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Research Paper

Temporal analysis of rainfed agriculture in Amravati division of Vidarbha

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ABSTRACT

An attempt has been made to study the temporal variation in sources of irrigation and their impact on the rainfed agriculture of Amravati division of Vidarbha. The data pertained to a period of twenty five years *i.e.* from 1980-81 to 2004-05 and were subjected to compound growth rate analysis. It may be concluded from the results presented in the study that there has been a very little increase in the total irrigated area in the study period. The cropping pattern of Amravati division is shifting from cereals to pulses and oilseeds due to better returns.

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Key words : Temporal analysis, Rainfed agriculture

INTRODUCTION

Amravati division is one of the six divisions of Maharashtra state with total geographical area of 46090 sq. km. Amravati and Nagpur divisions constitute the ancient Vidarbha region. Amravati Division is bound by Madhya Pradesh state to the north, Nagpur Division to the east, Andhra Pradesh state to the southeast, Marathwada region (Aurangabad Division) to the south and southwest, and Nashik Division to the west. Area under irrigation in the Amravati division is 2,582.02 km². The well density is 4.3. While there is significant unexplored groundwater development (that is, annual drawal of water as percentage of annual recharge) is iow at about 15 per cent. The annual rainfall in the region varies from 750 to 1700 mm. The main crops grown are *Kharif* jowar, bajra, pigeonpea, soybean, *Kharif* groundnut and cotton. The cropped area covered by these irrigation sources is inadequate and therefore rainfed farming is still predominanat in this region.

MATERIALS AND METHODS

In the present study an analysis has been made regarding the temporal variation in sources of irrigation and their impact on the rainfed agriculture of Amravati division of Vidarbha. The data were collected from the Agricultural Statistical Information Maharashtra State, Pune. The data pertained to a period of twenty five years *i.e.* from 1980-81 to 2004-05 and were subjected to compound growth rate analysis.

$$Y = a.\ b^{t}$$

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

where,
Y = Dependent variable (area / production / yield)
a and b = Parameters of exponential model

RESULTS AND DISCUSSION

Compound growth rate of area irrigated by different sources in the Amravati division of Vidarbha are presented in Table 1. A negative trend was recorded in the growth of area irrigated through surface irrigation (0.01 per cent). High positive trend was observed in the growth of area under well irrigation (4.12 per cent). In well irrigation,