

**Water Management and Sustainable Development: A Study in Kolhapur District****Dr. K. M. Desai**Assist. Professor & Head Department of Sociology,  
Shri Shahaji Chh. Mahavidyalaya, Kolhapur.**Abstract:**

*Water is a crucial resource for increased agricultural production and rural development. The problem of ownership and distribution of water resources has emerged as one of the important issues during contemporary period. It has also acquired added significance in the context of sustainable agriculture/rural development. Therefore, in predominantly agricultural societies, the expansion of irrigation, distribution and proper management of water resources is of crucial importance. The issue is generally conceived as an economic issue. However since the ownership patterns and the distributive mechanisms are socially evolved and groups of people with their vested interests are involved in this process, it has socio-political dimensions. Not surprisingly, therefore, the issue of water distribution and management is of sociological interest and analysis as well. To examine the existing water management practices of lift irrigation co-operatives by focusing on social, economic and ecological dimensions of agricultural sustainability.*

**Introduction:**

**T**he water resources constitute an indispensable support system for all the living species on the earth. Conceivably, all aspects of human development – agricultures, industry, health and advancement of socio-cultural life- depend upon water. However, water is not limitless and perennial; it is increasingly becoming a scarce resource. Therefore, the rational and judicious use and proper management of water resources constitute an important area of research in all aspects of human life. This is especially true in the field of agriculture because this sector consumes relatively more share of available water. Increasing population, expansion of irrigation systems, rapid industrialization and urbanization- all these exert tremendous pressures on the already scarce water resources. In view of this, all the societies have to pay urgent attention to the issue of water and it's problematic, in the larger context of achieving the goal of sustainable development.

The scholars in the field of water management are expressing different views with regard to most efficient way in which water can be managed. The privatization of water resources and total control of the government on the distribution of

water resources are the two views often being debated in this regard. But both of them are polar extremes and therefore impracticable in the democratically governed welfare states such as ours. Co- operatives and participatory management and distribution of water resources could be a middle and viable alternative or addressing both the issues of effective management of water resources and attainment of the goal of sustainable rural development.

The main reasons for low yields are inadequate rainfall, uneven and uncertain rains during the period of crop growth. Successful cultivation is not possible in large parts of our country due to lack of irrigation facilities. In the absence of such facilities, there are large areas in the country, which of them produce only one crop. It is generally found that the introduction of irrigation is associated with changes in the cropping pattern. The shift from traditional cropping pattern to the most advantageous cropping pattern is possible only in the presence of irrigation facilities. The new agricultural technology is highly bases towards sufficient moisture condition. Thus the development is crucial for increasing agricultural production in the country.

**Review Of Literature**

There are numerous books and articles written on the subject of water. The researcher has include the reviews such As Satyajit Singh, Khodaskar, Lohar N.S, Naik K.N,. S.G. Barve Commission, Salukhe S. A, Despande R.S, Narayanmurthy A Commission (2001) and Achary V.V.etc.

**The Theoretical Perspective:**

Social- ecological perspective is adopted for the present study, social ecology rests on the awareness of the interdependence of the ecological infrastructure and social, economic, political and cultural domains created by human beings.

**The Research Problem:**

The present study aims was to understand and critically examine the existing water management practices of lift irrigation co-operatives, functioning in Kolhapur district of Maharashtra, by focusing on social, economic and ecological dimensions of agricultural sustainability

**Objectives Of Study:**

The specific objectives of the present study were as under.

To study the evolution and development of lift irrigation Co-operatives in Kolhapur district.

- 1) To examine the existing water management practices of lift irrigation co-operatives by focusing on social, economic and ecological dimensions of agricultural sustainability.
- 2) To offer suggestions for effective management of water resources in order to promote sustainable development.

**Hypotheses:**

The specific hypotheses have been formulated of the present study as per the following.

1. The water is being fairly distributed by the lift irrigation co-operatives among their beneficiaries based on their rights in land/ size of land holdings.
2. The existing water management practices adopted by lift irrigation co-operatives are not ecologically conducive for sustainable agriculture.

**The Conceptual Framework And Research****Design:**

The conceptual framework for the present study is as per the following

**1. Social Dimension of Sustainability:** Do lift irrigation co-operatives benefit the lower strata of the village peasantry and elicit participation of socially underprivileged section of the village community in the process of rural development?

**2. Economic Dimension of Sustainability:** Do lift irrigation co-operatives contribute to the improvement in the level of income and material living conditions of beneficiary farmers? Do they also benefit non-members, particularly persons from lower strata of village community such as landless labourers?

**3. Ecological Dimension of Sustainability:** Whether the change in cropping pattern is facilitated by the lift irrigation co-operatives and the pattern of ecological resource base? An attempt had made in present study to provide answers to the above questions.

**The Study Area:**

The area for the present study is confined to Kolhapur district of Maharashtra state.

**Universe Of The Study:**

The focus of the present study is on the lift irrigation co- operative schemes on the sustainable development of Kolhapur district. Therefore, all the 596 lift irrigation co-operatives functioning in Kolhapur district constitutes the universe of present study, out of 596 lift irrigation, the researcher confirmed 12 lift irrigation co- operatives functioning at the time of present study.

**Selection Of Sample Of Lift Irrigation Co-Operatives:**

1. There are 12 talukas in Kolhapur district initially by resorting to systematic sampling, six talukas were selected. Then taluka-wise list of lift irrigation co-operatives were prepared.
2. By using taluka-wise list as sampling frames, from each of the six talukas two lift irrigation co-operatives were selected by resorting to random sampling (lottery method) technique. The total samples thus constituted 12 lift irrigation co-operatives from Kolhapur district.

**PLAN OF ANALYSIS AND  
INTERPRETATION OF DATA:**

For the present study, the plan of analysis and interpretation of data has given as below:

1. The data has to be collected with the help of interview schedules, which has to be coded after preparation of code books.
2. The coded data has to be processed on computer by using SPSS software.
3. The computer output will be used for analysis and interpretation with the help of simple statistical tools such as frequency distribution and percentage.

**Significance Of The Study:**

The present study is mostly useful for the advancement of theoretical knowledge on the subject in particular and also for promotion of sustainable agricultural practices in general.

1. The study has made available the valuable primary data with regard to existing water management practices which has been used for comparisons by future researchers.
2. The critical examination of the existing water management practices of lift irrigation co-operatives has enabled us to understand whether those were conducive to agricultural sustainability. Based on the findings of the present study, certain suggestions have been given for appropriate agricultural practices and sustainable development.

**Sampling And Data Collection**

The present study was consisted of general survey of lift irrigation co-operatives.

**Survey of Lift Irrigation Co-operatives in  
Kolhapur District:**

As per the plan of research, the data on certain general aspects of 12 lift irrigation co-operatives existing Kolhapur region, were to be collected with the help of questionnaire to be designed for this purpose. Researcher decided to undertake a survey of all the 12 lift irrigation co-operatives, officials of which positively responded to us and expressed their willingness to respond to the questionnaire.

**Data Processing And Analysis:**

In order to process the collected data through both the questionnaire and the interview schedule, the suitable codebooks [data definition files] were prepared. The data were processed with the help of computer. The computer generated output is used for the analysis and interpretation of the data presented in this report.

**Major Findings:**

The researcher has find out the five major findings in the present study which are given as below.

**1. Cropping Pattern:**

Sugarcane crop is intense water consuming crop, with the increase in land under sugarcane cultivation the proration of land under other crops is decreasing which has ecological implications in the context biodiversity.

**2. Use of Water is more than Requirement:**

Nearly 52 % beneficiaries have been giving more water than requirement so; it is serious problem in water management.

**3. Absence on Farm:**

Some of the beneficiaries farmer to remain absent on the farms when water is giving to the crops especially in the night times due to power load shading problem.

**4. Power Load Shading:**

In the rural area there is big problem of power load shading. It is the serious problem of wastes water in the night periods when water is giving to the crops.

**5. Land Degradation:**

There is overuse of water and chemical fertilizers.

As per the above information on the major findings in the present study, it is clear that there is serious problem in water management for the sustainable development.

**Suggestions:**

The researcher has given suggestions to the management of lift irrigation.

**Management of Lift Irrigation Co-operatives:**

The researcher has suggested for management of lift irrigation as per below.

**1. Ensure Benefit:**

The management of lift irrigation of co-operatives brings under the fold of irrigation the entire area under their command so as to ensure the benefit of irrigation to left out areas within their approved command.

**2. Ensure Fair Distribution:**

The management of lift irrigation co-operatives needs to take effective steps to ensure fair distribution of water among all the beneficiaries, so that there is no discrimination at all in this regard.

**3. Impart Training:**

The management of lift irrigation co-operatives needs to impart training in water management to all the 'Patkari' staff.

**4. Take Steps to Avoid the Distribution of Water:**

The management of lift irrigation co-operatives, need to take steps to avoid the distribution of water by means of open channels, instead, they must extend branch pipelines right up to the farmers of the beneficiaries.

**5. Encourage the Farmers to Adopt Modern Methods:**

The management of lift irrigation co-operatives needs to encourage the farmers to adopt modern methods of irrigation such as drip and sprinkler irrigation.

**6. Educate the farmer Beneficiaries:**

The management of lift irrigation co-operatives needs to educate the farmer beneficiaries in their command area regarding scientific use of available resources such as land, water and various types of fertilizers in order to avoid land degradation and improvement in quality of land agricultural productivity.

**7. Suitable Cropping Pattern plan:**

The management of lift irrigation co-operation needs to suitable plan the cropping pattern in their command so as to ensure requisite sugarcane production on the one hand and encourage cultivating other food crops resorting to rotational method of cropping.

**Conclusion:**

To conclude, the present study revealed that, the lift irrigation co-operative in the Kolhapur district.

Lift Irrigation Co-operatives are play a vital role to the well-being of the people in this world and play an important role in local, national and international growth and development. However, irrigation also has created problems such as degradation of land and water management, socio – economic and culture effects on society and environmental damage.

**References:**

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