The Study of Sustainable Development of Cropping Pattern in Satara District

Nivas Jadhav, Prakash K Tone
Raja Shiv Chhatrapati Arts And Commerce College, Mahagaon Tal-Gadhinglaj, Dist-Kolhapur, MS, India
Assistant Professor, Dahiwadi College Dahiwadi, Tal- Man Dist- Satara, MS, India

Abstract

The present research paper has analyzed the sustainable agricultural development of cropping pattern of Satara district. The researcher has selected the three Talukaj for the research respectively Mahabaleshwar, Jawali, and Pathan. The study is concerned to the cropping patterns and especially the study is concerned to production of crops like wheat, rice, jawar, bajara, tur, Channa, grounfnut, Miaze, wari vegetables and fruits etc. the researcher has categorized every crops with its percentage of production.

KEYWORDS: sustainable, patterns, crops, agriculture, cropping, etc**.**

Introduction

In India agriculture is the wellspring of living in majority. It assumes a critical part in Indian Economy. It gives beneficial work to an altogether huge segment of Indian Culture end gives crude material to an expansive number of enterprises in the nation. Horticulture utilizes around 66% of India's workforce and remains the most vital area of the economy. Horticulture is additionally a spine of our nation. About portion of the nations national wage is gotten from the farming and partnered exercises. Agribusiness gave nourishment to the abounding millions and crude materials to our industry. Johnston and Mellor says that Agriculture assumes a vital part in financial improvement, for example, arrangement of sustenance to the country developing fares, exchange of labor to non-rural segments, commitment to capital arrangement and anchoring markets for industrialization. (Johnston and Mellor, 1961) The development of agriculture seems to hold the key progress to our economy as a whole. It is therefore, necessary that it should be receive due emphasis. (Jalan M L.1987).

Sustainable Development of Cropping Pattern

Practical advancement is the administration and preservation of the normal asset in view of the introduction of innovative change in such a way as to guarantee the accomplishment and proceeded with fulfillment of human requirements for present and who and what is to come. Such manageable advancement conservers land, water and plant assets, is ecologically non-debasing, actually fitting, financially reasonable and socially adequate. Economical farming is an expansive idea that covers various diverse methodologies. All attempt in one way or other to accomplish monetarily beneficial, earth sound and morally satisfactory and socially dependable type of land farming.

Sangwan tries to define the sustainable agriculture is as follows:

Sustainable agriculture stands for successful management of resources for agricultural, development to satisfy the changing human needs. While maintain the quality of physical and environment resources. (Sangwan.2005)

Sustainable agriculture integrates two main goals economic portability and economic equity. Sustainable agriculture is the practice of farming using principles of ecology. It

has been defined as an integrated system of plant and animal production practices having a site specifics application that will over the long term for satisfy human food and fiber needs, make the most efficient use of non-renewable resources and on-farm resources and integrate, where appropriate' natural biological cycles and controls. Sustain the economic viability of farm operation; enhance the quality of life for farmers and society as a whole.

Objective

To study the understanding of sustainable development of cropping pattern.

To study the cropping pattern of select crops from the study area.

Research Methodology

This district has relatively higher proportion or the recompiled to the state (58%). Moreover, the soil and climatic conditions in the district are such that it has both inferior cropping pattern, dominated by tow value crops and relativity low yield in respect of most of the important crops. Ultimately it shows the existence of present farming. In such areas the magnitude of adoption of new crops and new techniques depend upon the speed with which they could be integrated and assimilated within the existing system.

The Study Area

The proposed study covers hilly area of Satara district particularly Mahabaleshawar, Jaoli and PatanTalukas.

Period of The Study

The present study aims to examine the sustainable development of agriculture. In this direction the period, from 1999-2000 to 2009-10 is selected for analysis.

Sampling Design

30 villages are selected from these three Talukas viz. 10 villages from Mahabaleshwar taluka, 10 villages from Jaoli and 10 villages horn Patantaluka. Moreover 10 farmers will be selected randomly from the each village based on the appropriate representation of the economic and social status of the farmers that is form marginal, small medium and big categories of landholding. Hence, the study covered 300 farmers form 10 villages of Mahabaleshwar taluka, 100farmers from 10 villages of Jaolitaluka and 100farmers from 10 villages of Patantaluka. Thus, total 300 sample farmers from these three talukas will be selected.

Statistical Tools

In order to examine the objectives and hypotheses of the study the appropriate statistical techniques are used. For bringing out changes in some relevant variables, based on two point of time viz. 1999-2000 and 2009-2010 technique of percentage change will be used. In addition to this, some statistical techniques such as coefficient of variation and simple correlation will be used. Beside these statistical techniques some cartographic techniques will.

Review of Literature

The study reveals that the total area under irrigation in Khatav, Koregaon, Jawali, Patan, Karad, Wai and Mahabaleshwar tahsils have increased from 2000-01 to 2010-11. The components in charge of this change are industrialization, urbanization and modernization of rural systems. The total area under irrigation in Khandala and Man tahsils have decreased from 2000-01 to 2010-11.

Agricultural Activities in the Study Area

This segment comprises the general information and examination of horticultural exercises directed in the investigation zone. It is one of the critical segments of this

examination it satisfies primary targets of the exploration. Cropping Pattern in the Study Area.

F. Lawal, O. A. Omotesho, and M. O. Adewumi (2010**)**The general conclusion drawn from the study is that production of food crops in the *fadama* of Niger State, Nigeria is sustainable. All the food crop enterprises produced hectareve positive net farm income, profitability the and return on Naira investment ratio than is greater than one. The levels of diversification of the enterprises do not impact negatively on the nutrient intake index (NII) of the crops. The Ruthberg index value, erosion and drainage situation shows the ctaret remedial and preventive measure is required to ensure sustainability of *fadama* land in the Southern Guinea Savanna of Niger State, Nigeria.

Veer (2016) The study reveals that the total area under irrigation in Khatav, Koregaon, Jawali, Patan, Karad, Wai and Mahabaleshwar tahsils has increased from 2000-01 to 2010-11. The factors responsible for this change are industrialization, urbanization and modernization of agricultural techniques. The total area under irrigation in Khandala and Man tahsils has decreased from 2000-01 to 2010-11.

S. S. Valunjkar (2007) The FLP and FIS are constructed with fuzziness involved in constraint coefficients and available resources of surface water in order to work out benefits from the crops under sustainable situation. Optimal results derived from FLP and FIS are compared with MLP. The result shows that there is no variation when the water is utilized in rabi season. Similarly, marginal variations in benefits are observed during normal years of rainfall. The implementation of modified linear programming in actual field may not be found viable due to its deterministic approach. On the other hand models having probabilistic approach namely, FLP and FIS could be used for revising the cropping pattern under sustainable conditions.

Pramod K. Singh1 and Abhishek Nair (2012), The paper concludes that cropping patterns evolving over a period of time have led to not only secular depletion of groundwater tables but also salinisation of soil and water. The paper suggests options for sustainable water management, soil conservation practices and cropping patterns based on soil, climate, and water availability in order to encourage the shift towards sustainable agricultural practices.

Cropping Pattern in the Study Area

Table no 1.1 Indicates out of 300 farmers 79.7% of farmers are taking wheat crop but only 21% farmers are taking vegetables in their farm and 2% farmers are taking fruit in their farm. It shows that wheat is major crop in the study area.

Table No 1.1

Cropping Pattern in the Study Area

		Jawar		**Bajara**		**Rice**	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Valid	Not Taking	88	29.3	280	93.3	38	12.7
	Yes -Taking	212	70.7	20	6.7	262	87.3
	Total	300	100.0	300	100.0	300	100.0

Table no 1.1. Indicates out of 300 farmers 70.7% of farmers are taking Jawar crop, but only 6.7% of farmers are taking Bajara and 87.3% of the faremersare taking rice in their farm. It shows that Rice is major crop in the study area. While farmers are taking jawar and Bajara also. However, it is observed that most of the farmers are dependent on Rice crop.

Table No 1.2
Cropping Pattern in the Study Area

	Wheat		**Vegetables**		**Fruits**	
	Freq.	**Percent**	**Freq.**	**Percent**	**Freq.**	**Percent**
Not taking	61	20.3	237	79.0	294	98.0
Yes taking	239	79.7	63	21.0	6	2.0
Total	300	100.0	300	100	300	100

We also find that most of the farmers are taking different crops in the Jaoli, Mahbaleshwara and Pathan Tahsil but while farmers are taking vegetables and fruit also however it is observed that most of the farmers are dependent on wheat crop.

Table No 1.3
Cropping Pattern in the Study Area

	Groundnut		**Maize**		**Vari**	
	Freq.	**Percent**	**Freq.**	**Percent**	**Freq.**	**Percent**
Not taking	139	46.3	202	67.3	277	92.3
Yes taking	161	53.7	98	32.7	23	7.7
Total	300	100.0	300	100.0	300	100.0

Table No.1.3 Indicates that out of 300 farmers 53.7% of farmers are taking groundnut crop, other farmer are not taking groundnut crop 32.7% farmers are taking maize crops in their farm and only 7.7% frames are taking vari crops in their fields. It shows above 50% farmers are taking ground crops in the study are while ? farmers are taking maize vari crops also however it is observed that must of farmer are depends on groundnuts crop.

Table No 1.4
Cropping Pattern in the Study Area

	Mango		Cotton		strawberry	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
Not taking	210	70.0	297	99.0	237	79.0
Yes taking	90	30.0	3	1.0	63	21.0
Total	300	100.0	300	100.0	300	100.0

Table No. 1.4 Indicates out of 300 farmers 30% of farmers are taking mango crop, only 1% farmers are taking cotton crop and 21% of farmers are taking strawberry crop in their farm. It shows that most of the farmers are taking mango crop. It is observed that mango is major crop in the study area.

Findings

- We found that out of 300 farmers 79.7% of farmers are taking wheat crop but only 21% farmers are taking vegetables in their farm and 2% farmers are taking fruit in their farm.
- Out of 300 farmers 53.7% of farmers are taking groundnut crop, other farmer are not taking groundnut crop 32.7% farmers are taking maize crops in their farm and only 7.7% frames are taking various crops in their fields.
- Out 300 framers 64.3% framers are taking Nachani crop, but only 3.7% frames are taking Rala in their farm and only 14% frames are taking other cereals in their farm.
- Out of 300 farmers 25% farmers are taking Tur crops and 28.3% farmers are taking mug crop in their farm, 29.3% farmers are taking Udid crop in their farm.
- We observed that very few farmers are taking Wal, Chavali and mango etc.It is noticed that out of the favorable conditions these farmers are not taking such crops in their farm.
- It is also found that out of 300 farmers 30% of farmers are taking mango crop, only 1% farmers are taking cotton crop and 21% of farmers are taking strawberry crop in their farm.
- It also indicates that out of 300 farmers 42% farmers are taking sunflower crop, but only 17% of farmers are taking karadi crop and 24% farmers are taking sunflower crop in their farm.

Suggestions

- There should be incensement in the production of fruits crops such as mango and strawberry.
- The most of the farmers should take the production of groundnuts.
- In the study reigon the farmers should prefer these crops in the farming such as Karadi, Wal, Chavali, Udid, and Tur.

Policy implication and conclusion

In the study region 79.7 % farmers are giving preference to the wheat crop, beside this 21 % farmers are taking vegetables and 2 farmers are taking fruits. Out of the 300 farmers 53.7 % farmers are taking groundnut crops, 32.7 % farmers are taking maize crop and 7.7% farmers are taking other crops. In case of Nachani and Rala 64.3 % farmers are taking Nachani and 3.7 % farmers are taking rala. We observed that very few farmers are taking Wal, Chavali and mango etc. It is noticed that out of the favorable conditions these farmers are not taking such crops in their farm.

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