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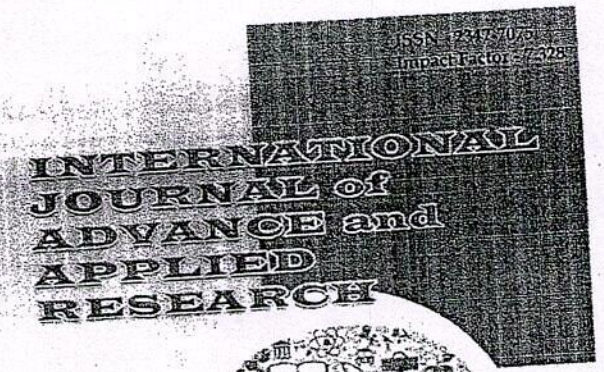

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IMPACT OF WATERSHED DEVELOPMENT PROGRAMME ON NUMBER OF HOUSE HOLDERS IN SATARA DISTIRCT

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Abstract

Watershed is a place draining the rainwater right into a stream. The Watershed development programme includes control of land, water, strength and greenery integrating all of the applicable medical methods suitable to socio-economic historical past for a pragmatical improvement of a watershed. It includes conservation, regeneration and sensible use of all of the sources, herbal sources like land, water, plants, animals and human in the watershed area. (Mani, 2005). In Satara district, rainfall has reducing from west to east. This element has each 3-4 years drought disposed condition. Where, continually referred to maximum water issues in summer time season. Present paper is a tried to look at the effect of watershed development programme on adjustments in wide variety of families with inside the Satara District. The records concerning wide variety of families were amassed from the statistical department. Tehsils functional evaluation well-known shows that, the Watershed Development Programme (WDP) is accompanied in the Satara District. Hence, at the tehsils level, wide variety of families. have minimal effect of WDP. Therefore, WDP has left out correctly effect on House holders with inside the tehsils. But a few tehsils have referred to higher effect on socio-financial status. It is concluded that descriptions of families do comprise typically used sides that collectively assemble the idea of family as a collection of human beings sharing sources, prices and activities.

Keywords: - Impact, watershed, house holding, Correlation

Introduction: -

Watershed is Geo-hydrological unit draining at a not unusual place factor via way of means of a device of aqueducts. It's a place draining the rainwater right into a sluice. The water may be controlled efficaciously nearest if an

indicator is taken as a unit. Since soil and factory life also can be with ease and efficaciously controlled on this unit, the milepost is taken into consideration an excellent unit for handling three essential and interdependent means of soil, water and human life.

Watershed development consist of conservation, regeneration and judicious use of all the resources natural resources like land, water, plants, animals and human-within the watershed area. (Mani 2005).

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Watershed development consist of conservation, regeneration and careful use of all the resources natural resources like land, water, plants, animals and human inside the watershed area (Mani 2005). Watershed development attempts to bring about best possible balance in the Environmental Issues and Remedies environment between natural resources on one side and man and grazing animals on the other. It requires people participation because conservation is possible only through the whole hearted involvement of the entire community. (S.D.Shinde, 2014)

"Watershed is a physical, natural, low- priced and social device. It's a land mass bounded vertically via way of means of the position urged via way of means of mortal sports and horizontally via way of means of the water that drains into the factors in a channel (Hazare, 2001)."

Watershed enhancement refers back to the conservation, rejuvenate science and really apt operation of all of the means like land, water, creatures and human inside a named indicator (Govt. of Maharashtra, 2003).

Review of literature: -

1. Ninan and Lakshmikantam (2001), These programmes have been initiated in India to ameliorate and sustain productivity and the product eventuality of the dry and semi-arid regions of the country through the relinquishment of applicable product and conservation ways. WDP is a holistic approach to ameliorate and develop the profitable and natural resource base of dry and semiarid regions.

2. Vaidyanathan (1999, 2006), Reddy and Dev (2006), Biswas, et al (2005), and others have bandied several issues in watershed development programmes. They've covered policy affiliated issues, institutional downsides, perpetration issues, community and participation issues, etc. Despite the fact that there are large figures of issues formerly covered, the exploration compass in the issue of watershed operation is tremendous. Over the times, with the attention shifted from further centralized to decentralized system of governance, watershed development programmes have inversely emphasized on decentralized approaches similar as further community and people's participation and involvement of PRIs in planning, executing and covering of the systems, etc. To ensure good governance, mechanisms like social auditing, periodic review and better attestation processes are taken into account as stylish practices in some of the WDP regions. There's a good number of studies available on participatory aspects of watershed operation.

3. Wani, et al (2001) study in Kothapally in Andhra Pradesh is one of similar studies that punctuate the effective community participation in watershed operation. In fact, their study has developed the model for effective participation in watershed operation.

Objectives: -

The main objectives of this research paper are as under:

1. To study the spatial distribution of watershed development programme in the study region.
2. To study the spatial distribution of Agricultural landuse in the study region.
3. To examine the correlation between watershed development programme and Agricultural landuse in the study region

1. To examine the correlation between watershed development programme and number of house holders in the study region.

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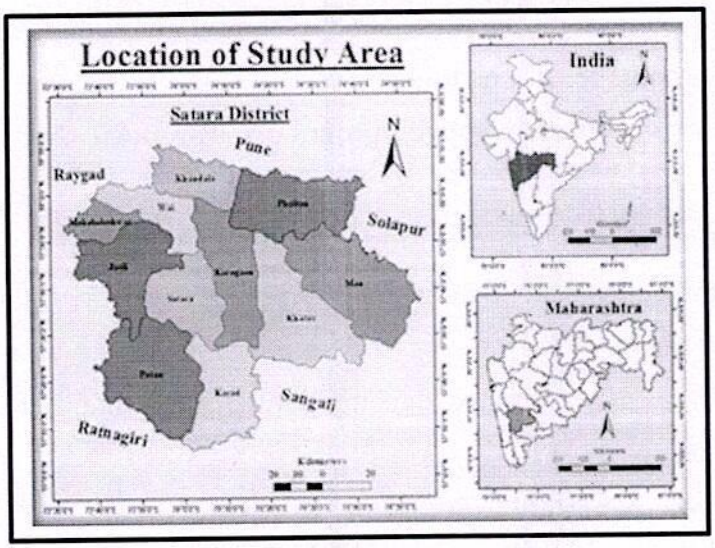
3. To examine the correlation between watershed development programme and Agricultural landuse in

the study region

Study Area: -

Satara quarter is located in the western part of Maharashtra. It's bound by Pune quarter to the north, Solapur quarter to the east, Sangli quarter to the south and Ratnagiri quarter to the west. Raigad quarter lies to its north-west. The geographical area of Satara quarter is 10,480 Sq. Km. which is about 3.4 per cent of the situation's total geographical area. Satara quarter is deposited in the sluice basins of Bhima and Krishna. Panchgani, Mahabaleshwar, Karad, Wai, Koregaon and, Koyananagar are the top cosmopolises of Satara District. Historically Satara was the capital of the Maratha area, land of great dog faces, saints and great personalities videlicet Rani Laxmibai, Krantisinha Nana Patil, Savitribai Phule and Karmaveer Bhaurao Patil. This land has rich heritage. Mahabaleshwar, one of the most beautiful hill stations of India, is located in this truly quarter.



Map No.1

Satara District lies between 17.5^0 to18.11^0 North latitude and 73.33^0 to 74.54^0 Eastern longitude. The quarter comprises of 11 tehsils videlicet Satara, Koregaon, Khatav, Karad, Patan, Wai, Jaoli, Mahabaleshwar, Khandala,

Phaltan and Man. Under the Satara Zilla Parishad governance, 1739 villages are covered through 11 panchayat Samities and 1509 Gram Panchayats. The variation in relief ranges from the pinnacles and high tablelands of main Sahyadri range having height over 4500 bases above mean ocean position to the subdued container of the Nira River in Phaltan tehsil. The climate ranges from truly heavy downfall in Mahabaleshwar region, which has an average periodic all of over 6000 mm to the driest in Man tehsils where the average periodic downfall is about 500 mm. (Map No.1)

DATA BASE AND METHODOLOGY: -

The paper is substantially grounded on the secondary data sources. To complete the objects data regarding watershed development programme and Number of house holders of Satara District is taken from Socio-economic (2001 and 2012). statistical height of Satara quarter. The collected data are reused to dissect the work of watershed development programme and number of house holders in Satara District. The Spearman's Rank Order system is used for analyzes the correlation between watershed development programme work and Number of house holders.

DATABASE AND METHODOLOGY

The paper is mainly based on the secondary data sources. To complete the objectives data regarding watershed development programme and agricultural landuse area of Satara District is taken from Socio-economic abstract (2014-15), statistical abstract of Satara district. The collected data are processed to analyze the work of watershed development programme and agricultural landuse in Satara District. Arc GIS 9.3 software used for preparing the map and to show the spatial distribution of watershed development programme work and agricultural landuse area in Satara District. The tehsilss of Satara District are grouped into three categories i.e. high, moderate and low level on the basis of simple statistical method. To analyze spatial pattern of agricultural landuse area, the same technique is applied for calculation. The Spearman's Rank Order method is used for analyzes the correlation between watershed development programme work and Agricultural landuse.

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$= 1 - \sigma \Sigma d^2 / n^2 - N$

Formula: -

Rank Order Spearman's Method

r = **1-6 (Σd2) / N (N2 -1)**

WATERSHED DEVELOPMENT PROGRAMME IN SATARA DISTRICT: -

WATERSHED DEVELOPMENT PROGRAMME (WDP) SCHEME

Satara district is western part of Maharashtra state, where eastern part- Man, Khatav, Phaltan, Koregaon etc. comes under severe drought prone climate. There is observed highly shortage of water for drinking as well as agriculture in every summer season. Hence, compare to other tehsils, watershed development programme is effectively done in these drought prone regions.

About 48466 number of water conservation work completed under the watershed development programme in the district. Big Project, Medium Project, Small Irrigation Project, Percolation Tank, Kolhapur Type Bunds, Underground Bunds, Lift Irrigation, Storage Irrigation Scheme, etc, several water onservation works are done under the WDP scheme in the district.Satara district is western part of Maharashtra state, where eastern part- Man, Khatav, Phaltan, Koregaon etc. comes under severe drought prone climate. There is observed highly shortage of water for drinking as well as agriculture in every summer season. Hence, compare to other tehsils, watershed

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Table No. 1
Total Growth of Watershed Development Programme: Satara District
(Area in Hectare, 2001 and 2011)

Sr. No.	Tehsils	Total area WDP		Total Growth
		2001	2011	
1.	Mahabaleshwar	70,735	65,434	-5,301
2.	Karad	1,05,602	98,334	-7,268
3.	Wai	55,095	43,555	-11,540
4.	Khandala	53,857	43,112	-10,745
5.	Jawali	58,336	51,478	-6,858
6.	Patan	50,397	41,266	-9,131
7.	Koregaon	86,704	76,445	-10,259
8.	Khatav	1,16,262	1,06,625	-9,637
9.	Phaltan	91,241	85,446	-5,795

10.	Man	1,37,749	1,14,776	-22,973
11.	Satara	8,54,88	7,83,36	-7,152
	Total Area	9,11,466	8,04,807	

(Source: District Census Handbook, Satara District, 2001 and 2011)

Households In Satara District: -

Satara district is western part of Maharashtra state, where eastern art- Man, Khatav, Phaltan, Koregaon etc. comes under severe drought prone climate. There is observed highly shortage of water for drinking as well as agriculture in every summer season. Hence, compare to other tahsil, watershed development programme is effectively done in these drought prone regions. About 48466 number of water conservation work completed under thewatershed development programme in the district. Big Project, Medium Project, Small Irrigation Project, Percolation Tank, Kolhapur Type Bunds, Underground Bunds, Lift Irrigation, Storage Irrigation Scheme, etc, several water conservation works are done under the WDP scheme in the district. Satara district is western part of Maharashtra state, where eastern part- Man, Khatav, Phaltan, Koregaon etc. comes under severe drought prone climate. There is observed highly shortage of water for drinking as well as agriculture in every summer season. Hence, compare to other tahsil, watershed development programme is effectively done in these drought prone regions. About 48466 number of water conservation work completed under the watershed development programme in the district. Big Project, Medium Project, Small Irrigation Project, Percolation Tank, Kolhapur Type Bunds, Underground Bunds, Lift Irrigation, Storage Irrigation Scheme, etc, several water conservation works are done under the WDP scheme in the district.Satara district is western part of Maharashtra state, where eastern part- Man, Khatav, Phaltan, Koregaon etc. comes under severe drought prone climate. There is observed highly shortage of water for drinking as well as agriculture in every summer season. Hence, compare to other tahsil, watershed development programme is effectively done in these drought prone regions. About 48466 number of water conservation work completed under the watershed development programme in the district. Big Project, Medium Project, Small Irrigation Project, Percolation Tank, Kolhapur Type Bunds, Underground Bunds, Lift Irrigation, Storage Irrigation Scheme, etc, several water conservation works are

done under the WDP scheme in the district. The householder refers to the person (or one of the people) in whose name the housing unit is owned or rented (maintained) or, if there is no such person, any adult member, excluding roomers, boarders, or paid employees. If the house is owned or rented jointly by a married couple, the householder may be either the husband or the wife.

The concept of household is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living. A household may be either (a) a one-person household, that is to say, a person who makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household or (b) a multi-person household, that is to say, a group of two or more persons living together who make common provision for food or other essentials for living. The persons in the group may pool their incomes and may, to a greater or lesser extent, have a common budget; they may be related or unrelated persons or constitute a combination of persons both related and unrelated.

Any generalizations about the Indian family suffer from oversimplification, given the pluralistic nature of the Indian culture. However, in most sociological studies, Asian and Indian families are considered classically as large, patriarchal, collectivistic, joint families, harboring three or more generations vertically and kith and kin horizontally. Such traditional families form the oldest social institution that has survived through ages and functions as a dominant influence in the life of its individual members. Indian joint families are considered to be strong, stable, close, resilient and enduring with focus on family integrity, family loyalty, and family unity at expense of individuality, freedom of choice, privacy and personal space. (Mullatti L., 1995)

Table No. 2

Total Growth Number of House Holders: Satara

(2001 and 2011)

Sr. No.	Tehsils	No. of Household		Total Growth
		2001	2011	
1.	Mahabaleshwar	9,623	9,836	213
2.	Karad	1,09,237	1,16,405	7,168

3.	Wai	39,372	41,933	2,561
4.	Khandala	24,615	30,230	5,615
5.	Jawali	25,288	27,729	2,441
6.	Patan	63,051	67,517	4,466
7.	Koregaon	51,622	54,919	3,297
8.	Khatav	52,622	60,121	7,499
9.	Phaltan	61,275	62,947	1,672
10.	Man	39,533	42,929	3,396
11.	Satara	94,368	1,01,634	7,266

(Source: District Census Handbook, Satara District, 2001 and 2011)

Correlation Between Watershed Development Programme And Agricultural Landuse:

The Spearman's Rank Order method is used for the calculation of the correlation of watershed development programme and number of house holders in Satara District. The formula is: -

r= 1-6 (Σd2) / N (N2 -1)

Table No. 3

Watershed Development Programme and Number of House holders: Satara District

Sr. No.	Tehsils	No. of House Holders	Rank	Total area WDP	Rank
1.	Mahabaleshwar	213	1	-5,301	11
2.	Karad	7,168	9	-7,268	7
3.	Wai	2,561	4	-11,540	2
4.	Khandala	5,615	8	-10,745	3
5.	Jawali	2,441	3	-6,858	9
6.	Patan	4,466	7	-9,131	6
7.	Koregaon	3,297	5	-10,259	4
8.	Khatav	7,499	11	-9,637	5
9.	Phaltan	1,672	2	-5,795	10
10.	Man	3,396	6	-22,973	1
11.	Satara	7,266	10	-7,152	8
N	11				Σd2=

(Source: District Census Handbook, Satara District, 2001 and 2011.)

Table No. 4

Analysis of Spearman's Rank Order and Correlation

Sr. No.	Tehsils	No. of House Holders	Rank	Total area WDP	Rank	Σd	d^2
1.	Mahabaleshwar	213	1	-5,301	11	-10	100
2.	Karad	7,168	9	-7,268	7	2	4
3.	Wai	2,561	4	-11,540	2	2	4
4.	Khandala	5,615	8	-10,745	3	5	25
5.	Jawali	2,441	3	-6,858	9	-6	36
6.	Patan	4,466	7	-9,131	6	1	1
7.	Koregaon	3,297	5	-10,259	4	1	1
8.	Khatav	7,499	11	-9,637	5	6	36
9.	Phaltan	1,672	2	-5,795	10	-8	64
10.	Man	3,396	6	-22,973	1	5	25
11.	Satara	7,266	10	-7,152	8	2	4
N=	11					Σd2=	300

r = 1-6 (Σd2) /N (N2 -1)

Here,

r = Correlation, N= Number of observations, D= deviation

r = 1- 5*300/11 (300-1)

r = 0.36

It is observed that there is weak positive correlation i.e. p= 0.44 between the watershed development programme and the agricultural landuse in Satara district. There are the some reasons for weak positive correlation in Satara district like political disturbances in watershed development programme, rainfall uneven pattern, highly mountainous region, drought prone region, river basin area etc.

It is observed that there is weak positive correlation i.e. P= 0.36 between the watershed development programme and number of house holders in Satara district. There are the same reasons for weak positive correlation in Satara district like economical and political disturbances in watershed development programme, rainfall uneven pattern, highly mountainous region, drought prone region, river basin area etc.

Conclusion: -

The watershed development programme and number of house holders is widely or unevenly distributed in Satara District. The maximum rainfall is recorded in Karad, tehsils and lowest in Man tehsils. number of house holders is highly observed in Karad, Khatav tehsils while minimum in Phaltan and Mahabaleshwar tehsils of Satara district, Then the correlation between the watershed development programme and number of house holders found weak positive correlation i.e., P=0.36. It means high watershed development programme, medium number of house holders. It was observed lower the watershed development programme higher the number of house holders. It is human resources development indicate to high growth of house holder than water development Programme in the study region. he watershed development programme and the agricultural landuse is widely or unevenly distributed in Satara Disrict. The maximum rainfall is recorded in Mahabaleshwar tehsils and lowest in Man tehsils. The gricultural landuse is highly observed in Karad tehsils while minimum in Mahabaleshwar tehsils of Satara district. But the correlation between the watershed development programme and the agricultural landuse found weak positive correlation i.e. p = 0.44. It means high watershed development programme, medium agricultural landuse. It was observed higher the watershed development programme higher the agricultural landuse i.e. Phaltan and Khatav tehsils.

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