IRRIGATION

Rehabilitation of Minor Irrigation Works in Sri Lanka

The minor tank irrigation development programme has come to be regarded as one of the most important components in the Cropping Systems National Programme of Sri Lanka. With the cuts in capital expenditure of government Ministries in 1980 and '81 investment on many agricultural and irrigation programmes too were affected. The programme of the Ministry of Lands and Land Development, for instance, has curtailed expenditure to 20 per cent below the investment programme ceiling and many of its on going activities have therefore, to be suspended, curtailed or phased out.

Priority is thus been given to those projects which would yield quick results and increase productivity at a low level of investment. One such project is the Village Irrigation Rehabilitation Programme which commenced in 1980. It will be expanded through 1982. The technical specifications and the calendar of operations of this programme, according to the Ministry publication on "Resource Development", has been rationalised to make the maximum use of funding available from different sources — the Decentralised Budget, World Bank, Asian Development Bank etc. and the National Committee on Rehabilitation of Village Tanks will continue to direct and monitor this programme.

In 1982, the programme will cover approximately 50,000 acres in 24 schemes. This has been commenced with no additional funds from the Government's Budget, being financed through a rationalised redistribution of funds voted for operation and maintenance.

From another perspective too the rehabilitation of minor irrigation works has been regarded as crucial, in view of their importance in paddy production. Paddy contributes the largest value added to the Gross National Product and will continue to remain the largest productive sector in the economy, even after the Accelerated Mahaveli Project is completed, where 29 per cent of the irrigable area will be under paddy.

The total area under paddy cultivation in Sri Lanka in 1979/80 was as follows:

Type of Cultivation	Acres
Major Irrigation Works	956,767
Minor Irrigation Works	562,243
Manawari/Rainfed Conditions	95,344

It is evident that more than one quarter (25.9 per cent) of the acreage under paddy is under minor irrigation. However, the average yield of paddy obtained under minor village irrigation works is only about one third of the average yield obtained under major irrigation schemes.

It is estimated that there are about 10,000 minor tank environment production complexes in the Dry Zone of Sri Lanka, encircling a cultivable area of 100-100,000 ha. of lowland paddy. Traditionally, the rice yields are quite low in this region (1-12 t/ha) and there is no record of other field crops grown under such conditions. The rice cultivation is often a failure and the success of rice crop was once in five or six years. Hence rehabilitation of tank/anicuts could offer opportunities for increased paddy production and agricultural development and there appears to be an urgent need to improve minor irrigation works. Several reasons have been given for the urgency for their rehabilitation; among them are:

(i) The 47,000 tanks/anicuts in Sri Lanka are structures already existing. Of these there are about 16,500 tanks under working conditions of different efficiencies, and 10,000 anicuts. There are about 12,000 abandoned tanks/anicuts which can be augmented and rehabilitated. Also, about 10,000 tanks are abandoned and must be kept abandoned due to various problems.

(ii) Quick results could be shown, within a year or two, compared to long gestation projects like the Accelerated Mahaveli.

(iii) Cost of maintenance of a working minor tank would be less.

(iv) There are settlements already existing in the command areas of tanks and by systematic rehabilitation the incremental acreage that could be brought under cultivation offers scope for newer settlements.

(v) It is easy to introduce discipline among farmers in the minor tanks, because farmers have learnt to accept water shortages.

(vi) It will lead to the upliftment of the tank based rural economy.

(vii) It will create conditions for more efficient use and control of water, an expansion of the crop acreage, as well as cropping intensity.

The rehabilitation of minor tanks/anicuts is also an agricultural proposition and not exclusively an engineering project. It has to be planned and implemented both by agriculturalists and engineers. Water conservation, water administration and water management coupled with soil conservation measures are inevitable for a systematic development of tank-villages.

The Walagambahuwa Concept

Under minor irrigation, generally cultivation of Maha paddy does not start with the rains. Cultivators wait until the tanks are full. Thus, a large part of the monsoon is wasted due to the great attraction of 'chena' cultivation in the highlands. The practice of the delayed paddy cultivation results in the consumption of the stored water in the Maha only, adversely affecting the Yala paddy plantation. It is difficult to understand the stance of the cultivator, not to begin maha paddy cultivation with the rains, when paddy is successfully grown in the 'chena' in the Maha season. If Maha paddy is planted with the rains, the crop can be harvested by about the end of January, and the tank can be stored practically full, assuring water for the Yala paddy and increasing crop intensity at least by 50%-100%. This is what the Walagambahuwa concept is trying to achieve in the Dry Zone of Sri Lanka. This concept was discussed at the recent SLAAS Annual Sessions 1981 by S. H. Upasena and S. Samarakoon of the Regional Agricultural Research Centre, Maha Illuppallama.

It was found that traditionally rice yields were quite low in the Dry Zone minor tank environment. It was realised that new technology generated to improve production in this region could increase rice production in the area enormously. The researchers reported that the Walagamoahuwa minor tank with its purana (traditional) village settlement is typical of minor tank environments in the Dry Zone of Sri Lanka. It was selected for the project study.

The technology developed and practised at this settlement scheme has increased rice production 2-4 times and furthermore, the rice cultivation that was possible once in five or six years frequency is being increased to once a year. Very often double cropping of rice was possible. The new technology was well screened against socio-economic constraints to production. The new technology is nothing but timely cultivation with relatively short age variety of rice, so that it could mature using the incidental rainfall in the Maha Season. The run-off collected in the tank in Maha season was utilized very rarely in Maha for rice cultivation but often for Yala cultivation for rice or other field crops.