	Number of plants planted/ rejuvenated.	17800 plants
8	Date of plants which survived (also indicate percentage survival).	92% 26.12.2013
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	
10	Amount paid and date of payment.	Total amount paid 31.12.2013
11	Mode of payment.	
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Tranker
13.	Whether Drip/ Sprinkle System in use.	No only pipe line
14.	Other inputs provided.	Yes
15.	Whether assistance available for Organic	Yes

	Farming	
16.	If so, area covered	Yes
17.	Assistance available	Yes Vermi Composting
18.	Available marketing facility for the crop.	
19.	Other infrastructure available in the vicinity.	
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
(Hakgs- Deoghar)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Suresh Yadav and AT Jormo PO+PS. Andharigarder Block Deoghar
2	Total land available with the beneficiary (ha).	25 hect.
3	Crop Cluster under which covered.	Mango
4	Name & variety of crop planted.	Mango Amrapali Gulabkhas, Maldha, Hisshayar etc.
5	Source of planting material.	Accredited Nursery
6	Number of planting material.	2500 plants
7	Number of plants planted/ rejuvenated.	2500 plants
8	Date of plants which survived (also indicate percentage survival).	93% 26.12.2013
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	
10	Amount paid and date of payment.	Total amount paid And of year 31.12.2013
11	Mode of payment.	
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Bore well
13.	Whether Drip/ Sprinkle System in use.	No only pipe line
14.	Other inputs provided.	Yes
15.	Whether assistance available for Organic Farming	Yes- NHM gives Assistance for farmer primary, Villages Camping
16	If so, area covered	Yes
17.	Assistance available	yes
18.	Available marketing facility for the crop.	Yes Vermi Composting
19.	Other infrastructure available in the vicinity.	

20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
(Hakgs- Deoghar)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Birbal Yadav and And At Andharigarder PO+PS Block Deoghar
2	Total land available with the beneficiary (ha).	30 hac
3	Crop Cluster under which covered.	Mango
4	Name & variety of crop planted.	Mango Amrapali Gulabkhas, Maldha, Hisshayar etc.
5	Source of planting material.	Accredited Nursery
6	Number of planting material.	3000 plants
7	Number of plants planted/ rejuvenated.	3000 plants
8	Date of plants which survived (also indicate percentage survival).	95% survival 26.12.2013
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	5,55,000/-
10	Amount paid and date of payment.	Total amount paid And of year 31.12.2013
11	Mode of payment.	
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Bore well
13.	Whether Drip/ Sprinkle System in use.	No (only pipe line)
14.	Other inputs provided.	Yes-water tenkar & Sprinkler system provided
15.	Whether assistance available for Organic Farming	Yes- NHM gives Assistance for farmer primary , Villages Camping to
16	If so, area covered	30 hac
17.	Assistance available	yes
18.	Available marketing facility for the crop.	Yes Vermi bed
19.	Other infrastructure available in the vicinity.	
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Area Expansion / Rejuvenation  
(Hakgs- Deoghar)**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of Beneficiary whose field visited.	Bachi Yadav + 20 Farmers
2	Total land available with the beneficiary (ha).	40 hac
3	Crop Cluster under which covered.	Cashew nut
4	Name & variety of crop planted.	
5	Source of planting material.	Accredited Nursery
6	Number of planting material.	7120 plants
7	Number of plants planted/ rejuvenated.	7120 plants
8	Date of plants which survived (also indicate percentage survival).	95% 26.12.2013
9	Total amount of subsidy assistance due to the beneficiary as (Rs.)	
10	Amount paid and date of payment.	Total amount paid
11	Mode of payment.	
12	Source of Irrigation Water (Bore well/ Tube well/ Canel)	Bore well
13.	Whether Drip/ Sprinkle System in use.	No (only pipe line)
14.	Other inputs provided.	Yes
15.	Whether assistance available for Organic Farming	Yes
16	If so, area covered	40
17.	Assistance available	yes
18.	Available marketing facility for the crop.	Yes
19.	Other infrastructure available in the vicinity.	Yes Vermi composting
20.	General upkeep of the plot; Very good/ Good / Average/ Poor.	
21.	Any other relevant observation by the JIT.	

**Proforma for use by Joint Inspection Team  
Water Resources Development**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited	Rameshwar Pd. Ray Village- Jogdiha, Nawadih, Deoghar
2	Total land available with beneficiary (ha.)	5.00 A.c
3	Type of MI system availed Drip/Sprinkler	Drip
4	Crop(s) covered	Vegetable
5	Total area covered (ha.)	5.00 ac



6	Crop spacing (for drip)	1.2 x 0.40 mtr
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	Jain irrigation system ltd.
9	Total subsidy paid & date of payment	2,09,137
10	Mode of payment	By Cheque
11	Status of crop	Good
12	General unkeep (very good/ Good/ Average/Poor)	Good
13	Any other relevant observation by JIT.	

**Proforma for use by Joint Inspection Team  
Water Resources Development**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited	Deepak Kumar Singh Village-Sarsa, Deoghar
2	Total land available with beneficiary (ha.)	12.50 ac
3	Type of MI system availed Drip/Sprinkler	Drip
4	Crop(s) covered	Vegetable
5	Total area covered (ha.)	12.50 ac
6	Crop spacing (for drip)	1.2 x 0.40 mtr
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	Jain irrigation system ltd.
9	Total subsidy paid & date of payment	507.739
10	Mode of payment	By Cheque
11	Status of crop	Good
12	General unkeep (very good/ Good/ Average/Poor)	Good
13	Any other relevant observation by JIT.	

**Proforma for use by Joint Inspection Team  
Water Resources Development**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited	Dhananjay Kumar Village-Rigunamarnl, Devipur Deoghar
2	Total land available with beneficiary (ha.)	8.80 ac
3	Type of MI system availed Drip/Sprinkler	Drip
4	Crop(s) covered	Vegetable
5	Total area covered (ha.)	8.80 ac
6	Crop spacing (for drip)	1.2 x 0.40 mtr
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	Neta fim irrigation India Pvt. ltd.
9	Total subsidy paid & date of payment	322,406

10	Mode of payment	By Cheque
11	Status of crop	Good
12	General unkeep (very good/ Good/ Average/Poor)	Good
13	Any other relevant observation by JIT.	

**Proforma for use by Joint Inspection Team  
Water Resources Development**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited	Mahendra maric Village- Kolhariy, Devipur Deoghar
2	Total land available with beneficiary (ha.)	5.04 ac
3	Type of MI system availed Drip/Sprinkler	Drip
4	Crop(s) covered	Vegetable
5	Total area covered (ha.)	5.04 ac
6	Crop spacing (for drip)	1.2 x 0.40 mtr
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	Neta fim irrigation India Pvt. Ltd.
9	Total subsidy paid & date of payment	2,10,717
10	Mode of payment	By Cheque
11	Status of crop	Good
12	General unkeep (very good/ Good/ Average/Poor)	Good
13	Any other relevant observation by JIT.	

## Deoghar district photographs



Mango seedlings stored before plantation



Cashew nursery seedlings ready for grafting



Newly planted cashew orchard in cluster



Three years old cashew plantation



Cluster plantation of mango through NGO'S



JIT field visit of mango plantation





Local water harvesting in bore well



Marigold as inter crop in newly planted orchards



Watering in guava field with pipe from water source



Two years old plantation of high density guava guava



View of cluster plantation of mango orchard



Field visit by the JIT members

## **Hazaribag 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. According to the 2011 census Hazaribagh district has a population of 1,734,005.

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 Jillinga and their heights are about 2816 and 3057 ft respectively. The main rivers of this district are Damodar and Barakar. About 45% area of this district is forest area. The forest area of this district is full of medicinal plants and trees. Due to negligence and lack of awareness they are on the verge of extinct. Leopards, bears, jackals and foxes etc. freely move in these forests. In the winter season several foreign birds visit these forests areas. Due to surroundings of mountains and forests this area has been known as Jharkhand from the ancient time. This area is the native place of tribal people. At the time of Mahabharata, King Jarasandh of Magadh Region ruled this area. Later on King Mahapadmanand Ugrasen defeated Jarasandh and occupied this area.

This area is very important from the religious point of view. People from different areas visit the religious, historical and archaeological places of this district. The 23rd Tirthankara Parasnath met his holy end here. In his memory there is a temple on the top of Parasnath Mountain. Presently it is in Giridih district. After the end of the 'Gupta' dynasty in 5th A.D. a State named Chotanagpur was established. King Phanimukta was

its first ruler. At the time of Mughal Empire, King Akbar sent a troop under the leadership of Shahbaj Khan to defeat the local ruler of this region.

This district also played a leading role in Freedom Movement. In 1857 Ramgarh Battalion revolted against the English rule. The Non Co-Operation Movement of 1920 moved the sentiments of local people tremendously. Mahatma Gandhi also visited this area in 1925.

There are several ores and minerals in the naturally rich and beautiful district of Hazaribag. Mica and Coal are the main minerals. These minerals are very important from industrial point of view. China clay and limestone are also found in this district. Most parts of this district are full of forests and stones. The cultivable land can be divided into two parts namely - Upper land and Lower land. The lands situated on the banks of rivers are fertile. One can get good crop even after using lesser amount of fertilizers in these lands. But the upper land is barren. A huge amount of fertilizers and irrigation is required for cultivation in these lands. Rabi and Kharif crops are generally sown here.

Irrigation facility is not adequate in this district due to hilly area. There are small natural rivulets, which are generally used for irrigation. There is no other natural source of irrigation. After independence government has tried and is still trying to solve the problem of irrigation. For irrigation wells and pump sets are used. Damodar Valley Project is also meant for irrigation in this area but these measures are not sufficient. Generally the farmers depend on rain for their cultivation. When there is scarcity of rain, people of this area usually face the problem of drinking water.

Due to mountains, forests, hills, rivers and valleys etc. the communication by road and rails are tedious and tiresome in this district. Much time is consumed for the travel. People of this area live in fear and terror due to extremist activities. Administration is trying its best to cope with this problem.

**Latitude:** 23.5 North to 24.4 North.

**Longitude:** 85.1 East to 85.9 East.

**Area:** 11165 sq km.

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.

**Annual Rainfall**            1234.5mm

**Temperature**                : Max. 42.20 and Min. 4.00 degree Celsius

The district comes within the Tropical Monsoon Regions of the world. Three broad seasons can be recognized:

- The cool season, November to February.
- The hot season, March to May.
- The rainy season, June to October.

In general the climate of Hazaribag plateau is much the same as that of Ranchi, differing from the other neighboring districts not only in lower average temperature, but also in the comparative dryness of the air in the rainy season. After the break of the rains in June, the first three months are usually quite pleasant and by the middle of September the mornings offer cold weather. In contrast with Bihar, October is a delightful month. From November to the middle of February the only drawback is the occasional excessive cold which follows rain. If there is a good fall of rain in February it remains cool till the middle of March. From April to May, the day temperature, though high, is always below that of the neighboring districts and it is rare for the nights to be oppressive. The prevailing winds are, during the rains from the south-west, in the cold weather from the west, and in the hot weather from the north-west. The hot weather winds are sometimes dust-laden.

## **Geography**

The district forms a part of the Chotanagpur plateau. It is a region of plateaus, residual hills and valleys, which occupy the southern half of the state of Jharkhand.



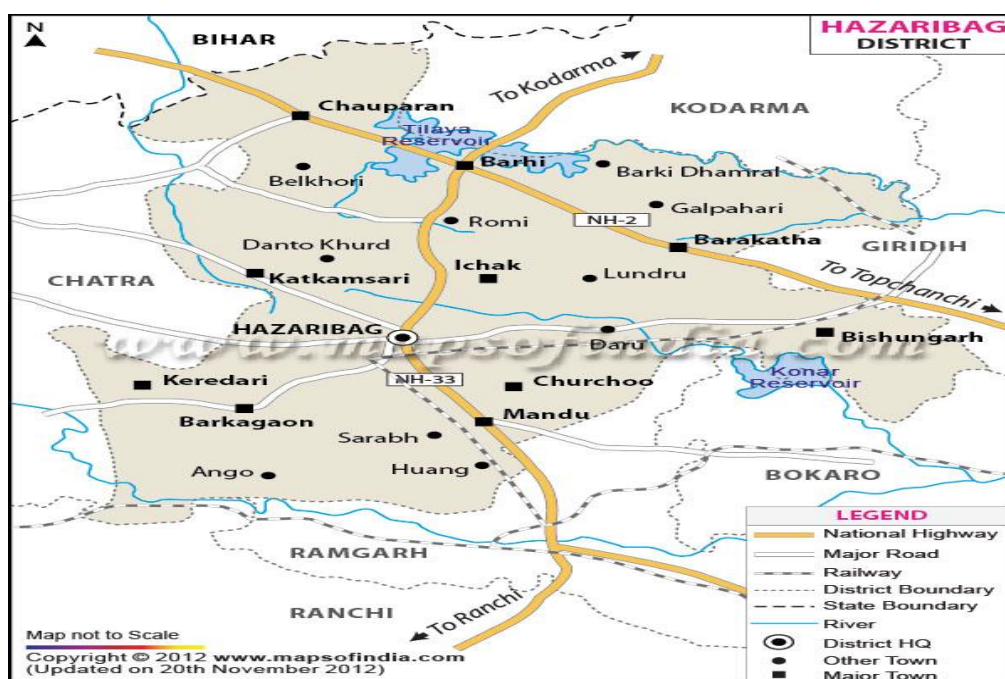
The district may be divided into the following broad natural divisions:

- The central plateau
- The lower plateaus, and
- The Damodar Valley.

The central plateau, averaging 2000 feet high, is situated in the centre of the district and contains the town of Hazaribag. Around the central plateau are the lower plateaus on all sides except the west where a high ridge connects the central plateau to the Palamu district. The lower plateaus average 1300 feet in height, their surface being undulating. In the north and northwest, the lower plateaus form fairly level tablelands until they reach the ghats when they drop to about 700 feet. On the east, the general elevation is lower and the descent gradual. Along the southern part of the district is the Damodar valley in which the town of Ramgarh is situated at a level of 1000 feet lower than Hazaribag. The chief hills in central Hazaribag are Chandwara and Jillinga which rise above the central plateau to 2816 and 3057 feet respectively above the mean sea level. To the south of the central plateau lies the Sugu hill which rises to 3203 feet and is separated from the Jillinga by the river Bokaro. Maran Burn hill lies south of the Damodar Valley between Hazaribag and Ranchi districts attaining a height of 3445 feet. Hazaribag is a predominantly forest district and nearly half of the total area is covered by forests which are distributed almost uniformly throughout the district.

Hazaribag, Jharkhand

RESOURCES		
Forest land (Sq.Km)	2088(34.81%)	
Cultivable Land (Acres)	283710	
Irrigated Area (Acres)	13368	
Non – Agriculture use Land (Acres)	50250	
Major Crops	Wheat, Paddy, Maize, Gram, Arhar, Sarso	



**Performa for use by Joint Inspection Team  
Micro Irrigation**

Sr. No.	Details	Remarks
1	Name & address of beneficiary visited.	Sri Bablu Soren Chanaro Charhi, Hazaribagh
2	Total land available with the beneficiary (ha).	0.40 ha.
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Tomato, Potato
5.	Total area covered (ha)	0.40 ha.
6	Crop Spacing (for drip)	1.2 X 0.40 m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	M/s Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs, 62426/-
10	Mode of payment	Cheque
11	Status of crop	Good
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Sri Patel Kumar Bihari, Balsagra Dadi, Hazaribagh
2	Total land available with the beneficiary (ha).	0.40 ha.
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Tomato, Brinjal
5.	Total area covered (ha)	1.00 ha.
6	Crop Spacing (for drip)	1.2 X 0.40 m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	M/s Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs, 62426/- Dated 30.12.2013
10	Mode of payment	Cheque
11	Status of crop	Good
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Sri Lalmohan Mahto, Balsagra Dadi, Hazaribagh
2	Total land available with the beneficiary (ha).	0.80 ha.
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Tomato, Potao
5.	Total area covered (ha)	0.80 ha
6	Crop Spacing (for drip)	1.2 X 0.40 m
7	Year of establishment	2012-13
8	Name of Manufacturer/ Supplier	M/s Jain irrigation system Ltd.
9	Total subsidy paid & date of payment	Rs, 99536/- Dated 28.12.2013
10	Mode of payment	Cheque
11	Status of crop	Very Good
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Cluster of 08 farmer Bokatand Bagmuni Samiti, Patratu.
2	Total land available with the beneficiary (ha).	0.80 ha.
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Mango, Orchard
5.	Total area covered (ha)	12 ha.
6	Crop Spacing (for drip)	10 X 10m
7	Year of establishment	2011-12
8	Name of Manufacturer/ Supplier	M/s Netafaim Irrigation India Pvt. Ltd.
9	Total subsidy paid & date of payment	Rs, 216376/-
10	Mode of payment	Paid in Farmer's Bank Account Through Gramin Bank, Patratu.
11	Status of crop	
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Sri. Chintaman Mahto, Vill-Bakapura, Visungarh, Hazaribagh
2	Total land available with the beneficiary (ha).	
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Vegetable
5.	Total area covered (ha)	0.296 ha.
6	Crop Spacing (for drip)	01.2X0.4 m
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	M/s Netafaim Irrigation India Pvt. Ltd.
9	Total subsidy paid & date of payment	Rs, 51795/-
10	Mode of payment	Paid in Farmer's Bank

		Account Through Bank of India, Nawada
11	Status of crop	
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Sri. Gobardhan Mahto, Vill-Bakapura, Visungarh, Hazaribagh
2	Total land available with the beneficiary (ha).	
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Vegetable(Potato)
5.	Total area covered (ha)	0.208 ha.
6	Crop Spacing (for drip)	01.2X0.4 m
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	M/s Netafaim Irrigation India Pvt. Ltd.
9	Total subsidy paid & date of payment	Rs, 42800/-
10	Mode of payment	Paid in Farmer's Bank Account Through Bank of India, Nawada
11	Status of crop	
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Sri. RamSingham Singh, Siladih, Daru, Hazaribagh
2	Total land available with the beneficiary (ha).	0.12 ha.
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Potato, Tomato, chilli

5.	Total area covered (ha)	0.12 ha
6	Crop Spacing (for drip)	01.2X0.4 m
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	M/s Jain Irrigation System Ltd.
9	Total subsidy paid & date of payment	Rs, 136300/- Dated 18.11.13
10	Mode of payment	Cheque
11	Status of crop	Very good
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Sri. Alok Kumar, Harhar, Sadar Hazaribagh
2	Total land available with the beneficiary (ha).	2.8ha.
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Potato, Pumpkin, Tomato
5.	Total area covered (ha)	02.8 ha
6	Crop Spacing (for drip)	01.2X0.4 m
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	M/s Jain Irrigation System Ltd.
9	Total subsidy paid & date of payment	Rs, 288063/- Dated 24.02.14
10	Mode of payment	Cheque
11	Status of crop	Very good
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	



## Hazaribagh District Photographs:



High density plantation of guava



Mango plantation in cluster with NGO support



Established mango orchard with NHM support



High density guava plantation in farmers field



Pea seed, production in farmers field



Pack house in farmers field



**Ramgarh district:**

Ramgarh district is carved out of erstwhile district of Hazaribagh on 12<sup>th</sup> September 2007. The Latitude and Longitude of District Headquarter is 23° 38' and 85° 34' respectively. Ramgarh district has one Sub-division namely Ramgarh and four Block's namely Ramgarh, Gola, Mandu and Patratu. The present boundary of Ramgarh district is in North – Hazaribagh district, South – Ranchi district, East – Ranchi and West - Bokaro district. The district headquarter is at Ramgarh town. The total area of Ramgarh district is 1360.08 Sq.Km, out of which 487.93 Sq.Km is forest area. Ramgarh district has 351 revenue village of which 334 is Chiragi and 17 is be-chiragi. According to the 2011 census Ramgarh district has a population of 949,159. The district is a part of Chotanagpur plateau. Important physiographic regions of the district are Damodar Valley. Major area of the district comes under Damodar Valley. Damodar Valley is bounded by Hazaribag Plateau in north and Ranchi Plateau in south. Ranchi and Hazaribag plateau is separated by east–west running Damodar Valley. Barka Pahar (Marang Buru) 1049 meters high above sea level located along the Ramgarh-Ranchi border is probably the highest peak, and it also separates the districts.

**Rivers and river basins:**

Damodar is the main river of the district and it also forms a major river basin, comprising a number of tributaries. Important amongst them are: Naikari, Bhervi or Bhera and Bokaro river. Naikari Dam, Patratu.

**Soils and climate:**

Soils: Mainly two type of soil found -Red Soil and Sandy loam. The area lies in the sub-humid region of Chotanagpur Plateau and enjoys semi-extreme type of climate. The day temperature rises around 40 °C during the summers and drops down to around 10 °C during the winter.

Three broad seasons can be recognized:

- The winter season, November to February.
- The hot season, March to May.
- The rainy season, June to October.

**Forests and wildlife:**

The forest area of the district is 487.93 km<sup>2</sup>. The district is rich in flora and fauna. Government has planned a deer park in the district. The park will come up on 25 acres on Gola-Muri Road in Gola block. 30 villages in the district is tuskers (elephant) effected. The main occupation of the people of Ramgarh is cultivation. There are three main agricultural seasons in the district, 1) kharif, 2) rabi 3) zaid. Rice, maize, ragi, fruits and vegetables are the main crop of the district

**Agro-Climatic/Ecological Zone:**

Agro Ecological Sub Region (ICAR) : Moderately to Gently Sloping Chattisgarh,

Mahanadi Basin, Hot Moist/Dry Subhumid

Transitional eco sub region (11.0)

Agro-Climatic Zone: Eastern Plateau and Hills Region (VII)

**Latitude Longitude Altitude 23.35°N 85.33°E 2140 feet**

Rainfall	Normal RF(mm)	Normal Onset ( specify week and month)	Normal Cessation ( specify week and month)
SW monsoon (June-Sep)	1139	2nd week of June	1st week of October
NE Monsoon(Oct-Dec)	80.64	2nd week of October	3rd week of December-
Winter(Jan- March)	26.88	1st week of January	4th week of March
Summer(Apr-May)	94.08	1st week of April	4th week of May
Annual	1344		

**Major Soils (common names like red sandy loam deep soils :**

Red lateritic (Ultic Paleustalfs)

Loam soil (Haplustalfs)

Fine Loam (Rhodustlafs)

Fine mixed Loam (Paleustalfs)

**Land use pattern of the district:**

Geographica area(,000ha.) 137.6

Cultivable area: 20.66

Forest area: 14.8

Barren and uncultivable land:9.62

Current fallows ('000 ha) :3.3

Agricultural land use	Area ('000 ha)	Cropping intensity %
Net sown area	20.66	117%
Area sown more than once	3.51	
Gross cropped area	24.18	

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Micro Irrigation**

Sr. No.	Details	Remarks
1	Name & address of beneficiary visited.	Cluster of 24 farmer's Dadidih & Sahitand Bagwani Samiti, Patratu. Ramgarh
2	Total land available with the beneficiary (ha).	
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Mango, Orchard
5.	Total area covered (ha)	72 ha.
6	Crop Spacing (for drip)	10 X 10m
7	Year of establishment	2011-12

8	Name of Manufacturer/ Supplier	M/s Netafaim Irrigation India Pvt. Ltd.
9	Total subsidy paid & date of payment	Rs, 1160124/-
10	Mode of payment	Paid in Farmer's Bank Account Through Gramin Bank, Patratu.
11	Status of crop	
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

**Performa for use by Joint Inspection Team  
Micro Irrigation**

<b>Sr. No.</b>	<b>Details</b>	<b>Remarks</b>
1	Name & address of beneficiary visited.	Sri Daya Shankar Yadav, Vill.-Matkama, Patratu. Ramgarh
2	Total land available with the beneficiary (ha).	
3	Type of MI system availed Drip/ Sprinkler	Drip irrigation
4	Crop(s) covered	Vegtable (Chilli, Pea)
5.	Total area covered (ha)	0.56 ha.
6	Crop Spacing (for drip)	01.2 X 0.4m
7	Year of establishment	2013-14
8	Name of Manufacturer/ Supplier	M/s Netafaim Irrigation India Pvt. Ltd.
9	Total subsidy paid & date of payment	Rs, 77642/-
10	Mode of payment	Due
11	Status of crop	
12	General upkeep (Very good/ Good/ Average/ Poor)	
13.	Any other relevant observation by JIT.	

## Ramgarh District Photographs



Cluster plantation of mango orchard by NGO's



Field visit of JIT members in mango plantation



Intercrop in established mango plantation



Field visit of JIT members in mango plantation



## **Observations:**

- Department needs to ensure timely supply of disease free quality planting material properly tagged and packed with name of varieties and pedigree from accredited nurseries only. NGO, s along with farmers may be given freedom to procure planting material from accredited nurseries/KVKs/SAUs .
- Field layout for establishment of orchards in large clusters should be laid out as per contour map and identified varieties should be planted blocks wise for better maintenance of stock.
- Training programme on recommended package of practices for fruit crops should be regularly imparted to the NGO'S and farmers. Also, refresher training programme /exposure visits are required for the implementing officers.
- Irrigation facilities' should be adopted as per contour map along with plastic mulching in newly established orchards.
- State Horticulture department have serious constrains of manpower at directorate and at field level. Independent separate directorate may be established with minimum trained man power up to block level.
- It was observed that pack houses constructed are not properly designed and look like go down with aluminum root top. It is desirable to provide design to them by SHM to districts level Officer.
- Specifications prescribed for proper spacing and Ventura support for fertigation need to be followed while installing drip irrigation system. Training for farmers regarding maintenance of MI system, fertigation scheduling should be imparted regularly.