

The Kathore Dairy Farming Project

Note for Dr. Akhtar Hameed Khan

By
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1. BACKGROUND AND METHODOLOGY OF THE STUDY

1.1 Background

In July 1991, the Al-Hamrika Organisation, which represents over 20 villages of the Jokhio tribe in the Kathore region, applied to the Swiss Inter-cooperation Agency for assistance for purchasing rigs for tube well drilling. On the advice of the author of this report, this request was refused for reasons discussed in the paragraph below. However, it was decided that the situation in the Kathore region would be studied and a more appropriate programme for assistance would be developed. In the discussions that followed, dairy farming was identified as a possible alternative and it was decided to study the nature of assistance that would be required to promote it.

1.2 Methodology

The consultant visited a number of villages in the Kathore region and spoke to small shopkeepers, farmers and local transporters on the problems of their areas and the production, availability and marketing of milk and related issues. A number of hotels/tea houses on the Super Highway were also visited and their demand for, and sources of milk supply were determined. On the information given by them a number of Karachi middlemen who give loans for the purchase of buffalo and cattle to individuals were contacted and their mode of operation investigated. The Orangi Pilot Project (OPP), Karachi, is in the process of developing a new concept for the economic rehabilitation of the arid areas around Karachi of which dairy farming is an integral part. Discussions were held with the OPP staff on this subject. A visit was made to Pahlwan Kaml Khan Goth, which is to be the recipient of the Inter-cooperation assistance, and a dialogue with its community members was held. Proposals for the project were drawn up on the basis of this information and the Al-Hamrika organisation was given time to discuss them with their members. On 28 November 1991, the Consultant and the office bearers of the organisation finalised the terms of the Project.

2. THE KATHORE REGION AND ITS SOCIAL ECONOMY

2.1 Location and Description of the Kathore Region

Kathore is a hilly arid area to the north-east of Karachi between 45 to 60 kilometres from the city. Most of it is in the Karachi division and a small part of it in the Dadu district. The region has a large number of natural drainage channels and two dry rivers, the Mol and the Malir, which carry water only in the rainy season. The Super Highway linking Karachi to Hyderabad is the only major road in the region and as such, the villages next to it have an easy access to the Karachi markets. The dominant tribe in the region is the Jokhio. Traditionally they have been a pastoral people. The tribal structure has ceased to exist except in name, and the tribal chief now lives in Karachi and wields no effective authority.

2.2 The Pre-Tube Well Social Economy

Before tube wells were sunk in the Kathore region most villages had hand dug wells in them. In Pahlwan Kamal Khan Goth there were two. Animals drew water from them and this was used for domestic use, watering animals and cultivating about ten acres of land. The daily needs of the population were met through pastoral activity, mainly related to cattle and goats. Agriculture was rain-fed and consisted almost entirely of millet cultivation. The natural drainage channels were regularly dammed and after the rain water had seeped into the soil, they too were cultivated. The village was self-sufficient and its staple diet consisted of millet bread and dairy produce. Land for the most part belonged to the state and was given to the residents on a 10-year lease for grazing and cultivation purposes. Given the subsistence nature of the economy, Kathore, like the regions around it, had a very egalitarian social system. This, coupled with the limited needs of its inhabitants and the regular storage of grain in “good years” for use in “bad ones”, made it possible for the inhabitants to withstand long periods of drought.

The subsoil water level in the region varied from 50 to 100 feet, depending on the location. Very often the wells were dug near seasonal water channels or even in the dry *nullahs* near the village.

2.3 The Sinking of Tube Wells and the Expansion of Agriculture

In 1955, the first pump was installed on a dug well. With mechanical extraction of water it became possible to practice the agricultural production practices of the irrigated regions of Sindh. The economic benefit of establishing this first mechanised well was obvious to all inhabitants and by 1976 there were over six tube wells operating in the region cultivating over 250 acres of land. As a result, mango and *amrud* orchards were planted and the region started to export vegetables to Karachi.

2.4 The Physical Repercussions of Tube Well Use

Like in most arid regions, the subsoil water in the Kathore region consists for the main part of a limited rain water aquifer. The mechanical extraction of this water has depleted this aquifer. By 1974, water levels started to fall and many hand dug wells became dry. By the 1980, boring had to be carried out on a number of mechanical wells to reach the new water levels and now water is available in sufficient quantity only below a 250 feet depth, and that too not in insufficient quantity.

Apart from excessive extraction of subsoil water, the subsoil aquifer is not effectively charged during the rains anymore. This is because sand and gravel, built over millions of years in the dry river beds, has systematically been removed and taken to Karachi for construction purposes. Thus, water run-off cannot be contained and the aquifer charged.

Due to the above reasons, *amrud* and mango orchards are dying and the land under cultivation is fast shrinking. Social and economic changes, brought about by the tube wells make it impossible for the Jokhio to go back to their old ways of life. The excessive water run-off due to sand and gravel lifting has also had an adverse effect on pasture land. In addition, the break-up of tribal authority and the need for cash, has also led to over grazing due to an absence of land rotation for grazing that the village authority imposed. Trees that the old system protected have also been cut for the same reasons. The *Kanday* tree for instance, which was a major source of fodder for goats, has all but disappeared. It has been turned to charcoal and sold for the Karachi market.

2.5 The Social and Economic Repercussions of Tube Well Use

Only those with means, or access to corridors of political and bureaucratic power, could install tube wells. Their economic conditions improved and so did their social position. They employed their fellow village residents as *haris* and the old egalitarian system fell apart. Their tube wells became a source of domestic water supply for the village, thus further enhancing their position. These new “water lords” gave up pastoral activity, which was left to those who had no perennial source of water for agricultural purposes. In Pahlwan Kamal Khan Goth there are over 100 *hari* households out of just over 150 households.

The production of agricultural surplus also meant the development of marketing, the emergence of a cash economy and the necessity of various consumer items. This has killed village “self-sufficiency”. There are 10 to 12 shopkeepers in the village who sell vegetables purchased from the *sabzi mandi* in Karachi, *paan* and cigarettes and patent medicines. In addition, there is a general store.

Karachi *bayparis* purchase the *amrud*, mango and vegetable produce from the cultivators well before it has matured or in the case of vegetables, before they have been sown. Without this financial “support” and the marketing expertise of the *bayparis*, it would be difficult, if not impossible, for the village population to carry on agriculture. The residents claim that about six

years ago there was so much produce in the village that |one truck was required to service one tube well per day to carry away the produce”. However, now “one truck is required for 10 tube wells”.

Since the decline in agriculture and the destruction of orchards due to water shortage, the *haris* in the village have become destitute. Ironically, most of them now work as day wage labour for the contractors who are carrying away what is left of the sand and gravel in the dry river beds to Karachi for the construction industry. Their maximum earnings are about Rs 30 per day and jobs are not always available.

Most village inhabitants still have a cow and one or two goats. The cows are fed from fodder produced by the village, which is of poor quality and insufficient, and the goats are sent with a hired person to be grazed. He is paid Rs 10 per goat per month. However, due to poor pasture land the goats do not produce sufficient milk and the same applies for the cows due to poor feed. As such, an increasing number of households are giving up keeping animals. Very little of the milk produced in the village is sold, and that too, to the nearby hotels on the Super Highway. Its sale price is Rs 5 per kilogram against a Karachi price of Rs 12 per kilogram. Two families own buffaloes in the village, but they are for personal use.

2.6 Linkages with Karachi

Although the Kathore region depends on Karachi for its consumer items, supplies agricultural produce to the Karachi *mandis*, and deals with Karachi *bayparis*, *artis* and transporters, none of the residents of Pahlwan Kamal Khan Goth work in the city or are engaged in business and trade with it. Nor do they possess technical, managerial or entrepreneurial skills to do so.

2.7 Conclusions

- a) Due to the limited amount of water available in the subsoil aquifer of the region, Kathore cannot sustain an agricultural economy which follows the production processes of the irrigated areas. The current water crisis cannot be overcome by going deeper into the aquifer.
- b) The social and economic changes that have taken place in the region cannot be reversed. The cash economy is here to stay.
- c) Given the above, an economic alternative has to be found to the agricultural activity as it is practised today in the region.

3. DEMAND FOR MILK IN THE KATHORE / KARACHI REGION AND MIDDLEMEN ACTIVITY

3.1 Demand

There is a big demand for milk in the Karachi / Kathore region. Karachi milk dealers are willing to arrange to pick up milk from upto 75 kilometres from the city produced it is at least 300 kilos at one place. In addition, the various hotels on the Super Highway are potential customers if milk can be available locally and at cheaper rates than what they are paying at present to Karachi suppliers. Because of this demand for milk there is considerable middleman credit available for the purchase of buffaloes and cows. The market demand is more for buffalo milk than cow milk. The farmer sells at a higher price and the buffalo gives more milk than a cow.

3.2 Middlemen Credit: Terms and Conditions

-	Loan given	:	Rs	15,000
-	Earnings for the person receiving loan	:	Rs	19,950
	• 12 kilos x 210 days x Rs 10 per kilo	:	Rs	25,200
	(Market rate is Rs 12)			
	• Deduct feed for the buffalo	:	Rs	5,250
	(Purchased from the market) at Rs 25 per day for 210 days			

	Earning	:	Rs	19,950
-	Payment made to middleman against the loan	:	Rs	18,000
-	Net earnings	:	Rs	4,950
				Or Rs 700 per month
	• From sale of milk	:	Rs	1,950
	• From selling the buffalo for slaughter	:	Rs	3,000

At the end of seven months the client of the middleman is ready for another loan of Rs 15,000 so as to make between Rs 500 to Rs 700 per month.

4. THE ORANGI PILOT PROJECT EXPERIMENT

4.1 The Concept

The Orangi Pilot Project (OPP) has been working in the villages around Karachi where conditions are almost identical to those in the Kathore region. The concept developed by Dr. Akhtar Hameed Khan, director of the OPP, is explained below:

- a) Agricultural production through flood irrigation cannot be sustained in the arid regions as what is required here is the conservation of water. As such, farmers should move from cultivation to the plantation of trees for timber and fodder for animals. These trees should be watered at their roots through hose pipes or from animal carried containers. Thus, no water is wasted by flooding the tree lots. These timber lots in the long run will become the capital of the communities.
- b) For economic activity the farmers should switch to milk production. The Karachi demand is, for the foreseeable future, insatiable. Credit on reasonable terms and technical support can make this activity fairly lucrative for individual households. Certain elements of the activity can also be on a cooperative basis.

4.2 The OPP Project at Kathore

In Sohrab Faqir Jokhio Goth near the Konkar bus stop, the OPP has given 17 loans for the purchase of buffaloes. The recipients of the loan are to pay Rs 1,000 per month for its adjustment. After seven months, when the buffaloes are dry they will not be slaughtered but will become productive again through artificial insemination. When the buffalo becomes dry the beneficiary will be given an additional loan for the purchase of another buffalo against which he will pay an additional Rs 1,000 per month but will not pay for the first buffalo while it is dry. Thus the loan will be recovered in two years at the end of which the borrower will be the owner of two buffaloes and will have made a profit of an average of about Rs 2,000 per month from the sale of milk.

The OPP project has led to the farmers planting fodder for the buffaloes, thus lowering the costs of feeding the animals. However, fodder is also imported from Karachi and is collectively purchased by the buffalo owners. The milk is placed in containers and picked up by a milk dealer who also takes the milk of other dairy farms to Karachi.

The OPP also sells trees from its nursery to the farmers and gives on their plantation and maintenance. Thus, the number of trees in the area have increased considerably.

5. AL-HAMRIKA ORGANISATION

The Al-Hamrika Organisation represents those Jokhios who are descended from Hamid Jokhio, an elder of the tribe. They live in 22 villages in the Kathore region. The organisation was established in 1986. Its activists are mainly school teachers. It has a paying membership of about 250, spread in 12 villages. The fee is Rs 5 per month and one has to be married to be a member. The Organisation is registered with the Social /welfare Department (SWD) and a council meeting is held every three months. The Organisation is a member of the Sindh Rural Workers' Cooperatives.

The Organisation has carried out a number of "self-help" projects. These include:

- A windmill at the Haji Alladad Jokhio Goth, with Canadian assistance, for pumping out water from a hand dug well. The windmill only worked for a few days. It has been inactive for over one year.
- Hand pumps with ATDO assistance in four villages. The villages contributed labour and materials such as cement and aggregate for concrete.
- Industrial home for women: The home has six sewing machines. However, it is not in operation for the last year and a half as there is no instructor.
- A self-help library does function in the village. The SWD pays for its running costs through a grant of Rs 5,000 a year.

The Organisation has a “social welfare” approach to its projects and not a “developmental” one. The office bearers are interested and if a developmental vision can be conveyed to them they would be able to assimilate it and act upon it. However, their work does need monitoring and advice from time to time from relevant resource persons.

6. PROPOSAL FOR INTER-COOPERATION ASSISTANCE

6.1 The Proposal

The following proposal has been prepared in collaboration with the Al-Hamrika Organisation:

- a) The Organisation will select 20 beneficiaries in the village of Pahlwan Kamal Khan Goth in the Kathore region who will be given a loan of Rs 15,000 each for the purchase of a buffalo. The beneficiaries will be women and will belong to those families who do not have the benefit of tube well water for agriculture. The figure 20 has been chosen so that milk may be produced in sufficient quantity to attract purchasers and/or transporters from the city.
- b) In addition, Rs 20,000 will be given to the Organisation for the purchase of fodder for the buffaloes from Karachi. The Organisation will appoint a responsible person for this purpose who will do this work as a business deal.
- c) The beneficiaries will pay back the loan at Rs 1,000 per month to the Organisation as long as the buffaloes are producing milk. Once they become dry those beneficiaries who have paid their loans regularly and have planted and development at least 50 trees on their land, will get an additional loan of Rs 15,000 for the purchase of another buffalo. Those beneficiaries whose buffaloes have died for whatever reason, will not get a loan. Through artificial insemination the first buffalo will be made productive again. However, no payment will be made for the period it is dry.

- d) In addition, the Organisation will:
- Organise the marketing and transportation of milk through existing systems and/or by involving informal sector operators;
 - Come to an understanding with the veterinary hospital at Gadap (about 20 kilometres away) so that a doctor can visit the buffaloes once a month for examination; preventive and curative assistance; and artificial insemination once the buffaloes start becoming dry;
 - Motivate people to plant trees and arrange for the supply of these trees from the forest department or the OPP nursery in Orangi. It will also seek assistance from relevant resource people and/or organisations to identify those trees that need little or no water, whose leaves can be used as fodder, and which can sell as timber once they have grown fully;
 - Organise the dissemination of the concept of conserving water by taking activists to the Konkhar Project and will motivate people to grow their own fodder;
 - Collect the loan instalments from the people with a 16 percent mark up and receive additional funds from Inter-cooperation for the second stage of the Project; and
 - Keep accounts of all transactions. This will be a condition for future support.

6.2 The Economics of the Proposal

a)	Initial loan given by Inter-cooperation	:	Rs	320,000
-	20 buffaloes x Rs 15,000	=	Rs	300,000
-	Loan for fodder	=	Rs	20,000
b)	Recovery by the Organisation after seven months	:	Rs	147,000
-	From buffaloes (7 x Rs 1,000 x 20 buffaloes)	=	Rs	140,000
-	From the fodder loan	=	Rs	7,000
c)	Balance	:	Rs	173,000
d)	7 months after first loan: (Additional loan required for purchase of 20 buffaloes)	:	Rs	153,000
-	20 buffaloes cost	=	Rs	300,000
-	Loan recovered	=	Rs	147,000
-	Additional required	=	Rs	153,000

e)	Total loan left to be recovered (c + d)	:	Rs	326,000
f)	Recovery in 12 months after (d)	:	Rs	292,000
-	In 5 months while 1 buffalo is dry 5 x Rs 1,000 x 20	:	Rs	100,000
-	In 2 months with both buffaloes Producing: 2 x Rs 2,000 x 20	:	Rs	80,000
-	In 5 months while 1 buffalo is Dry: 5 x Rs 1,000 x 20	:	Rs	100,000
-	Recovery of fodder loan during same period :		Rs	12,000

			Rs	292,000
g)	Final balance	:	Rs	34,000 + mark up

This can be recovered with mark up in the two month period when both buffaloes will be producing.

h) Inter-Cooperation can convert this loan into a revolving fund so that new beneficiaries can be identified. However, this should be done only after the first phase of seven months and the second of 12 months has been completed successfully.
