International Journal of Advance and Applied Research (IJAAR)
Peer Reviewed Bi-Monthly

ISSN – 2347-7075
Vol. 1 No.4
Mar- Apr 2014

A STUDY OF WATER MANANGEMENT OF LIFT IRRIGATION SCHEME IN KUNDAL

Prajakta Patangrao Lad.
Research Student,
Department of Economics,
Shivaji University, Kolhapur

INTRODUCTION:

Agricultural development plays vital role in economic development of underdevelopment countries. Agricultural development implies increase in productivity and production of agricultural sector. Productivity of agricultural sector depends on irrigation facilities fertilizers, pesticides, improved seeds and application of modern techniques of cultivation etc. Supply of water or irrigation faculties assumes greater importance because without sufficient water supply other inputs cannot be fully utilized. Hence in agricultural development irrigation is the most important element in agricultural development.

Irrigation helps in intensive cultivation of land and it is one of the key elements in boosting and stabilizing agricultural production. Expansion of irrigation leads to expansion of plantations. Prices of agricultural commodities exercise a dominant influence on general price level. In fact prices of food grains acts as a pacesetter in the behavior of general prices. The output of agricultural commodities changes from year to year due to seasonal nature of agriculture. Hence, there is price instability.

Introduction of irrigation provides guarantee to agricultural production. It reduces fluctuations in prices of goods. Price stability is important in agricultural Development. Irrigation is very good means to get production from famine. A systematically developed irrigation system collects water during the period of Excess rainfall and stores it. This water stock is life saving during the famine and drought period. Irrigation channels can be utilized to generate electricity. In this way irrigation helps the development of agricultural sector.

OBJECTIVES:

1. To examine the impact of Kundal Co-operative irrigation project on agricultural area, production productivity and yield of the crops in the command area.
2. To study the impact of irrigation on cropping pattern.
3. To measure crop wise agricultural income of farmers through changing cropping pattern.
4. To examine the nature of improvement in the social life of beneficiaries.
5. To suggest appropriate measures to improve the operational efficiency of the project.
6. To analyze the working of co-operative irrigation society.

HYPOTHESIS:

1. There is no association between area under irrigation and the education level of the farmers
2. The average variation of area under irrigation and income level of the farmers is same.
3. The income of the farmer is closely associated with irrigation and cropping pattern.

RESEARCH METHODOLOGY:

A) Data Collection:

i) Primary data:

Primary data has been collected from various sources through structure questionnaire.

1) Survey of sample households.
2) Special interviews of office bearer and chairman.
3) Discussion with leading farmers.
4) Field work

ii) Secondary data:

Secondary data on various relevant variables were collected from the following documents/reports.

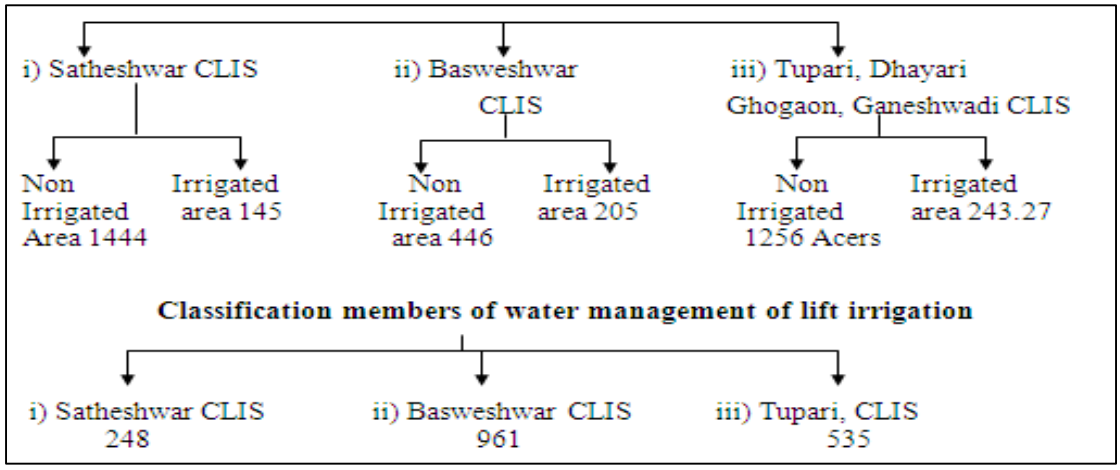
1) Departmental publication.
2) Annual report of the co-operative society.
3) Data from Kundal co-operative irrigation office.
4) Gazetteers of district.

B) Data Analysis:

Simple statistical techniques like percentage changes, frequency, distribution and mean are used. Moreover some other tools are used to data analysis.

C) Sample Design:

Classification of irrigation and non irrigation area under three cooperative irrigation society



The researcher had selected three irrigation schemes located in Kundal which are as follows.

A) Satheshwar CLIS had 1446 Acres Non-irrigated are and 145 acare irrigated area.
B) The Basweshwar CLIS had 446 Acres Non-irrigated are and 2054 Acres under irrigation area.
c) Tupari, Dhayari, Ghogaon, Ganeshwadi CLIS had1256.73Acres Non-irrigated area and 243.27 Acres irrigated area.

SAMPLING TECHNIQUE:

Sample had selected by using Yamnes Formula .Stratified Random sampling Technique had used for selecting different projects. Proportionate allocation method of sampling had used for selecting the sample size of each strata . The segment was be based on the category of projects. Calculation of the sampling size was as follows.

Researcher had determined the sample size by using Yames formula as below.

$$n = \frac{N}{1+N\,(e2)}$$

Where, n = Sample size
N= Population size
e = Sampling error

Here it was assumed that sample error is 10%

Total population is 1780. Therefore, Sample size was 100. The population used for the study was finite. Researcher had selected the farmers of different project using stratified sampling method . Proportionate allocation of each stratea is calculated with respect to total population by using the formula.

$$Ni = \frac{n*Ni}{N}$$

Project Name	Total number of farmer	Sample size (n)
Satyeshwar	248	16
Baswesher	961	54
Tupari	535	30
Total population	1780	100

The Satheshwar co-operative irrigation scheme had 284 total members, from which researcher had selected 16 members. The Basweshwar co-operative irrigations scheme had 961 members. The researcher has selected 54 members. The Tupari, Dhayari, Ghogaon, Ganeshwadi Co-operative

Irrigations scheme had 535 members from which researcher has selected 30 members.

SOCIO – ECONOMIC IMPACT OF KUNDAL COOPERATIVE LIFT IRRIGATION SOCIETY:

1) Wastage of water:

Water is most important and natural resource on the earth. Now a day's efficient water management has required CLIS are not careful to managing this resource. Lack of water management leads to wastage of water. It is cheatings lowly but very diverted effect on the society.

2) Decrease quality:

Total samples are using Hybrid seeds using of hybrid seeds can leads to increase the output or production of crops. No doubt it increases growth rate of agricultural sector also it has created some major negative impact on quality of crops. Yields increases but quality of crop decreases.

3) Maximum use of chemical fertilizer:

All 100 % farmer mostly prefer the chemical fertilizer. Chemical fertilizer negatively affects on quality of soil. It creates long life effect on productivity of lands. Now a day's farmer focused on only outputs profitability but it will created major problem for farmers and also for economic wealth.

4) Change in cropping pattern:

Before materialization of CLIS, farmers were taking only kharif crops. In case of delay to raining or non occurrence of last one or two showers, there be 25 is 50 percent loss of the Kharif crop. After establishment of CLIS it becomes possible to farmers to save their kharif crops. Since they get support it irrigation farmers started taking wheat and vegetable in the rabbi season and groundnut, gram, black gram and vegetables in summer. Farmers of the study area started to take various cash crops e.g. Grapes and Sugarcane. This leads to develop the financial position of farmers.

5) Increase in income:

Lift irrigation society ensures satisfactory income to farmers.Supplying adequate water from CLIS income of farmers increased from 1000 to more than 10,000 rupees increased level of income has developed living standard of farmers.

6) Increase in Assets:

After introducing CLIS there is significant change in assets. Majority of farmers used to live in thatched huts. Now they have build cement concrete houses they also have invested in gold and silver ornaments, utensils, furniture and vehicles etc there is remarkable improvement in food content.

7) Increased in food intake:

There is both qualitative and quantitative change in consumption of food earlier marginal and small farmers hardly used to manage two meals a day particularity in summer and rainy seasons. Now they get full nutritious food which contains wheat pulses and vegetables. Their intake of sweet also increased. Many farmers is producing small quantity of vegetables purely for domestic consumption. Thus, their diets now comprise a much greater quantity of green vegetable. In addition vegetables are available almost year round in

most of the village at lower prices so even non beneficiaries have access to better food.

8) Reduction in migration:

The major impact of LIS is on out migration which has been cubed. Prior to lift irrigation rain fed agriculture land cultivated only one season. Thus, when the kharif season come to an end villagers were forced to migrate. With the introduction of lift irrigation farmers are able to cultivate their land in two to three seasons since they have a regular income for most part of the year. Migration of labor is no longer a compulsive option. People do still migrate to earn some money but for lesser number of day. An earlier person used to migration for 120 to 150 days in a year, migration has reduced to30 to 40 days in a year. Now Majority time they stay back and work on their fields for rabbi and kharif crops .At present, migration is a choice not a necessity.

9) Change in occupation:

In the kundal cooperative society, after harvesting kharif crop people sought employment in other area. Now they spend majority of their time in improvement of their fields. A peculiar feature is that some landless villagers have started farming with availability of irrigation facility. Crop intensity has increased leasing out land to landless for share cropping in the village. Even people from outside the schemes through availability of labor and availability of agriculture products such as grain and vegetables at cheaper price with increase in agricultural produce Agriculture residue is available as fodder either free of cost or at a cheaper rates which led people to adopt animal husbandry as secondary occupation .

CONCLUSION:

Under the study of water management of lift irrigation society in Kundal we studied the three CLIS, namely Satheshwar CLIS, Bashweshwar CLIS, Tupari, Dhayari, Ghogaon, Ganeshwadi CLIS. All these irrigation societies were medium irrigation societies in Palus tahshil which was located on Krishna River basin in Sangli District. Farmers in Palus Tahashil had benefited from this society. There are 7 villages benefited from these CLIS. At present, under the command area of all the three CLIS area is 3146 acre and 2442 acre area is irrigated. Consequently agricultural scenario of the region had undergone a phenomenal changes and rural life of the command area has been gradually changing for better living.

FINDINGS:

1) Cooperative lift irrigation society plays vital role in farmers' income and agricultural production.
2) Every crop pattern needs different level of water. CLIS lift irrigation does not provide proper water supply to farmer's .So wastage of water is the main problem, due to this farmers and society faces the problem of water supply in summer.
3) CLIS changes the cropping pattern of the study area so that agricultural production increases.

4) In the modernized Era, CLIS used traditional instruments and traditional sources of water supply. Modern equipments are available in market but society does not use that equipments.
5) Lickage of the pipes is the most prominent problem of CLIS because of that the expenses of CLIS are increased.
6) Documentation is the most important part of any organization for their working but CLIS in Kundal had not maintained proper documentation.
7) Absence of a proper system of collecting the water charges and account keeping which leads to malfunctioning. Secretary was not accountable for collection of money the members.

SUGGESTIONS:

1) Preventive maintenance of machinery is a largely ignored aspect in many cooperative lift irrigation. Eventually leading to higher electricity bills and increase in water delivery costs. It is imperative that the cooperative CLIS irrespective of their large or small size need to pay particular attention to the preventive maintenance of the machinery.
2) Maintenance of up to date records is an important activity in cost control .Unfortunately many CLIS tend to neglect it. It is advisable that as an operational necessity the lift irrigation society should systematically maintain basic minimum record stock register and other subsidiary books as may be necessary. Especially large lift irrigation societies should maintain their cost ledgers up to date.
3) Administrations of every lift irrigation society should consciously strive to be aware development in irrigation technology. Adoption of these would help them to control cost enhances productivity and profitability as well as earns beneficiary satisfaction.
4) The lift irrigation society should appoint only technically trained local personnel to bring down the maintenance costs and enhance the service efficiency.
5) An Evaluation of training needs of administrative and technical personnel of the cooperative lift irrigation schemes.
6) All irrigation societies in Kundal want to convert their non irrigated area into irrigated area.
7) Proper repair and maintenance of lift irrigation pump is important to the success of any CLIS. In the absence of proper maintenance of pump, repair cost increases which may be difficult for the cooperative to bear. There has to be regular greasing of pump, and immediate repair of minor faults. Stabilizers have to be installed to cover the risk of fluctuation in electricity voltage.
8) Proper documentation of records is very important. Records are very useful for monitoring the progress of the CLIS and help improve the weak areas. It is very important to update records for proper monitoring. Good record keeping ensures transparency in the working of the cooperative and thus helps to develop the trust among members and committee. Proper documentation also helps to acquire further funds from government agencies.

REFERENCES:

1. Annual Report of Kundal Co-operative irrigation society (2000 to 2012).
2. Directorate of economics & statistics (2000) statistical outline of Gujarat.
3. Directorate of economics & statistics (fed-2002) socio economic review of Gujarat state.
4. N.M sad guru water & Development foundation (994-2001) Annual Reports.
5. Oza Apoorva (1998) NGO'S & institutional Reforms A case study of irrigation sector Reforms in Gujarat India, Aga khan rural support programmers (India) Ahmadabad.
6. Parekh, Sheel (1997) water Resource Development in Akrsp (I) programmers areas of rural Gujarat, Socio economic study of lift irrigation & Ground water Recharge, university of Toronto, Canada.
7. Shah, Anil (1991) Samdhialu. Story of Development through Disciplined Democratic process. A lift irrigation cooperative society. Agakhan Rural support programmers (India) Ahmadabad.
8. General Admistration Department of planning Division of Government of Gujarat (2001) Government of Gujarat Development programmers for 2002-03.
9. Mishra , Naryan (1996) performance & comparison of individual portable Engines & lift irrigation schemes . N.M Sadgura water and lift Development foundation, Dahod , Gujarat.
10. Saini . Harmeet (1996) Training For lift irrigation cooperatives. A handbook N M sudguru water & development foundation Dahod Gujarat.
11. Saini harmeet (2002) farmers federation formation Achievement & initiatives, N. M sadguru water & Development foundation Dahod , Gugarat.
12. Leki R.K. and Sing Joginder (2004), Agricultural economics, Kalyan and Publication, New Delhi.
13. Koli P.A 2006 irrigation development in India .
14. Palanisami. K.Irrigation water management the determinates of cooperation.
15. Bagchi K.S (1995) irrigation in India
16. Sundaram K. P.M. and Datta R. (2006), Indian economy S.Chand and Company Ltd., Ramnagar, New Delhi
17. Agrawal A. N. (1996), Agricultural problems of India Vikas Publishing House Pvt. Ltd., Mumbai.
18. Patil D T (1994) primary Agricultural cooperative credit societies and agricultural change in miraj. Taluka . Thesis submitted for PhD in economics.

19. Patil ramchandra (1994) A case study of financial performance of shri Dudgaganga ved.
20. Jugale V.B. (1980), Impact of Lift irrigation schemes on general land use cropping pattern and small farmers – A case study of village Alas Journal of Shivaji University, 19-87-100.
21. Prof Dr. Nizamettin ciftci the sustainability problem o irrigation in turkey.
22. Shri A. C Bodhale (July 2000) socio economic impact of irrigation in pandharpur Taluka (Sholapur District)
23. Aga khan rural support program India (1994-2001) Annual progress reports.
24. Center for science & Technology (Delhi) Down to earth January 15, 2000.
25. Development support center (june1999) participatory irrigation management computation or orders of Government of Gujarat published by development support center. Ahmadabad.
26. Lakhe A.A. (July, 2008), Role of Washi irrigation project in Agricultural development of Walwa-Taluka.
27. Lakshman S. Killedar (Nov. 1988), Performance of Co-operative lift irrigation schemes – A study in the Area of operation of Bhogawati Co-opertavie Sugar Factory Shahunagar, Parite, Taluka- Karveer, Dist.Kolhapur.
28. Shri. Shinde M. V. (Dec., 2006), Impact of Jangamhatti irrigation project on agricultural development of Chandgad Taluka.