CHAPTER IX

PROBLEMS OF THE LIFT IRRIGATION SCHEMES

9.0 Introduction

In view of the very limited water resources over the large parts of Maharashtra and the necessity to make it available for agriculture at the quickest, great emphasis has been put on lifting water from rivers and streams with the help of pumps. There are certain advantages of the lifts over the other sources of irrigation. With the help of the lifts, it is possible to irrigate lands located at the higher level where sinking of wells is impossible since underground water is at a great depth, and where construction of canals is difficult. Large amount of public and private funds are currently tied up in lift irrigation projects. It is, however, felt that the implementation and working of such projects have, in many instances, been highly unsatisfactory. Many schemes have remained incomplete or taken a long period to complete, despite the receipt of the necessary finance. In other instances, the full capacity of schemes that have been completed and are in operation have not been utilised. In many examples, loans taken for the projects have not been repaid. Consequently, some schemes have been locked up after the physical plants have been installed, while
some others have been taken over by the state. Nevertheless, usefulness of the lifts in general for growth of agricultural production in the preponderantly 'dry' regions of the State cannot be questioned. Therefore, the losses involved in the schemes make the financial institutions and the State Government hesitant about encouraging these in still large numbers. Under the circumstances, it is necessary to examine the reasons or circumstances leading to delay in the completion of the projects, delay in the full utilisation of the irrigation potential created, and delay in the repayment of loans, in regard to such irrigation schemes. We propose to do this, with regard to the schemes studied here, in this chapter.

We have seen in Chapter V that every one of the four schemes selected from the Lift Irrigation Federation of Maveli Taluka, District Pune, took more than four years to complete, and, further, it was estimated that these schemes would come to the full development of irrigation in the course of 8 to 10 years from the beginning. On the other hand, the construction of the scheme located at village Bhade (Taluka Khandala, District Satara) was completed in less than a year and it was estimated that this project would not take more than six years to reach the stage of full utilisation of irrigation from the beginning. Had the former projects also been completed and the full irrigation potentials been utilised in a
shorter period, as in the case of the Bhade project, the benefits of the projects would have been much larger than those estimated by us in Chapter V. For, the interest calculated as a cost on the capital locked up over the period of construction would have been reduced by reduction in the period from four years to less than one year. Moreover, the full income stream would have accrued at the end of six years instead of 8 to 10 years from the beginning of irrigation. The point can be illustrated with one of the four schemes, viz., the Koregaon-Mul Lift Irrigation Scheme.

Table 9.1 shows that the net present worth of that project would have been Rs. 24.12 lakhs if it had been completed in a year and the full potential income been generated at the end of six years from the date of commencement of irrigation. This is higher by Rs. 3.33 lakhs than the net present value of Rs. 20.79 lakhs worked out in Chapter V. Therefore, the delay may be said to have resulted in a loss of the net present value of Rs. 3.33 lakhs. This raises a number of questions:

(1) One year is considered adequate to construct such lift irrigation schemes. Then why were four years necessary in the case of each of the four schemes in Haveli Taluka studied here?

(2) Why is it estimated to take 8 to 10 years to develop the irrigated lands to their full
Table 9.1. Financial profitability of the Koregaon-Mul lift irrigation scheme under the early utilisation of irrigation

<table>
<thead>
<tr>
<th>Period</th>
<th>Capital costs</th>
<th>Operation and maintenance costs</th>
<th>Cost of land leveling</th>
<th>Net increase in the associated costs</th>
<th>Gross costs cols. (2+3+4+5)</th>
<th>Net increase in the crop production (7)</th>
<th>Net benefits cols. (7-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
<td>(8)</td>
</tr>
<tr>
<td>1970-71</td>
<td>1,59,562</td>
<td>12,040</td>
<td>1,704</td>
<td>84,029</td>
<td>2,57,335</td>
<td>1,49,930</td>
<td>-1,07,405</td>
</tr>
<tr>
<td>1971-72</td>
<td>-</td>
<td>12,040</td>
<td>2,888</td>
<td>1,42,437</td>
<td>1,57,385</td>
<td>2,54,179</td>
<td>96,794</td>
</tr>
<tr>
<td>1972-73</td>
<td>-</td>
<td>12,040</td>
<td>5,163</td>
<td>2,54,715</td>
<td>2,71,918</td>
<td>4,54,476</td>
<td>1,82,558</td>
</tr>
<tr>
<td>1973-74</td>
<td>-</td>
<td>12,040</td>
<td>5,163</td>
<td>2,77,180</td>
<td>2,94,343</td>
<td>5,26,073</td>
<td>2,31,730</td>
</tr>
<tr>
<td>1974-75</td>
<td>-</td>
<td>12,040</td>
<td>5,163</td>
<td>2,92,732</td>
<td>3,09,935</td>
<td>5,55,855</td>
<td>2,15,920</td>
</tr>
<tr>
<td>1975-76 to 1979-80**</td>
<td>-</td>
<td>12,040</td>
<td>5,163</td>
<td>3,22,691</td>
<td>3,39,894</td>
<td>6,71,503</td>
<td>3,31,609</td>
</tr>
<tr>
<td>1980-81</td>
<td>29,951*</td>
<td>12,040</td>
<td>5,163</td>
<td>3,22,691</td>
<td>3,69,845</td>
<td>6,71,503</td>
<td>3,01,658</td>
</tr>
<tr>
<td>1981-82 to 1989-90**</td>
<td>-</td>
<td>12,040</td>
<td>5,163</td>
<td>3,22,691</td>
<td>3,39,894</td>
<td>6,71,503</td>
<td>3,31,609</td>
</tr>
<tr>
<td>1990-91</td>
<td>29,951*</td>
<td>12,040</td>
<td>5,163</td>
<td>3,22,691</td>
<td>3,69,845</td>
<td>6,71,503</td>
<td>3,01,658</td>
</tr>
<tr>
<td>Total</td>
<td>2,19,164</td>
<td>3,61,200</td>
<td>1,69,156</td>
<td>91,18,348</td>
<td>98,18,168</td>
<td>1,67,28,088</td>
<td>88,79,920</td>
</tr>
</tbody>
</table>

* Replacement cost
** For these periods only yearly figures which remain constant over the years are present.

Net present worth at 9.5% discount rate = Rs. 24,11,789
irrigation potential, when the Bhade scheme was expected to take only six years' time?

(3) Finally, despite the fact that all the beneficiary-farmers were estimated (Chapter VI) to be able to repay the loans within the stipulated period (or even earlier), why is it that the actual performance in this matter was tardy in the four lift schemes in Haveli Taluka, but not in Bhade? In fact, during a recent visit to the lift schemes it was learnt that the beneficiaries in Haveli Taluka had not repaid a single paisa of the loan, while those in Bhade had repaid all the instalments in time.

We shall begin with examining the reasons leading to the delay in construction of the four projects selected from the Haveli Taluka Lift Irrigation Federation.

9.1 Reasons for the Delay in Construction of Schemes

Generally, construction of a lift irrigation scheme of a moderate size can be completed within a year if the necessary finance is available in time. However, as mentioned earlier, all the four lifts in Haveli Taluka took more than four years to complete the construction work. The most important reasons for the delay are inadequate finance and improper planning from the very beginning. This needs a little explanation.
As mentioned in Chapter III, the Government of Maharashtra launched a special Rabi Campaign Programme for development of irrigation in the drought prone regions of the State in 1966. Under the Programme, the Revenue Department of the State Government stipulated financial assistance (i.e., loans) at the rate of Rs. 375 per acre of the potentially irrigable area to the individual farmers, irrespective of the total investment likely to be incurred for the purpose. Since construction of lifts was the only way open for many farmers in Haveli Taluka, who had lands near river banks, to irrigate their lands, they took advantage of this facility. Some political and social workers from the Taluka came forward and formed the Lift Irrigation Federation of Haveli Taluka and persuaded the farmers to come together under the Federation for proper planning and execution of the lifts. This idea was accepted by a large number of cultivators and 42 lift irrigation schemes in different villages of the Taluka were prepared under the supervision of the Federation. These schemes were submitted to the State Government for provision of loans under the Rabi Campaign. Joint loans were sanctioned and disbursed against the security of the land of the cultivator-members on 26th February 1966 to every one of the 42 schemes by the State. However, while sanctioning the loans, the State Government did not examine carefully the technical basis and financial feasibility of the
schemes, since the Government was in a hurry to disburse the funds to promote irrigation activity. Consequently, the Federation also did not take great care in formulating the scheme and working out the technical and financial feasibility. However, when following the sanction of the loans by the Government, the detailed plans of the schemes were worked out by the Federation, it became clear that the estimated amount of investment in each scheme would be much in excess of the loans disbursed by the State Government.

Nevertheless, construction of all the schemes started within a couple of months from the date of disbursement of the loans by the Government in the hope that the additional funds required could be obtained from the banking agencies on hypothecation of the capital work. When the construction of the lifts was in progress the Federation approached various banks to secure the additional funds for completion of the projects. But, none of the banks was prepared to finance the schemes only on the hypothecation of the capital work. In addition to hypothecation, the banks wanted first-hand mortgage of the lands under the projects; but, as mentioned above, these lands had already been mortgaged to the Government against the loans taken. The Government on its part expressed its inability to provide the additional funds for completion of the schemes. However, the Government expressed its willingness not only to release
the mortgage, of course, on the repayment of the loans taken from it, but also to guarantee the refund of any larger loans that the societies may be able to obtain from a commercial bank, for repaying the State loans and completing the projects. Thereafter, the Federation approached one of the commercial banks for approval of the loan proposals. The bank rejected 26 proposals out of the 42, on the ground of feasibility and agreed to finance the remaining 16 schemes. The loans were disbursed on 9th October 1969 and construction of the 16 schemes was completed by early 1970. (Our sample of the four lifts belonged to these lifts). In addition to these 16 schemes, 7 more of the original 42 schemes were completed by 1972 as the Federation managed to secure additional funds for these projects from some other banks. Thus, in all 23 schemes were completed at the time when our field survey began in 1972.

Construction of the four lift irrigation schemes selected for study was completed in a couple of months from the date of disbursement (9th October 1969) of the bank loans. However, after installation of the electric pumps and completion of all other works, the Maharashtra State Electricity Board did not give power connections to the pumps for about six months because separate power lines and the transformers were yet to be fixed for the lifts. Ultimately, the lifts, the construction of which was started
in early 1966, could release water into the fields by May 1970, that is, four years after the commencement of the construction work.

It is obvious from the above discussions that the major difficulties in timely completion of the four schemes were inadequacy of the necessary finance and the lack of systematic planning from the beginning itself. The State Government which came out to help in creating the irrigation facilities did not give any attention to the extent of finance required for the schemes and their feasibility while advancing the initial loans. At the same time the Federation was equally unmindful of the necessity of properly formulating the schemes, and estimating the financial requirements, as would be clear from the facts that nearly half of the 42 schemes of the Federation originally sponsored by the Government, could not be approved of by any financial institution, and all the schemes discovered the inadequacy of the government loans soon after the schemes were worked out in detail to begin construction work. The Federation possibly thought that the additional funds needed could be secured easily and without delay from the banks, if so, this was most unreasonable expectation. Apart from the technical difficulties in the way of two financing agencies, to come in succession, to finance the project, it was necessary to ensure the technical and financial feasibility of the schemes which were to be financed by multiple
agencies. These failures have been the major reasons for considerable delay in the completion of the schemes.

Another problem which added to this difficult situation is the passiveness of the farmers who were members of the lift irrigation schemes. While the loans were taken in the names of the farmers and they mortgaged their lands, they or anyone from amongst them took little or no initiative in organising the schemes and in following up on the implementation. The entire initiative was taken by some political-social workers, who organised the Federation and took all the initiative and interest in the projects. The trustees of the Federation consisted of five members, none of whom was a member of any one of the 42 lift irrigation schemes under it, nor held any land in any of these projects. The farmers under the schemes had no participation in the technical and financial policy formulations and decisions. Besides signing the mortgage papers, they had no participation in these projects until the water was made available to their fields. The political-social leaders of the Federation had many other preoccupations, and, in any case, depended more on their political strength rather than on the technical and financial feasibility and performance of the projects, to see them through. No wonder, they were not greatly exercised over the delay in the execution of the schemes and its financial and economic implications, which would have been expected to bother the farmer-members.
of the schemes if they had been actively associated with it. The farmer-members, on their part, were quite passive, because of their implicit trust that the political-social workers would see to it that whatever the fate of the lift schemes, they (i.e., the farmers) would not come to any financial loss. If anything, they would gain something, however long it may take.

On the other hand, as mentioned earlier, construction of the lift located at village Bhade, was completed within a year. This was possible for the following reasons. Unlike in the earlier projects, the farmers took initiative in creating the irrigation potentials on their farms from the very beginning. As a result, formulation and implementation of the lift arose out of the 'group action' of the cultivators. Efficient leadership was provided from amongst the farmers themselves and by the Mimbkar Seeds and Agricultural Development Company, Limited, Phaltan, District Satara. We shall illustrate this point by giving the salient features in the formulation and implementation of the lift scheme.

When the idea of the lift was mooted in the village, the farmers prepared a plan of the project and approached various banks to secure the necessary finance for the lift. However, no bank agreed to finance the scheme because the lands of the majority of the farmers had already been mortgaged to either the Land Development
Bank or the village co-operative/society. Therefore, it was neither possible for the banks to obtain first-hand mortgage of the lands as security, nor were the farmers in a position to repay all the outstanding dues and clear all the encumbrances on their lands, so that the bank could advance the loan against security of land.

Under these circumstances, the farmers approached the Nimbkar Company for assistance in formulation and implementation of the scheme. The Company guaranteed one of the leading banks the repayment of the total loan to the lift irrigation society, and at the same time laid down the following conditions with the farmers, for its services:

(1) The Nimbkar Company will complete the construction of the scheme through its own engineers and experts. For this, the Company will receive 10 per cent commission on the total expenditure on the project.

(2) The participating farmers will lease out, till the repayment of their total loan is complete, 25 per cent of their irrigable land under the scheme to the Company.

(3) The Company will decide on and supervise the crops to be grown in the total command area under the project, including both the leased land and the land under cultivation by the farmers.

(4) All the producers will have to sell their produce
to the Company or through the Company, till the repayment of the loan is complete.

(5) From the receipt of the sale of the farmers' produce all the dues of the different financing agencies will be paid first and then the balance will be paid to the farmers; and

(6) the Company will execute and supervise the project till the repayment is complete.

The farmers agreed to all these conditions and formed a Committee consisting of six of them. The Committee was given the power of attorney by the cultivators.

The capital cost of the project was estimated at Rs. 5.61 lakhs (including the 10 per cent commission to the Nimbkar Company). Since there were 57½ acres to come under the lift irrigation scheme, the capital cost per acre came to roughly Rs. 1000. The Committee therefore decided to issue shares to its members of the value of Rs. 1000 per acre. All members were required to pay Rs. 200 per acre, being one-fifth of the share value, in the beginning and the remaining in four equal annual instalments. In fact, 35 cultivator-members of the scheme paid the full share value of Rs. 1000 per acre on 101½ acres of their land right at the beginning; on the remaining land the members paid at the rate of Rs. 200 per acre. Thus, the Committee collected from the farmers Rs. 1.73 lakhs at the beginning towards the capital cost
of the project. The remaining Rs. 4 lakhs were obtained from a leading commercial bank as a loan, to be repaid in six years commencing from the second year after the date of disbursement of the loan.

The farmers' ability and willingness to raise such a significant part of the capital cost right at the beginning was a notable feature of this project. This was possible largely because some of the farmers were reasonably well off due to some irrigation under wells on parts of their total landholding. But there was also the advantage of their taking the initiative themselves, rather than some outsiders selling the idea and promising to do everything for them. That the cultivators were quite alert about their interest will also become clear from the fact that they released their 25 per cent land from lease with Nimbkar Company ahead of schedule by repaying the loans (or the remainder of the share value, plus interest) from the surplus on the 75 per cent land at their disposal.

The Nimbkar Company prepared the plan and started the construction on 1st December 1971 with the help of the share capital raised by the farmers well in advance. The bank sanctioned a loan of Rs. 4 lakhs for the scheme on 3rd April 1972 on the security of guarantee of repayment from the Nimbkar Company, the mortgage of some of the land in the command area and hypothecation of the
capital work. The loan was disbursed to the scheme on 22nd June 1972 and the project was completed by 16th September 1972, that is, within 10 months from the beginning of the construction.

The active participation of the farmers and the careful formulation and execution of the project by the Company, not only helped in completion of the project at the earliest, but also in full utilisation of irrigation.

9.2 Reasons for the Delay in Full Utilisation of Irrigation Potentials

It may be recalled (Chapter V) that the lift in Bhade village is expected to come to the full utilisation stage of irrigation in the course of six years from the beginning, while in the case of the other projects this period would be between 8 and 10 years. The time taken for full utilisation of irrigation would be mainly because of levelling land and making it suitable for irrigated farming. This work would be prolonged over a period of 5 to 7 years in the case of the projects in Naveli Taluka and only 3 years in the case of the project in Bhade village. The rest of the period, that is, 3 years was considered necessary for the land which would come under irrigation for the first time, either after land levelling or otherwise, to reach the stage of full maturity of irrigated farming. For, as discussed in Chapter V, the
additional land that will come under irrigation every year will take some time to adjust to irrigation, and hence the estimated crop pattern and yields of the crops will not accrue immediately. These will come slowly and accumulate steadily till the stage of maturity is reached. On the basis of the information available to us, we estimate that the irrigable area will reach full maturity after receiving irrigation for three consecutive years. Therefore, this period of three years should not be considered as delay in full utilisation of irrigation. The reasons for the time taken for the work of land levelling are discussed below.

It was observed during the farm surveys that land levelling was essential in all the projects on 35 to 40 per cent of the total command area. However, it was estimated that the work of land levelling in the Bhide project would be completed in a shorter period than in the other projects. This was because the extent and the nature of work on the individual farms was different in the Bhide project from that of others. The Bhide scheme had many small farms and a few large farms. On the small farms, the extent of area to be levelled was much smaller than in the other projects. Besides, the gradient of land to be levelled was generally less on the Bhide farms. Therefore, the extent of work involved in levelling and making the land suitable for irrigation on these small
farms was less than in the case of the most farms in the other projects. Secondly, the bulk of the land requiring levelling in the Bhade scheme was concentrated on the lands of the big farmers who were well equipped with the land levelling equipments; some of them had tractors with land levelling accessories which were also available on rent for the work on the other farms. Moreover, the Nimbkar Company established a mechanical unit for land development in the village from which tractors as well as bullock driven equipments were made available on rent for the work. In addition to this, the Company insisted on the farmers to develop and make the lands suitable for irrigation, failing which, water was not to be supplied to the farms. Because of all these factors, the work of land development in the Bhade project started prior to irrigation in anticipation of the facility and was completed within three years from the beginning of the project.

In the other projects, despite the willingness of the farmers to hire the necessary machinery from the State Government (Command Area Development Authority), or from the neighbouring villages for land development, it was not available. Therefore, besides the greater extent of work on account of larger area and the greater gradient of land to be developed on the individual farms, the entire burden of the work fell on farm labour. Moreover, it was
reported by the farmers that it was possible to undertake this work only when bullocks and men were free from crop production work, and that was possible in summer. Even during summer, labour was not available for land development over the entire season because preliminary tillage operations were also due in summer for the forthcoming kharif crops. The farmers reported that every year hardly two months were available for the work. Thus, apart from the investment required for land development, the period available for the work every year was too short to complete the entire work sooner than in the estimated period. On the whole, the work on land development was very slow in these command areas. Moreover, the work was started after completion of the projects and not earlier in anticipation of the irrigation facility as in the case of the Bhide Scheme. On account of these factors we estimated that the work of land levelling in the command areas of the projects in Naveli Taluka would be completed in the course of 5 to 7 years from the beginning.

There were some other reasons for the delay in utilization of irrigation in these projects. A few farmers did not allow the water distributaries to pass through their fields, while some farmers did not bother to irrigate their lands in the beginning because they had more land in the neighbouring villages or had other
occupations elsewhere.

It is seen from the above discussions that the main problem in bringing the area under irrigation in an earlier period was levelling and making the land suitable for irrigated farming. Therefore, considering the necessity of making irrigation available to land at the quickest and the period available every year for land development with the help of farm labour, farm mechanisation in land levelling may help to some extent in this matter as in the case of the Bhade project. This is not possible for the majority of farmers in the State unless the necessary machinery is available on rent from some agency. The Command Area Development Authority has already taken up this work in the State, of course only on a small scale.

9.3 Reasons for the Delay in Repayment of Loans

We shall turn to the last of the three problems raised in the beginning of this chapter, viz., the very poor performance in regard to repayment of loans by farmers in the four schemes of Haveli Taluka, as against the timely repayment in Bhade. The terms and conditions put forth by the Nimbkar Company, as mentioned earlier, compelled the farmers in Bhade village to repay the loans in time. Not only did the Company require the farmers to sell all their produce from the command area cultivated by them through or to the Company, from which the loan
instalments and interests are to be deducted before the sale proceeds are handed over to the farmers, but the Company was to cultivate its per cent of the command area on its own, for which the rental to the farmers was to be the instalment of loan to be repaid and the interest. These stiff conditions made the farmers strive to repay the loans at the fastest and be freed from these requirements. Indeed, they repaid not only the loans relating to 75 per cent of the land they were themselves cultivating in time, but also from the surplus of this land repaid the loans of the 25 per cent leased out to the Company ahead of schedule, so that the Nimbkar Company had to release this land from lease earlier than anticipated and therefore could not carry out its plan of cropping on such land. The farmers, when interviewed expressed the view that if the Nimbkar Company had not put those conditions, they would not have cared to repay the loans within the stipulated period. They further opined that, in general, the farmers who create irrigation facilities on their farms by taking loans from the financial institutions and do not repay the loans for quite a long period were more often wilful defaulters. This means that unless stiff conditions, such as those laid down by the Nimbkar Company in execution of the scheme, are specified, repayment of loan by farmers is likely to be neglected and poor.

This appears to be the main reason why the benefi-
ciaries of the projects in Haveli Taluka have not repaid the loans inspite of having the necessary repayment capacity. It was learnt while discussing the problem of repayment with the farmers that neither the Lift Irrigation Federation of Haveli Taluka which formulated and implemented the schemes nor the State Government which has guaranteed repayment to the bank, has insisted with the farmers about repayment of the loans. The Federation has not formulated any plan of collecting the necessary instalments of loans for repayment from farmers. Nor does the bank, which advanced the loans, appear to have done anything for the repayment beyond writing letters once in every six months. Presumably, they rest on the State's guarantee of repayment, and do not feel called upon to do anything more in this direction.

Many lift irrigation schemes in the State are reportedly not functioning efficiently. The reasons identified above may go a long way in explaining this. Hurried and inadequate formulation of lift schemes with whatever finance is immediately available has resulted in prolonged periods of construction. Improper or inadequate arrangements for land development has further lengthened the period required to start irrigated farming on the command area. Absence of built in conditions which will make the farmers see the necessity and usefulness of timely repayment is another source of not merely failure of
financing agencies from recovering their funds, but also for tardy and negligent development of irrigated farming by the farmers. And finally, what is required is involvement of farmers in the formulation and execution of scheme, where they feel they have a stake and something to lose for their failures. Charitable outsiders are poor substitutes for this.