

BUSINESS FOR DEVELOPMENT: IMPLICATIONS FOR EXPORT STRATEGY-MAKERS

SRI LANKA

THE 'POLYTUNNELS INITIATIVE' TO DEMONSTRATE WHAT A TRADE SUPPORT ORGANIZATION CAN DO TO MORE THAN JUST PROMOTE TRADE

1. Introduction

In Sri Lanka, as in many other developing countries, the vast majority of the rural population is dependent on Agriculture. Agriculture forms the backbone of the Sri Lankan economy. The countries' core strengths are the availability of adequate land and water resources and a conducive climate for Agriculture.

Protected systems of Agriculture such as Polytunnels use Micro Irrigation Systems which is a scientific method of irrigation carrying desired water and nutrients direct to the root zone of the plant, drop by drop. Advantages of the technique are ' More crop for every drop ', early maturity of crop, better quality of produce and higher yields. The technique is ideal even for terrain with problematic soils and water. It saves labour cost, increases yield up to 230 per cent and saves water up to 70 per cent.

Accordingly, the 'Polytunnels initiative is an attempt to introduce high tech agriculture to a selected project area in the hill country of Sri Lanka. Its basic objectives are:

- (a) To increase productivity and the quality of agricultural produce to meet the demand of consumers in international markets, in a competitive manner.
- (b) To increase the incomes and improve the living standards of the farmer community in the project area and
- (c) Make themselves reliant, to obviate the necessity to depend on state subsidies.

The initiative is to cultivate vegetables under "protected systems" for export, in a district known as 'Badulla' in the hill country, in a project area known as the 'Uva Paranagama Electorate'. The area has suitable soil and climatic conditions for the cultivation of exotic vegetables.

2. Socio Economic parameters of the project area are as follows: -

- (a) The total land area is 131.3 sq. kms.
- (b) It consists of 68 rural administrative areas.
- (c) The total population is 76,282 and comprises 37,430 males and 38,879 females. They represent 19,550 family units.
- (d) The total land area of 13,330 Hectares is presently utilized in the following manner.

| | <u>Hectares</u> | <u>Percent (%) Land Area</u> |
|--------------------|-----------------|------------------------------|
| Paddy | 1896 | 14.2 |
| Chena cultivation | 1491 | 11.2 |
| Tea | 3591 | 27.0 |
| Thick jungle | 742 | 5.6 |
| Timber Plantations | 270 | 2.0 |
| Forest Resources | 368 | 2.7 |
| Grass Land | 116 | 0.9 |
| Home Gardens | 4579 | 35.7 |
| Abandoned Land | <u>96</u> | <u>0.7</u> |
| | <u>13330</u> | <u>100.0</u> |

- (e) There are no major industries, other than a few tile factories
- (f) Of the 19550 families, 9131 (46.7%) are in the low-income category and are beneficiaries of the state social support system known as 'Samurdhi'.
- (g) Although the economy of the project area (Electorate) is primarily based on agriculture, production efficiency and productivity of farmlands are very low.
- (h) Home gardens (35.7 percent of the land area) are generally used for the cultivation of fruits, vegetables and spices, excluding the area occupied by human settlements.
- (i) Most of the agricultural produce is seasonal and are affected by adversities such as heavy wind and rain, particularly during the flowering periods.
- (j) Per capita land availability which is around 0.24 hectares is very low and contributes to the low incomes of the population.

In view of the above facts, the alternative strategy to improve the income levels and living standards of the people is to increase the productivity of farmlands. It was therefore determined that a system of protected agriculture for the cultivation of vegetables was the solution to the problem.

3. **Market for the Produce**

There is an increasing trend in the world consumption of vegetables. This is due both to an increase in the consuming population as well as their dietary habits. The trend is particularly discernible in developed countries, due to the realization of the importance of vegetables in the diet, as the high nutritive value of vegetables is vital for the good health of the body. However although there is an increase in the demand for vegetables, the world's cultivable land area is decreasing due to (a) Rapid Urbanization (b) Industrialization (c) Shrinkage in land holdings (d) Pollution and (e) Land erosion.

Therefore, off seasonal vegetable production under protected systems is considered the best alternative to obtain optimum benefits from the available cultivable lands, and other resources such as water, fertilizer and manpower etc. In conventional agriculture, these resources are used exclusively with improper control and generally poor results.

4. **Advantages of Cultivation of Vegetables under Protected Agriculture Systems**

Different types of protected agriculture systems are used in various parts of the world. They include Hot Beds, Cold Frames, Frame Culture, Polythene tunnels, Green Houses, Glass Houses and Poly Houses. In all these systems agricultural inputs are used systematically to achieve optimum yields. In Sri Lanka, generally low cost low technology protected systems are used to a rather limited extent, in the hill country areas, where cold climatic conditions are prevalent.

This paper does not attempt to analyze the differing structures and technologies used in the range of protected agriculture systems, their relative advantages and disadvantages and outputs. However, in general, cultivation of vegetables under protected systems has the following advantages:

- Increases carbon dioxide levels, leading to better photosynthesis;
- Protects production of vegetables in the initial stages, from adverse environmental conditions such as high and low temperatures, frost, hail, rain and snow;
- Ensures high quality products and enhanced yields and also assures a regular supply;
- Plant growth is enhanced and crops mature faster;
- Usage of water is optimized due to reduced evapo-transpiration. Up to 40-50 per cent water could be saved;
- Protects crops from birds, monkeys and other stray animals;
- Reduces the incidence of diseases and pests.

The project under implementation proposes to use the green polyhouse method specifically known as poly tunnels. A standard model of such a green house of dimension 25' x 40' (1000 sq. ft.) and a production flowchart is at Annex. I. There are three categories of polytunnels based on cost. Low cost, Medium cost and High cost. Low cost polytunnels use relatively simpler technology and has a shorter durability or life span. The specific nature of the polytunnels that will be installed in the project and their micro irrigation and fertigation systems have not been decided as yet.

5. **Products and Marketing**

Sri Lanka exports fresh vegetables and fruits mostly to the Maldives and Middle Eastern countries by air freight. Smaller volumes are exported to European countries for the consumption of ethnic communities. Export statistics for the period 1997 to 2002 and the marketwise distribution of exports are detailed in Annex II.

The data reveal an increasing trend in exports, except in the year 2001 when severe unsettled market conditions prevailed due to the events that occurred both in the international arenas as well as in Sri Lanka, affecting the Airline Industry.

The main vegetables that will be produced in this project are Tomatoes, Beans, Brinjals and Capsicums. Production of other exotic varieties will be undertaken depending on requirements. Leading exporters of fresh fruits and vegetables who are members of the 'Sri Lanka Fruits & Vegetable Producers, Processors and Exporters Association (FVPPEA)' will enter into a tripartite marketing agreement with the Sri Lanka Export Development Board (National TPO) and the producer farmers of the project (who will be incorporated into a single legal entity) to purchase the entire production for export. The 'marketing agreement' will stipulate the terms and conditions of purchase as well as the obligations of the parties to the agreement. The national TPO will ensure 'Fair Trade' practices under the agreement in regard to quality of produce as well as prices that are payable in relation to international market conditions, under forward sales contracts. The TPO will be responsible for the proper implementation of the marketing agreement.

The TPO will allocate to each selected link exporter of the Exporters Association a specified number of poly tunnels, depending on the capacity for purchase. Each link exporter will be required to specify the types of vegetables that should be grown during a particular period, by the farmers to whom polytunnels are allocated, and will be responsible for purchase of the produce in terms of the agreement. Similarly the allotted farmers will be obliged to sell the produce in the first instance to the particular linked exporter. They will however be free to sell any excess that the linked exporter may not require, to other exporters, with mutual agreement, under the direction of the TPO.

The TPO will reserve the right to link other leading Export Houses (who may not be members of the FVPPEA) to the project, depending on market conditions and terms of purchase. However, no farmer will be permitted to sell the produce in the local market under any circumstances, or to other purchasers for export, outside the marketing agreement except under the express direction of the TPO.

The agreement will also stipulate the obligations of the linked exporters in respect of supply of quality seed material, fertilizer and other inputs as well as technical extension services.

6. **The Scope of the Project**

The project will encompass 600 youth farmers. They have already been given an initial training on green house technologies at a state 'In Service Training Institute'. The TPO has met the cost of this training under its promotional budget. However the supplier of polytunnels will be required to impart comprehensive training to the farmers in respect of the technology that will be used. It will be a condition of the purchase contract.

7. **Cost of project and Means of Financing**

The estimated total capital cost of the project based on a low cost polytunnel is Rs. 94 Million. (US\$ 940000). The imported cost of polytunnels will be financed through a foreign credit line. All local costs including working capital requirements will be financed through a 'Rural Economy Resuscitation Fund' The foreign as well as the local cost of financing will be channeled by the State, to the EPV Company of the farmers, through the national TPO. The TPO will be required to monitor the proper disbursement of funds. Additionally the TPO will be responsible for the proper implementation of the project in terms of the 'Project Plan' as well as for the recovery of state funds, from each farmer out of their incomes, through their EPV. The recoveries will be in terms of a predetermined repayment schedule, based on their estimated net monthly incomes.

Each of the selected 600 youth farmers will be allotted one polytunnel for installation in his own premises. Each will be required to use family labour for erection. The polytunnels will effectively belong to the State, until each farmer completes repayment of the full cost when ownership will be transferred to the farmer concerned. Failure to do so for whatever reason (including improper use) will empower the TPO to dismantle and allocate a polytunnel to another selected farmer.

8. **Management of the Project**

The Management of the project will basically be in the hands of the EPV whose stakeholders are the 600 producer farmers. A Board of Directors will be elected from among the farmers to manage the corporate affairs of the EPV.

In terms of a specific article of the 'Memorandum of Association of EPV Peoples Companies' the national TPO is empowered to appoint suitable persons both from the private and public sector to function as 'Advisory Directors'. Accordingly, it is proposed to appoint a 14 member Advisory Board of Directors to cover the project in view of its large size and scope. Their responsibilities are to advise, guide and assist the farmer Board of Directors of the EPV in the fields of Finance, Marketing, Production and Social Development activities of the project. This process facilitates the decision making process and makes it more efficient and effective, as the village producers lack the required experience in Management.

The selected supplier of polytunnels will also be expected to serve in the Panel of Advisory Directors to effectively impart expertise and experience related to technical assistance and training.

The EPV will recruit professionally qualified administrative and field technical staff to effectively manage the project in view of its wide geographical area of coverage. The field level staff will be in overall charge of a Farm Manager. 6 Technical and Extension officers and 24 Field Assistants will comprise the field staff proper. The 24 Field Assistants will each be allotted a specific number of polytunnels in a particular geographical area. The 6 Technical and Extension Officers will each supervise 4 Field Assistants. Their emoluments will be met by the EPV. The recruitment process of field staff is underway.

The national TPO has already recruited on contract a Project Manager (who is a qualified and experienced Agriculture Professional) to monitor and supervise the project. He will also function as a 'trouble shooter' and will be responsible to the TPO. He will be assisted by specialist agriculture officers of the TPO and will have authority to give directions to the field staff under the EPV.

9. **Profitability of the Project**

An assessment of the commercial viability of the project shows that each of the 600 beneficiary farmers will be able to earn a net average income of Rs. 12,000 (US\$ 120) per month. This includes the cost of each farmers labour related to production. The estimated net income has been computed after setting aside all input costs related to production, repayment of installments of the cost of polytunnels, a contribution of 4 percent on turnover to the EPV to defray administrative costs, and a similar contribution of 2 percent to the national TPO, to defray costs related to the entire project.

10. **Social & Economic Benefits of the Project**

- 10.1 635 direct employment opportunities and 120 indirect employment opportunities for suppliers of inputs will be created.
- 10.2 Each beneficiary farmer will be able to earn a minimum average net income of Rs. 12,000 (US\$ 120) per month.
- 10.3 The net foreign exchange earnings of the entire project will exceed Rs. 100 Million (US\$ 1 Million) per annum.
- 10.4 Infrastructure facilities of the project area will be developed.
- 10.5 A large number of peripheral employment opportunities will be created through the establishment of Grocery Shops, Boutiques and other service facilities.
- 10.6 Living standards of the beneficiary farmer families will be enhanced.
- 10.7 Dependence of the beneficiaries of the project and their families on the state social support system will shift towards self-reliance through income generating activities. This shift will result in self-confidence and self-empowerment.
- 10.8 Social development of the beneficiary families will be enhanced by way of better education of their children, health care, nutrition etc.

Conclusion

This project is being undertaken by the State as a national endeavour. If successful, it is proposed to replicate the model, incorporating lessons learned, in other rural agricultural areas, for overall national benefit.
