THE RASAYA-STORY OF LOST SOIL FERTILITY

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Introduction

As a part of the interdisciplinary joint research project on "Irrigated Agriculture and Eco-development" we had a number of interviews with farmers in some Purana (traditional) villages in the Dry Zone of Sri Lanka. The Purana (traditional) villages depend mainly on irrigated wet-rice cultivation and on shifting cultivation. The focus of our investigation was traditional agricultural practices and their potential for "sustainable development" (WCED, 1987). Population increases in these villages without accompanied changes in traditional agricultural technology has led to a considerable resource stress, a situation of coming close to, or exceeding, the carrying capacity of the area. A sound combination of modern agricultural technology and traditional knowledge among small-scale farmers is probably one of the most promising paths towards increased producutivity and long term ecological sustainability (Palm & Sandell, 1989).

The "Green Revolution Package" has been very important in increasing productivity in many areas in the Third World. Nevertheless these achievements were obtained at the cost of increasing inequalities, foreign dependency and the use of non-renewable resources. The following presentation is meant to discuss farmers' views on soil fertility in the light of the experiences in selected "Purana" villages of the Dry Zone of Sri Lanka with a view to make suggestions for agriculture for tomorrow.

A Pessimistic Human Ecological Perspective

The farmers interviewed in the "Purana" villages often held a pessimistic view of the ecological situation associated with a low rainfall and a decreased soil fertility. Reasons frequently mentioned for this deteriorated situation were: (i) deforestation; (ii) the neglect of the religious ceremonies; and (iii) undesable human behaviour such as; theft and disrespect towards traditions and elders. This human ecological perspective was often linked to the use of modern agricultural inputs. In spite of this most farmers wanted to increase their use of such inputs because they needed to increase production. Modern agricultural inputs were used irregularly and not according to the recommended doses. This was mainly due to the costs involved. Sustainability was another reason. The traditional institutions which dealt with common property such as irrigation tanks and canals are also deteriorating. This is often claimed to be a main reason for inefficient use of irrigation water.

Some contrast the modern agricultural inputs with the past practices in terms of traditional varieties, manure used and precipitation received. This is, of course, to some extent just longing for a unrealistic "glorious past". But many authors (e.g. Madduma Bandara, 1985) have pointed out that, when all elements are considered together, the traditional agriculture of the Dry Zone is a good example of a time-tested sustainable farming system. And Karunanayake (1983:15) has, for example, pointed to the important fact that "traditionally there were about 150 varieties of paddy whose period of maturation varied from 2-7 months, whereas now there is a much more limited number of varieties available.

The Sinhala Word 'Rasaya' (රසය)

During the interviews on agriculture we came across the Sinhala concept **Rasaya**. Literally it means taste or good taste and could be used to praise a good meal. When informants mentioned **rasaya** in discussing soil fertility and nutrients, it was used as a synonym of fertility. But not in a physical sense, i.e. tasting with the mouth. This is exemplified by the statement such as "Now the plants do not grow as at the time of clearing the land (highland). The **rasaya** was absorbed by the plants" or: "...**rasaya** will be there when the forest is burned and the soil loosened". People also referred to **rasaya** in the soils of the paddy fields.

Linkages between sweet taste of soil and a harmonious relationship between Man and Nature is a part of Buddhist mythology (de Silva, 1987:11), as well as Christianity. For example, in the Bible, milk and honey are a sign of a bountiful area. It is obvious that the theme of the soil or natural environment as a fertile substance similar to sweet food, existing (at least on earth) in the past, is very common and old. Farmers physically testing the soil to judge its fertility has also been reported (Weinstock, 1984). We tried to investigate whether or not the concept of **rasaya** used by these Sinhala farmers involved 'soil testing' to determine the fertility of the soil.

The informants described how fertility could be judged by the amounts and types of plants growing in the area. They also said that the colour of the soil gave an indication of **rasaya**. But no one had thought of the possibility of tasting the soil. Until one day, during an interview with an 87 year old man who said that 'soil tasting' was possible and that he had heard of it being done. He also gave an example of a well that had been located according to this method. He also claimed the **rasaya** is created in contrast to chemical fertilisers that are produced, used and absorbed. **Rasaya** is created and generated in the way the living air, (**prana vauva**) has been created out of the interaction between water, fire, the sun and the moon. "It is like inhaling and exhaling". He also said that if an area is used for shifting cultivation (chena) the living air is collected by the forest and in paddy rice cultivation the water creates **rasaya**. "The water provides the paddy rice with food as a mother.... The quality of the water is absorbed by the soil in the paddy field."

Soil Fertility and Sustainability

The story of **rasaya** is still another parallel to the common theme among these farmers of a deteriorating trend with regard to natural resources and also the sceptic view of the industrialized agricultural inputs. But it also illustrates that probably a large amount of previous knowledge and practices concerning sustainable agriculture in this region are, at the present, lost or at least hidden. In the light of the increased awareness of negative ecological and environmental effects of the "green revolution package" the close and dynamic view of the Man – Nature relationship is probably a necessary part of any sustainable agricultural technology.

In the search for agricultural practices for the future the knowledge and perspectives of the local farmers can be an indispensable source of inspiration (Richards, 1985) even in the light of modern technology. Any agricultural technology signifies social and ecological effects. One of the greatest challenges to current development efforts seems to be planning from above" and how to encourage local knowledge and local adaptation especially with regard to sustainability aspects.

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