Increase in Area Irrigated By the Farm Pond of Aurangabad District

Shivanand Tanajirao Jadhav
Assistance Professor, Department of Geography, Shri Sant Gajanan Mahavidhyalaya, Kharda

Abstract:-

Farm pond is the most important and promising technology in the watershed management. Farm ponds would help the farmers for on farm water management by using stored water for tacking the drought or dry spells during the season which are common. Water farm ponds can serve domestic and livestock water supplies as well as irrigation for high-value crops and vegetables. Paper presents an innovative approach of watershed development using farm-pond. After the implementation of farm-pond based watershed development project during 2007-08 to May 2012 whole ecosystem and agriculture (cropping pattern, crop Production) scenario has been changed in the area. Availability of water for drinking and agriculture, establishment of orchards and agro forestry in farmlands, increase in overall agricultural production and creation of local self-employment are some visible impacts.

Key Word: *Farm pond, cropping pattern, productivity.*

Introduction:

Water is an essential resource for the development of agriculture and living organisms including human beings. The importance of water has been known since the existence of this Planet/ human beings. The importance and scarcity of water has been identified with an increase of human population who are responsible for industrialization, urbanization, exploitation of natural resources to the maximum advantage of human resources any resource will not yield till it is protected developed, conserved and utilized. In the process of development, industrialization, urbanization the quality and quantity of water and its accessibility tend to diminish leading to scarcity.

"Water is a life" development of any area is depending upon rain or water, that's why human being is living around water availability. Rainy water is natural resource and for this individual wells, tab water is become reason for quarrels. Due this water there are disputes arise between not only states but also countries, on the issues of dams, rivers, or clouds in modern period. During rainy season what water falls from rain is flown away by rivers, drains, canals etc. which results in scarcity water during summer. Agriculture is mostly depending upon rain. Now a days climate change and global warming found in irregularity and uncertainty of rain which results into famine, water scarcity and storms, to solve such problem and to raise the level of underground water there is need of water saving. Rain Watershed area development by different methods and conservation of it. If we save drop and drop of water rather than searching water on mars, it will help in avoiding water disaster.

Study Area:-

Aurangabad is capital of Marathwada. Aurangabad district of Maharashtra state is part of South-West India is selected for this research project. Aurangabad situated at $19^0 18'$ north to $20^0 36'$ north latitude and $74^0 40'$ east to $75^0 36'$ east longitude. Aurangabad total area is 10,107sq km. which is state's 3.28 per cent. With Aurangabad, Paithan, Gangapur, Vaijapur, Kannad, Khultabad, Sillod, Soygaon and Fulambri these are 9 tehsil and 1344 villages are there. 766 villages are water shortage affected there. In this regard till last year what watershed area development methods has been adopted and their statistic and collected water methods has been studied.

Objectives:-

While studying watershed area development methods of Aurangabad district following objectives has been drawn.

1. To study the impact through the growth in irrigation
2. To study the utility of Farm Ponds
3. To study the response of agriculture officers.
4. To take into conservation importance of water as natural resource.

Methodology:-

The present study is based on investigation, information, about various spot observations. Data will be collected from secondary sources. It was decided to collect maximum information through secondary sources. Secondary data collected from toposheet, Govt. Reports, WALMI yearly reports, socio – economic review, gazetteers, project of tourist, reference books, research articles etc. and numerical data information has been analysed. Internet information is also another popular source of information for data collection.

Primary data:

The primary data is collected from the Farm Pond beneficiary farmers of the selected Districts. Few Samples of non-beneficiary are also taken to know the difference between the economies of the both.

The data is extracted with the help of designed questionnaire/schedule and experts were appointed to collect the data.

Secondary Data

Secondary data is collected from the published sources like economic survey, statistical abstract etc. for the supporting the results of the present study. The secondary data figures provide the guideline and insight for planning and implementing the research work.

Sampling Techniques:

The population of Farm Pond Beneficiary Farmers in selected area is 3377 The sample size of 10 percent of the population i.e. 3062 Farm Pond Beneficiary Farmer to be covered, however during the study 3071 sample farm ponds actually covered. The few Non-Beneficiary farmers are taken for comparative purpose.

Tahsil	Aurangabad	Fulambri	Gangapur	Kannad	Khultabad	Paithan	Sillod	Soygaon	Vaijapur	Aurangabad
Sample	58	20	37	45	14	83	61	7	52	377

Period of Study:

The scheme of Farm Pond is initiated in year 2007 and continues till the year 2012. Therefore the yield and irrigation data is collected for three years before Farm Pond's construction and after Farm Pond's construction i.e. from 2005 to 2012.

Subject Interpretation:-

Aurangabad has historical background it appears that in different periods by taking into consideration importance of water, rainy water was collected by different modes. For an incomparable example Harsul lake, Panchakki and Jayakwadi dam is there. According to changing circumstances in 1995-56 Jayakwadi dam construction has been started with this huge project to solve water and sprinkling problem by government and peoples participation different kinds of rain watershed area development methods has been come into existence. In this district "Pani Adwa ni Pani Jirva" slogan has been observe and little percolated lakes. Has been constructed and continued. In Aurangabad district with help agriculture development groundwater survey and development social forestation small irrigation department, forest department and through people participation different rain watershed area development methods has been evolved.

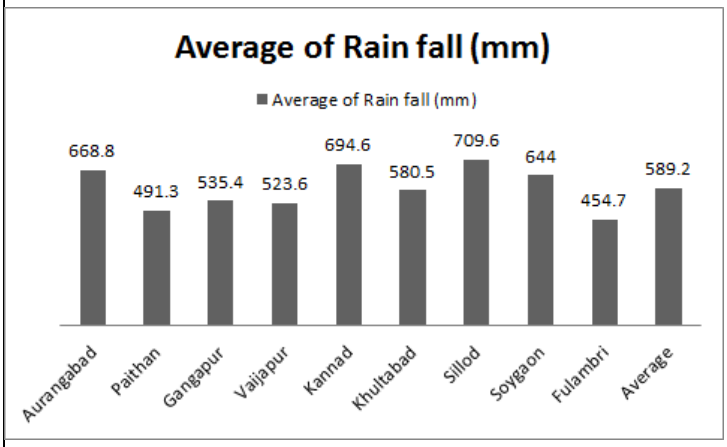
Rain Fall:

Aurangabad districts found different tehsil places not only different average of rain fall but also rain fall period. That's why rain watershed area development is most important.

In Aurangabad district Tehsil wise rain fall average and period.

Tehsil	Average of Rain fall (mm)	Rain fall period (Day's)
Aurangabad	668.8	51
Paithan	491.3	38
Gangapur	535.4	41
Vaijapur	523.6	46
Kannad	694.6	46
Khultabad	580.5	40
Sillod	709.6	47
Soygaon	644	46
Fulambri	454.7	27
Average	589.2	51

Source: Aurangabad district review 2012.



Aurangabad district Rain fall

Source of Irrigation of Farm Pound Beneficiaries

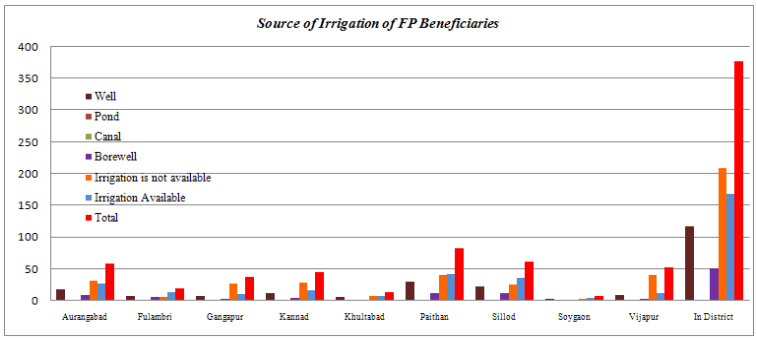
Tahsil		Well	Pond	Canal	Bore well	Irrigation is not available	Irrigation Available	Total
Aurangabad	**No.**	**18**	**0**	**0**	**9**	**31**	**27**	**58**
	%	31.03	0	0	15.5	53.46	46.55	100
Fulambri	**No.**	**8**	**0**	**0**	**6**	**6**	**14**	**20**
	%	40	0	0	30	30	70	100
Gangapur	**No.**	**8**	**0**	**0**	**2**	**27**	**10**	**37**
	%	21.62	0	0	5.41	72.97	27.03	100
Kannad	**No.**	**12**	**0**	**0**	**4**	**29**	**16**	**45**
	%	26.67	0	0	8.89	64.44	35.56	100
Khultabad	**No.**	**6**	**0**	**0**	**1**	**7**	**7**	**14**
	%	42.86	0	0	7.14	50	50	100
Paithan	**No.**	**30**	**0**	**0**	**12**	**41**	**42**	**83**
	%	36.14	0	0	14.5	49.4	50.6	100
Sillod	**No.**	**23**	**0**	**1**	**12**	**25**	**36**	**61**
	%	37.7	0	1.64	19.7	40.98	59.02	100
Soygaon	**No.**	**3**	**0**	**0**	**1**	**3**	**4**	**7**
	%	42.86	0	0	14.3	42.86	57.14	100
Vijapur	**No.**	**9**	**0**	**0**	**3**	**40**	**12**	**52**
	%	17.31	0	0	5.77	76.92	23.08	100
Aurangabad	**No.**	**117**	**0**	**1**	**50**	**209**	**168**	**377**
	%	31.03	0	0.27	13.3	55.44	44.56	100

Source of Irrigation before adoption of Farm Pond in Aurangabad Division

Increase in area irrigated by Farm Pond

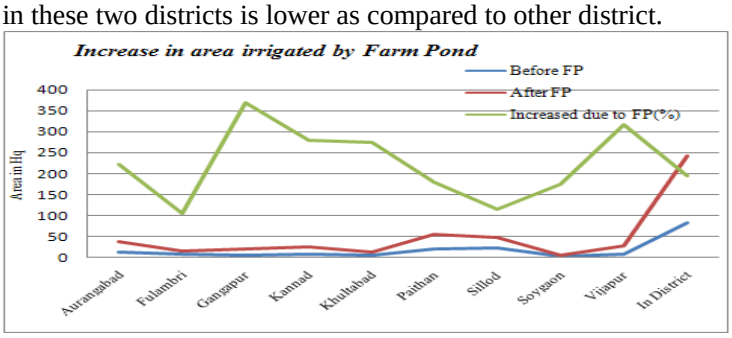
Tahsil	Before Farm Pound	After Farm Pound	Increased due to Farm Pound in (%)
Aurangabad	11.74	37.85	222.41
Fulambri	7.29	14.98	105.56
Gangapur	4.05	19.03	370
Kannad	6.48	24.7	281.25
Khultabad	3.24	12.15	275
Paithan	19.43	54.25	179.17
Sillod	21.86	47.37	116.67
Soygaon	1.62	4.45	175
Vijapur	6.48	27.13	318.75
In District	**82.19**	**241.9**	**194.33**

The results given in table no 132 indicates that Source of Irrigation before adoption of Farm Pond in Aurangabad Division. As per the results it found that the 29.21 per cent Farm Pond Beneficiaries were having well as source of irrigation; 12.57 per cent were having Bore-well as source of irrigation. The 57.52 percent Farm Pond Beneficiaries were not having irrigation source. Amongst the districts, the highest number of Farm Pond Beneficiaries were using well as source of irrigation are found in Jalna district (34.10 percent). The more use of bore well was observed in Jalna district (13.47 per cent). The use of Canal water and ponds were found in Negligible.



Increase in irrigated area by Farm Pond in Aurangabad Division

Increase in irrigated area by Farm Pond in Aurangabad Division is given in table 135. As per the information given by Farm Pond Beneficiaries, the irrigated area in the division is increased by 157 per cent after the adoption of farm pond over the area before adoption of farm pond. Amongst the districts, the highest increase in area is observed Aurangabad district (194 percent). It is followed Jalna District (190 per cent). The base year area in these two districts is lower as compared to other district.



Source: RKVY Report Oct 2013

The table focuses on the advantageous of the Farm Pond adoption at Overall Level. At overall level, the 100 per cent Farm Pond Beneficiaries responded that the Farm Pond water is used for protective irrigation. It is followed by the 86.25 per cent Farm Pond Beneficiaries uses water for Kharif crops during interruptions in rains. The 98.85 per cent Farm Pond Beneficiaries uses Farm Pond water as drinking water of livestock animals. It has also increased water level (36.68 per cent). Other secondary uses of water are increase in water filtration in salty land (1.43 per cent) further.

Conclusion:

1) In addition to the major advantages experienced, it is also resulted in creating additional supportive very small extent.
2) New activity is commenced and of which fisheries found cases.
3) Likewise advantages, the beneficiaries also expressed that there were disadvantages which noticed after the construction.
4) One of major such disadvantage expressed was loss of land for farming (93.98%). The others are insignificant as these will happen as special cases like overflow to farms, not in a position to use stored water, not in a position to store water due to break, repairs, wild animals entering into the fields and damaging the crops etc.

References:

1. ***Agriculture Census Division (2015)*** *"Agriculture Census-2010-11", Department of Agriculture & Cooperation Ministry of Agriculture, New Delhi.*
1. ***AFC India Ltd. (Oct. 2013)****: Impact Assessment Study of RKVY Farm Ponds in Maharashtra, Director, Soil Conservation & Watershed Management Commissioner of Agriculture, Maharashtra Shasan, Pune.*
2. ***K.S. Reddy, Manoranjan Kumar, K.V. Rao (Oct. 2012)*** *"Farm Ponds: A Climate Resilient Technology for Rainfed Agriculture", Director, Central Research Institute for Dry land Agriculture, Hyderabad.*
3. ***Dr. Narendra Jadhav (July, 2008)*** *"Farmers Suicide and Debt Waiver an Action Plan for Agricultural Development of Maharashtra", Government of Maharashtra.*
4. *www.afcindia.org.in*
5. *www.mahaagree.com*