

**RAMSHIR INFRASTRUCTURES DEVELOPMENT EFFECTS ON  
PARTICIPATION OF THE SMALL AND LARGE LAND HOLDERS**  
(RAMSHIR INFRASTRUCTURES EFFETS DE DEVELOPPEMENT SUR LA  
PARTICIPATION DES PROPRIETAIRES FONCIEERS PETITS ET GRANDS)

**Ardeshir Arian<sup>1</sup> and Farshid Morshedi<sup>2</sup>**

**ABSTRACT**

The Ramshir Plain development infrastructures are constructed on Jarrahi River in 100 Km SE of Ahwaz. They are around the Ramshir town in khozestan province including a diversion dam, Flood control canal and irrigation and drainage network on area about 18800 ha.

The infrastructures were intended to meet the dual purpose of supplying assured agricultural water and flood control. This development has caused elimination of Pumping water. In addition the obtained water used for leaching the saline soils and improving the agricultural lands within 18800 ha area extent of the network. In Irrigated lands, farmers aimed their efforts at agricultural development in the area due to decreased risk of flood and water supply. In this relation, the development of the existing agricultural cooperatives and the formation of new cooperatives based on the land being divided by the network and with the participation of the large and small holders, have brought about the assured agriculture in the area. On the other hand, the increase of the income due to agricultural activities and project ensuing from the cooperation among small and large holders, within the framework of the mentioned cooperatives, have led to the increased interest among the small and large holders who are found of agriculture and cultivation of strategic crops. This situation has caused the decrease of the number of immigrant farmers of large land holders in the area and has also brought about the omission of the intermediaries of the agricultural products and consequently, has

---

<sup>1</sup> Mahab Ghodss Consulting Engineers, 17, Takharestan Alley, Dastgerdy Avenue, Postal Code 19187 81185 , Tehran-I.R.Iran, Email: [a\\_arianus@yahoo.com](mailto:a_arianus@yahoo.com), Phone: +98-21-23961460,

<sup>2</sup> Mahab Ghodss Consulting Engineers, 17, Takharestan Alley, Dastgerdy Avenue, Postal Code 19187 81185 , Tehran-I.R.Iran, Email: [fMorshedi@yahoo.com](mailto:fMorshedi@yahoo.com), Phone: +98-21-23961455

increased the income and profit of the agricultural households of the area and the effects of these on the enhancement of hygiene, education and industrialization in the area are visible.

**Key Words:** Ramshir plain, Infrastructures, Development

### SUMMARIES AND CONCLUSIONS

En construisant les superstructures de développer les sources d'eau et d'améliorer la situation dans le domaine de la culture, l'image de la production agricole dans la zone a été modifiée, et de nouvelles situation économique l'a emporté. Les produits agricoles et, par conséquent, la valeur des produits de la région a augmenté, en plus grâce à la coopération des titulaires de petits et grands dans la région et à la mise en œuvre des projets agricoles automatisé sous la forme de coopératives établies, l'investissement par ha a augmenté. Le coût de production moyen à l'hectare a diminué de 48% à 30%, et le revenu de chaque hectare a augmenté de 12 - fois à cause de l'efficacité de l'amélioration de la production.

L'amélioration des conditions de culture, et l'augmentation des revenus découlant de l'agriculture dans la région, a causé les propriétaires d'éviter de louer leurs terres aux agriculteurs immigrants, ainsi toutes les terres dans la région est exploitée par les propriétaires. Cette situation a entraîné l'augmentation des revenus dans la région. Parmi les autres résultats de la mise en œuvre des structures mentionnées, sont le contrôle des inondations et la prévention des dommages graves qui leur sont dues, de sorte que les dommages-intérêts un montant total de 1,67 millions de dollars ont été enregistrées. Enfin, le revenu de la région a augmenté et les conditions économiques qui y sont améliorés, et les conditions de vie des habitants de la région ont permis d'améliorer qualitativement et quantitativement. Les résultats de celles-ci ont vivement touché l'amélioration de l'hygiène, l'éducation, et de l'industrie dans la région, et le taux d'analphabétisme dans la région a baisse de 77,4% à 19%.

### THE PROJECT AREA

The KhalafAbad Plain is situated in the Khuzestan Province in the southeast of Iran. This plain covers a vast area extending from the Mashrage Bridge to the Shadegan Village.

The Jarrahi River that is the only source of irrigating the lands of the project area, covers throughout the plain and enters the Shadegan Plain. Fig.1 shows the location of the plain.



**Figure1.** The location of the Khalafabad Plain (L'emplacement de la plaine Khalafabad)

In this paper the economic and social of the plain before and after the implementation of the infrastructure will be dealt with.

#### THE SITUATION OF KHALAFABAD PLAIN BEFORE THE CONSTRUCTION OF THE INFRASTRUCTURES IN 1984

The Khalafabad Plain covers an area of 58000 ha and includes 78 villages. From among these, 40 villages have irrigation water and 38 villages too, have dry farms. The total agricultural land is about 28877 ha (about 49.7%) and 29247 ha (50.3%) too, include pastures and barren land.

The barren land within the extent of the Khalafabad Plain makes poor pastures which have remained barren due to the sparsely of vegetation resulting from soil salinity and alkalinity, and to deficient precipitation.

From among the total agricultural land too, only 29% or 8384 ha forms the wet land due to the abstraction method of water in the Khalafabad Plain, and to the limitations of water abstraction, and the remaining part including 10493 ha or about 71% is considered uncultivated agricultural land.

Systems of Exploiting land and Water Resources before the establishment of Installations

Generally, the exploitation of the water and land resources of the Khalafabad Plain is done by large holders and small holders. The large lots are cultivated by the owners or are leased to the immigrant farmers.

Twenty three per cent of the water from the Jarrahi River is abstracted by small holders using small pumps, for which they do not pay any water charge.

Sixty five percent of the water is abstracted from the Jarrahi River by the big farmers using high-discharge pumps. This water is used either for irrigating the lands of the big farmers, or the ones belonging to the immigrant farmers. A portion of the water abstracted from the Jarrahi River is used by agricultural groups.

In irrigated and dry lands, on the whole, 66.9% is ascribed to the cultivation of grains, and 6.3% is dedicated to summer vegetables. The proportion of the fallow is 25.5% altogether, and the proportion of the foliage and gardens and other crops is 1.3%. Thus the cultivation density in all the area is about 74%.

This proportion well displays the single crop, self-use and backward economy of the plain. The appropriation of the main proportion to the cultivation of wheat shows that the production of yield is aimed at the production of the food stuff in the area.

Because the large holders in the area are inclined towards the products which are cultivated with the min labor, and with the utmost use of mechanized equipment, so the combination of cultivation in the systems concentrated in the irrigation lands in the plain includes 100%.

The stake-holding and leasing systems in the irrigated lands of the plain and in the part upstream of the plain, have concentrated in areas where there are better conditions. These units in the lands of large holders are managed by immigrant farmers. In these lands, the cultivation rate has decreased to 44.8% and, on the contrary the cultivation of summer vegetables have increased to 55.2%. This shows that the main intent of the production in such units is production for the market and for more income.

The cultivation proportion in the lands exploited by small holders

The small holders' lands make up the most exploitation units and are scattered in the plain. The production of the common products in this group of exploitation is mainly

aimed at the consumption by the household of the farmer, and only summer vegetables ...products are transported to the market.

#### PRODUCTION'S ECONOMY IN THE SITUATION PRECEEDING THE CONSTRUCTION OF THE INFRASTRUCTURES IN 1984

The Kalaf Abad Project area has had a population of 26794 in the year 1984. The employed in the area are mainly in the agricultural sector, and make up 62% of the population ten years in age and older.

The present value of average production costs per ha in the area is about 75 US\$, of which 51% belongs to organizations and agricultural machinery and 49% comes from the expenses relevant to labor. The average gross value of production per ha in the area in present value is about 155 US\$ and the average surplus value of production per ha is 80\$.

Sixty five percent of the households are Land owners and 35 percent of the households are without land. The income of these households is earned from wages, and salaries in the agricultural sector, of from non-agricultural activities.

The income main resources of the farmer households are agriculture and animal husbandry. On this basis, the present value of average income from agricultural work, had been 1100 US\$. As the average production unit is about 13.7 ha for agricultural households, so the income from each ha had been about 80 US\$.

Although the extent of the households' lands is fairly high, but the income from agricultural work is low. This is generally due to lack of easy access to water.

#### THE SUPERSTRUCTURES BUILT IN THE PLAIN

In order to determine the level of the water needed by the irrigation and drainage network to be supplied by gravity, and also to protect the mentioned network and the settlements and building situated at the margins of the river, superstructures have been constructed. The main components of this project are as follow:

- Diversion dam to provide the level of the water needed, and to divert a part of the river flow into the main canals of the network. In flooding, the max flow

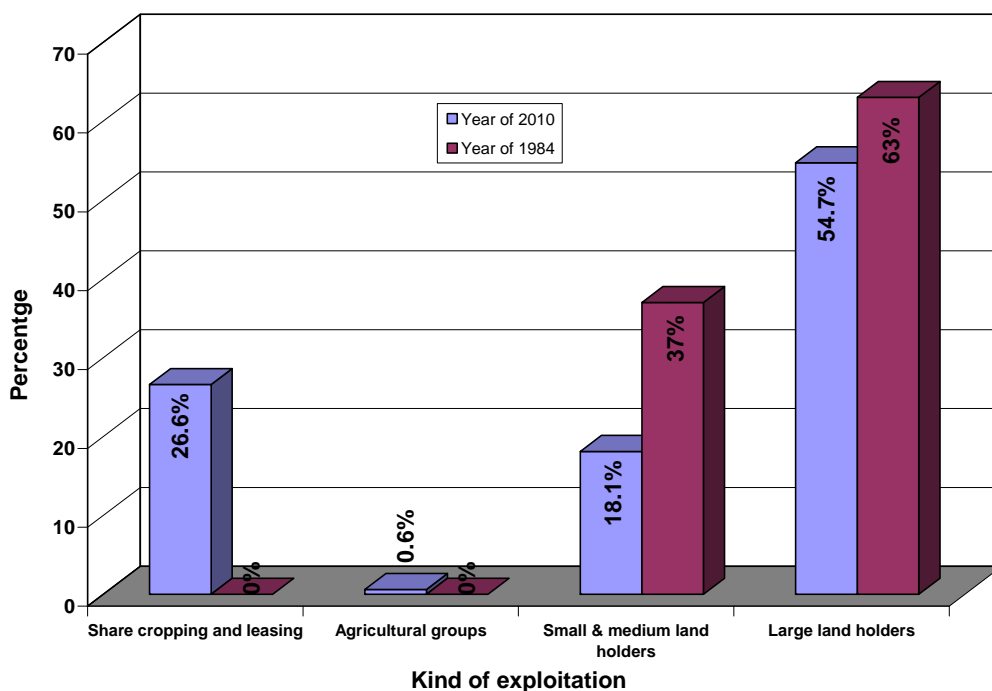
through this diversion dam will be about 600 cubic meters per second, and this will be equivalent to the safe capacity downstream of the river.

- The canal with the capacity of 1400 cubic meters per second (return period of 25 years) has been constructed to discharge floods exceeding the capacity of the river into the Shadegan Swampland.
- The fuse-plug has been constructed to convey floods with discharges ranging from 25 to 1000 years in return period towards the right flood control canal, and finally to the Shadegan Swampland.
- The irrigation and drainage networks on area of 18800 ha.

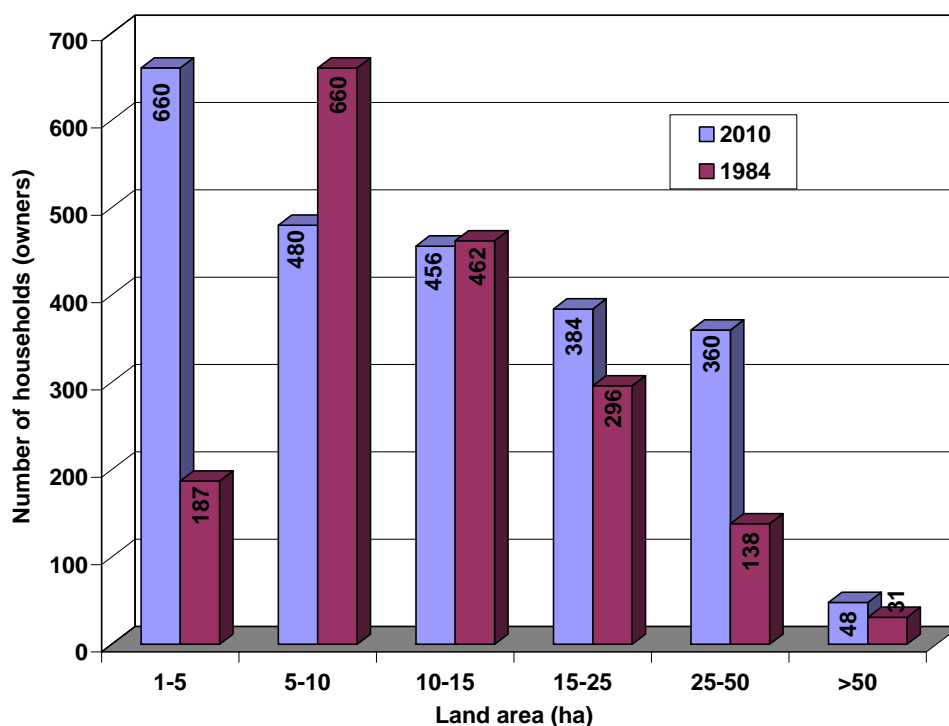
#### THE SITUATION IN THE KHALAFABAD PLAIN AFTER THE CONSTRUCTION OF THE SUPERSTRUCTURES IN THE YEAR 2004

After the construction of the superstructures in the plain, and the area of the irrigated land under cultivation by use of water supplied by gravity has been increased to 18800 ha, omitting pumping. Also, some large and small holders have become members of the two cooperatives established. The distribution of the land ownership has been shown in the figure 2 for the years 1984 and 2010.

Also, the exploitation situation of lands is shown in figure3 for the years 1984 and 2010.



**Figure2.** The distribution of the land ownership in the Khalafabad Plain (La répartition de la propriété des terres dans la plaine Khalafabad)



**Figure3.** The the exploitation situation of lands (la situation d'exploitation des terres)

The investigation of the situation of land ownership distribution and of its exploitation shows that due to the construction of the superstructures, and to the secure and suitable water supply, the number of large and small holders has increased considerably in addition to the increase of the area of the irrigated land under cultivation. Also, that part of land which was leased to the immigrant farmers is being cultivated by owners at present, due to the improvement of the economical situation.

## PRODUCTION ECONOMY AFTER CONSTRUCTION OF THE SUPERSTRUCTURES

The population of the Khalafabad Project area will be about 49238 persons in the year 2010, and this shows an increase of about 80% relative to that in the year 1984. The population occupied in the area shows 5.3% increase relative to that in the year 1984, i.e. 30.5% (15000 persons).

The average production costs is 490 US\$ per ha in the Khalafabad Plain, the average gross value of production per ha is 1210 US\$ under the present conditions, and the average surplus value of production per ha is 900 US\$.

In the study area the main sources of income of the farming households is mostly agriculture and animal husbandry. On this basis, the average income through agriculture has been estimated at 10800 US\$. The average exploitation unit is about 12.5 ha for the agricultural households, and the income is 870 US\$ per ha.

## CONCLUSIONS

By constructing the superstructures to develop the water sources and to improve cultivation situation in the area, the agricultural production image in the area has been changed, and new economic situation has prevailed. Agricultural products, and consequently, the value of the products of the area has increased, besides due to the cooperation of the large and small holders in the area and to the implementation of the automated agricultural projects in the form of the established cooperatives, investment per ha has increased. The average production cost per ha has decreased from 48% to 30%, and the income from each ha has increased 12- fold due to the efficiency of production improvement.

The improvement of cultivation conditions, and the increase of the income ensuing from agriculture in the area, has caused the owners to avoid leasing their lands to immigrant farmers, thus all the land in the area is exploited by owners. This has caused the income increase in the area.

Among other results of the implementation of the mentioned structures, are the control of floods, and the prevention of severe damages due to them, so that the damages totaling 1.67 million dollars have been saved. Finally, the income in the area has increased and



the economic conditions there have improved, and the living conditions of the people in the area have improved qualitatively and quantitatively. The results of these have vividly affected the enhancement of hygiene, education, and industry in the area, and the illiteracy rate in the area has decrease from 77.4% to 19%.

**References:**

Mahab Godss consulting engineers, 1984, *The feasibility study of Irrigation and drainage networks of Khalafabad plain.* (in Persian)

Mahab Godss consulting engineers, 1984, *The detail design study of Irrigation and drainage networks of Khalafabad plain.* (in Persian)