

Impact Factor - 6.625

ISSN - 2348-7143

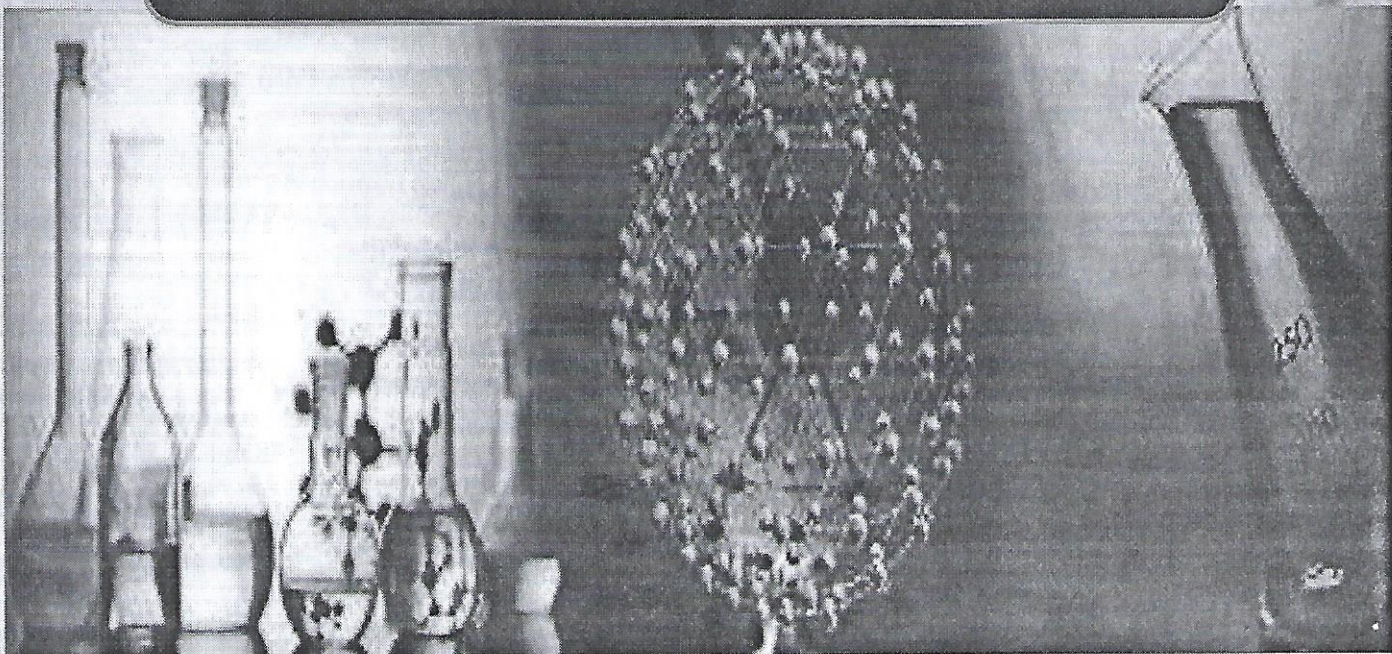
INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S
RESEARCH JOURNEY

International Multidisciplinary E-Research Journal

PEER REFREED & INDEXED JOURNAL

January - 2020 Special Issue - 236 (B)

**Introspection, Prognosis and
 Strategy for Global Water Resources**



Guest Editor :
 Dr. Devidas S. Gejage
 I/C Principal,
 Sameer Gandhi Kala Mahavidyalaya,
 Malshiras, Solapur, Dist. Solapur

Executive Editors :
 Mr. Santosh P. Mane
 IQAC Cordinator
 Sameer Gandhi Kala Mahavidyalaya,
 Malshiras, Solapur, Dist. Solapur

Chief Editor :
 Dr. Dhanraj T. Dhangar (Yeola)



- This Journal is indexed in :
- Scientific Journal Impact Factor (SJIF)
 - Cosmos Impact Factor (CIF)
 - Global Impact Factor (GIF)
 - International Impact Factor Services (IIFS)

Principal
 Jawahar Arts, Science & Commerce College
 Anadur Tal. Tuljapur, Dist. Osmanabad.

For Details Visit To : www.researchjourney.net

SWATIDHAN PUBLICATIONS

**INDEX**

No.	Title of the Paper	Author's Name	Page No.
1	Problems and Prospects Related to Micro Irrigation for Water use Efficiency	Dr.Bapu Raut	05
2	Population Projections in Drought Prone Area of Sangli District (Maharashtra): A Geographical Study	Mr. R. R. Salunkhe, Prof. (Dr.) S. B. Gaikwad	11
3	Slum Environment and its Impact on Human Health in Pimpri Chinchwad Urban Area	Dr. S.A. Nimabrgi	15
4	The Environmental Audit and its Implementation in Industries: A Case Study of Shri Vitthal Sahakri Karkhana Venunagar, Pandharpur	Dr. B.T. Nikam, Dr. V. B. Bandgar	21
5	Soil Fertility Status and Soil Quality in Kolhapur District	Dr.Anubhuti Ghodake	27
6	Spatio Temporal Analysis of Primary Milk Cooperative Societies in Pune Division	Mr. Popat Shende , Dr. Ashish Jadhav , Dr. Subhash Kothawale	35
7	A Study of Public Health Centre Distribution in Kolhapur District. (Maharashtra State)	Dr. B.R. Phule, Mr. P.U.Ughade	40
8	Agriculture and Irrigation Facilities in Sangli District	Shri. G.M Kotagonde, Shri. P.Y sawaisarje	47
9	Educational Scenario of Religious Mmnority Pupils in Satara District: A Geographical Perspective	Dr. K.N.Sontakke, Dr. D.G. Gatade	51
10	District Wise Distribution of Minor Irrigation Schemes in Marathwada Region	Dr. M. T. Musande, Prof. R. U. Chochande	56
11	Study of Hierarchy of Rural Service Centres in Satara District, of Maharashtra	Dr. B.S. Naiknaware, Dr. V. L. Jawan	62
12	Socio-Economic Profile of Health Beneficiaries of Primary Health Centers in Sangli District	Mr. B.B.Mali, Prof. Dr. S.C.Adavitot	69
13	Study of Crop Combination in Malshiras Tahsil Based on Raffiullah's Method	Santosh Mane, Dr. D. C. Kamble, Dr. S. K. Pawar, Krishna Patre	75
14	A Case Study of Watershed Development in Sangola Tahsil In Maharashtra	Mr. Suresh Raybhan	80
15	Phone Radiation On Harmful: A Special Reference To Solapur City (Maharashtra State)	Dr. T. N. Lokhande, Dr.S.M.Mulani, Mr.Amol S.Shinde	84
16	Sex Ratio Fluctuation in Solapur District (1961-2011)	Dr. S.N.GUJAR	89
17	Dimensioning the Impact of Irrigation on Sugarcane Cultivation in Solapur District: A Geographical Analysis	Sule Bharat Maruti	94
18	Role of Irrigation in Parbhani District - A Geographical Study (Ms)	Dr. H. A Gandhale	101
19	Water Resources and Agriculture Development in Satara District (Maharashtra)	Dr. Shrikant Ghadge	107
20	Water Management: Present Situation and Upcoming Challenges	Mr. Sunil Gavit	112
21	Rainfall Variability in Marathwada Region Through PCI	Mr. Kishor Shinde, Dr. Parag A. Khadke	117
22	Examination of Land use Land Cover Change of ZONE .No.1 of Solapur City	Dr.D.S.Narayankar, Dr.M.D.Sangepag	123
23	Impacts of Climate Change in Maharashtra	Dr. Sominath Khade	127
24	Growth of Medical Waste in Sangli –Miraj –Kupwad Municipal Corporation	Mr. R. S. Kadam, Dr. S. S. Kothavale	131



25	Settlement Patterns in Osmanabad District A Geographical Analyses (M.S) Dr. S.C.Advitot, Mr. N.I Shaikh	139
26	Study of Temporal Growth Sheep Farming in Solapur District of Maharashtra Mr. V.S.Sabale	144
27	Status of Rain Water Conservation of Majale Village: A Geographical Review Atish N. Patil, Somnath Gaikwad	151
28	Study of Hierarchy of Market Centres in Osmanabad District of Maharashtra Dr. M. G. Lavate, Dr. V. L. Jawan	160
29	A Geographical Analysis of Sex Structure In Goa State Dr. P. P. Ubale	165
30	Geographical Analysis of Human Resource Development: A Case Study of Solapur District Dr. Vijaykumar Pukale	174
31	Water Resource Management for Sustainable Development Dr. D. S. Harwalkar	181
32	A Study of Tahsilwise Rural Density of Population in Osmanabad District Dr. Vaijnath Chavan	187
33	Site Suitability Evaluation for Ecotourism Using Remote Sensing, GIS and AHP For Western Part of Kolhapur District, Maharashtra Dr. Mrs. V. J. Palkar, Dr. J. M. Palkar	191
34	Agricultural Productivity of Kharip Jowar in Kolhapur District: Maharashtra Dr. J. M. Palkar, Dr. Mrs. V. J. Palkar	199
35	Regional Disparity in Economic Development in Kolhapur District Dr. N. S. Masal	204
36	Irrigation Facilities Leads to Changing Cropping Pattern in Sangli District (Maharashtra) Dr. Dattatray Shinde	210
37	Application of Geospatial Technology For Groundwater Potential Mapping in Sangola Taluka of Solapur District (MS) Dr. Govindrao Todkari	216
38	Review of Water Resources for the Sustainable Development in the Purandhar Tahsil of Pune District Dr. Sampat Jagdale	223
39	Land use Planning and Development of Sadola Village in Majalgaon Teshil of Beed District (M.S) Dr. S.P Ghuge	233
40	Electric Resistivity Model Studies for Groundwater Recharge in Sus Basin, Solapur District Maharashtra India M.N Raut, M.R.Petkar	237
41	Drought Grapes: An Important Farmer's Ornament Dr. Vishal Ovhal, Dr. Varsha Bhosale	245
42	Study of the Awareness of the Household Women About Water Conservation Mrs. Urmila Shendage	254
43	Economic Analysis of Drinking Water Availability in Solapur City Dr. Dipali Patil	259
44	Dr. B.R. Ambedkar's Contribution on Water Resource in India Shailendra Sonawale	265
45	Current Status of Jawahar Wells in Solapur District Dr. N. R Pawar	267

Our Editors have reviewed papers with experts' committee, and they have checked the papers on their level best to stop furtive literature. Except it, the respective authors of the papers are responsible for originality of the papers and intensive thoughts in the papers. Nobody can republish these papers without pre-permission of the publisher.

- Chief & Executive Editor

Principal
Jawahar Arts, Science & Commerce College
Anandur, Tal. Tuljapur, Dist. Osmanabad



District Wise Distribution of Minor Irrigation Schemes in Marathwada Region

Dr. M. T. Musande

Head, Department of Geography,
Jawahar Arts, Science and Commerce College,
Anadur, Tq. Tuljapur, Dist. Osmanabad (MS)
musandemt@gmail.com

Prof. R. U. Chochande

Department of Geography,
B. S. S. Arts, Science, Commerce College
Makani, Tq. Lohara, Dist. Osmanabad
ranjanachochande@gmail.com

Abstract:

Water is an important component of the life support system. Unfortunately water has been overused and even abused over the centuries. But in the study area water resources are imbalanced with the reference to ground and surface water based on irrigation development and water supply. The overall stage of ground water development in the state is above 30%, despite being predominance hard rock with difficult hydrological and meteorological condition. Considering the population growth and inevitable fresh water, the seriousness of the issue man faces becomes obvious in the study area Osmanabad, Jalna, Beed, districts finds lack of rainfall and mismanagement of water resource. In this connection I would like to geographical study of minor irrigation schemes in Marathwada region.

Keywords: Water sources, Ground water, minor irrigation schemes.

Introduction:

Irrigation is essentially the artificial application of water to overcome deficiencies in rainfall for growing crops (Sivarama Krishnarao and M. I. Ali, 1986). This could be done by artificial application of water to land for growing crops and is known by the term irrigation. Irrigation is one form or another has been in vogue from time immemorial. For instance, in Egypt, it goes back to 400 B.C. or beyond and other parts of the world it is equally old and is described, often in great detail, in ancient literature such as the Rigveda or the records of ancient travelers and traders. It is developed in response to conditions of climate, and the same holds good today in many parts of the world (Cantor L. M., 1967). Irrigation is regarded as an integrated part of a sound infra-structure and is one of the basic in gradient of agricultural activities. To be successful and well developed agriculture requires supply of water at regular interval and in required quantities.

Study Area:

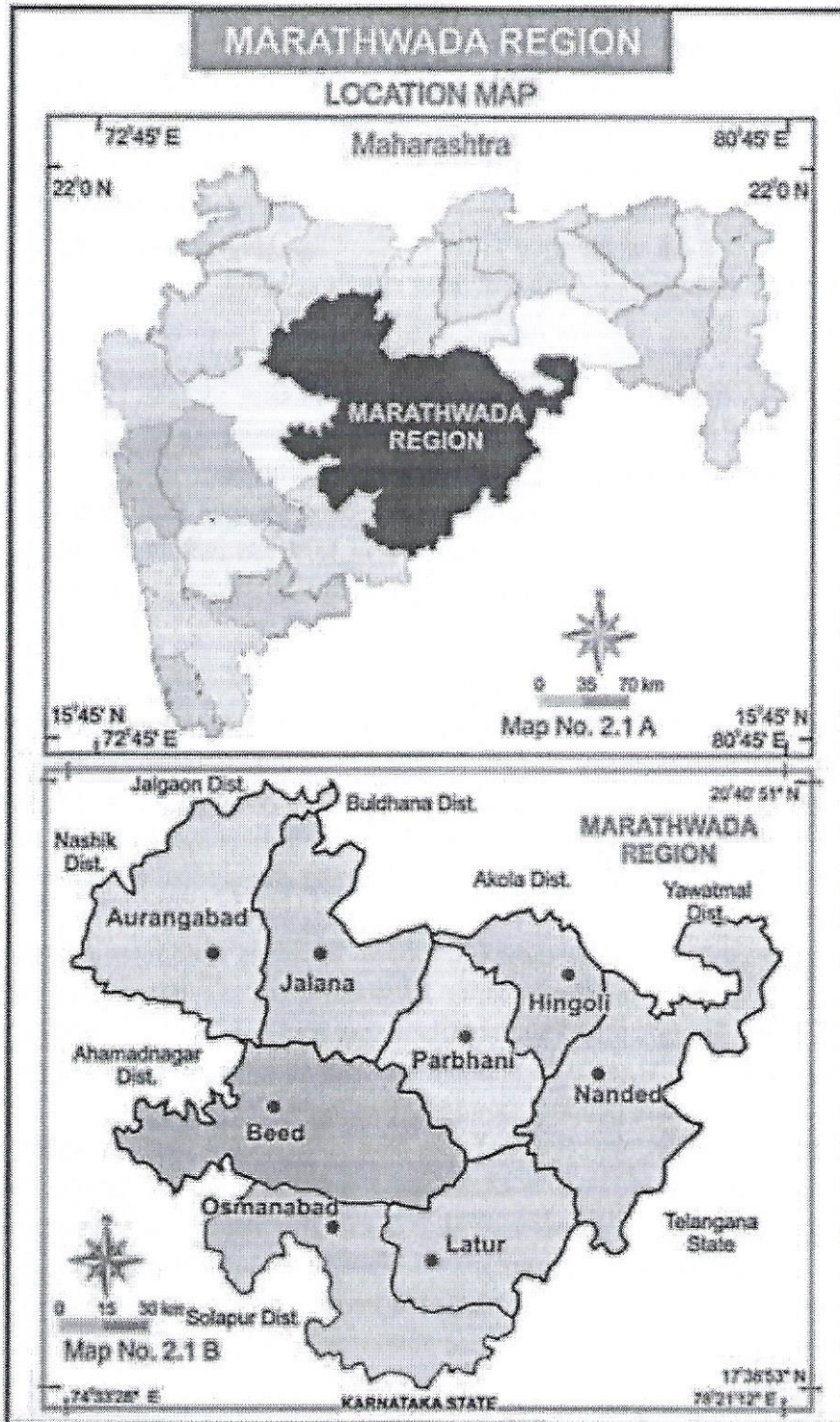


Principal

Jawahar Arts, Science & Commerce College
Anadur Tal. Tuljapur Dist. Osmanabad



The Maharashtra State is administratively divided into six divisions, viz. Konkan, Nasik, Pune, Amravati, Nagpur and Aurangabad. The Aurangabad division is also known as Marathwada was formerly a part of Hyderabad state. Marathwada forms the South central portion of



Maharashtra

with Aurangabad city being located almost at the centre of the state (Map 1). Marathwada is one of the most backward regions of Maharashtra state.


Principal

Jawahar Arts, Science & Commerce College
Anandur, Tal. Tuljapur, Dist. Osmanabad.



The Marathwada region lies in the upper Godavari basin. The absolute location of region is 17⁰38'53" North latitude to 20⁰40'51" North latitude and 74⁰33'28" East longitude to 78⁰21'12" East longitude. The study region is bounded to the north by Jalgaon, Buldhana, and Washim districts, to the north east by Yavatmal district to the east by Nizamabad and Adilabad districts of Andhra Pradesh to the south and south east by Bidar and Gulbarga districts of Karnataka state, to the west by Ahmednagar to the Southwest by Solapur and to the North West by Nasik district. Its shape is roughly triangular. East-West maximum extension of region is 394 Kilometers and North-south extension in of region is 330 Kilometers. Total Geographical area of region is 64434 Square Kilometer which is 20.95 per cent of the state and its population is 1.87 cores which is 16.66 percent of the state as per census of 2011. Administratively study region is divided into eight districts that are further divided into 76 tahasils.

Objective:-

The main objectives of this paper is analyses to Minor irrigation scheme in Marathwada region.

Data collection and Methodology:

The present study is based on secondary data source. Data collected from Socio Economic Review and District Statistical Abstract of Districts in Marathwada region. For the statistical analysis various techniques and methods will be applied. For this study statistical data are taken to 2010-11.

Discussion:

Irrigation is a pre-requisite for the adoption of new technology in agriculture and for the rapid growth of agricultural sector. The conversion of dry land into wet land, provides, security against the vagaries of rainfall, preventing crop failure and enabling higher yield per hectare. It also helps to the farmers to take two or more crops from the same field within a year and it increases the productivity of the land, by transforming the agriculture (Gajhans D. S. and Suryawanshi M. T., 2012).

Irrigation leads to changes in cropping pattern, increases yield rates and labour utilization and in the ultimate analysis bring prosperity for socio-economic change that sets motion the productive forces in the agricultural sector (Chatterjee Nandini, 1995). Irrigation appears to be the most basic inputs as HYV seeds consume more water in adequate and timely does a thing not possible in rain fed agriculture (Rudder Dutta and Sundaram K.P.M., 1997).

The irrigation project, which covers less than 2000 hectares cultivated command area is called minor irrigation project (Rudder Dutta and Sundaram K. P. M., 1997). During the rainy season when water collects and forms a pond, it is usually called a tank. This water is used for irrigation for standing crops after the wet season. Tank irrigation, therefore, needs much rainfall for later storage and utilization. Level of water in tanks is solely dependent on the quantum of rainfall of that season. After the independence government of Maharashtra has given more stress on minor irrigation in the every district.

The table No. 1 shows that the high concentration of minor irrigated projects is found in Aurangabad, Beed, Osmanabad and Nanded district i.e. above 15 percent. It is moderate in Latur district i.e. 14.30 percent, where as it is low in Jalna, Parbhani and Hingoli district i.e. below 8 percent as on March 2011.

Jawahar Arts, Science & Commerce College
Anandur, Tal. Tulapur, Dist. Osmanabad



The table No. 1 indicates that region as a whole has 1.81 lakh hectares irrigation potential. The district level distribution of irrigation potential area through minor irrigation project is uneven. The high irrigation potential is found in Latur district i.e. above 48679 hectares. Whereas it was low in Jalna, Beed, Parbhani, Hingoli, Nanded, Aurangabad and Osmanabad districts i.e. below 26667 hectares on March 2011.

Table No. 1: Statement showing District- wise Minor Irrigation Schemes and their Irrigation Potential, (As on March 2011.)

District / Region	No of Minor Schemes	Irrigation Potential in Hectares
Aurangabad	1100 (20.22)	26637 (14.69)
Jalna	78 (1.36)	19525 (10.76)
Beed	1142 (20.99)	11360(6.26)
Parbhani	309 (05.68)	4655(02.57)
Hingoli	246 (04.52)	17270 (09.52)
Nanded	851(15.65)	18823(10.38)
Latur	778 (14.30)	70691(38.97)
Osmanabad	935(17.19)	12417 (6.85)
Marathwada Region	5439 (100.0)	181378 (100.0)

Source; Socio-Economic abstract of Aurangabad, Beed, Parbhani, Higoli, Nanded, Jalna, Latur and Osmanabad-2011(Note: Figures in the brackets indicates percentage.)

Irrigation Wells

As the cost of construction of well is low, they are suite to poor and marginal farmers (Singh and Dhillon, 1995). In the study area wells are important for irrigation due to the paucity of other irrigation facilities and poor economic condition of farmer. Well irrigation was important during the period of second five year plan. Maharashtra state government was given priority for the construction of new wells as well as repairs of old wells. Irrigation wells are increased through five year plans in the Marathwada region. The density of irrigation well is calculated by using following formula.

$$\text{Density of well} = \frac{\text{Total irrigation well}}{\text{Total net sown area}} \times 100(\text{Per 100 hectare})$$

The table 3.5 shows that during 1981- 85 the region as a whole has 4.01 densities of irrigation wells per 100 hectares, but spatial distribution varies from district to district. The low density of wells is recorded in Nanded and Hingoli districts i.e. below 3 per 100 hectare. It is moderate in Osmanabad, Parbhani and Latur districts, where as it is high in Aurangabad Jalna and Beed districts i.e. above 4.5 per 100 hectare.

Table No. 2: District- wise Density of irrigation wells in Marathwada Region

District	1981-85		2005-10		1981-85	2005-10	Volume of Change
	Well	Net Sown Area	Well	Net Sown Area	Density per 100 hectors	Density per 100 hectors	
Aurangabad	45260	753140	69181	691260	6.01	10.01	4.00



Jalna	31669	626200	36870	572380	5.06	6.44	1.38
Beed	37296	758100	53213	754660	4.92	7.05	2.13
Latur	17820	537140	59622	519900	3.32	11.47	8.15
Osmanabad	23819	570920	33378	478020	4.17	6.98	2.81
Nanded	13742	728900	26731	703960	1.89	3.80	1.91
Parbhani	22550	512220	25312	485120	4.40	5.22	0.82
Hingoli	5638	339960	9887	329520	1.66	3.00	1.34
Marathwada	197794	4826580	314194	4534820	4.10	6.93	2.83

Source: Compiled by the Researcher, on basis Socio-Economic abstract of Aurangabad, Beed, Parbhani, Hingoli, Nanded, Jalna, Latur and Osmanabad – 1981-82 to 2009-10.

During 2005-10, the region as a whole has 6.93 density of irrigation wells per 100 hectares, but spatial distribution varies from district to district. The low density of wells is found in the district of Nanded and Hingoli i.e. below 5 per 100 hectare. It is moderate in Osmanabad, Beed, Parbhani and Jalna districts. While it was high in Aurangabad and Latur districts i.e. 8 per 100 hectares.

During the period of investigation well density is increased by 2.81 per 100 hectares. But spatial distribution varies ranging from 0.82 to 8.15. The high positive change is recorded in Latur district i.e.8.15 wells per 100 hectares. The moderate positive change is found only in Aurangabad district, while low positive change is found in Jalna, Beed, Parbhani, Hingoli, Nanded and Osmanabad districts i.e. below 3.5 well per 100 hectares.

Percentage of Well Irrigated Area to Net Sown Area

Table no 3.6 indicates that region as a whole has 6.25 percentage well irrigated area to total net sown area in 1981-85, but spatial distribution varies from district to district, high well irrigated area is recorded in the district of Osmanabad and Beed i.e. above 9.5 percent to total net sown area. The moderate well irrigated area is observed in Aurangabad and Jalna district ranging from 6 to 9.5 percent, while low well irrigated area is found in Parbhani, Hingoli, Nanded and Latur district i.e. below 6 percent to total net sown area. The table no. 3.6 indicates that Marathwada region as a whole has 9.21 percent well irrigated area to net sown area in 2005-2010, but spatial distribution varies from district to district, the high well irrigated area is recorded only in Aurangabad district i.e.17.26 percent to total net sown area, because of recharge of groundwater due to canal. The moderate well irrigated area is observed in Beed district i.e. 10.58 percent, while it is low in Parbhani, Hingoli, Nanded, Osmanabad, Latur and Jalna district i.e. below 9.5 percent to total net sown area. It is low in Jalna, Hingoli and Nanded districts, due to Ajantha, Satmala hill range lies in Jalna, Hingoli and Nanded district which adversely effect on irrigated area, it is low in Parbhani and Osmanabad district due to development of surface irrigated facility.

Conclusion:-

Most of the minor irrigation schemes become dry in summer season due to rate and distribution of the monsoon rainfall which effects on the water storage capacity of the project. The high density of irrigation wells in Aurangabad and Latur districts. During the period of under review region as a whole has 2.96 percent positive change in percentage of well irrigated area to total net sown area. Well-irrigated area is increased in all districts except Osmanabad and Beed. The high well irrigated area and remarkable increase is found in Aurangabad district



mainly due to recharge from surface irrigation. The low well irrigated area in Jalna, Hingoli and Nanded districts, is a result of Ajantha, Satmala hill range, which adversely affect on well irrigated area. The negative change in well irrigated area in Osmanabad and Beed district is mainly due to scarcity of rainfall and lowering of ground water.

References:

1. C. Sivarama Krishnarao and Mohammad Iqbal Ali (1986): Impact of Irrigation on Cropping Pattern" Kurukshetra, August - Sept. 1986.p. 37.
2. Cantor L. M. (1967): "A world Geography of irrigation" Edinburgh, Oliver and Boyd pp. 10 - 21.
3. Gajhans D. S. and Suryawanshi M. T. (2012): International Journal of Basic and Applied Research Vol. 2. Issues-2, Dec. 2012, p-45.
4. Chatterjee, Nandini (1995): Irrigated Agriculture, A Case Study of West - Bengal, Rawat Publications Jaipur. P. 23.
5. Rudder Dutta and Sundaram K.P.M. (1997): Indian Economy, S. Chand and Co. Ltd. New Delhi. P.438.
6. Singh Jasbir and Dhillon S.S. (1995): Agricultural Geography, Tata McGraw Hill Publishing co. Ltd. New Delhi, p. 115, 125, 144.




Principal

Jawahar Arts, Science & Commerce College
Anandur, Tal. Tuljapur, Dist. Osmanabad

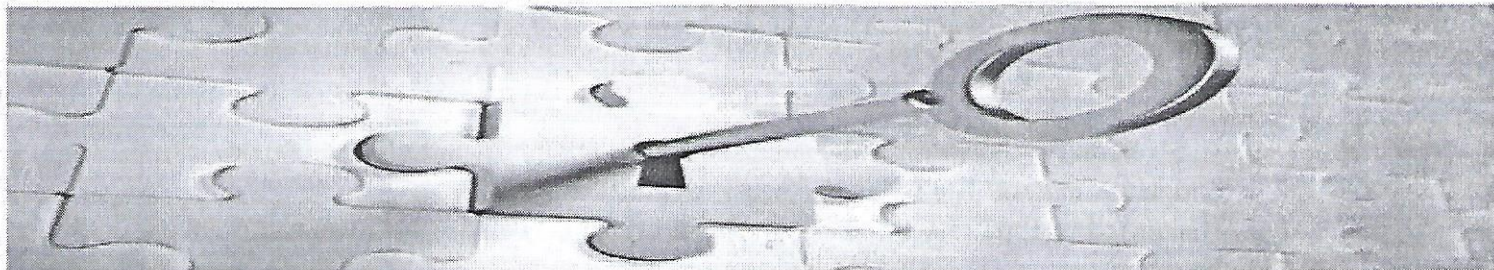


COSMOS IMPACT FACTOR

Search Journal

Search

HOME INDEXED JOURNAL SUGGEST JOURNAL REQUEST IF DOWNLOAD LOGO REVIEWER PANEL



Category

- INDEXED JOURNAL
- SUGGEST JOURNAL
- JOURNAL IF
- REQUEST FOR IF
- DOWNLOAD LOGO
- CONTACT US

- SAMPLE CERTIFICATE
- SAMPLE EVALUATION SHEET

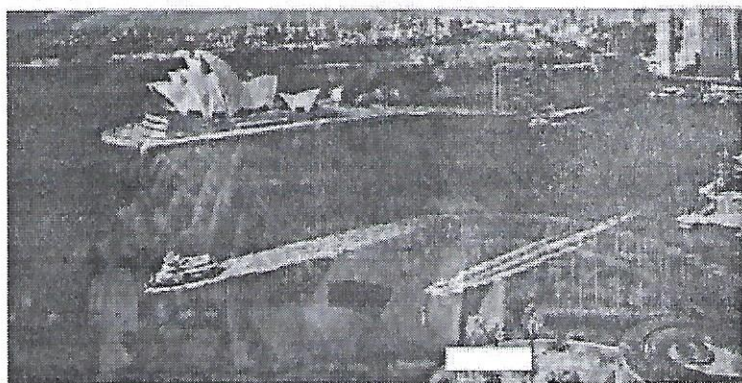
Journal Detail

Journal Name	RESEARCH JOURNEY
ISSN/EISSN	2348-7143
Country	IN
Frequency	Quarterly
Journal Discipline	General Science
Year of First Publication	2014
Web Site	www.researchjourney.net
Editor	Prof. Dhanraj Dhangar & Prof. Gajanan Wankhede
Indexed	Yes
Email	researchjourney2014@gmail.com
Phone No.	+91 7709752380
Cosmos Impact Factor	2015 : 3.452



Research Journey

Due to large number of application please allow us time to update your journal



SJIF 2019:	Previous evaluation SJIF
6.625	2018: 6.428
Area: <u>Multidisciplinary</u>	2017: 6.261
Evaluated version: online	2016: 6.087
	2015: 3.986

The journal is indexed in:

SJIFactor.com

Basic information

Main title	Research Journey
Other title [English]	Research Journey
Abbreviated title	
ISSN	2348-7143 (E)
URL	http://WWW.RESEARCHJOURNEY.NET
Country	India
Journal's character	Scientific
Frequency	Quarterly
License	Free for educational use
Texts availability	Free

Get Involved

- Home
- Evaluation Method
- Journal List
- Apply for Evaluation/Free Service
- Journal Search

Recently Added Journals

Research Journey	
ISSN	2348-7143
Country	India
Frequency	Quarterly
Year publication	2014-2015
Website	researchjourney.net
Global Impact and Quality Factor	
2014	0.585
2015	0.676

(Signature)
Principal

Prof. Dhanraj Dhangar
M.G.V.'S ARTS & COMMERCE COLLEGE, YEOLA, DIST NASHIK