FORESTS AND THE MAHAWELI

By virtue of its sheer magnitude and scope, the Mahaweli Development Scheme, the largest development project ever to be undertaken in Sri Lanka, has received and continues to receive the most searching and all-round development effort it commands. Probably for the first time in the history of an irrigation cum hydro-power scheme, the total value of forestry, as one of the necessary inputs to maximise and maintain gains from the scheme in perpetuity, has been recognised and incorporated into the complex build-up. This is a welcome feature and makes a radical change from the past when forestry as one of the important factors in maintaining a favourable environment, was abyssmally not taken account of. To take an illustration: If there is a piece of desert, a suitable crop can still be grown, if the necessary inputs of water and nutrienets vital for plant growth are provided on the ground. But if a favourable environment in such a situation is maintained in which effective solar radiation is reduced, wind velocities checked significantly, relative humidities enhanced, maximum air temperatures lowered and minima raised, then not only can savings be effected in water economy (due to reduced evaporation rates) but crop yields can be significantly increased by as much as 20 percent or so as has been claimed in several countries (because of improved micro-climate). Forests commonly in the form of shelter belts and wind An improved micro-climate will be more readily perceived by human population whose timber and fuelwood requirements too have to be met as a matter of bare necessity.

Broadly speaking, the Mahaweli Scheme envisages the conversion of another 650,000 acres of mainly forest land to irrigated agriculture (250,00 acres already converted), the generation of 300 MW of hydro electric power, the setting up of agro-based industries and the settlement and stabilisation of 500,000 families in townships, villages and hamlets with necessary infra-structural supports embracing a total area of about 2.57 million acres measuring about 135 miles acrosses from North to South and about 80 miles from East to West at their longest and widest extremities. It would appear that less than 20 per cent of the original forest cover would be left in concentrated town and village reserves if the rest is completely deforested, being specially confined to the upper catchment, north-central and northern portions of the scheme.

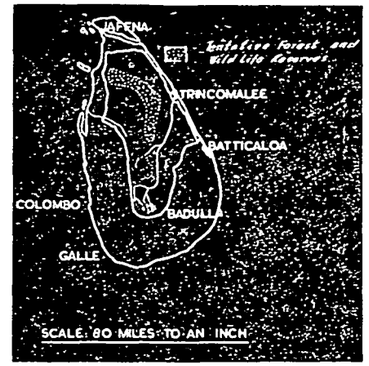
Mahaweli Ganga Basin Forest Resources as at 1956

	Forest	Total Area
Wet Zone	138,180	736,540
Intermediate Zone	111,550	551,200
Dry Zone	881,460	1,286,970
Total	1,131,190	2,574,710

Source: *A Report on a Survey of the Resources of the Mahaweli Ganga Basin, Canada-Ceylon Colombo Plan Project (1962).*

The intrinsic value of forests in the upper catchment of the Mahaweli is not in doubt. Although there has been controversy about the role of forests vis-a-vis precipitation, mainly rainfall, concensus of opinion based on hydrological catchment experiments in several countries over long periods is that it is uninfluenced except in the case of orographic precipitation which is increased 2 to 3 percent particularly on the windward sides of slopes. However, as a component in regulating stream-flow, in increasing deep storage of water in the ground, in drastically reducing floods and erosion and in increasing the purity (and potability) of water, forest cover remains unrivalled. The proposed programme of the Forest Department to scientifically augment existing forest cover by reforesting certain 'undeveloped' erosion prone areas in the upper catchment of the Mahaweli would go a long way in achieving some of the important objectives of watershed management. The adoption of sound soil and water conservation measures in what constitutes the greater 'developed' areas in the entire upper catchment is more vital to overall planning and management of water resources of the Mahaweli. The strict maintenance of river and stream banks and their reservations in undisturbed vegetative growth, whether natural or planted, all along the course of the Mahaweli is of the highest importance.

Another aspect of forestry is in relation to the lower Mahaweli where vast tracts of forest in the



Tentative forest and wild life reserves in Mahaweli area.

low and dry zone are to go under development. The future of forestry in this area seems to be uncertain as yet. Climatically, this zone is characterised by hardly any rainfall, dry desiccating winds, high day and night air and soil temperatures, soil moisture deficit, etc., for at least 6 months in the year, from April to September; all factors which contribute to high evapo-transpiration and respiration rates and retardation of plant growth (and dry matter production), not to forget the deep discomfort caused to humans during the period even with the present extent and distribution of forests (68.5% as at 1956). True, the macro-climate is uninfluenced by forest, but the micro-climate contingent on deforestation over very vast areas would result in adverse climatic changes in the biosphere which in turn evoke certain responses in plants and animals, their functions and distribution. Sagacity and care are therefore, needed in the comprehensive scheme of land use management to prevent sizeable areas being rendered climatically harsh and inhospitable. Multiple use of land on a rational, long term basis incorporating the forestry sector are no doubt, being planned for execution. Among the suggestions worth considering at this stage are:

1. Protective shelterbelts and windbelts of the existing natural forests and, where necessary, of artificially created ones integrated at intervals in the areas converted to agriculture, due care being taken to sufficiently isolate these belts from natural forests to prevent possible inroads by animals e.g. elephants, and monkeys which damage crops.
2. Production forests, both natural and artificial, on a town and village basis to be left to cater to timber and fuel needs of local populations and of forest based industries, as well as to meet national requirements.
3. Protection forests, natural or artificial, to be demarcated or created around the catchments of all reservoirs or wewas to increase sub-surface water collection and minimise silting, a perennial problem in the dry zone.
4. Maximum utilisation of all timber in forest areas going under development, whether of any residual timber, poles, fence posts and even presently hard-to-come-by fuelwood in the form of firewood or of more durable charcoal.

The realisation of any or all of the above-mentioned or of any other related objectives in the Mahaweli model would ultimately depend on the motivation and degree of purposeful involvement of the people within the scheme. There will be a clear need to engender forest values through vigorous education and practice at the town and village levels.