OBSERVATIONS ON THE MAHAWELI GANGA DEVELOPMENT PROJECT, SRI LANKA

Robert Chambers

Discussion of R. S. Jayaratne "The Proposed Settlements and the Existing Villages in the Mahaweli Development Area"

and A. Maheswaran "Mahaweli Ganga Development - Project I - Its Likely Impact on Agricultural Production in Sri Lanka"

at the Conference "Agriculture in the Economic Development of Sri Lanka", organised by the Ceylon Studies Seminar,

15 - 20 August, 1974, Peradeniya, Sri Lanka.

The Mahaweli Project is by far the largest single development project in Sri Lanka. Its implementation has been tentatively programmed to cover 30 years. If fully implemented it would be capable of generating 500MW of electricity and providing irrigation water for 900,000 acres, of which, however, 246,000 already receive some irrigation water. To clear up a confusing inconsistency, the generally agreed usage for describing the sequence of implementation is that there are phases, projects and stages. In the first Phase there are three Projects, and Project I has three Stages. We are concerned primarily with Stage I which is already being implemented, and Stage II for which financial negotiations are well advanced. It is anticipated that the outcome of the first three stages will be (apart from hydroelectric benefits):

Stage I: 120,000 acres which are already being irrigated will receive additional irrigation water.

Stage II: 70,000 new acres will receive irrigation water, and 27,000 acres which are already irrigated will receive additional water.

Stage III: 30,000 acres under the Kaudulla and Kantalai reservoirs will receive water.

In my remarks I shall be concerned not only with these stages but with some aspects of the development project as a whole and in the longer-term.

The two papers deal respectively with settlement policy and with the likely impact of Project I on agricultural production in Sri Lanka.

SETTLEMENT

My remarks on Jayaratne's paper will be brief as settlement will be considered in more detail later in the conference. He is concerned with settlement in Stage II, particularly at Kandalama

and Kala Oya where about 70,000 acres are to be provided with irrigation water. In these areas there will be both new settlement and also old purana settlements to be incorporated into the new system.

The proposals for policy and procedures for new settlement appear sensible and humane. The adoption of individual family holdings avoids the tempting pitfalls of ideological utopianism and recognises the wisdom of giving settlers a form of tenure and economy which they are likely to want. Relying on the initiative of settlers themselves should also avoid the worst excesses of the dependence syndromes which so commonly raise the costs and reduce the benefits of settlement programmes.

The proposals for incorporating existing purana lands into the new irrigation system are noteworthy for introducing a small-scale land reform. As the author points out, they do not involve very large areas; but they may prove to be important testing grounds to identify the potential and problems of an equalising land reform on paddy lands. The proposal is to acquire the land compulsorily from the owners with compensation but then later to give them preferential consideration for "the alienation of new allotments if they are otherwise eligible to receive lands". This will presumably mean that those with small paddy holdings will receive more land, and those with large holdings will receive less, all ending up with "an equal extent of land and ... equal opportunities for self-advancement". This procedure involves moral and practical questions. The experience gained from it should be a national asset for future policy-making, and it might be useful if the process could be monitored and evaluated.

Finally, the proposals in the paper, as so often with settlement procedures, balance with a mixture of delicacy and awkwardness on the scale between compulsion and consent. For example, one wonders what the reality will be that follows from the observation that residence and plot selection "are expected to be left to (settlers) with a certain amount of direction; of course". It is the humanity and self-restraint with which that "certain amount of direction" is exercised or abstained from that is one of the most difficult parts of settlement for anyone in a managerial position.

THE IMPACT OF PROJECT I

Maheswaran's paper and its supplement discuss the possible impact of Project I on Sri Lanka's agricultural development and through this on economic development. This is a huge and complex subject with many imponderables and anyone who has to attempt to cover it in a short paper deserves sympathy. However, the conclusion that Project I was justified "to produce the food requirements of the country" is not, to my mind, effectively substantiated either by the authority of the UNDP/FAO study's finding that Project I would give the best returns, or by the evidence presented in this paper. Much more detail of the costs and benefits of the Project would be needed to arrive at this conclusion, including a serious consideration of alternatives to the Mahaweli Ganga Development Project as a whole. Moreover the benefit estimates appear high. If national consumption is running at around 90 million bushels (of paddy) and production at around 65 million bushels, it cannot be expected that Project I will close the gap of 25 million bushels. The figure given in the paper is about 16 million bushels from the three stages of Project I. This appears a high estimate, based as it is at least in part on projected production of 90 - 100 bushels of paddy per acre. In any case, by the time that production is forthcoming, the growing population will have increased demand substantially. In terms of national self-sufficiency, Mahaweli Ganga looks more like a holding operation which may prevent the gap widening rather than a means of closing it.

GENERAL COMMENTS

Four sets of comments seem worth making.

(i) Economic "feasibility"

The paper by Maheswaran states that "the economic and technical feasibility of the project has been established". The technical feasibility is not in dispute. But it is rather difficult to know what economic feasibility can mean. It is perhaps best divided into two expressions - financial feasibility, meaning whether or not the necessary funds can be raised, and economic desirability, meaning whether from a wider economic point of view the project is

justified. These are two different things. It may be possible, indeed it often is with government projects, to raise or find money to finance them when from a strictly economic angle they are less desirable than alternative uses of those funds. We are told in the paper that Stage I has been fully financed and Stage II partly financed. But the question of greater interest and importance is whether or to what extent Mahaweli Ganga is justified economically.

Many hard questions need to be asked and answered before one can say that a major project is economically justified. It is not enough to quote an official internal rate of return since it is so common even in the most respectable circles for internal rates of return to be fiddled to produce the answers that are wanted. In the case of Mahaweli Ganga some of the hard questions are:

- what are the estimated recurrent costs? Uda Walawe, I believe, costs about Rs10 million a year just to keep running, quite apart from development costs. If some 25,000 acres are irrigated (the target is over twice this figure), this means a recurrent cost from government of no less than Rs400 per acre per annum merely to keep the project operating. It is difficult to know how to remove the persistent blind spot in economic evaluations which fail adequately if at all to anticipate recurrent commitments of this sort and which fail adequately to include them in the discounting of future cost flows as part of the calculation of the internal rate of return. So the questions are: what recurrent costs are anticipated for Mahaweli Ganga (in the employment of staff, in maintenance, in vehicles, in subsidies to settlers, etc.), and have they been taken into account in calculating the internal rate of return of 12 per cent?

- what provision has there been for cost escalation? There seems to be a paradoxical law that the larger the project, the larger is the proportion of unanticipated costs to original estimates. One may perhaps be forgiven for asking whether Mahaweli Ganga might not become Sri Lanka's Concorde.

- what provision has there been for the avoidance of the mistakes made on Gal Oya and Uda Walawe? It would be tedious to recite the catalogue of criticisms in the Gal Oya Evaluation Report, or to

labour the difficulties which have beset Uda Walawe through the irrigation for a paddy crop of land with high percolation rates, or to emphasise the unresolved problems of water control and management which both projects still face. But if such difficulties are to be avoided in the construction and operation of Mahaweli Ganga, deliberate provision has to be made.

- is there an economist or a team of economists responsible for continuous reappraisals of the desirability of the next steps in the programme, whatever they may be, in the light of the very rapidly changing economic situation both within Sri Lanka and in the world? And if so, does he or do they have the degree of detachment needed to be able to turn their thumbs down when necessary? And if they do turn their thumbs down, how likely is that to be effective?

(ii) Thinking about water

There is a persistent and quite extraordinary gap in thinking when it comes to water. The three volumes of the Final Report of the UNDP/FAO on Mahaweli Ganga present a striking demonstration of this gap. Apart from the hydroelectric aspects, the justification for the Mahaweli Ganga Project is that it will increase agricultural production through the provision of additional water for irrigation. The Report states that in the area under command, although 1.5 million acres are suitable and available for irrigation, water is only sufficient for 0.9 million acres. The immediate and obvious implication is that water is a scarcer resource than land and that the sparing use of water through good water management will be critical ain determining production benefits. Yet the Report gives less than one page to the organisational aspects of water control, while devoting an average of eight pages each to four other concerns - the supply if inputs; marketing; agricultural credit and co-operatives; and agricultural research, extension and education. It would have been far, far more useful if it had given space to considering how returns to scarce water could have been improved; and in particular the detailed organisational and operating details needed for the sparing issue and application of water.

It is understandable that the paper by Maheswaran should follow the distinguished international team of UNDP/FAO experts along the path which they so authoritatively blazed in the wrong direction. The paper states, for example, that "The cropping patterns in the

new areas specially will depend on the types of soil and the marketing conditions operating at any point of time". This is sensible as far as it goes. But the cropping pattern should also depend on returns to water, which is not mentioned. Nor is it likely to be entirely justifiable, democratic and permissive though one may wish to be, to say that "As a wide range of crops is possible, the farmer will be able to so choose his crops as to get the best returns for himself". The diverted water of Mahaweli Ganga represents a huge national investment and it is at best questionable whether farmers should be entirely free to choose crops with low yield:water ratios when crops with higher yield:water ratios are available. If one must revert to thinking in terms of land, the point is that water saved is land-augmenting; and water used profligately, is land-dissipating. Sparing water management and the choice of water-sparing crops should be a path towards irrigating larger areas, towards higher cropping indices, towards benefiting more people, and towards higher national food production.

The experience with large projects so far has been that water control is permissive and wasteful, and that the acreages irrigated are smaller than anticipated. This has been the case both on Gal Oya and on Uda Walawe where some foresee a serious shortfall in the acreage that can be irrigated. The question has to be asked

- what arrangements, if any, are being made to avoid the wasteful permissiveness of water issues on Gal Oya and Uda Walawe? What reason is there to believe that the experience with Mahaweli Ganga will be any different? And if it is not different, what will the effects be on the acreage served with water, the production resulting from it, and the numbers of people who can find a reasonable living through agriculture in the area served?

(iii) The large project trap

There is a persistent danger, and not by any means only in Sri Lanka, of what I hope I can without disrespect call the Parakrama Bahu complex. It is more exciting, more satisfying, and easier to muster special efforts for works of construction than it is to manage their operation once constructed. Moreover, as Parakrama Bahu the Great no doubt knew only too well, construction is more prestigious and more likely to immortalise the names of

those responsible. Big projects quickly become irreversible. They develop momentum, attract commitment and enthusiasm, generate new jobs, and become identified by many people with their personal interests. It would be churlish to suggest that the motives of those who become committed are merely self-regarding. For engineers in particular the opportunities are creative. As men do with women, so also engineers and others with projects pass through stages of sceptical appraisal, flirtation, day-dreaming, falling in love, becoming wed, and finally adorning their beloved with objects of unquestionable beauty and high cost but of doubtful productive value. But for all the creative aspects, the vested interests attracted to and supported by large projects cannot be ignored. If a country has a surplus of engineers who exceed the jobs available, there will be an especially strong pressure for construction projects, and a correspondingly strong resistance to winding them down or phasing them out. There are some very human aspects of irreversibility.

Albert Hirschman, in his characteristically provocative book Development Projects Observed, has presented the doctrine of the Hiding Hand. According to this, habitual underestimates of the difficulties which projects will face are offset by compensating habitual underestimates of the creativity which can be mustered to overcome them. This is a neat, attractive and persuasive concept. He goes further and argues that one of the weaknesses of agricultural projects is that they are easier to abandon than industrial projects, and consequently may be abandoned prematurely before they have called forth the creativity which might make them do better. A grave weakness of this set of ideas is the high cost of "creativity". In practice this rather innocent word means higher capital costs, higher recurrent costs, subsidies, and further drains on scarce resources with high opportunity costs like specialised manpower - these together often amounting to a heavy charge on the national budget and the taxpayer. With Mahaweli Ganga as with other large projects, it is right to ask questions about the costs of this sort of creativity and about irreversibility, and to ask how and with what costs a halt can be called to construction and related activities as and when it seems right.

In this respect, Mahaweli Ganga has the strongest advantage of being much more divisible than some other projects. In Maheswaran's words "Each phase consists of several projects and implementation could be in stages in separate units without prejudice to subsequent developments". The questions then are - is there a hatchet machinery which can stop the flow of phases, projects and their stages? Is it powerful enough to operate? What vested interests, if that is not too pejorative an expression, might resist such a decision? How, if necessary could they be overcome?

A final aspect of the large project trap is the inertia of special organisations set up at the development and settlement stages. This may apply particularly to engineering, settlement and extension staff. Heavy staffing becomes less necessary as construction and settlement are completed. But the parent organisation finds itself with its own resettlement problem for its staff. The easiest solution is a sequence of further projects to employ the same people: in Britain, Blue Streak followed by TSR 2 followed by Concorde; in Sri Lanka, is it too fanciful to draw a parallel in Gal Oya followed by Uda Walawe followed by Mahaweli Ganga?

(iv) Opportunities to innovate

Although the tenor of these remarks has been generally critical, I should like to end on a positive note. Large projects present challenges which sometimes call forth great efforts and imagination. I do not mean to undervalue the work which has gone into the Mahaweli Ganga Project nor the vision and application which have brought it to its present point. Rather I should like to urge that the opportunities which it presents, for as long as it is being implemented, should be adequately exploited. Perhaps the greatest opportunity is to innovate. A partially independent Board with its own organisation has chances to try out new forms of organisation and new procedures which it might be much more difficult for ordinary government departments to undertake. The experience gained with consolidation of paddy fields, as described by Jayaratne in his paper, is a case in point. Perhaps other new

departures should be tried. And perhaps the most important of all would be to design, test and replicate management systems for water, concentrating on the management of the people who manage the water; for if water management on major irrigation could be made much more efficient through methods developed in the relative freedom of Mahaweli Ganga, and if those methods could be spread through major irrigation in Sri Lanka, the benefits might even be greater than those which derive directly from the Mahaweli Ganga Project itself.

November 1974