

The ECO approach to agricultural development

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Agriculture in Sri Lanka is traditionally an integrated system with crops, trees, livestock and fish. Animal and crop production are based on three aspects: ecologically sound practices, astrology and the relation with spirits and supernatural beings. ECO in Sri Lanka is establishing a system of field experimentation to enhance effective traditional agricultural practices. The objectives are to offer alternatives to high-tech and chemical agriculture and protect farmers from exploitation.

Initiatives to promote eco-farming started in 1989, when a small demonstration and training centre was established. During the course of my work in the Ministry of Agriculture I was able to build up experiences in eco-farming and the use of biogas. After my retirement I continued and involved more farmers in this work.

ECO is an independent institute based on the personal commitment of its workers and participating farmers. Apart from the director, ECO has 7 professional field workers. Four of them have a formal agricultural training and three of them are astrologers or shamans. ECO has a steering committee made up of representatives of universities, shamans and farmers.

Cosmovision in Sri Lanka

The majority of the people in Sri Lanka are Buddhist and only 10% are Hindus. People believe in gods and other deities and invoke their blessings to protect them from danger, ill health and hardship. Gods inhabit trees, especially the Bo tree (*Ficus religiosa*). Astrology plays a dominant role in agriculture, especially in the cultivation of rice. Since ancient times rituals have been used in agriculture to support crop growth and animal husbandry and to chase away wild animals and pests. Despite the impact of the Green Revolution many of these spiritual practices still exist, though their meaning is often not fully understood by younger farmers. Rituals are most often practised away from the eyes and ears of outsiders, as they have been ridiculed and condemned as being backward.

The *pooja* or offerings in the harvest festival are widespread spiritual practices in Sri Lankan agriculture as well as *mantras*, or verses with sounds. Other practices include the use of *yantras*, or drawing of symbols, and *kems* which are certain techniques to obtain favourable effects. These ritual practices are based on a careful observation of nature and natural phenomena. Much of the indigenous knowledge system is described in ancient

documents or *ola scripts*.

The spiritual leaders have different names. The *daiwatnya* deal with astrology, *kattandirale* with yantras and mantras, *kapua* with gods and spirits and the *vedemahataya* treat sick animals and humans.

The ECO training program

In 1989 ECO bought a tea-plantation and replaced tea monoculture with a combination of trees, vegetables and rice crops using organic manure, there is also a pond for the production of *azolla* for natural fertiliser and a biogas installation. Pests and diseases are prevented as much as possible using natural processes, encouraging a great diversity of plant species, good soil management and crop rotation. When necessary natural and botanical pesticides are used. A dormitory and classroom has been built and practical training is offered to local farmers, based on "learning by seeing and doing". This allows farmer-students to observe the effect of multiple cropping, organic manure and the use of biogas. During the last nine years the number of students as well as the number of training centres has increased making it possible to accumulate experiences with eco-agriculture under a variety of ecological conditions. At present ECO has 4 training and demonstration facilities in different parts of the country.

Introduction of eco-agriculture

The field workers take initiatives to actively introduce the eco-approach into new areas. This involves the following steps:

Identify new areas

First a network of farmers, local leaders and government agents interested in the eco-approach identify new areas. Criteria include the interest of the farmers in experimenting with eco-practices, and the level of damage to the environment.

Identification of knowledgeable persons

Who in the community has special knowledge on traditional farming, astrology and

the use of mantras, yantras and kems? Which individuals perform special functions during village activities and rituals at farm level? Bhuddist temples are also important places with respect to indigenous knowledge, because priests carry out indigenous practices, such as charming water and sand.

Organise a community seminar

During a one-day seminar male and female farmers, elderly people and the youth of the community are invited to share ideas and discuss the possibilities for experimenting with eco-farming. ECO offers a free meal and drinks to the participants. Normally half of the village population participates in these seminars, during which the application of cosmovision-based technologies are discussed and demonstrated. Then up to 20 individuals can apply for further training.

Training

A one week training in the ECO centre as well as an informal training in the villages on organic farming and ecology is offered to the 20 interested individuals. The use of astrology, mantras, yantras and kems is also included. This implies a change of attitude from conventional towards more traditional farming, which is often a difficult process

Field experiments

Each trained farmer then establishes a plot in his fields for eco-practices, inviting 3 other farmers to observe, analyse and discuss the results. Field staff gives intensive guidance during the phase of experimentation, and they live and work in the village with the farmers.

Principles for field workers

Over the years of training and learning with farmers in eco-agriculture, ECO has developed a number of principles for field workers. Most important, the fieldworkers have to appreciate the traditional farming practices, survival strategies, knowledge and customs. In other words they have to show respect for the culture, norms, leadership structure and spirituality in the

community.

On the basis of this respect, fieldworkers can become more open to learning from farmers' experiences, their local knowledge and spirituality. Admitting a lack of knowledge and an eagerness to learn are basic elements for this exchange. Field workers should be able and ready to ask questions whenever things are not clear, disagree respectfully when there is difference of opinion and remain open to further exchange and dialogue. Giving examples, mentioning specific resource persons, relating experiences of other communities, participating in field work and showing skills that have been acquired in practice are guiding principles.

These initial activities usually involve contact between farmers and fieldworkers that take up about 8 days a month. Gradually this frequency can be reduced to one day a month. Care should be taken not to break off direct contact with the farmers too soon, to make it possible to continue learning from and with them.

Training farmer-trainers

A new development is the system of farmer-trainers. At present, some 200 farmers, NGO officials and field workers are given a oneweek training in eco-

farming each year. This takes place in groups of 15 trainees at a time. Afterwards 60 farmers are selected on basis of their field experiments to receive the advanced training of one week. Twenty are then selected on basis of attitude, capability and dedication to eco-farming for a 6 week in-depth training course to enable them to become effective farmer-trainers or local extension workers.

In order to identify the results of indigenous practices, plots where eco-practices have been used and plots cultivated under present day Sri Lankan conditions will be systematically compared. The use of astrology to determinate planting dates, chanted seeds for crop protection specific mantras is studied with statistical guidance from the Postgraduate Institute of Agriculture of the Peradeniya University. Spiritual leaders are providing parameters for non-quantifiable data.

Networking

A regional consortium of NGOs has been established to promote the work on eco-agriculture and cosmovision. This grouping includes representatives of government extension services, universities, banks as well as regional development authorities such as the Mahaveli Authority. During

workshops, government officials together with traditional leaders perform opening and closing ceremonies. The university will carry out supportive research and banks are being asked to provide finance for transport and food during training sessions.

Registration and regular exchange meetings of shamans and spiritual leaders are being prepared. A documentation of indigenous farming knowledge, including technical and spiritual practices, is in process and an astrological farming calendar is being compiled. This way we hope to promote eco-farming, offer viable alternatives for conventional agriculture and support farmers in their struggle against exploitation.

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Ecological Farming and Intercultural Dialogue

Exchange programmes have proven to be very important tools and pleasant ways of sharing experiences between NGOs. A three member Sri Lankan team from ECO visited the GREEN Foundation in India in May 1998. The aim was to enable the GREEN staff and the farmers they work with to learn from the innovative ecological farming methods applied by ECO. ECO was also able to benefit from the GREEN methodology to conserve biodiversity and native seeds. The five-day workshop also included a day of interaction with spiritual leaders and indigenous health practitioners.

The workshop started in a local temple with a meditation, followed by lectures on ecological and bio-dynamic farming by ECO staff. In the area south of Bangalore vegetation loss has resulted in reduced soil fertility and increased attacks by pests and diseases. Organic matter and recycling are the key to ecological farming; therefore the importance of soil microbes was explained. On the second day eco-farming practicals were carried out on the GREEN demonstration farm and training centre: mulching to retain soil moisture, using biogas slurry as a growth stimulant and liquid manure and compost to stimulate microbial activity in the soil. GREEN staff then repeated the practicals with farmers who arrived on the third day. A crop rotation chart was prepared between the GREEN and ECO resource persons. At the end of the workshop a striking statement by a GREEN staff member brought joy: "We never knew that ecological farming was so simple".

The field day was also very interesting, especially the GREEN approach to native seed production and conservation. A seed exhibition was organised and, during a meeting with villagers, the use of mantras and astrology for pest and disease prevention was discussed. During the exchange with spiritual leaders and indigenous health practitioners experiences were shared on astrology, spiritual powers and the use of yantra, mantra and tantra in worship.

The ECO team explained the Sri Lankan view on the relationship between basic needs and a harmonious community life. The importance of conducting small-scale experiments was also discussed.

Several participants mentioned the value of extensive exchange with other Compas partners including IDEA's experience of using *gondas* (chalk marks to communicate with the gods) and mantras, the experience of CIKS and KPP with *Vrksayurveda* (traditional agricultural practices) and the work of FRLHT on reviving simple health and curative practices. Meetings between these organisations could result in a reference or training manual, which could benefit the whole Southeast Asian region. This (internal Compas) training is now planned for April 1999 in Bangalore, India.



Making compost during ECO/GREEN exchange.

Photo: Krishna Prasad