

# Sustainable Rural Livelihood Security (SRLS) in Disadvantaged Districts of Maharashtra

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## ABSTRACT

The Sustainable Rural Livelihood Security in Disadvantaged districts Maharashtra state is one of the NAIP projects being undertaken in Maharashtra State. The data is collected from the Yavatmal district for the period 1990-91 to 2005-06 and tahasil levels for Ralegaon and Ghatanji tahasils. The area irrigated in Ralegaon tahasil has decreasing trend for the two sources of irrigation, Surface and Well irrigation with negatively significant growth rates. Similar is the situation for these indicators in Ghatanji tahasil except surface irrigation source which has shown negative but non-significant growth rate. Yavatmal district has indicated positive change in its status during 2003-04 over 1995-96 with increase in number of Tractors, Electric pumps and oil pumps have indicated positive change implying farm mechanization. Similar is the increase in number of tractors in Ralegaon and Ghatanji tahasils.

## INTRODUCTION

In many parts of the world, the rural poor population substantially depends on the freely available natural resources for their livelihood (R. Mahesh, Ph.D. Thesis). These resources provide them a range of goods for household use, as consumer durables, production inputs, and capital assets. Even when the poor have access to other resources, these natural resources provide a cushion to them during periods when income from other sources decline or become unavailable. Under such situations, the natural resources is the only assets to which the poor people have access (Shyamsundar, 2002). Hence it is these groups that are the most impacted due to the declining natural resource environment, especially in the absence of any successful process of regeneration. But the ways in which natural resource degradation affects the poor and the extent to which it affects individual groups depend to a large extent on the types of 'poverty' of such groups and their assets.

The National Agricultural Innovation Project (NAIP) was launched on 26<sup>th</sup> July, 2006 with the total budget for the project as US\$ 250 million with 80 per cent fund sharing by the World Bank. The NAIP is functioning through four components as under :

- The ICAR as Catalyzing Agent for Management of Change in the Indian NARS
- Research on Production to

Consumption Systems (PCS)

- Research on Sustainable Rural Livelihood Security (SRLS), and

- Basic and Strategic Research in the Frontier Areas of Agricultural Sciences (BSR)

Objective: To study the performances of the Natural and Infrastructural resources in Yavatmal district of Maharashtra.

## METHODOLOGY

The following indicators are identified for studying the performance of the natural and infrastructural resources in Yavatmal District.

- The land use pattern,
- Infrastructural parameters, such as population density,

District income / Per capita income, Area under irrigation source-wise, Major/Minor Projects, Farm Implements, Livestock population, Veterinary hospitals, Forest areas, Agricultural Cooperative Societies, Electrification of Villages, Agricultural and Non-Agricultural Industries, Educational Institutions, and others.

- The values of the compound growth rates obtained through fitting of exponential regression function to the data on different parameter of the Infrastructure.

$$\text{Compound growth rate} = (b - 1) \times 100$$

where b is the parameter in the exponential model

**Key words :**  
Pumps irrigation,  
Projects

Accepted :  
January, 2010

$Y = a b^t$ , where, Y is the total irrigated area and t is the time variable. The significance of CGR is the significance of the value of b in the above model.

#### Data and study period :

The study pertains to the disadvantage district Yavatmal. Two tahasils from Yavatmal district, namely, Ralegaon and Ghatanji are selected as these are also being surveyed through the NAIP projects already in operation in the district. The secondary data for the district and the two tahasils are collected from the publications of the State Government, District statistical abstract of Yavatmal for the period from 1990-01 to 2005-06.

### RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented below:

#### Land utilization statistics:

The Land utilization at the tahasil levels is presented in Table 1 where the areas are compared to the district figures. Ralegaon tahasil covers 5.87% of the GCA of the district while Ghatanji covers 6.56 per cent of the GCA. The coverage under forests in Ralegaon and Ghatanji is seen to be 5.35 % and 9.92% of the district figures. The area sown more than once in these two tahasils has reduced during the five years under study. This may be due to lack of irrigation availability and

lowering of the groundwater level.

#### Status of different infrastructural parameters :

The secondary data on many of the indicators is not available for many of the years. Only the available data for indicators is analysed and the means, Variability within the indicator measured in terms of coefficient of variation (%) and the compound growth rates (%) for these parameters are presented in Table 2 as under:

Table 2 shows the status of area irrigated under sources of irrigation in Yavatmal district and the two tahasils, Ralegaon and Ghatanji. On the basis of data available for the period from 1996-97 to 2005-06, it is seen that the average area irrigated through Surface Irrigation amounts to 9465.05 hectares in Yavatmal district and the variability is to the extent of 30.52 %. The area irrigated through surface irrigation during the period has significant Growth Rate of 10.01 per cent per year. However, around average of 27,492 hectares area is irrigated through Well Irrigation in the district, but this source has shown 53.56 per cent variation. The growth rate for this indicator is seen to be non-significant. Since 1996-97, the gross irrigated area has reached an average of 46,975 ha with variability of 28.31 per cent. Statistically the growth is non-significant indicating that the gross irrigated area during the period has not changed. The area irrigated in Ralegaon tahasil has shown decreasing trend for the two sources surface and Well irrigation with

**Table 1 : Land utilization pattern of Ralegaon and Ghatanji Tahasils in Yavatmal district for 2000-01 and 2005-06 (Area '00'ha)**

Sr. No.	Particulars	Yavatmal		Ralegaon		Ghatanji	
		2000-01	2005-06	2000-01	2005-06	2000-01	2005-06
1.	Area for land utilization	13519	13519	793	793	969.14	969.14
				<b>5.87</b>	<b>5.87</b>	<b>7.17</b>	<b>7.17</b>
2.	Forest	2441	2429	68.44	130	136.93	241.04
				<b>2.80</b>	<b>5.35</b>	<b>5.61</b>	<b>9.92</b>
3.	Land put to non-agricultural uses	639	647	20.64	5.22	18.8	3.63
				<b>3.23</b>	<b>0.81</b>	<b>2.94</b>	<b>0.56</b>
4.	Current fallow	339	352	23.68	37.74	18.77	36.32
				<b>6.99</b>	<b>10.72</b>	<b>5.54</b>	<b>10.32</b>
5.	Culturable waste	229	228	105.92	21.69	85.81	32.42
				<b>46.25</b>	<b>9.51</b>	<b>37.47</b>	<b>14.22</b>
6.	Other fallow	259	253	25.25	26.82	117.97	16.28
				<b>9.75</b>	<b>10.60</b>	<b>45.55</b>	<b>6.43</b>
7.	Net sown area	8479	8476	548.65	571.31	590.86	639.45
				<b>6.47</b>	<b>6.74</b>	<b>6.97</b>	<b>7.54</b>
8.	Area sown more than once	1286	1286	5.66	0.8	4.54	1.22
				<b>0.44</b>	<b>0.06</b>	<b>0.35</b>	<b>0.09</b>
9.	Gross cropped area	9765	9762	554.31	572.11	595.4	640.67
				<b>5.68</b>	<b>5.86</b>	<b>6.10</b>	<b>6.56</b>

Bold Figures indicates percentages for Ralegaon and Ghatanji Tahsils out of Yavatmal district, respectively.

**Table 2 : Mean, C.V(%) and growth rate for area irrigated under sources of irrigation during 1996-97 to 2005-06**

Sr. No.	Particulars		Surface	Well	Gross irrigated area
1.	Yavatmal	Mean (ha)	9465.05	27492.20	46975.65
		C.V.(%)	30.52	53.56	28.31
		CGR	10.01*	-9.99	-5.83
2.	Ralegaon Tahasil	Mean (ha)	482.30	1895.95	2863.90
		C.V.(%)	87.82	79.32	72.75
		CGR	-18.19*	-27.12**	-24.27**
3.	Ghatanji Tahasil	Mean (ha)	255.90	1780.90	2427.95
		C.V.(%)	18.06	78.32	54.03
		CGR	-1.83	-20.41**	-16.51**

**Table 3 : Per cent change during 2003-04 for different Parameters over 1995-96**

Sr. No.	Particulars	Per cent change		
		Yavatmal	Ralegaon	Ghatanji
1.	Wooden plough	11.00	-21.280	638.08
2.	Iron plough	-14.00	-33.160	790.68
3.	Bullock cart	12.00	0.440	121.97
4.	Tractor	132.37	63.490	63.33
5.	Oil pump	27.66	-46.380	-8.62
6.	Electric pump	30.06	-14.790	112.00
7.	Livestock population	-7.43	-22.140	3.06

negatively significant growth rates. This suggests that more intensive measures be taken in this tahasil to build up new wells, and the measures like farm ponds, check dams, and other methods of conserving rain water be taken up. Similar is the situation for these indicators in Ghatanji tahasil also except the surface irrigation source which has shown non-significant growth rate. Similar results are in conformity with the finding of Navroz, 2003 said that the declining ground water table in many parts of the country.

The data for the parameters is not available from the Government Publication. However the data for only two points of time, namely, 1995-96 and 2003-04 is subjected to analysis and the same is given in Table 3 as below:

Yavatmal district has indicated positive change over its status in 1995-96. The highest increase of 132.37 per cent is recorded by the number of Tractors used for agricultural purposes. Similar finding were reported by Grover and Sharma, 2000, they observed significant increase in the demand for tractors during the last over two decades in the country. Electric pumps and oil pumps have increased by 30.06 and 27.66 per cent during these two periods. The increase in these indicators indicates a positive sign towards mechanization. Similar is the increase in number of tractors in Ralegaon tahasil (63.49 per cent)

while the other indicators have shown decreasing trends. Ghatanji tahsil, however, indicates increase in all the indicators. Only the numbers of oil pumps have reduced by 8.62 per cent. The number of iron plough and wooden plough have shown maximum increase.

### Conclusion:

– The area irrigated in Ralegaon tahasil has decreasing trend for the two sources of irrigation, Surface and Well irrigation with negatively significant growth rates. Similar is the situation for these indicators in Ghatanji tahasil except surface irrigation source which has shown negative but non-significant growth rate.

– Yavatmal district has indicated positive change in its status during 2003-04 over 1995-96 with increase in number of Tractors, Electric pumps and oil pumps have indicated positive change implying farm mechanization. Similar are the increase in number of tractors in Ralegaon and Ghatanji tahasils. Similar results were also reported by Grover and Sharma (2000) stated that Tractors in India increased at the rate 17.06 per cent per annum. The number of oilpumps in Ghatanji have reduced. The number of iron ploughs and wooden ploughs have shown maximum increase in Ghatanji.

– For these indicators in Ghatanji tahasil except surface irrigation source which has shown negative but non-significant growth rate.

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