

Tube-well Irrigation as Sustainable Source of Rural Economy in Inyatullah Karez District Killa Abdullah, Balochistan

Sociology

Ashrafullah¹ & Dr Syed Ainuddin²

Abstract

The present study deals with the changing economy of rural Balochistan. Formally, the rural Economy was depended upon an indigenous system of Karez irrigation, with the passage of time this System of irrigation couldn't continue for future sustainability. As such, a new system of irrigation was to be adopted as an immediate substitute of Karez irrigation system. This shift suggest that neither the Tube-well technology nor its risk aversion had been a serious constraint. Inclination of small farmers towards the adoption of tube-well technology had been more than their big counter parts. Despite the fact that the discriminating treatment of various credit giving agencies. The growth of tube-well is faster because there is no other source of Karez substitute. Installation of tube-well is costly due to low water-table and hard soil. Tube-well Technology is gaining preference because of producing more water to a single owner than that of Karez shareholder. Further, it is highly profitable in yielding more crops per Acre. This irrigation system help the farmers in promoting their agriculture far more than they could do in Karez irrigation system. Thus tube-well irrigation is more viable for agriculture sustainability.

Keywords: Karez irrigation, tube well adoption, modern innovation, economic endeavours. Inyatullah Karez.

Introduction

Karez irrigation system had been one of the oldest gravity irrigation system in Balochistan. This has provided irrigation water to small as well as large farmers for centuries. This system remained in vogue as one of the

¹ M.Phil Research Scholar, Balochistan Study Centre, University of Balochistan, Quetta.

² Research supervisor and Chairperson, Department of Disaster Management, University of Balochistan, Quetta.

leading irrigation system until the advent and introduction of modern Tube-well technology. According to Abdus Salam Toor (1990) Karez irrigation was indigenous of free natural water for agricultural development. It fulfilled all other necessary water requirements of the community people. Karez irrigation for sustenance of agriculture in Balochistan was the only source of water supply. According to Dr, Shahid Ahmad (2007) it is believed that there were 3000 karezes in Balochistan in 1970, providing water supply to town and for irrigated agriculture. Karez is a worldwide Phenomenon. Karez as a system of irrigation had been operative with different name as such this system was the basis of agricultural sustenance. We should not presume that this source of irrigation is limited to the province of Balochistan. No doubt there is a web of karezes in different Districts of Balochistan varying in numbers, depending upon its source of providing groundwater.

Karez was a cultural heritage for a sustainable future with the installation of tube-wells the advantage of this energy free source of irrigation is diminishing and some centuries old karez are Dying day by day. According to Dr. Shahid Ahmed (2007) the highest ratio of Karez is found in District Killa Abdullah, total number of Karezes are 243 IDP survey. It is quite evident that Karez irrigation was a strong source of human Survival. Today majority of Karezes are drying due to lack of natural feedback. Local community have realized an immediate substitute for agricultural sustenance. This substitute is the adoption of Tube-well technology as an alternative of karez irrigation.

Danish Mustafa (2007) the adoption of tube-wells and its spread all over the Balochistan was not just accidental nor the result of rural electrification. It was included in the government policy to enhance and promote tube-well irrigation in Balochistan. It is why that rapid growth of tube-wells in the province was so fast. Tube-well technology is far ahead of Karez irrigation. Tube-wells are operated with Electric motors and pumps which pulls water from an underground depth of (400-600) feet to the surface of the earth. Water travels in the pipe-line and stored in big water tanks (Talab) which, later on is released to field cumulatively. The quantity of water of single tube-well is much more than that of a Karez share-Holder. Today 98% of irrigation in district Killa Abdullah is done through tube-wells and there is no hope of Karez revival in future.

Research Methodology

The present article is based upon the use of secondary sources of the data for the comparative assessment of karez and tube-well irrigation in Balochistan. Content analysis was used for the above mention assessment from the literature on karez and tube-well irrigation. This will help in

understanding that how a rapid shift occurred in the changing of karez to tube-well irrigation. The adoption of tube-well technology had a bright impact upon the socio-economic condition of the farmers of the area under study. It further, enhanced the chances of investment for the adoption of this technology.

Tube-well as an alternative to karez

According to M. Jamil Chaudhry (1990) since 1960' tube-wells have succeeded in replacing karez irrigation in Pakistan. In Killa Abdullah District tube wells were introduced since 1970. These electric operated tube-wells have been excavated in the periphery of Inyatullah Karez without considering its negative effects on Karez water. Comparatively tube-wells have a short life span than that of Karez. Where Karez system had been functional since centuries. There is no doubt, that Installations of tube-wells are necessary for agricultural sustainability in Balochistan, because there is No other source of water supply except few districts, As such the adoption of tube-wells was thought Of as an immediate substitute of Karez irrigation.

There are about 400 tube-wells in the surrounding area of Inyatullah Karez. Among these 252 tube-wells are registered officially with regular payment of monthly electricity bills. Whereas the remaining 148 tube-wells are illegally operating without making any monthly payment. Some tube-wells are owned by single individuals and some others by the groups comprising of kinsman.

Community people consider electric operating tube-wells as more profitable because it is not restrict by ownership to one individual or a class structure. These tube-wells are owned by small Farmers as well as by predominantly a large proportion. The adoption of tube-well technology diminished the year's long inequalities among the share-holders of karez.

Adoption of tube-well technology support the view that an overall change occurred in the socio-economic conditions of the community people. It laid the basis for better economic endeavors. This further enhanced the potential for investment in the adoption of this technology. Tube-well adoption Works as a strong cohesive force among their kinship groups. It creates cooperation and competition among its members for better economic achievements. It maintains kinship relation among members of a particular lineage group. Tube-well irrigation cause change in breaking the joint family into nuclear family. As such it paved the way for migrating to the Quetta and other mega cities of the Pakistan. They established Business and those who could not do so, moved for employment in public and private sector in city.

The main economic activities of the community people are not restricted to a particular occupation. They are involved in different kinds of economic endeavors, such as business, agriculture and Keeping of live-stock. Improved irrigation system was introduced in the area by the community people. This improvement brought more changes in the field of horticulture, which includes use of technology, Modern techniques, and transportation, Use of tractors, thresher, fertilizer and pesticide. Similarly, local farmers were depending upon animal for their farming. The main activities of the people in area are not specified to a particular occupation. All the community people do not possess higher economic statuses except few whose annual income is in millions. After the adoption of tube-wells the agriculture sector developed rapidly and common man got engaged as a tenants, and in some cases as partner in operational tube-well.

The low profit farms products are not cultivated by the local farmers. They have replaced cheap quality of orchard with that of expensive ones. Further, they have also expanded their Agriculture by planting profitable grapes. This agricultural products have increased the economic statuses of local farmers.

Man is a change oriented, he is always ambitious for advancement. According to Anwar Mohyuddin and Dr. Hafeez Ur Rehman Chaudhry (2007) Change occurred in man's life by the agricultural revolution between 8000 BC to 5000BC and later on by Industrial revolution which took place in 17th -18th century. After industrial revolution the concept of Development shifted from richness humanity to the richness economy.

Comparative analysis of karez vs tube-well

It is generally observed that due to low rain and snowfall as a natural feedback of Karez, The age of Karez is almost over, further, due to lack of proper management and inadequate policy by the Local community, this indigenous system of irrigation have been neglected because of the availability of Electricity in the area. Which have resulted in excavation of tube-wells without considering its impact of Karez water. Local community people still consider Karez as the most successful source of water supply for agricultural sustenance. Tube-wells are costly, small share-holder of Karez are unable to excavate Tube-wells. Thus Karez had been thought to be a permanent source of water fulfilling all the water Requirements of the community people. In view of these facts both the system of irrigation are operative In Balochistan. Whereas Karez irrigation still operate in some mountainous regions of Balochistan. It may be Sommed up.

1. Karez was a permanent source of water supply. This source of water was more reliable depending upon the natural feedback. Whereas tube-well are the artificial source of water supply which run for the shorter period.
2. The cost of Karez, its management and distribution of water among the share-holders is less stressing. Whereas, the maintenance and management of tube-well is handled by a single owner is more troublesome than Karez.
3. Karez reflected mutual cooperation among its share-holder. It provided opportunities of employment for members of local people. Yearly cleanliness of Karez require skillful personals which are always available among the community people.
4. In a majority of cases the wells are owned individually. The water so taken out is used for the owner benefits and also sell water to the other users. For smooth operation tube-well require access capital for its management. Whereas expenditure so incurred on Karez are less and every share-holder get maximum benefit from it.
5. In the present era the improvement and significance of tube-well is “pivotal” for the smooth functioning of tube-well irrigation in Balochistan. Without the existence of tube-well technology agriculture could not have developed because of the scarcity of surface water. It is because of the adoption of tube-well that agriculture flourished to its present stage.
6. Water management of Karez and tube-well are varying. In Karez system water is managed and distributed to its share-holders by a reputed and nominated local person known as “Mehrab”. The function of Mehrab is to determine and organize the distribution of water, enforce water rights, resolve dispute and make arrangements for cleanliness and maintenance of the karez irrigation system. Whereas management of a tube-well is complex phenomena. It involves installation repair of tube-well machinery. Incurred cost, expenditures, electricity bill, distribution of water (if jointly owned). Further, taking water to fields in a joint water course, determining its time period.

7. Karez are the cost effective alternative in the long run, and expensive to build, it is the most affordable source of water supply. Once a Karez is built its life Span is longer than that of modern tube-wells, Karez have been noticed to functions for centuries while wells have only a life Span of 15-20 years. Karezes are sustainable depending upon the level of ground water. it fluctuate, when the level of water drops because of low feedback than the water flowing in Karez also drops. Karez water also creates difference and conflicts not only among its share-holders but also between villages. Where Karez water passes in a joint water course. In case of tube-wells such, conflict rarely arise among its co-partner. It at all, such differences are found it is resolved mutually.
8. Karez irrigation had not only been a major source of sustaining agriculture but also a means of providing livelihood to poorer segment of the rural society and thereby keeping them integrated in the community, with the dryness of Karezes the poor people have to migrate to big cities to find employment or work as a laborers, with the development of tube-well the common man was successful in seeking employment as a tenant or a laborer. Tube-wells are economically more beneficial to its owner as well as to all those who are involved in cultivating different crops and taking part in planting different orchards.
9. When a tube-well is installed its owner are more advantageous than the arez share-holders. The tube-well owner wins higher profits, a tube-well is normally, owned by one or two or sometimes three people they, which are earning more than the karez share-holders. Karez is communally owned from which 200-400 people may be earning their living. So can figure out how a tube-well gives individual benefit and Karez share-holders lose out.

Conclusion

Agriculture is the backbone of rural economy of Pakistan and all the agricultural Activities are depended upon water. The supply of water is not sufficient to meet the crop water Requirements. Further due to increased cropping intensity, supplies are becoming shorter and shorter Affecting crop yield. An alternative for augmenting these supply is the use of underground water.

Underground water is in abundance which is only possible through the excavation of Tube-well technology. This technology diminished centuries old long system of Karez irrigation. These Alternation enhanced the speed of agricultural development for sustainable future. Furthermore, Investment in the adoption of tube-well irrigation increased in breaking the old pattern of agriculture. Thus a new mode of agricultural pattern was introduced which was more productive.

In the adoption of tube-well small farmers are benefited which supports the view that this technology is profitable with the hope of agriculture sustenance and future sustainability. This has also overcome the view that small farmers are no longer conservative and resist change in adopting modern technology for the promotion of their agriculture.

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