

# Geographical Analysis of Medium Irrigation Projects in Dhule District (M.S.)

## Abstract

The present paper throws light on the medium irrigation projects of the study area and the water available for the agriculture purpose in the study area. Irrigation is very important activity of man from an age old. In, India where the rainfall distribution is very uneven both inadequate and unpredictable, irrigation plays key role to minimize its adverse effect on agriculture. Agriculture practice is the backbone of Indian economy. Therefore the development and stability of agriculture is depends upon the sources of water for irrigation.

Now a days the problem of food scarcity is increased day by day. The increasing population on every day is growing burden on land resources. To compensate this problem we have to introduce the high varieties food technology. It is also think that to increase food production in large quantity.

**Keywords:** Water, Irrigation, Agriculture, Domestic, Industrial.

## Introduction

Irrigation is generally the artificial application of water to soil for crop production. The well-being and prosperity of any region depends upon the extent to which it succeeds in harnessing its land and water resources and derive maximum benefits from them by adopting appropriate policies and technologies.

This water utilization helps agriculture, industrial and domestic purpose. In Dhule district there are 12 Medium Irrigation Projects. By the medium irrigation project the water capacity status is 302.62 Mcum of catchment area find another source of water availability. This water utilization helps agriculture, industrial and domestic purposes. In Dhule district up to year 2011 there are only 08 medium irrigation projects, but it increases up to 12 after 2011. These irrigation projects play an important role in agriculture development of the study region. There is a need of more irrigation projects to overcome the problem of frequent droughts in study region.

## Objective of the Study

The main objective of the present study is to identify location and distribution of medium irrigation projects in the study region

## Study Area

Study area is located in Northern part of Maharashtra state spread between Latitude  $20^{\circ} 38'$  to  $21^{\circ} 16'$  N. and Longitude  $73^{\circ} 50'$  to  $75^{\circ} 11'$  E. Dhule district is bounded by the district, Jalgaon is located to the East, Nashik to the South, Gujarat State and Nandurbar district is located to the North-West. It is Located at the crossing of three National Highways namely NH-6 (Surat-Nagpur), NH-3 (Mumbai-Agra), and NH-211 (Dhule-Solapur), Because of the Satpuda ranges. Dhule district is separated from Madhya Pradesh. Satmala ranges also separate it from Western Maharashtra. Dhule district has an area of 8061 sq.kms, and contributes 2.62% area of the Maharashtra State. The height of the district varies from 300 to 1200 Meters above mean sea level. Dhule district with its headquarter at Dhule includes four tehsils namely, 1) Dhule 2) Sakri 3) Shindkheda 4) Shirpur.

## Physiography

Physiographically the district is divided in three parts i.e. mountainous region, hilly region and plain region. Largest part of Dhule and Sakri tehsil is occupied by hilly region. The height is upto the 1200 meters. The middle part which is drain by river is plain and fertile. The northern part is occupied by Satpura mountain ranges.

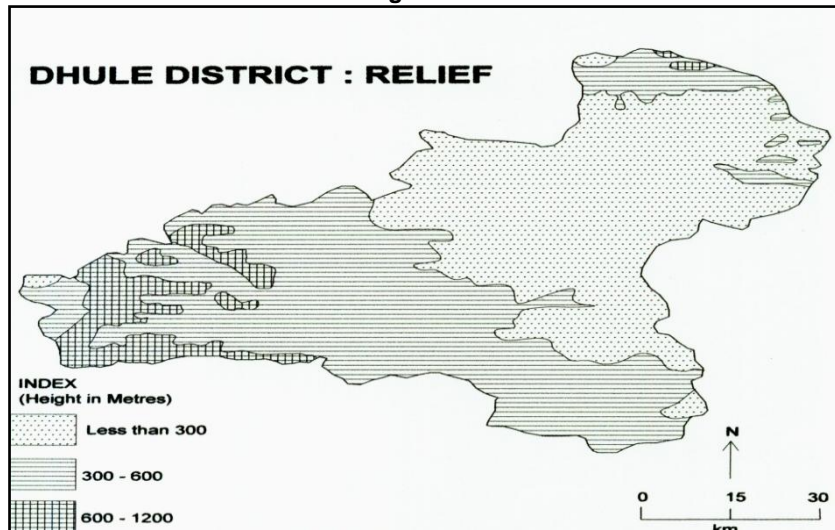
## Hemant S.Nandre

Assistant Professor,  
A.D.M.S.P'S Late. Annasaheb  
R.D.Deore Art's and Science  
College,  
Mhasadi, Sakri, Dhule,  
Maharashtra, India

## Shivaji B. Patil

Head and Research Guide,  
A.D.M.S.P'S Late. Annasaheb  
R.D.Deore Art's and Science  
College,  
Mhasadi, Sakri, Dhule,  
Maharashtra, India

Fig. 01



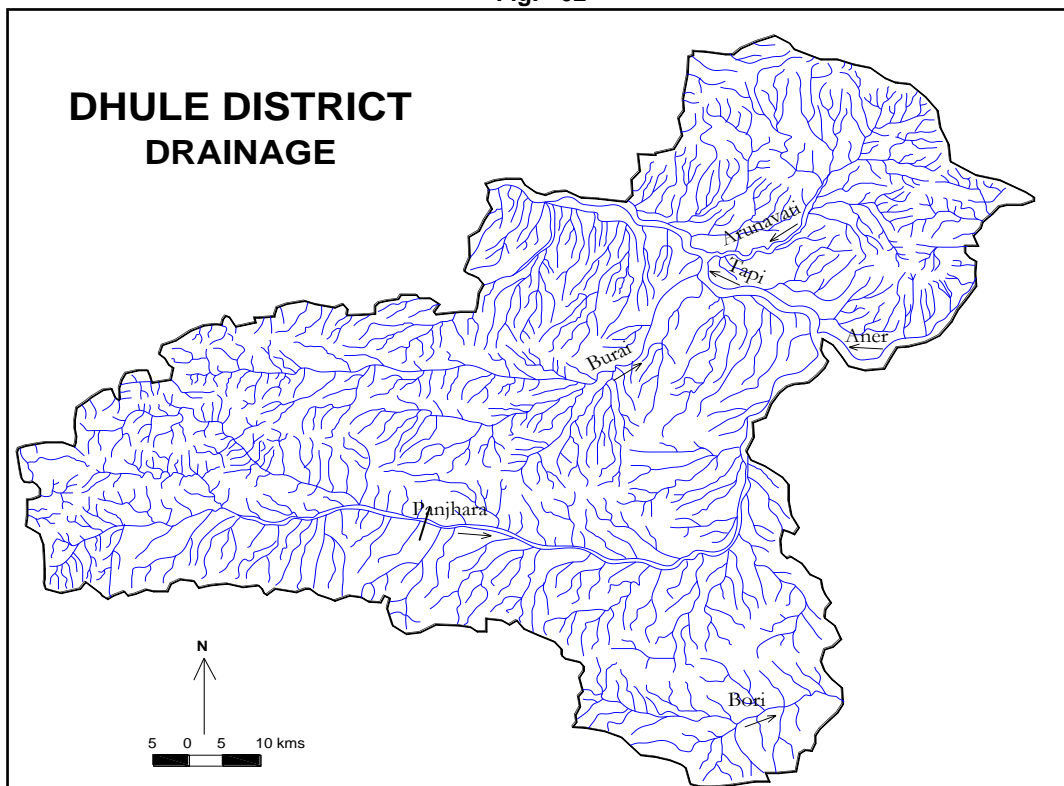
District is occupied by fertile plain. Shindkheda, Shirpur and DhuleTashil are included in central fertile plain. (Fig. 01)

**Drainage**

Tapi is the major river in the study area. It enters from Jalgaon District and flows from East to West. Aner and Arunavati are the major tributaries join from Western bank, where asPanzara, Burai, Amaravati Join to the Tapi from the southern bank. Panzara is the largest tributary of the river Tapi.

Therefore most part of the Dhule District is made fertile by the tributaries of Tapi river. The river Tapi not only discourages human concentration on its bank but also erodes both the bank heavily. The force and velocity of water is considerable resulting in deep entrenched valet leaving the banks very high. Sometimes the river banks are 20 to 30 meter high. The river banks are characterized by gully erosion and badland development is observed at several places. (Fig. 02)

Fig.- 02



**Soil**

Soil of the Dhule District is fertile black cotton. The area along Tapi and her tributaries shows deposition of black cotton soil. Mountainous region of

the hilly west having sandy soil. Soils of the study area is divided in to three major types: (Fig. 03)

1. Deep Black Cotton soil
2. Medium Black soil

3. Coarse Shallow soil.  
**Deep Black Cotton Soil**

These soils occur in a narrow strip of land around 3 km on both the sides of the river Tapi and her major tributaries. The local name for it is 'Bharikali'. The soil is deep black in color and highly fertile, which generally supports excellent vegetation growth. The average depth of the soil in this region does not exceed 3 meters. This soil has a tendency to develop deep cracks in summer and tends to be waterlogged in the rainy season.

**Medium Black Soil**

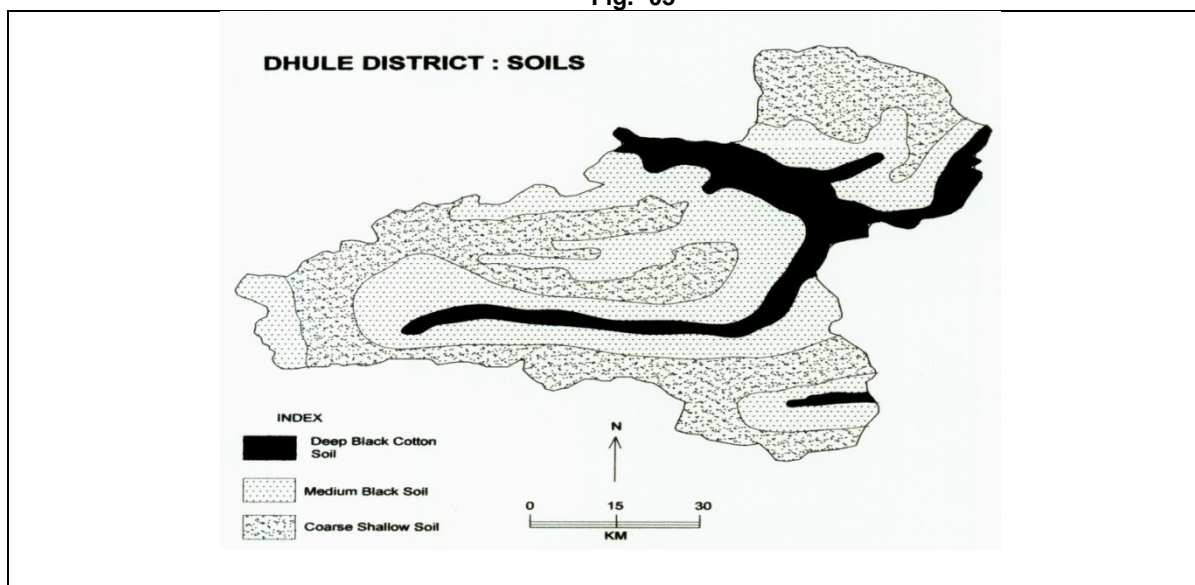
A major part of Tapi basin is covered by this type of soil. It is found in the plain and also the

undulating areas of the southern zone and along the rivers and streams in extensive patches. The soil is fertile. It is granular to sub-granular and loamy to clayey in structure.

**Coarse Shallow Soil**

This type of soil is confined only to the hilly areas. The slope and foot hills of the Shirpur ranges, Galana hills and Dhanora hills are covered by these soils. These soils are formed of the disintegrated basaltic rock. These rocks produce 'Murum' as a result of disintegration which ultimately produces soils of varying depth, colour and texture. These soils are often very gravelly and at places are mixed with gravels.

Fig.- 03



**Database and Methodology**

The present work is carried out by using following methodology. The data regarding irrigation projects is obtained from secondary sources. i.e. irrigation department and socio economic review of Dhule district.

**Literature Survey**

The available literature on the above topic of research is scanned from various research papers and books.

**Laboratory Work**

Laboratory work includes tabulation of data, tables and figures.

**Location of The Irrigation Projects in The Study Region**

The following TableNo 01 gives information about 12 medium projects its distribution, Catchment area and storage capacity of the medium irrigation projects. Irrigation projects in Dhule districts in which five projects in Sakri Tehsil, four in Shindkheda tehsil, two in Shirpur tehsil and one in Dhule tehsil. The Nimnpanzara (Akkalpada Project) has largest storage capacity (109.31 Mcum.) in the study region. The Kanoli Dam located near Palasdare in Dhule tehsil has lowest storage capacity. Chronologically the storage capacity has Aner (103.56 Mcum.), Sulwade barrage (65.06 Mcum.), Panzara Latipada Project (43.42 Mcum.), Wadishewadi (36.93 Mcum.),

Amravati (27.78 Mcum.), Karvand (21.12 Mcum.), Sonwad (14.30 Mcum.), Burai (14.21 Mcum.), Jamkhedi (13.28 Mcum.), Malangaon (13.03 Mcum.) and Kanoli (11.90 Mcum.). The Panzara medium irrigation project has largest catchment area (16093 Hec.) in the study region, while Kanoli dam located southern of Dhule city has the minimum catchment area (160 Hec.). The total catchment area of all medium irrigation projects is 87255 and the total water availability capacity of all medium irrigation projects is 473.90 Mcum. the agricultural development in study region is also depend on proper utilization of the available water. Though the water storage capacity of the irrigation projects is small but they are very useful for irrigation purpose.

As the area of the study region is considered the number of medium irrigation projects is very less. In the study region no major project for irrigation or other purpose is available. Study region comes under the drought prone. Droughts are frequently happened in the study region. In Dhule tehsil there is only one project available, there is a scope for the newly development of the irrigation project. Such sites are available in the study region. As we consider the drainage pattern of the study region there is a large scope for such development. Crop failure due availability of water frequently happened in the study

region. Shirpur and Shindkheda tehsil has also scope for the construction of such irrigation projects.

**Table No. 01:- Medium Irrigation Project in Dhule district (2017)**

Sr.No.	Name of medium Irrigation project	Tehsil	Catchment area in (Hector)	Capacity in (Mcum)
1	Amravati	Shindkheda	4094	27.78
2	Nimnpanzara	Sakri	12519	109.31
3	Wadishewadi	Shindkheda	9636	36.93
4	Sulwadebarege	Shindkheda	9333	65.06
5	Aner	Shirpur	8813	103.56
6	Karvand	Shirpur	8266	21.12
7	Panzara	Sakri	16093	43.42
8	Malangaon	Sakri	2877	13.03
9	Burai	Sakri	4520	14.21
10	Kanoli	Dhule	1620	11.90
11	Jamkhedi	Sakri	7032	13.28
12	Sonwad	Shindkheda	2452	14.30
Total		12	87255	473.90

(Source: - Irrigation department, Dhule)

**Fig.04- Location of Medium Irrigation Projects in Dhule District**



**Conclusion**

It is concluded from the above study that, all medium projects had large capacity of irrigation; it is helpful for the agricultural development in the study region. It is also noted that number of such irrigation projects are less and there is a scope for new construction of irrigation projects. If the more projects are constructed will be helpful for agricultural irrigation and it directly affects on the income of agricultural families. It is also helpful for industrial and domestic purpose. Study region has great potential for the development but it is depend on the planners and political willingness.

**Reference**

Borse R.J. (2006): "water resources of Jalgaon district, Maharashtra: A geomorphologic

study". Unpublished thesis North Maharashtra University, Jalgaon

Dr.V.P.Chaudhari and Dr.S.B.Patil (2015) "Geographical Study of flood affected settlements in dhule district (M.S)" Social Science Reporter, Latur

Patil S.B. and Patil V.S. (2012) "Distribution and growth of population: A case study of Dhule district (MS)", The International research Journal of social sciences and humanities, Vol-I, No.3, Octo-2012, Pp-42-44.

Patil S.B. (2008):"Geomorphology and settlements in Dhule district (M.S.)" Unpublished Ph.D. theses, submitted to North Maharashtra University Jalgaon.

Irrigation department reports – 2011  
Socio – Economic abstract Dhule district 2016