

Study Visit

Department of Agriculture
Extension and Training
Sri Lanka

25 January - 14 February 2002



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Consultant

Study visit to Sri Lanka

Report from a study visit 25th of January to the 14th of February 2002

Undersigned, Per Magnuson visitor to the Department of Agriculture, Peradeniya

Subjects covered:

Extension work among farmers
Women extension program and training
Promotion of enterprises in rural areas
Biodiversity and genetic resources
Action taken towards sustainable agriculture

Background

My aim in visiting Sri Lanka and the Department of Agriculture was to learn more about the work done towards sustainability and extension work in agriculture in Sri Lanka. I am a former plant breeder and have been working for a seed company in southern Sweden, SvalöfWeibull AB. The company is also active in international courses in seed production and technology, and sustainability in farming. In the latest course: "Sustainable Agriculture in an Environmental Perspective", September to October 2001, I was the Course Director. Now I am working as a consultant with some assignments for the company and also some missions for different donors.

During seven weeks, January and February 2002 I have been visiting different projects in India and in Sri Lanka. The visits have been very useful for my ongoing work and a major input to my activities.

It has *not* been my mission in any way to evaluate activities or make any proposals for future projects. My personal reflections are presented, sometimes subjective since they are based on limited knowledge.

Gender Issues

Women and men relation has been discussed over the years. In late 60:ies and early 70:ies the world experienced the great emancipation era. Women and men and equality was an approach among intellectuals. Still 30 years later inequality between sexes are obvious and still more pronounced in rural areas.

There are many examples of inequality between sexes world-wide. Women most of the



Tea-pickers in Central Province

time carrying a heavier workload than men. Women not given opportunity to work but to take care of the household and family.

Already in 1970 a special programme named the Farm Women's Agriculture Extension, FWAE, started within the Ministry of Agriculture, Sri Lanka. The aim of the newly started body was to educate farm women as it was realised that the farmer can not be treated in isolation when planning for agriculture development in the food crop sector. In 1976 the FWAE became an integral part of the Extension Division of the Government Department of Agriculture (DOA). Today the FWAE gives an active and progressive service to extension officers in all provinces on the island. Farming women are given relevant and updated information by these extension officers. Results are there and impressive with the limited resources at hand.



Women's Programme, North Western Province

Biodiversity

Unsustainable agricultural practices have caused negative impacts on biological diversity, worldwide, at all levels - ecosystem, species and genetic - on both natural and domestic diversity.

Inappropriate reliance on monoculture, over-mechanisation and misuse of agriculture chemicals diminish the diversity of fauna, flora and micro-organisms, including beneficial organisms.

Agriculture practises are of major importance to biodiversity. Many agriculturists have made strong efforts to preserve biological diversity important to agriculture, both *in situ* and *ex situ*. Currently, progress is being made in many regions of the world in implementing biological diversity-friendly agriculture practices in soil conservation, withdrawing production from marginal areas, mastering chemical and nutrient run-off and



Organic Farming, north Western Province

breeding varieties which are genetically resistant to diseases, pests and abiotic stresses.

Sustainable Agriculture

Today's high input agriculture that is dominating the developed part of the world and even the developing countries cannot be regarded as sustainable. Negative side effects, like polluted ground water, accumulation of pesticides and alga blooming in lakes and the sea, are obvious outcome. Agriculture is also highly dependent on fossil fuel, a limited source of energy. Many farmers have begun to adopt alternative practices and are moving towards sustainability. The objective of sustainable agriculture is to sustain and enhance, rather than reduce and simplify the biological interactions on which production in agriculture depends. Alternative agriculture is not a single system of farm practices, but encompasses many farming systems called organic, biological, ecological, balanced, low input, regenerative or sustainable systems. Such systems emphasise management practises as well as biological relationships between organisms. In addition they take

advantage of naturally occurring processes such as nitrogen fixation. Adap-ting a more sustainable agriculture method might, in some case give a lower yield that should be compensated by lower input costs and a higher price of products.

If food is going to be provided for everyone over the coming decades, the sustainable production must increase. Food security is a must but factors like unfair distribution and polices in the world are heavy constraints to achieve equity in food supply. Food safety is also a must and could only be achieved with more environmental friendly methods in agriculture. Basic knowledge of ecology, agro-ecology and the human role in ecology must be understood by decision-makers at all levels.

After the first green revolution in the sixties, with boost in harvest, it is time to move towards a more sustainable way to produce food. It is an enormous challenge we face to turn farming to be less resource demanding and be more environmental conscious.

My visit to Sri Lanka has given me a great deal of practical good examples of agriculture approaches in the process towards a sustainable agriculture. My personal view is that these approaches should be given priority in future promotion and sponsoring of agriculture. One of the most important link in the work is the extension officer in transfer of knowledge to the farmer. Vacancies in extension service throughout the country is worrying.



Extension Service, vegetable grower

Visits

26th January,

Exhibition, Central Province, Kandy

The exhibition was a part of extension to farmers, with useful information in different aspects

of agriculture. A plant nursery gave a good overview of tree plants for a diversification of a farm. Inputs as well as machinery were presented. By-products in farming and good examples of small scale enterprises for the rural sector were given a major part of the exhibition. Examples of enterprises were: bee-cultivation, jam production, dried fruits and genuine handicraft.



Agriculture Exhibition, Kandy District

Nourishment and the well-being of the family was an area of high priority with easily understood posters. Breast feeding and care taking of new family members were also an important subject.

The visit of the Provincial Minister of Agriculture gave the exhibition extra publicity.

26th January,
Visit to the Economic Trade Centre,
Dambulla

A short but interesting visit to the centre for agriculture products, like fruits and vegetables. A busy area with truckloads of farming products to be sold and prices to be set and the market of Colombo and other urban areas to be provided with fresh products. Loads are sometimes just too big and harvest lost due to careless transportation should be considered.

27th January,
Visit to Ambuluwakande

To the south of Peradeniya is a somewhat strange project established in the name of biodiversity. Some parts of the forest was well worth preserving, *in-situ*, and a source of genetic material for the future. The newly established gardens were to me misplaced and should not be part of a biodiversity project. The project was supervised

from the Dept. of Agriculture.



Ambuluwawa Biodiversity Complex

27th January,
Visit to the Royal Botanical Gardens
(RBG), Peradeniya

The gardens were shown by Mr Jayaratne, superintendent of RBG. The objectives of the gardens are as follows:



Royal Palm Avenue, RBG

- a. Carry out activities related to authentication, ethnobotany and *ex-situ* conservation
- b. Identify potential new products from under-utilised plants.
- c. Management of the National Herbarium
- d. Disseminate information on plants and related subjects
- e. Provide educational opportunities
- f. Development of ornamentals

RBG are important for science but also as a recreation area.

29th January,
Small scale up-country agriculture
projects, Nuwara Eliya

Under the guidance of Mr Pallemulla we visited farmers growing crops suitable for a temperate climate like potatoes, strawberries and a broad variety of vegetables. Promotion of entrepreneurship was encouraged from the side of extension and some farmers processed their harvest at the farm. One example was the farmer that made strawberry jam when there was a boost harvest.

We could also see the multiplication of potato with tissue culture in order to avoid different diseases, especially viruses.

The success of extension in finding the most suitable varieties of potato and strawberry was obvious. The use of modern biotechnology in producing sound seed potato is also a good example how agriculture is gained and yield increased in the benefit of the small scale farmer.



Greenhouse for potato multiplication

31st January and 1st February,
Two days trip to Trincomalee

A workshop was held in Trincomalee with one day in field. The theme of the workshop was Integrated

Plant Nutrition Systems (IPNS), a way to optimise the use of fertiliser. The workshop was given as a series of lectures with handouts. Different aspects on IPNS was presented.

I would very much like to see the case studies and possibilities for participants to discuss and to verify knowledge.

What advise do they give today and what alternative could there be?

During the first day we made a break to see the surrounding crops in field at the regional station. Fields are difficult to cultivate since



Opening of the workshop

there are an enormous amount of pebbles in the field, a usual sight in the fields in the area. But many good crops were shown.

A simple and effective way to spray was demonstrated, a sprayer working with over-pressure in a simple manner. An introduction could be done in order to make spraying easier with less hazard for the user.



Hand managed sprayer

Day two was spent as a field day with visits to farmers, schools and resettlements, all with different aspects of agriculture. A very fruitful day with different questions at issue.

The area around Trincomalee has been very badly affected by the war. Resettlement was in progress, a procedure that needs a lot of as

sistance from the side of agriculture extension.

The approach to involve school children in the process of establishing nurseries etc is important in the long perspective.

5th February,
North-Western Province and Women's Programme
Six different projects were visited by the group:



Women's Village Project

- a. Jam and fresh drinks
- b. Different snacks and sweets of coconut extract
- c. Mushroom grower, and mushroom processing
- d. Organic farming of vegetables
- e. Plant nursery and vegetables, organically grown
- f. Women's village project
- g. Village for war heroes

The Farm Women Agriculture Extension has an impressive programme with a huge amount of extension staff involved and results in the villages are essential.

Among the parts of the programme following should be mentioned:

- a. Initiation of economic activities
- b. Organisation and management of household activities
- c. Food preservation and food technology
- d. Improved family food system
- e. Training of extension officers etc
- f. Publicity programmes

The activities of FWAE aiming at sustainable development and empowerment of women

are important inputs in order to achieve gender equality.

6th February,
Small scale home based projects

We visited three different projects this morning, and they were all home based and sustainable in the sense that they had marginal effects on environment and were low in energy input. The bee-keeping of Asian bees is an interesting activity that should be developed even more. Some constraints like heavy use of insecticides must be solved in co-operation between bee-keeper and farmer. Bee-keeping could be a substantial extra income to many people in the rural areas.



Bee-keeping

7th February,
Soil Conservation Projects, Madugalla
Two farmers were visited and both of them are applying the SALT system, Sloping Agriculture Land Technology, to prevent soil erosion.

Sticklings of *Gliricidia sepium* was planted on contours to form hedges to prevent soil erosion. *Leucaena leucocephala* is another species useful for



SALT-project

the same purpose. Both of them are fixating nitrogen. Vegetable and agriculture crops were planted in between the hedgerows. The technology seemed to be very well functioning and harvest seemed to be good. One question that should be asked is of course if this land really should be cultivated in an intensive manner. Forestry could, maybe, be more environmental friendly. A well functioning technique to plant fruit trees was shown.



Fruittree plantation

8th February,
Small scale millers and post harvest technology

The centre for post harvest technology in Anuradhapura was visited. Different techniques in the processing of rice was shown and demonstrated. Decoating of beans was done with a simple method using rotating discs of a metal cutter. Maize cob sheller has a big demand among



Tractor transmission to a sheller

farmers and makes shelling easy and quick. Transmission from a two wheeled tractor was developed in the workshop.



Parboiling facilities at farm

A new technique to dry fruits is under development using osmosis to dehydrate the fruits. Then the fruit is air dried or a fire heated drier is used.

Many simple but genius machinery has been developed from the side of the department and most of the technique is transferred to small scale farmers.

12th February,
Tobacco Regulation Programme
The most contradictory visit with an environmen-



Farmer within the tobacco PR-project

tally sound approach and a health damaging product - tobacco. Plant nursery are of major impor-

tance to speed up the growing season of tobacco.

Farmers plant the small plants and manage their crop with the assistance of officers from the tobacco company. Many of the farmers are growing their crop on the hillsides together with vegetables and agriculture crops. Some of the hillsides are not really suited for agriculture. The company has together with the DOA introduced SALT to the growers. In addition the company has several PR-projects to promote environmentally friendly approaches. One village with 20 families had been assisted with houses and extension service to grow a diverse assortment of vegetables and fruits

11th February,
Pesticides Registrar Office

Presentation of activities and trends in the use of pesticides.

Horticulture Research and Development Programme

Presentation of research programmes and other activities.



Demonstration garden, Horticulture Department

Seed and Certification Centre

Insight in the procedure of certification of seeds.

13th February,
Plant Genetic Resources Centre

Presentation of the role of the Gene Bank of Sri Lanka. Good resources to preserve genetic material. Storage of material in -18 centigrade is a priority. Biotechnology lab and personnel are at a high level. The good facilities of the lab are not used due to lack of funds, a frustrating situation. Much could have been done to assist plant breeders to identify marker genes and special genes for

resistance to different diseases, insects and abiotic factors.

Courses with participants in the region is held on a regular basis.

In-service Training Institute

An institute that gives courses in all aspects of agriculture as a service. Government officers are given further training and others with connection to agriculture given opportunities to attend training courses. Training is an important component that should be given high priority.

Conclusions

During my stay I have seen many good examples on environmental friendly farming. Organic farming demands a great deal of cattle or poultry manure to have a sustainable system. Many farmers are recommended to have a more of balanced farming system, not excluding inorganic fertiliser totally. Alternative to pesticides are of great importance since the use of pesticides are increasing in the country. Promotion of integrated pest management, IPM is there and should be even more stressed. The increase of pesticides is on the account of vegetable growing making them not as nutritious as the ought to be.



FWAE, Women Village Group

A good approach is the promotion of enterprises in small scale in order to make people self-supporting in a sustainable way. The strengthen of women by the FWAE has one of the best programmes I have seen, with good results. Women in rural areas need all support in making

their every day life easier with improvement of kitchen, post harvest, food quality and nourishment of the family. The day when these steps are implemented by women and men together, we may be able to talk about equality between women and men.

Acknowledgement

I am very grateful to all staff of the DOA, Extension and Training, that made my stay very interesting and pleasant. The visit was very well organised and most successful. I was met by a great hospitality and I really felt welcome.

Thank you all very much!

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Istuthi and Ayubowan