

**Research Article**

**Aquifer and modify consumption patterns of water resources in sustainable agricultural development Case Study: Water spreading station Chandab in Tehran Province**

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**ABSTRACT:**

South East of Tehran's construction of research stations and extension education Chandab water spreading county Pakdasht started in late 1996 and began its implementation activities. According to the objectives of the project, including flooding and power Chandab aquifer groundwater aquifers reports indicate that the gain something in this area. The study, based on survey research and analysis is done. Considering the findings of this research and field studies have been conducted. The results show that satisfaction of rural people downstream the reduction in flood damage to farms and places is desirable. And but for the public participation because the villagers did not participate in this area, is not satisfactory. But they are ready to have had any involvement in this regard.

**Keywords:** aquifer CHANDAB, econometrics, sustainable agricultural Tehran Province

**INTRODUCTION:**

Construction of water spreading on watershed Chandab station in Tehran, Garmsar alluvial fan is available, which overlooks the road. In order to prevent flooding, loss of agricultural lands downstream, reducing flood damage, Tehran, Garmsar prevent the destruction of roads and increasing groundwater levels downstream is villages. Flood Spreading activities with use of earth dams, channels broadcast major and minor flood, tree plantation and has been gabion dams. . The main purpose of the construction of water spreading station to recharge groundwater and surface water resources Chandab of flooding in downstream villages. Because in the last years floods destroyed addition to the main road Tehran, Garmsar, as well as damage to agricultural lands downstream villages entered.

**BACKGROUND RESEARCH:**

Satterland.1982.In their study has concluded that watershed management plans in accordance with

the logic of production and service offering to increase water harvesting and utilization of production watershed especially in the areas of water downstream and solve social problems associated with the restoration and development of watersheds can not be considered successful design.

Hudson.1991-In her project entitled "The causes of success and failure of soil and water conservation projects can be integrated as one of the studies considered in evaluating the results of this experiment indicates that soil conservation structures That simple and that they comply with the basic requirements and methods of operation and maintenance of water structures. Baniasadi.m.1995- In his study entitled "*Effects of small water aquifer management plan of Bam on socio-economic status of residents of small water*" has. With the implementation of 500 hectares under





**Figure 2** Gabion goal early in the intake site and Diversion Dam in aquifer Chandab

The research area includes the villages downstream water spreading is Chandab In the south of the main road Tehran - Garmsar these villages are located: Afarin, Ali Abad, Abdul Abad, Qermez tappeh, Ebrahim Abad, and Kahrizak. Hydrating mechanical operation includes the construction of canals, water channels and construction of the entrance and gates and gates and biological operations include operations fruitful and fruitless planted seedlings, nursery sowing and hill work and construction. The study area of 100 meters and an average depth of 7 wells that discharge of 25 liters per second there . Garden area is 700 hectares of agricultural land and water use them

permanently. In general terms the geographical area is semi-arid areas and in recent years has been the drought situation prevailing in the region and this issue should be considered in the analysis and evaluation of the activities.

**DISCUSSION:**

A total of six villages downstream Chandab seasonal flood occurred in the years directly damage had been deployed on the sidelines of this problem. Population of approximately 4626 people in 1996 year. And total growth rate in years1986-96 during this village about 55/3 percent. Confidence levels increased in 1996 to 5604 people. Table -1.

**Table -1.**Population changes in villages downstream water spreading station in years 1986-1996

	Name of the village	1976	1986	1996	The population growth rate 1976-1986
1	: Afarin,	699	969	705	3.32
2	Ali Abad,	916	1195	1725	2.69
3	Abdul Abad,	243	372	403	4.35
4	Qermez tappeh,	686	844	1195	2.1
5	Ebrahim Abad,	714	946	1238	3.05
6	Kahrizak	233	300	338	2.56
	Total	3236	4626	5604	3.55

Source: Statistical Center of Iran, General Census of Population and Housing, years1976.1986.1996.

Six villages downstream aquifer: Afarin, , Ali Abad, Abdul Abad, Qermez tappeh, Ebrahim Abad and Kahrizak total of 4626 people have been in 1996. Abdul Abad village with the highest growth rate of 35/4 percent and the village of Qermez tappeh with 1/2 percent had the lowest growth rate.

Generally, developments Pakdasht immigrant population of villages and the villages near the center of industry and employment, especially due to its proximity to the metropolitan area as a

dormitory acting Tehran and other cities In addition, number of Afghans living in the village and are therefore affected by several factors, including population changes they are mentioned cases. According to the assessments of the effects of diet-induced because they are still way groundwater downstream flood the play area data are not available. According to local research and development of agricultural exploitation has been observed and on ways to improve crop cultivation and development of

agricultural lands of these villages has not been effective. Since the downstream villages of drinking water spreading station Chandab even suffer from a shortage of farm water But at the same time as the agricultural and livestock activities in these villages is the main activity of residents and the amount of acreage of 2650 ha was in 1991. Which is mainly cultivated wheat, barley, vegetables and crops remain confined. Many execution plans for disregarding socio-economic conditions in the region have serious problems Recent years because of drought conditions prevailed in the region total average annual floods occurred only 2.1 million square meters of ground water aquifers is injected. However, considerable changes in the level of groundwater table has not been created That can be effective in improving farming villages downstream but on reducing flood damage in addition to damage buildings and bridges in honor of the main road Tehran - Garmsar reduced. But in reducing flood damages caused by the destruction of agricultural lands and residential villages on the edge of the watercourse has been effective. Chandab in the basin indicate that the floods have occurred in recent years in addition to the destruction and threat-based communication Tehran - Garmsar agricultural lands and villages downstream of it have suffered damage addition, waste and waste water runoff and flooding recoverable amount has been out of reach And while the region in terms of surface water and groundwater resources is difficult. The shortage of water is one of the most rural problems And running water spreading if the conditions are right atmosphere. And scientific and technical issues in the water spreading due to the physical characteristics . Area must be met to be wasting prevent flooding and runoff upstream basin In addition to reducing flood damage, also used to recharge groundwater.

The aim of the project is to raise social welfare. It should be noted that the welfare of society based on people's willingness to pay is measured The preacher who wish to pay the benefits of a project or propagandists who want to be compensated for losses which they are imposed as Social benefits that outweigh the costs of

social projects that it will have a positive impact on social welfare.

Due to drought conditions prevailing in the region in recent years and lack of information on changes in water level downstream area the impact of the station on the increase the productivity of cultivated land, increase agricultural production, improve the lives of farmers and creating employment was not significant and remained unchanged, Although water spreading to rural land transfer may occur many job opportunities. People downstream villages stated that they are ready to participate and cooperate in the water spreading. as 47% of them are in top form in this area and 66% of them broadcast operations floods helpful In the case of socioeconomic development in flood spreading. It should be noted with regard to investigation and collecting the data and reports of rural people In downstream areas, we have determined .That the threat of flooding in recent years, the destruction of agricultural lands and residential numerous losses to downstream areas has been compiled. That construction of the station broadcasts in addition to reducing flood damage buildings and roads eyebrows Tehran - Garmsar reduce damage to plantations and houses in this area is. Due to the geographical conditions of the region, special features, such as recent droughts lack of information on changes in water level of wells downstream area Directly impact on the downstream farming villages have been. But indirectly, including reducing flood damage to farms has resulted gain something from it.

#### **CONCLUSION:**

- Studies show that the main problem the people of this region revealed that the water shortage, soil, investment and ultimately property problems that about 67 percent of the water problems have described as the most important issue.

-However, studies show that public participation in the aquifer and watershed management plans as the most important success factor in their selection. However, the participation rate was extremely low in the downstream villages And even some of the goals of this project were

unaware Data collected showed that about 86 percent of the villagers have said very little participation in this area have that is, in fact, have no participation. And it seems only labor forces in the region has been to build stations were employed temporary.

-Some villagers even protester was also the site of the aquifer and saw it as his pasture, so that 65% of them had this dissatisfaction.

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