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SRI LANKA  
AGROENTERPRISES PROJECT

Project No. 383-0111

MIDTERM EVALUATION

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This report presents the independent findings and recommendations of an evaluation team. It does not necessarily represent official views of the Government of Sri Lanka or the Agency for International Development.

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## PREFACE

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The team conducted this evaluation from September 28, 1994 through November 1, 1994. We wish to thank all those who assisted us in reviewing Argo-Enterprises' (AgENT's) activities. We are grateful to the project clients who hosted us on field trips around Colombo, Kandy, and Nuwara Eliya. We deeply appreciate the opportunity to discuss the project with private sector business leaders; officials in various ministries, departments and provinces of the government of Sri Lanka; and officials of the USAID/Sri Lanka Mission.

We are particularly grateful to Dr. Colin Sorhus, the AgENT project manager for Oregon State University, and the AgENT project staff for the long hours they spent answering our questions. Richard Hurelbrink, the AgENT Chief of Party was especially helpful in organizing many briefings on all aspects of project implementation.

We have attempted to collect relevant information and report our findings and conclusions in a logical manner. However, we are solely responsible for any errors in reporting or interpreting facts.

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## ACRONYMS

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AED	Agro-Enterprise Development
AEIF	Agro-Enterprise Investment Fund
AgENT	Agro-Enterprises Project
AgSS	Agricultural Support Services Project
APAP	Agricultural Planning and Analysis Project
CIPART	Citizens Participation on Development Project
CISIR	Ceylon Institute of Scientific and Industrial Research
DARP	Diversified Agricultural Research Project
EOPS	End of Project Status
GSL	Government of Sri Lanka
ISM	Irrigation Systems Management Project
LOP	Life of Project
MARD	Mahaweli Agriculture and Rural Development Project
MED	Mahaweli Enterprise Development Project
M&E	Monitoring and Evaluation
NIC	Newly Industrialized Country
OSU	Oregon State University
PACD	Project Assistance Completion Date
PL 480	U.S. Public Law 480
R&D	Research and Development
SCOR	Shared Control of Resources Project
TIPS	Technology Initiative for the Private Sector Project
USAID	U.S. Agency for International Development

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## EXECUTIVE SUMMARY

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### **Purpose of Evaluation**

This evaluation was conducted to (1) provide USAID/Sri Lanka, the National Policy Planning Department, and the Ministry of Agriculture an in-depth assessment of project implementation and progress to date and (2) recommend any modifications to improve the likelihood of achieving the project purposes. The evaluation assesses the delivery of USAID and GSL/Private Sector project inputs, the progress towards achieving the project purposes, and the impact of project activities to date. It also provides clear guidance on what future action may be needed to ensure sustainability of AgENT—or an organization that can continue the services provided by AgENT—and the validity of initial design assumptions and strategies.

The evaluation also examines planned inputs for the remainder of the project and recommends changes needed to achieve the project purposes. Particular attention is given to technical assistance. The evaluation also examines the project's relevance to the Mission's Strategic Framework, especially its contribution toward the strategic objective of "Increased competitiveness and growth of markets and enterprises."

### **Evaluation Methodology**

The evaluation was conducted by reviewing a wide range of USAID Mission, project, and statistical documents relevant to AgENT's design and implementation. Interviews were conducted with project staff, project clients, USAID officials, GSL officials, and private sector entrepreneurs whose opinions and experiences are relevant to AgENT's performance. This information was analyzed with respect to 11 specific issues and 6 general and cross-cutting issues identified by USAID.

The specific issues were assessed in terms of objective findings and logically derived conclusions. The general issues were addressed through conclusions based on overall project performance. Lessons learned were identified to give USAID and the GSL useful insights on aspects of the project that contribute to overall project success and merit consideration for application to other development projects. Finally, recommendations were made on actions that can improve project performance.

### **Purpose of Activities Evaluated**

AgENT is being implemented to expand agro-industrial enterprises and support the diversification and commercialization of Sri Lanka's agricultural sector.

## **Findings and Conclusions**

The project has set appropriate output targets in annual work plans. Progress to date includes successful introduction of new technologies, market development, and new financial mechanisms. The rate of investment has been about one-half of cumulative output targets, but the client base is expanding rapidly and past investments are building momentum within existing client firms and their competitors. Progress on improving public sector support to agro-enterprises has been slow, but the team has made significant headway in collaborative training and market development activities with key public institutions.

The project design remains relevant to USAID and GSL strategic frameworks. The team's planned inputs over the remaining life of the project are sufficient to meet all project output objectives.

The project M&E system is accurately tracking project inputs and outputs on a timely basis. A purpose-level monitoring and evaluation framework is not yet in place. Refinement of the logical framework's purpose-level indicators will strengthen the M&E system.

The project has an effective screening procedure for assessing potential adverse impacts on the environment. No adverse impacts have been identified to date. However, the use of pesticides/fungicides in crop production trials needs to be assessed to determine whether more comprehensive environmental compliance procedures are warranted.

The AgENT team is making satisfactory progress toward meeting project objectives. Inputs are being provided on a timely basis and work plans are well designed and monitored. The team is using cost-effective methods to accomplish its scope of work. Training has been localized to focus on country-specific enterprise development issues and save funds that would normally be required for overseas training. Cost-sharing investments in innovative technologies with clients are stimulating client confidence and fostering prudent financial management behavior.

The project is generating a broad base of commercial interest in its program. It has effectively reached a broad target audience of micro-, small-, and medium-sized firms. Women are well represented in the client base, and training and promotion efforts have been effective in extending project access to non-English speaking entrepreneurs.

The project is highly effective in improving the entrepreneurial behavior of its clients. The clients are demonstrating the capacity to exploit project assistance well beyond the planned life of the project. Competitors within the clients' markets are benefitting from the knowledge generated by client technology adoption programs.

However, there is no assurance of sustainability of the team's strong technical assistance effort beyond the project life.. No organization in the public or private sector currently appears to be a viable candidate to assume the project's advisory role. The project advisory board has an important opportunity to promote project sustainability by identifying and assisting relevant organizations to extent the project's important work.

## **Lessons Learned**

Three major lessons may be learned from AgENT design and implementation experience.

- First, the AgENT advisory board is staffed mainly by progressive agro-entrepreneurs from the private sector. Their perspectives on the agricultural commercialization and diversification process provide effective guidance to the project team on strategic implementation issues. They also serve as an important platform for stimulating effective public sector support for agricultural development.
- Second, the team's aggressive promotion campaign has secured a solid client base and established the level of momentum necessary to achieve the project's planned end of project performance targets.
- Third, the decision to initially concentrate on selecting clients from established (rather than new) firms has allowed the project to identify a highly productive investment and technology transfer opportunities and avoid a high rate of business failures.

## **Principal Recommendations**

The team identified five areas where project performance can be enhanced.

1. Market development studies should emphasize descriptions and analysis of market linkages, competitive standings at each market level within a particular sub-sector, and firm-level or land-level comparisons of crop enterprise profitability and resource use.
2. The team should investigate downstream market development opportunities to complement successful introduction of new enterprises and business expansions upstream at the producer level.
3. The team should emphasize improved financial market performance in agro-enterprise development rather than encouraging funding mechanisms that circumvent existing financial market inefficiencies.
4. The project logical framework should be modified to include specific purpose-level indicators that can be traced through the project's client businesses. The project M&E system is already collecting firm-level employment, output, sales, and investment information.
5. The team should assist the mission in developing an environmental management strategy that is consistent with pesticide/fungicide requirements for crop production

trials, as well as the mission's obligation to comply with basic US environmental regulations.

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## SECTION I BACKGROUND

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### A. Purpose

This report presents the results of the first interim evaluation of the Agro-Enterprises (AgENT) project. Key project data are summarized in Annex A. The primary purpose of the evaluation is to (1) provide USAID/Sri Lanka and the National Policy Planning Department and the Ministry of Agriculture with an in-depth assessment of project implementation and progress to date and (2) recommend any modifications to improve the likelihood of achieving the project purposes.

The scope of work is presented in Annex B. The evaluation assesses the delivery of USAID and GSL/private sector project inputs, progress towards achieving the project purposes, and the impact of project activities to date. It also provides clear guidance on what future action may be needed to ensure sustainability of AgENT—or an organization which can continue the services provided by AgENT—and the validity of initial design assumptions and strategies.

The evaluation also examines planned inputs for the remainder of the project and recommends changes needed to achieve the project purposes. Particular attention is given to technical assistance. The evaluation also examines the project's relevance to the Mission's Strategic Framework, especially its contribution towards the strategic objective of "Increased competitiveness and growth of markets and enterprises."

### B. Methodology

The evaluators collected information on all aspects of project design and implementation by:

- Reviewing relevant project documents, including work plans, quarterly progress reports, technical reports, project files, mission strategy and design documents, and the contractor cooperative agreement and scope of work
- Reviewing published statistics on Sri Lanka's agricultural sector
- Interviewing key project personnel, including technical assistance contractors, mission development officers, GSL officers in agriculture and planning, university researchers, and project advisory board members
- Interviewing a random sample of farmers and entrepreneurs who are project clients

- Interviewing a random sample of agri-business managers who supply agricultural inputs and services and market agricultural products

The list of persons interviewed is presented in Annex C. The documents and reports used in the evaluation are listed in the bibliography.

The information collected from interviews and documents was analyzed with respect to several critical project issues and concerns. The analysis placed particular emphasis on 11 specific issues that are highlighted in the evaluation scope of work (Annex B). The specific evaluation issues are addressed in Section II of this report as a series of findings and conclusions.

Overall conclusions and lessons learned were drawn with respect to the project's relevance, effectiveness, efficiency, impact, and sustainability, as well as gender concerns. Finally, recommendations were developed to address critical project implementation issues over the remaining life of the project (LOP).

### **C. Project Rationale**

Research in Sri Lanka has demonstrated the capacity to increase farm income through diversification and commercialization of the agriculture sector. Significant yield improvements are possible, and farmers will readily accept new technologies if rewarding markets are available. Furthermore, an increasingly active private sector is emerging in production, marketing, and processing in the once government dominated agricultural sector.

However, new strategies are necessary to introduce appropriate production technologies, increase the amount of value added processing, expand the commercial outgrower schemes, and develop active marketing and financial linkages. Technical innovation and support is necessary to help Sri Lankan firms and individuals establish new competitive agro-enterprises. Flexible and creative investment packages are required in all parts of the agricultural production, marketing, and food processing industry.

### **D. Project Summary**

The Agro-Enterprises Project addresses the unmet demand for comprehensive, creative, technical, and financial services required to develop Sri Lanka's agro-industrial sector. The project provides assistance to emerging and expanding agro-enterprises through a combination of technical services in production, processing and marketing, research, and training. It supports agro-industrial development and investment packaging to leverage an increased share of the financing available through commercial banks and other financial institutions.

The Project mobilizes significant local resources through private investments from participating financial institutions and agro-entrepreneurs. Thus, the project addresses the principal constraint to development of the sub-sector.

USAID inputs include:

- Short- and long-term U.S. and Sri Lankan expertise, including operating costs for an information and service center
- Agro-enterprise development grants
- Agro-enterprises training funds
- Equipment and materials
- Market development and research
- Analysis of policy issues and related environmental issues

Other inputs for the project include:

- In-kind contributions from individuals and institutions involved with research and development in collaboration with agro-enterprise development grants
- Investment funding or owner equity put up by private agro-entrepreneurs and financial institutions

The project feasibility derives from market forces that direct investment and project activities. However, the project also recognizes a link between resulting economic growth and poverty alleviation through the generation of employment. In addition, the project gives special attention to promotion of investments in women-owned businesses or to businesses where women are primary beneficiaries.

Professional guidance and oversight for the project is provided through an advisory board composed of key GSL officials and representatives from business and participating financial institutions. The Board advises on matters concerning implementation and helps develop strong linkages with the agricultural, financial, and agri-business community.

The AgENT project office in Colombo serves as an informal technical resource center for entrepreneurs. The project technical assistance team advises entrepreneurs on agri-business development and obtains marketing, production, and processing technology information for entrepreneurs as required.

Initially, the project advertised the availability of its services. This approach was used to inform potential clients about the availability of services and promote the idea of agro-enterprise investments. Potential clients include private sector individuals, farm organizations, or businesses that are willing and able to pursue an agro-enterprise investment.

Potential clients request assistance from the project. Requests for information and advice are fulfilled by the project team as much as possible. Requests for more specialized

information or assistance for research or development of innovative new businesses are reviewed separately. Assistance is provided if the proposals meet certain criteria, including expected returns from the enterprise, the degree of innovation in the enterprise, the financial commitment and management capabilities of the clients, the environmental safety of the activity, the potential benefit to farmers and unemployed, and the potential benefit to the country.

The project may provide consultant services, training, marketing assistance, research and development grants, proto-type equipment for processing, and management assistance. Clients are expected to jointly finance the activities. The matching contribution depends on the cost of the activity, the degree of risk involved, the ability of the client to pay, and the potential benefit from the enterprise development.

The project works with whatever agricultural enterprises clients may propose that meet the criteria for assistance. It may cover a broad range of production and processing activities, including livestock, plantation crops, horticultural export crops, and crops for the domestic market.

The project adheres to the theory that private investors and the market will seek the most profitable investments. Therefore, those are the enterprises that should receive support. Emphasis will go to outgrower production activities and "big investor, small producer" projects whenever possible.

### **D1. Project Goal**

The project goal for the AgENT Project is to diversify and commercialize agricultural systems. Diversified, commercialized agricultural systems can be expected to generate the increased employment and higher incomes required as a base for rural development and future economic growth. Agricultural diversification and intensification is most compatible with Sri Lanka's natural resources and cultural traditions.

### **D2. Project Purpose**

The project purpose is to stimulate the development and expansion of private agro-based enterprises. The project builds on existing entrepreneurial firms and individuals with interest in investments in the agricultural sector and on the production base capable of producing a wide range of crops and products at reasonable cost. In the past, few investments other than tea, rubber, and coconut have been made in this sector because government economic controls and policies favored production of subsistence food crops.

### **D3. Project Outputs**

The project is designed to diversify Sri Lanka's agricultural sector by producing specific outputs in the areas of agro-enterprise investments, new technologies, market development, improved public sector support for agro-enterprises, and new agro-enterprise

financial mechanisms. The outputs and their relationship to project inputs, purposes, and goals are summarized in the project logframe (Annex D).

### **D3a. Agro-Enterprise Investments**

The project is expected to generate approximately 50 new agro-enterprises, as well as expansion and improvements in approximately 300 others. These investments will result from technical innovations introduced by the project, new market opportunities, and the financing provided through participating financial institutions. Other firms and entrepreneurs will benefit indirectly by the spread of project introduced technology and the ability to enter new markets pioneered by initial investors.

Substantial investments will also be made with entrepreneurs' own capital or resources from other sources. The project actively promotes joint ventures with U.S. firms wherever possible and is compatible with USAID policies and regulations.

The investments will result from market forces. Private sector entrepreneurs will identify the geographical areas, products, and types of enterprises to be financed. Farms, which also operate as small businesses, will benefit. An estimated 9,700 farmers will supply products for the agro-enterprises established with project assistance and financing.

### **D3b. New Technologies**

Over the life of the project, approximately 100 new technologies are expected to be introduced in the enterprises assisted. These technologies will include germplasm, improved pest and disease control, and harvesting techniques for proper time and size for best quality. Post-harvest handling improvements will include in-field or close-to-field packing, introduction of proper packing crates, proper cooling, improved transport to reduce loss, and improved handling at wholesale markets. Several processing technologies are expected to be introduced including modern juice plants, fruit drying, improved packaging materials for foods, frozen fruits and vegetables, processing of crop by-products, and processing of livestock products.

### **D3c. Market Development**

The project is designed to produce direct improvements in market linkages between producers, intermediaries, and consumers. Project assisted firms and entrepreneurs will develop greater sophistication in assessing consumer requirements and planning to provide products at prices and qualities demanded by consumers. Improved production and post-harvest technology will improve market efficiencies, and project-introduced promotional materials will help firms better market their products.

### **D3d. Improved Public Sector Support to Agro-Enterprises**

GSL agencies and training institutions have been oriented to service the government and small farmers as clients, but have been not well-directed to service businesses. The

project will draw on the resources of government agencies, primarily the Ministry of Agriculture, the Ministry of Export Agriculture, the Ministry of Livestock Development and Health, the Ceylon Institute of Scientific and Industrial Research (CISIR) and Universities. Together with commercial firms, these organizations will resolve technical problems of economic importance. The project will accomplish this by providing funds, jointly with private companies, for approximately 25 research and development projects undertaken by government agencies under the project.

The project will also complete studies of key policy issues affecting the sector. An estimated twelve studies and reviews conducted during the project will provide input to government policy reform and implementation of procedures to stimulate non-traditional agricultural exports and improve linkages between small producers and agro-enterprise markets.

#### **D3e. New Agro-Enterprise Financing Mechanisms**

The project will help interested financial institutions to develop new procedures for "packaging" agriculture-related investments. The new financing innovations will increase confidence between the financial system and the private agro-enterprise sector and will increase the debt capacity of entrepreneurs. Confidence will increase through better training and greater experience of financial institution staff with agro-enterprises investments. The project will also attempt to reduce transaction costs and the time required to process loan applications.

#### **D4. End of Project Status**

By the Project Assistance Competition Date (PACD), it is expected that the project will have facilitated the establishment or expansion of approximately 350 agro-enterprises with consequent increases in farm incomes and employment. The project is expected to result in generation of approximately 13,000 new jobs, increased production valued at \$ 8.15 million per year in constant dollars and increased exports of \$4 million per year.

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## SECTION II FINDINGS AND CONCLUSIONS ON KEY ISSUES

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In this section, we examine the 11 specific issues detailed in the evaluation scope of work. Each issue is addressed by first summarizing the evaluators' objective findings then deriving conclusions that support a logical resolution of the issue.

### A. Progress on Planned Outputs

#### A1. Findings

Project output targets are summarized in the logframe (Annex D). The targets are generally congruent with overall enterprise development objectives. However, the variation in clients' interests have required the AgENT team to support a mix of activities that could not be uniformly focused on each output target. The broad characteristics of the clients are summarized in Annex E. We discuss output targets below, emphasizing the validity and relevance of the project design. Progress to date on each target is summarized in Annex F. Training statistics are summarized in Annex G. Project technical reports are summarized in Annex H.

#### A1a. Agro-Enterprise Investments

AgENT grants are intended to share the cost of investments in research and development (R&D) and adoption of innovative technology, as well as the risks in new enterprise ventures. Because these types of investments are designed to promote innovation and share risks, these project inputs are programmed as grants. Project grant activity is summarized in Annex I.

To date, 207 AgENT grants have a project contribution value of \$576,000. Client contributions have been \$546,000. Total investments have therefore been \$1.1 million, against a 2-year cumulative target of \$2.4 million. Grants have been made for 46 production trials against a target of 36. No post-harvest handling trials have been made against a target of 8. No processing trials have been made against a target of 10. Fourteen marketing trials have been made against a target of 8.

A total of 40 grants totaling \$222,860, or \$5,297 per grant, have been made to 37 clients for equipment or production commodity investments. These grants were 45 percent of the combined AgENT-Client investment of \$472,419. On a per client basis, the average AgENT contribution was \$5,726, out of a total investment of \$12,768.

The OSU-AgENT cooperative agreement has a US source and origin requirement, so the project cannot provide grants of more than \$5,000 for non-US equipment. Since many of the clients are interested in upgrading processing equipment for large scale plants, the high

cost of US equipment over equipment from less distant countries may cause them to opt for non-US equipment.

A total of 15 outgrower/contract grower initiatives have been made, against a target of 8. These initiatives include 3 investment packages completed, against a 2-year cumulative target of 20.

#### **A1b. New Technologies**

The project is supporting innovation in marketing, management, and production. New marketing and production technologies are being introduced in the broad areas of transportation, storage, handling, packaging, seeds, cultivation, and harvesting. A total of 34 new or improved equipment/technologies have been introduced and adopted, against a target of 30 for the first two years.

#### **A1c. Market Development**

Of a total of 303 clients, 301 clients are established firms that intend to expand. Of the established firms, 126 enterprises have actually expanded, against a 2-year cumulative target of 120. These expansions have generated 1,479 additional jobs, compared to a 2-year cumulative target of 1,825. Because the project has initially chosen to serve only clients with established enterprises, only two new enterprises (wreaths and dried fruits) have been started with project assistance. Some experts assert that the onion storage and crop (pyretherum, legumes, and vanilla) trials are developing new enterprises.

No policy studies have been conducted, against a target of 2 during project year 2.

#### **A1d. Improved Public Sector Support to AgENT**

The project has developed strong collaborations with several GSL entities, including the Export Development Board (cost-sharing for trade fair participants), the Agricultural Development Authority (big onion production and storage trials and training), Horticultural Development Institute (vegetable trials and training), CISIR (agricultural products quality workshop), and the University of Peradeniya (floriculture training). To date, no government or university agencies have undertaken contract research through AgENT.

#### **A1e. New Agro-Enterprise Financing Mechanisms**

Two new financing instruments are targeted for introduction during the first two project years. To date, one new mechanism has been introduced but not yet implemented—a \$6 million World Bank fund that was intended to be administered by a group of local financial institutions with an apex institution. Because the World Bank did not create the fund, an agro-enterprise bond issue has been proposed as a substitute. The proposal is being reviewed by USAID/Washington.

## **A2. Conclusions**

The team concludes that progress to date on planned outputs is reasonable, given the ambitious goals of the project. The team's strong proactive promotion program is justified in view of Sri Lanka's long history of socialist economic policies and the sector's relatively small non-plantation resource base. Non-US equipment may be competitive for clients who cannot afford the cost-share of US goods. However, in many cases, non-US equipment has been found to be of lower quality and therefore not truly a competitive advantage.

### **B. Validity and Relevance of the Project Design**

#### **B1. Findings**

The World Bank Agricultural Support Services project was intended to be the keystone investment facility for the AgENT Investment Fund. In discussions with sector business leaders and banking officials, we have determined that it is not clear that this fund was either feasible or necessary. While the fund was not planned to affect agro-enterprises at financial costs significantly below market rates, it could have had the equivalent effect if it had not included provisions to increase efficiency in credit transactions costs.

The choice of an advisory board, composed mainly of private sector representatives, to provide program guidance to the project is one of the project's most effective design features. The board provides timely, strategic guidance to the project, avoiding the usual problems of undue restrictions and overly cautious promotion when government agencies act as counterparts.

The focus on improved public sector support to agro-enterprises addresses a serious constraint to Sri Lanka's agricultural development. The risk of failure on this initiative is quite high, given the government's long history of economic policy bias against the private sector, meager funding to government economic development agencies and universities, and counter-productive subsidies and non-competitive financial policies.

However, reforms undertaken over the past decade and AgENT's emergence as USAID's premier agricultural sector project are signs that agricultural development policy is being redirected to forge a sustainable partnership between private sector entrepreneurial interests and public sector responsibilities for public goods such as research, education, and basic market information.

The design does not focus on a particular agricultural commodity, technology, or market level. This approach has allowed the AgENT team the flexibility to apply simple strategic planning methods to identify the commodities, technologies, and market levels that can offer the highest returns on project assistance. Much of the focus has been on high value horticultural crops. This emphasis is consistent with crop trends over the last decade.

The sector overview in Annex K indicates that growth in rice and plantation crops has been stagnant, erratic, or declining slightly, while growth in high value horticultural crops

and livestock has been steady and positive. The strong growth trends in high value horticultural crops and livestock indicate that AgENT EOPS are ambitious but consistent with the sub-sectors' market development potential.

The plans for amending the AgENT project paper to add policy and farmer organization components are particularly appropriate. While the Agricultural Planning and Analysis Project had a positive impact on privatization and planning management, it did not bring a critical mass of analytical resources to bear on the issue of diversification and the long-term competitive position of agro-industrial enterprises.

AgENT's strategy is to pursue entrepreneurial development and expanded investment across priority commodity sectors by identifying and pursuing targets of opportunity along each commodity's marketing channel. This approach is well suited as a platform for the agricultural policy component because it focuses on critical elements of the commercialization process and draws the key policy interest groups into each business development constraint issue.

As this platform is implemented, the policy component can use these sub-sectors to more effectively address the broader issues of rural poverty alleviation, land tenure, competitive position of industrial/plantation crops, financial reform, technology transfer (to agro-industry), and strengthened competition in downstream processing, distribution, and merchandising markets.

The prospect of strengthening current farmer organizations and assisting in creating new organizations, or assisting established organizations, must be considered as a sustainability issue. Who wants these organizations? Who is willing to maintain them? It would therefore be prudent to focus on organizational objectives that are tied to narrow commodity bases. Farmer organizations can provide critical support to agro-industrial development if their primary objectives are to:

- Transfer new, appropriate technology to members
- Facilitate market service economies of size in purchasing inputs upstream and selling products downstream
- Facilitate policy reform by identifying policy constraints, formulating competitive policy options, and advocating government deliberation on those policy options

Farmer organizations also require a narrow purpose if they are to be sustainable institutions. Sustainability will be enhanced, but not guaranteed, if the organizations:

- Base membership on commodity interests, and ensure that it is proportional to the market distribution by farm/grower size
- Recover organization operating costs mainly from member fees/voluntary services, without government or donor financial support

## **B2. Conclusions**

The team concludes that the AgENT design concept was valid when it was conceived and remains valid for implementation experiences to date. The design is particularly appropriate in view of the completion of USAID agricultural projects in the Mahaweli region next year. The EOPS are ambitious but attainable project performance targets that are consistent with growth trends in high value horticultural crops and livestock (particularly poultry).

The assumption that entrepreneurial development is a key element in sector diversification and development represents a major advancement in designing effective agricultural program initiatives. The design's focus on strengthening entrepreneurs capabilities to exploit new market opportunities is a critical ingredient in the country's efforts to employ its land, labor, and capital resources in accordance with their value in an expanding international market.

The proposed project amendment provides important complementary policy and farmer organization support to AgENT.

## **C. Nature and Distribution of Project Benefits**

### **C1. Findings**

The project does not have enough experience to demonstrate sustained aggregate investment, employment, sales, and income impacts. However, client results indicate the project is producing significant changes in purpose level behavior. Project assistance in big onion storage is causing onion growers and marketers to quickly adopt the recommended storage technology. Project clients have developed practical business plans to verify high returns on investment in storage facilities, which has caused several financial institutions to become interested in financing onion storage facilities.

Clients and surrounding competitors recognize the profit opportunities in capturing four-month price rises from Rs 25-30 per kg. This technology is readily transferable to other storable commodities. Experience in the Kandy District suggests that such applications will succeed and should be adaptable to other onion product sizes.

Legume and pyretherum trials in the upland tea estates are causing a fundamental change in estate managers' historic stoic allegiance to tea. The trial protocols are highly professional and widely tracked by the tea industry. The estate managers' interest in commercialization is so strong that the AgENT production advisor is cautioning against early adoption before production and marketing feasibility is assured.

Project assistance to two poultry processors is allowing one processor to double the slaughter capacity by investing in new, efficient equipment. The other processor is achieving major grower efficiency gains from investment in a modern poultry house cooling system. The system is reducing mortality rates by 50 percent and allowing bird densities to be more

than doubled. These initiatives are accelerating development of an industry that is already outpacing the agricultural sector.

The poultry industry is structured to achieve great economies of size by using outgrowers to produce the birds for high-capacity processing plants. The outgrowers will benefit from these expansions because the processors will have greater capacity with new slaughtering equipment, and feed efficiency will increase sharply with the new house cooling technology. The outgrower system allows easy entry to small operations that primarily use family labor with modest investments in housing and equipment. Their cash flow requirements are minimized because the processor supplies the chicks, feed, veterinarian services, and technical assistance.

The strong consumer demand for poultry products creates a strong derived demand upstream for poultry feed. This means Sri Lanka's grain crop sub-sector will increasingly be stimulated to compete for poultry energy and protein feeds. Maize and sunflower demand could increase, but growers will face severe insect, disease, and bird pest problems. Overall, it is not likely that significant amounts of paddy land will shift to maize-sunflower production, but marginal shifts are clearly feasible over the next five years.

Tropical fish clients are using new long-life nets to reduce bird damage. These new efficiencies are being translated into increased output at current costs of other inputs. Over time, overall capacity will be increased to capture the long-run benefits of the new nets. These expansions have direct impacts on investments, employment, and sales.

Vanilla production trials with project clients have demonstrated high income potential for small entrepreneurs in the Kandy, Matale, and Kagalle districts. As commercialization commences, household labor will be more fully employed with the existing land base. A significant number of vanilla growers are women.

The project's newly developed women's program has screened 222 participants and identified 23 as potential clients. Twenty of these have been accepted as AgENT clients. Five shared investment grants have been made to female entrepreneurs.

The client-level employment, sales, and investment impacts are tentative at this early stage in any entrepreneurial expansion. However, the results of site visits to selected clients indicate significant firm-level gains in technical efficiency. These gains will translate into expanded employment and cost advantages within the respective industries.

As clients expand, surrounding competitors are being compelled to adopt their new technologies to remain competitive. The overall effect is pushing industry production costs and market prices downward. Because the products AgENT is promoting have relatively price-elastic demand, industry expansion will lead to increased total sales, even though prices fall (i.e., output increases proportionately more than prices fall).

Most of AgENT's clients are small to medium-sized firms. Of the 59 clients with suitable monitoring data as of June 30, 1994, 40 were micro enterprises (annual sales less

than Rs 1 million) 22 employed fewer than 6 workers, and 23 had turnovers of less than Rs 100,000 (see Annex E). This assistance approach is particularly effective in helping a large segment of the disadvantaged labor force to have sustained employment, as well as the opportunity to become entrepreneurs.

To date, 4,853 participants have attended AgENT training events. These training programs have placed particular emphasis on serving the needs of women and non-English speaking entrepreneurs (Annex G). The project is, therefore, effective in addressing poverty alleviation concerns because it is accelerating the entry of the disadvantaged into commercial activities.

## **C2. Conclusions**

The team concludes that the project is generating significant benefits in all strata of the agro-industrial sector. While direct measures of industry level employment and sales are not yet being systematically tracked by the project M&E system, client-level impacts are demonstrating full exploitation of project assistance. Current project beneficiaries are consistent with the project target audience of small and medium-sized entrepreneurs and the households that are directly affected by employment with these firms.

### **D. Effectiveness of Project Monitoring and Evaluation System**

#### **D1. Findings**

The main function of the project's M&E system is to track inputs and outputs and purpose-level objectives on a regular basis. The inputs that require monitoring are technical assistance, training, investment grants, and commodities.

The outputs are more complex. Five main categories of outputs are identified in the project paper.

#### **D1a. Agro-Enterprise Investments**

AgENT will provide assistance (grant funds) to selected clients on a cost-sharing basis. The output target comprises 50 new agro-enterprises and expansion and improvements in 300 others. These enterprises are expected to have significant income and employment multiplier effects.

#### **D1b. New Technologies**

Improved technologies will be introduced through long- and short-term expatriate technical assistance to selected firms and entrepreneurs; commodity procurement (machines, instruments, germplasm); training and travel of private sector entrepreneurs; and production and marketing trials. The output target over the life-of-project is approximately 100 technologies.

### **D1c. Market Development**

Project-assisted firms and clients will be actively supported in their efforts to supply high-quality products at competitive prices to domestic and foreign markets. Output targets include 20 new products, 20 out-grower/contract grower schemes, and 20 new markets for agricultural products.

### **D1d. Improved Public-Sector Support to Agro-Enterprises**

Under this category, AgENT is expected to collaborate with universities and government agencies in undertaking scientific research activities that will benefit the private sector. The output target is 25 research projects to be jointly funded by AgENT and interested parties in the private sector. The project will also finance 12 studies (to be undertaken by consultants) on key constraints on private agri-business development and investment expansion that could be addressed through policy intervention.

### **D1e. New Agro-Enterprise Financing Mechanisms**

The project is working with interested financial institutions in developing new procedures for funding agro-enterprise investments and to act as a catalyst in linking the financial system to the private agri-business sector. There are no output targets identified under this category in the project paper, but studies and surveys undertaken for identifying and pursuing new financing innovations could serve as proxies for outputs.

The project, since its inception, has been producing outputs in varying degrees in all the above categories. The least progress has been made in improved public-sector support to AgENT where, although support is being provided for training, seminars, and field-trials, no collaborative studies or research projects have yet been initiated. Studies and surveys have been initiated under new AgENT financing mechanisms and a new financing mechanism has been identified and is presently under consideration.

The project has an automated system for monitoring inputs and outputs, and detailed records are maintained for each line-item. A spreadsheet of progress on major work plan components is also maintained. These components include studies, assessments, meetings, consultancies, training, workshops, overseas visits, field trials, market test trials, and specific activities undertaken in support of project-assisted firms and clients.

The spreadsheet contains information on objectives, activities, targets and progress achieved. It is updated on a quarterly basis. The tracking of major work plan components appears to be efficiently organized.

The tracking of inputs is also efficient and information on expenditure on technical assistance, grants, commodities and training is available on a monthly basis. A detailed inventory is maintained for each of these line items. Information on grants offered and accepted is updated and summarized each quarter. Data on host-nation contributions are also updated every quarter.

The project has an excellent documentation center, a repository of books, journals, studies, reviews, newspaper articles, and technical reports. The center has a wide client base.

Progress on the five outputs is being monitored closely and summary tables are prepared every quarter. In addition, the project is tracking several other outputs, including agro-enterprise activities (consultations, technical reports, participant training) and employment generated from assisted enterprises. AgENT has not yet begun to report achievements in other areas—such as indirect employment benefits, increased investment, and value added—but is in the process of defining a system for effective measurement of these indicators.

Purpose-level indicators are difficult to quantify since they deal with behavioral and attitudinal changes among the target audience. The logical framework has defined only one measure of purpose achievement: the creation of 50 new agro-enterprises and the expansion in 300 others. Other measures also need to be developed to capture purpose achievement at both the firm level and the industry level.

## **D2. Conclusions**

The team concludes that the project is collecting and summarizing data on inputs and outputs in a timely and systematic manner. The M&E system, however, needs to become more sophisticated to measure and track three key indicators of progress on the output side: employment (both direct and indirect), investment, and value added. The project also needs to develop suitable techniques for measuring or assessing behavioral changes among the target audience. Information on purpose-level indicators is provided in Annex L.

## **E. Appropriateness of Future Planned Project Inputs**

### **E1. Findings**

At project inception, the AgENT team assessed the agro-enterprise environment as very risk-averse and unlikely to test new production and marketing technologies or seek new markets. They concluded that the project had to start with a very proactive promotion campaign if it expected to attract a critical mass of viable and fruitful clients. The relatively heavy injections of training and technical assistance to date have established a broad base of agricultural producers and processors that are either actively seeking direct project assistance or closely observing the experiences of other project clients, in the classic tradition of technology diffusion.

The strong promotion program has generated a large client base that will increasingly stimulate new clients outside the AgENT team's direct promotion efforts. The existing client base has caused the business information center to supply far more services than were planned at its inception. The project has an extensive file of correspondence from a wide range of clients who have either requested specific information or appreciated previous

information supplied by the center. The project anticipates significant increases in future business information services.

Training has been almost exclusively local in nature. Future training plans anticipate higher average monthly activity than experience to date with no change in emphasis toward overseas training. Proposed budget adjustments allow adequate training funds through the remaining LOP.

The project's initial geographic focus excluded the Mahaweli area because MED, MARD, and DARP had exclusive mandates to assist that areas' farmers and small- to medium-sized enterprises. However, the recent completion of DARP and the anticipated completion of MED and MARD in 1995 have required the project plan assistance to Mahaweli agro-enterprises during the third project year.

The contractor proposes an additional 32 person-months of short-term expatriate LOE to serve the exiting client base's technical assistance needs, investigate new enterprise opportunities, and expand basic coverage to the Mahaweli area. This personnel change can be supported with a no-cost budget amendment. This technical assistance effort is particularly important for mobilizing 98 person-months of local short-term technical assistance that has not been used to date.

## **E2. Conclusions**

The team concludes that future planned inputs are appropriate for meeting project objectives. Experience to date indicates that the low rate of investment grants and financial packaging accelerates as project momentum carries these activities. Current financial division resources and the planned replacement of the local financial advisor will allow that division to fully support project financial services needs over the remaining LOP.

Production trial results are well positioned to allow commercialization of vanilla and highland legumes and pyrethrum during the third project year. The production division has ample flexibility to complete current trials and initiate a small number of trials on new commodities over the remaining LOP.

The proposed introduction of a policy component and a farmer organization component under the AgENT project will provide an important complement to the AgENT team's efforts to exploit policy reform opportunities, accelerate technology transfer, and agglomerate marketing of farm input supplies and products.

Although enterprises the team is promoting have the most market development potential in the sector (see Annex K), among financial institutions, the sector ranks as one of the country's poorest investment opportunities. Therefore, the project must continue to employ a critical mass of technical assistance services to its clients to maintain and expand implementation momentum.

## **F. Unanticipated or Adverse Environmental Impacts**

### **F1. Findings**

During the client screening process, the AgENT team administers an environmental checklist to determine whether the client's business operations constitute a significant environmental concern. Chemical input use is surveyed to determine whether a pollution or industrial hygiene threat currently exists or would arise as a result of project assistance. Farm use of fertilizers, pesticides, and herbicides is surveyed for overt pollution and health safety threats. Processing plants are checked for hazardous waste disposal, wastewater effluents, and safe use of processing chemicals.

The project environmental review process indicate that the clients with the greatest potential for adverse environmental impacts were legume and pyrethrum trials, ornamental fish, and processed foods. Legume and pyrethrum trials are being conducted on enclosed plots at 20 sites in upland tea estates.

Fertilizer applications are well within safe practice limits for groundwater pollution. Pesticides and fungicides are not being used in conjunction with tea estates' standard practices. AgENT monitors the plots on weekly or bi-weekly basis and advises trial plot supervisors on responsible pesticide/fungicide usage, including storage and application. No unsafe pesticide practices have been identified by the AgENT team. Cultivation practices are consistent with local methods for minimizing soil erosion and conserving water.

Ornamental fish operations present a potential environmental threat because harvesting methods may harm coastal and marine habitats. While dynamiting and cyanide harvesting methods are not used in Sri Lanka, there are recurring concerns about divers harming coral reefs while harvesting ornamental fishes. The project does not assist marine fishing operations. Before proceeding with further assistance to the ornamental fishes sub-sector, AgENT commissioned a preliminary review of the marine segment of the ornamental fish industry.

The draft report found no direct evidence of ecological damage from harvesting. However, the AgENT team remains cautious about environmental issues and continues to assess the sector before accepting clients. Based on the draft report recommendations, the team's strategy is to support proposed collaborations between the Sri Lanka Wildlife Heritage Trust, the Department of Wildlife, the National Aquatic Resources Association, and the AgENT marine ecology consultant to conduct a low-cost study to expand marine ecology knowledge within the industry and address specific concerns mentioned in the draft report.

Processed food clients are monitored for chemical usage and wastewater effluents. No adverse environmental threats have been identified in the area of chemical usage. Poultry processing poses a potential environmental threat over phyto-sanitary conditions and wastewater effluent. No environmental problems have been found among the two poultry clients. However, one of the clients received AgENT investment cost-sharing for an

environmental study and wastewater treatment system to handle a slaughter operation that doubled after AgENT shared the cost of new processing equipment.

## **F2. Conclusions**

The team concludes that no adverse environmental impacts been identified among AgENT clients. In the case of one poultry processor client, project cost-sharing for wastewater treatment facilities clearly mitigated a future pollution problem that would have arisen after the plant's processing capacity doubled. This project investment is timely because it makes the poultry industry and environmental regulators sensitive to the future environmental risks that will arise if wastewater effluents are not kept within the standards recommended by the World Health Organization.

Pesticide applications being made by tea estate managers on AgENT legume trials do not appear to constitute an adverse environmental impact. However, the crops are not being systematically tested for residues that exceed tolerances established by the US Environmental Protection Agency, the UN Food and Agriculture Organization, or the UN World Health Organization.

## **G. Compliance with Project Covenants and Conditions Precedent**

### **G1. Findings**

The only conditions precedent to disbursement in the Project Agreement are the designation of authorized representatives. This has been met to the satisfaction of USAID.

There are six covenants included in the Project Agreement to ensure successful implementation of AgENT.

- The first covenant requires that three project evaluations be conducted in year 2, 4 and 6 of the project, respectively. The first evaluation is in progress.
- The second covenant requires that all project activities be conducted without discrimination on the basis of sex, religious beliefs, age, or ethnic or national origin. To the best of our knowledge, there have been no conscious violations of this covenant to date. However, English-speaking clients may have a slight advantage over Sinhala- or Tamil-speaking clients in seeking and obtaining project assistance since they are able to communicate better with project staff.
- The third covenant concerns the transfer of equipment (including vehicles) procured under the project when the equipment is no longer needed. This issue will be addressed at the end of the project.
- The fourth covenant calls for the establishment by the project of an apex institution with funding from the World Bank Agriculture Support Services project. Since the World Bank assistance is not forthcoming, this covenant is no longer binding on

the Project Agreement. However, the project is mandated to actively pursue new agro-enterprise financing mechanisms and innovations.

- The fifth covenant requires the GSL to continue efforts to ensure expeditious land-leasing procedures to make additional suitable land available for private agro-enterprises. To date, land availability has not been a constraint. It may surface in the future, particularly if private companies wish to lease relatively large blocks of land from the GSL for the establishment of nucleus estates and processing plants.
- The sixth covenant requires that GSL continue its efforts to rationalize plant quarantine procedures and facilitate germplasm imports by private enterprises. The GSL has liberalized seed imports to a considerable degree and has established a modern plant quarantine facility at the main airport to enable rapid screening of imported planting materials for pests and diseases. In our view, this is a major step taken by the GSL to support and facilitate importation of germplasm by the private sector.

The Ministry of Agriculture, which until recently had a monopoly on seed imports, has undergone a remarkable attitudinal transformation and is now sensitive and responsive to private-sector demands for germplasm imports. The team is confident that the GSL will continue its efforts to rationalize the entire seed industry and encourage as well as facilitate private sector agro-enterprise development.

## **G2. Conclusions**

Compliance with conditions precedent and project covenants has been satisfactory to date. On-going covenants, however, need close monitoring to ensure satisfactory compliance in the future.

## **H. Relevance of Project to Other USAID Agricultural Projects**

### **H1. Findings**

In 1984, the GSL prepared a National Agriculture, Food, and Nutrition Strategy with USAID assistance. The strategy identified several issues, including the over-emphasis on rice in terms of government policy and investments; the high cost of irrigation and settlement per unit of land in the dry zone; the under-utilization of existing land and the neglect of minor irrigation schemes; low-productivity and the high costs of production per unit of output among a large number of perennial and seasonal crops; and the widespread prevalence of poverty, under-employment, and malnutrition in the rural areas.

The strategy concluded that there was a critical need to increase the income and employment potential of the agricultural sector through the diversification and commercialization of agricultural systems. The strategy outlined the priority areas for investment and policy intervention. The strategy also emphasized the role of farmer organizations in the management of land and water resources.

The strategy was the basis for the formulation of several USAID agricultural projects, including APAP (concluded), DARP (concluded), ISM (concluded), MARD (to end in 1995), SCOR (on-going), and AgENT (on-going). Within the Mahaweli region, MED's ongoing enterprise development focus supports non-agricultural sectors.

APAP was designed to develop an integrated agricultural planning system and improve planning and analytical skills in the key agriculture line-ministries. The rationale for this project was that Sri Lanka's agricultural planners required training, commodity support, and technical assistance for undertaking policy analysis and formulation with a reasonable level of competence.

MARD was designed to support and facilitate agricultural diversification, with emphasis on new export crops, in System B of the Mahaweli scheme. The rationale was that through project intervention, rapid technical and institutional innovations could be achieved in agriculture.

SCOR was designed to promote environmental conservation and improved resource use through local institution-building efforts in two selected areas of Sri Lanka. The rationale was that project assistance was necessary for developing and strengthening Sri Lanka's capacity for environmental conservation and shared control of resources.

AgENT was designed to promote private-sector agribusiness and investment expansion and enhance Sri Lanka's agricultural export potential. The rationale was that a project of this nature was necessary to create new opportunities for private initiatives and to stimulate entrepreneurial development in the agricultural sector.

An important cross-cutting theme in the strategic plan is improved human resource productivity, which is relevant to all four projects. Labor is the most abundant resource in Sri Lanka. An increase in the overall productivity of labor will translate into increased economic efficiency and enhanced economic growth.

Increased labor productivity also contributes to the reduction of prices and the growth of real incomes. It is one of the principal means by which growth with equity could be achieved. To the extent that AgENT is expected to have a significant impact on human resource productivity, it shares a common bond with the other USAID agricultural projects (complete and on-going). Many of the other cross-cutting themes are also relevant to all these projects.

AgENT is a fitting sequel to DARP and MARD; while their primary focus is the agricultural production sector, AgENT's primary focus is the agro-industrial sector. Both projects share a common program objective—the diversification and commercialization of agricultural systems. By facilitating rural development-based industrialization, they are also making a significant contribution towards realization of the overall strategic vision. With the closure of DARP and the completion of MARD in early 1995, AgENT has been tasked to expand its support to the Mahaweli region.

AgENT also shares a healthy synergism with SCOR. Both are concerned with improving the productivity of agriculture, but through different mechanisms: AgENT, through private entrepreneurial development, and SCOR, through institution-building at the grass-roots level. Since both projects are contributing towards the enrichment of Sri Lanka's human and physical environment and the creation of a productive natural-resource base (an important USAID subgoal), they are highly complementary to one another.

## **H2. Conclusions**

The team concludes that AgENT has a direct bearing on the strategic vision and complements other USAID projects in supporting the strategic plan at several levels, including the strategic vision, subgoals, and program objectives.

### **I. Commitment of GSL to Providing Effective Project Guidance**

#### **II. Findings**

The advisory board of AgENT comprises six senior private sector executives two senior GSL officials: the Additional Director General of Planning and the Secretary of Agriculture.

Formal board meetings are held on a quarterly basis. However, there is frequent communication between the head of AgENT and the two GSL officials, who are strongly supportive of agribusiness and see a vital role for the project in Sri Lanka's economic development. The team believes that the GSL is well informed about AgENT's activities, particularly with regard to how it is handling the technical assistance and grant components.

Relations between AgENT and the GSL are good, and both parties are able to discuss problems and issues and identify areas where improvements need to be made. The GSL's feedback and criticism is constructive and helps AgENT continually evaluate its progress.

At board meetings, the project is reviewed critically, key issues are discussed, and guidance is provided by board members on how project impact can be enhanced. While AgENT does not necessarily agree with all the views expressed by the board members on how it should be evolving, it finds these meetings extremely useful and productive.

While the GSL views AgENT in a very positive light, it has some reservations. Since the promised World Bank assistance is not forthcoming, the creation of an apex lending institution for agricultural entrepreneurs is no longer a realistic prospect. The GSL, therefore, believes that the project should be making a greater effort to attract clients to compensate for this lapse on the part of the Bank. In other words, the rate at which grant funds are being disbursed under the project is too slow.

The GSL feels that though the project is not trying hard enough to attract clients. It points out that the purpose of AgENT is to stimulate the development and expansion of

private agro-enterprises for domestic and export markets. Accordingly, the project should be aiming to create a critical mass of agricultural entrepreneurs. The GSL also argues that the larger the number of clients, the greater will be the multiplier effects in terms of income, employment, and foreign exchange earnings.

While it appreciates the GSL's point of view, AgENT believes that its function is not to dole out money, but to fund only those enterprises that have a high probability of success. The project is proactive and does attract a large number of clients, but not all of them receive financial assistance.

Investment grants are provided only to those clients who have initiated (or are about to initiate) economically viable enterprises involving innovative new technology, and who have a specific proposal and matching funds (50 percent of the estimated cost). The grant is supplemented with technical assistance, and the combination often enables the entrepreneur to significantly increase his or her scale of operation.

The reason that grant funds are being disbursed at a relatively slow rate is because assistance is confined only to clients who are making (or likely to make) profits. Moreover, the average size of a grant is much smaller than originally anticipated (\$5,000 per client, compared to an earlier estimate of \$25,000 per client at the design stage). This is because the majority of enterprises assisted by AgENT are either small or medium-sized. The assistance is generally phased so that the client's progress can be evaluated at each stage.

The average size of an AgENT grant has been \$2,835 for 207 grants totaling \$575,512; the average size of the grant per client has been \$4,641 for 124 clients. The reason for this difference in grant size is that some clients have received multiple grants in a phased program of investments.

AgENT's argument is valid. Private companies or clients should not be funded simply because they ask for money. The project needs to exercise rigor and caution in screening and selecting clients for assistance. The GSL's case is also a strong one, AgENT should strive to create a critical mass of entrepreneurs as well as a wide range of products to realize project purpose and maximize income and employment multiplier effects in the agribusiness sector.

Perhaps AgENT and the GSL could agree on how large the critical mass should be and what type of investments AgENT should promote to accelerate grant disbursements. The project could then revise its output targets accordingly.

## **12. Conclusions**

The rapport between the GSL and AgENT is strong. The two parties do not necessarily agree on some issues, such as the rate of disbursement of investment grants under the project. The team believes that guidance provided by the GSL to the project is, on the whole, effective.

## **J. Contributions of Project to Mission Strategic Framework**

### **J1. Findings**

The mission's philosophy for the 1990s is outlined in a document entitled "Strategic Framework FY 1992-1996." This document serves as the basis for articulating goals and objectives, identifying priority areas for U.S. assistance, negotiating policy initiatives and reforms under the PL 480 Title III program, and identifying criteria for monitoring and evaluating the impact of USAID's overall development assistance program in Sri Lanka.

The document embraces a strategic vision: supporting Sri Lanka in its efforts to become a democratic "greener" NIC (newly industrializing country) by the turn of the century. Expanding opportunities through a new private-public partnership is defined as the goal through which this vision is to be realized.

The strategy goal is to be achieved through the pursuit of three subgoals: (1) an effective and dynamic market economy, (2) a healthy environment and productive natural-resource base, and (3) an active pluralistic democracy. The subgoals are linked to four program objectives:

- Sound investment climate and business performance
- Diversification and commercialization of agricultural systems
- Conservation and shared control of environmental and natural resources
- Citizen participation in democratic systems

These program objectives are highly specific and comprise the four main areas of U.S. assistance. For instance, the TIPS project corresponds to sound investment climate and business performance; DARP, MARD, MED and AgENT correspond to diversification and commercialization of agricultural systems ; SCOR corresponds to conservation and shared control of resources; and CIPART corresponds to citizen participation in democratic systems. U.S. assistance is expected to have the greatest impact in Sri Lanka at the program level.

The strategic framework identifies five cross-cutting themes: sustainability, human resource productivity, U.S. technology exports and investment, policy change, and regional balance. Three new cross-cutting issues were later added through an amendment: policy reform, women in development, and trade and investment.

At a mission retreat held in May 1994, the strategy statement was revised and updated and three new strategic objectives were incorporated into the framework: broad-based economic growth, environment, and democracy. The revised statement (strategic plan) includes all nearly all the "strategies for sustainable development" emphasized by the USAID Administrator. Only population and health is excluded.

The strategic vision was also redefined to include: Sri Lanka as a Green, Democratic, Newly Industrialized Country (NIC), with broad-based sustainable development.

The strategic vision places private initiative at the center of development. The AgENT project is consistent with this vision and has as its primary objective the mobilization of entrepreneur capital and promotion of private sector agri-business in Sri Lanka. The project is strongly committed to private sector development and to the creation of an effective and dynamic market economy in Sri Lanka, one of the key subgoals in the strategic framework.

The goal of AgENT coincides with one of the four program objectives, to diversify and commercialize agricultural systems. In this regard, the project focuses on ten commodity groups with significant income potential, intending to diversify Sri Lanka's agricultural base; stimulate entrepreneur development in production, processing, and marketing; and realize new opportunities for export agriculture.

AgENT is helping expand investment and improve business performance in the agricultural sector by expanding markets, increasing agro-industrial value added, and exploiting new market development opportunities. It is also sensitive and responsive to conservation issues. It is therefore contributing to two other program objectives as well.

The possible amendment of the AgENT project paper to include policy and farmer organization components would significantly improve the project's overall efficiency in diversifying and commercializing agricultural systems and provide important complementary support to economic development beyond the agricultural sector.

The project is also consistent with three of the AID Administrator's four strategies for sustainable development: broad-based economic growth, environment, and democracy. It is also paying adequate attention to cross-cutting themes relevant to its activities, such as U.S. technology, exports and investment, human productivity, women in development, and regional balance.

The project is active in the four main agro-ecological regions: the low-country wet zone, the up-country wet zone, the mid-country intermediate zone, and the dry zone. It is well balanced regionally. Plantation crops have potential for AgENT support if the assistance is delivered to enterprises on private lands.

The project office has a division that deals exclusively with women in development. The activities in which women are being trained and assisted include high-value crop cultivation (vanilla) and food processing (spices and fruit).

Wherever possible, the project is making use of U.S. technology to facilitate and expand agri-business in Sri Lanka. Specific examples are poultry and ornamental fish.

Sustainability is one cross-cutting theme that is of concern. The strongest element of the project is its technical assistance component, which is highly customized. The project is also producing technical literature that is of value to universities, research institutes, private agribusiness firms, and agricultural entrepreneurs. There are no local consulting firms specializing in agri-business, nor are there any government or semi-government

establishments capable of replicating the role that AgENT is playing in stimulating growth and expansion of the private agribusiness sector in Sri Lanka.

In other words, when the project ends in four years from now, it may not leave behind a mechanism for servicing its existing clients and for generating new agro-enterprises. A critical issue is whether project momentum and impact can be sustained beyond project life. The only apparent satisfactory solution to this problem at this time is a follow-on project to AgENT in 1998.

## **J2. Conclusions**

AgENT is strongly supportive of the strategic framework and is, in fact, crucial for realization of the mission's program vision and strategic objectives. The issue of sustainability, however, is not being adequately addressed by the project at this time.

## **K. Effectiveness of Project Financial Management**

### **K1. Findings**

During the first 18 months (through August 1994), project expenditures were \$3.9 million, out of a total OSU-AgENT budget of \$13.7 million (see Annex J). The major cost issues during this period involve commodities, training, and the AED grant. Because commodity expenses were far greater than anticipated, 85 percent of that line item has been spent. While equipment, computers, vehicles were somewhat more costly than originally budgeted, promotion costs and business information center costs were the main expense. High promotion costs were incurred in mounting an early, proactive campaign to recruit project clients.

Since that effort has effectively informed the target audience about project objectives and business development assistance opportunities, promotion costs should be minimal throughout the remainder of the LOP. Business information center costs are much greater than anticipated. The AgENT team quickly discovered that the project is one of the few sources of timely, comprehensive business information on key agricultural enterprises. While performance to date has met planned output requirements without budgetary constraints, future commodity requirements cannot be met with the current \$761,000 line item.

Training costs have been much lower than anticipated because the AgENT team has found that local training programs are more focused and effective than overseas program. By concentrating on local training, the project has been able to train more participants at a lower total cost than would be possible with overseas programs. This has allowed the project to conduct more training than was planned for this period for only 15 percent of the training budget. The costs for the anticipated future high rate of local training will be well within the current \$820,000 training line item.

The AED grant program was envisioned to handle much larger grants than the AgENT team has found prudent and effective. While the project planned to issue grants that averaged \$20,000 or more, with at least five grants of \$100,000, actual grants have averaged \$2,780, or \$4,641 per client (Annex I). The largest equipment grant has been for \$36,000 (50-50 cost sharing for poultry processing equipment) and the largest production trial grant has been \$49,400 (64-36 cost sharing on vanilla trials).

The AgENT team has packaged relatively small grants to match the clients' financial and risk capacity while maintaining control to expand or reduce support according to the clients' performance with past AgENT grants. While the grant volume to date has been modest in comparison to design assumptions and the experience in many USAID enterprise development projects (such as TIPS), AgENT quickly established sustained momentum in building a client base.

Over the remaining LOP, it is reasonable to expect that the current client base and new clients will build a much higher monthly rate of effective grant demand. Since only \$113,000, or three percent, of the budget line item has been spent to date, it is also reasonable to expect that future grants will be well within the current budget. The discrepancy between the \$113,000 grant expenditures in Annex I and the \$576,000 grant expenditures in Annex H is due to the project field office accountants withholding grants from the contractor invoice until all phases of a client's grant program have been completed. This practice has been dropped, and future grants will be invoiced as they are dispersed in the field.

The contractor is proposing a no-cost budget amendment to adjust line items for four key resources: personnel, commodities, training, and the grant fund. Thirty-two additional person-months of expatriate short-term technical assistance are proposed. This labor adjustment would increase the current salary and fringe benefit balances by 67 percent and 47 percent, respectively.

The commodity line item is proposed to be increased by 386 percent over the current budget balance, from \$117,000 to \$567,000. This cost change is proposed to meet anticipated growing demand for business information center services.

Most of the proposed increases in personnel and commodity budgets would be funded by reducing the training budget balance by 29 percent, from \$692,000 to \$492,000.

The current grant fund balance is proposed to be reduced 19 percent, from \$3.37 million to \$2.74 million.

## **K2. Conclusions**

The team concludes that the current budget balance of \$9.8 million is sufficient to meet planned goals and objectives over the remaining LOP, as long as line item adjustments are made to cover higher commodity and personnel costs than were planned at project inception. The commodity and personnel cost increases over the remaining LOP are well

within the range of unneeded training funds. There is also flexibility to shift some of the costs to the AED grant fund without compromising the project's investment promotion program.

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### SECTION III

## CONCLUSIONS ON GENERAL ISSUES AND LESSONS LEARNED

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In this section, we examine the six general issues detailed in the evaluation scope of work. Less emphasis is placed on findings because the issues transcend all aspects of the project. Instead, a broad set of conclusions are derived from the overall impressions gained in addressing specific critical issues in Section II. The conclusions are used to identify key lessons learned from project experience to date.

#### A. Relevance

AgENT's approach is consistent with the current development strategies supported by the current AID policy statements and adopted by the GSL. The project emphasis on entrepreneurial development is at the heart of all private sector development efforts, and it serves as a stimulant to restructure the agricultural sector in a rapidly changing international economy. The project directly supports USAID's Strategic Framework.

The current emphasis on assisting already established enterprises is justified in view of the project's limited resources, the pervasive weakness of entrepreneurship in the private sector, and the high failure rate for new enterprises. The project's commercial development efforts are directly increasing farmer income, first by lowering production costs at a given product price and then by expanding production more quickly than prices of relatively elastic products fall.

#### B. Effectiveness

The project is making satisfactory progress towards its stated objectives. However, new emphasis is needed on expanding client investment and increasing marketing efficiency downstream from growers. The project emphasis on enterprise development is being addressed within a framework that also recognizes the need to take an industry-wide perspective on each priority commodity or product. Clients are supported within an assistance framework that regularly evaluates links between the clients and adjoining market levels upstream and downstream to assess opportunities for reducing marketing costs (of inputs upstream and products and services downstream).

Overall, inputs are being provided in a timely manner with adequate quantity and quality. However, in the case of financial services, special effort is needed to accelerate the rate of investment, both from the project grant fund and from project clients and their surrounding competitors.

Work plans are well designed and monitored to guide project implementation. Quarterly progress reports are keyed directly to work plan elements. The resulting use of work plans and quarterly reports allows effective monitoring of critical project tasks.

### **C. Efficiency**

The project has used its resources to maximize the benefits of its assistance to the target audience. Clients are screened to minimize wasting assistance on enterprises that will fail or lack adequate motivation to benefit from AgENT. Therefore, the main project effects are produced at an acceptable cost (compared to alternate approaches) to serve a broad audience.

In view of limited project resources and the agricultural sector's historical weak investment potential, the AgENT team is taking a prudent course in conducting screenings. While the target for each grant is 50-50 cost sharing, the project has not rigidly enforced that policy. For the 37 clients who have received grants for equipment investments, AgENT has supplied about 45 percent of the total investment cost.

Business information services are targeted to clients that have specific information needs.

Production trials are conducted to maximize grower access to ongoing results and commercialization potential.

The project has demonstrated significant cost savings by concentrating on local rather than overseas training programs. Training programs have been focused clearly on local commercial, entrepreneurial development issues at lower cost per participant. This has allowed far more participants to be assisted at a lower total cost.

### **D. Impact**

The project has generated a broad base of commercial interest in its program that extends beyond its client base. This interest is helping spread the technical innovations introduced by the project. Moreover, the project promotional campaign is stimulating a broad renewal of entrepreneurial values and support for private sector approaches to economic and social development.

While the failure of the World Bank to provide the Agricultural Support Services Project with a \$6 million investment fund might have had a negative impact on the project, it is not clear that the fund would have been used to strengthen the local financial market. Because typical World Bank investment fund programs have historically circumvented, rather than improved, existing financial market constraints, long-term benefits are often less than expected.

AgENT's impact on financial services will be greatest if it continues to concentrate on improving financial market efficiency rather than yielding to the demand to provide cheaper credit than is available in competitive markets.

The decision to use an advisory board instead a government agency for host country project guidance has had a particularly positive impact on the AgENT teams' ability to identify and exploit market development opportunities.

In the case of legume and pyretherum trials in the highlands, tea estate mangers are eagerly monitoring the results for quick commercialization in place of unproductive tea stands. This behavioral change, which has evolved within the current project year, is the most dramatic example of the project's impact on agriculture diversification.

Experience indicates that, even if the legume and/or pyretherum trials find those crops infeasible, the tea estate managers have been exposed to a new competitive spirit that is distinctly different from the monoculture mentality that the tea industry has practiced for the past century. Tea estate managers, as well as most project clients, are watching project activities to identify new enterprise choices, expanded access to markets, and increased opportunity for their businesses and the workers and businesses (including growers) that are linked to them by competitive commercial interests.

#### **E. Sustainability**

The project's effects on entrepreneurial development will continue well beyond the LOP. However, the main focus of these effects will be the clients who have exploited the advantages of one-on-one assistance from the project. The issue of how project activity will contribute to sustainability has two elements: the behavior of clients and the perpetuation of the project's technical assistance component.

Each client is receiving quality technical assistance on production, marketing, and financial management aspects of effective entrepreneurial development. Changes in firm-level sales, employment, and investment give only a partial picture of the project's long-term impact. On a more qualitative level, the clients are undergoing fundamental changes in their approach to innovation and risk, the two essential requirements for successful entrepreneurs.

The behavior among a small sample of the 124 clients who have received cost-sharing investment support from the project indicates that they are aggressively applying those investments to expand and sustain their businesses well beyond the LOP. Competing firms will benefit from client successes by adopting their AgENT-induced marketing, management, and production innovations.

However, AgENT is much more than an investment promotion activity. The project's technical assistance program is essential to ensure that each client is able to fully exploit investment cost-sharing. AgENT specialists provide unique training and technical assistance on business development that is not available from any Sri Lankan institution in the public or private sector.

After reviewing the potential for continuing project activities in government agencies, universities, trade organizations, non-profit institutes, and private consulting firms, the team

concludes that none of these entities is a viable option. None of these organizations currently provides a focused supply of the services agro-enterprises needed to maintain and expand their operations, and they do not show the capacity to develop such capabilities during the LOP.

At the moment, the project's best hope for sustainability is to maximize its client base, consistent with quality assistance, and expose the widest range of surrounding competitors to the clients' successful investments and entrepreneurial innovations. The AgENT Advisory Board is aware of the importance of sustainability and may constitute an important vehicle for stimulating local organizations to exploit and perpetuate AgENT's technical assistance package.

#### **F. Gender Concerns**

Gender concerns are an integral part of the design and implementation of the project. The recent creation of the AgENT women's program and its strong collaboration with the Sri Lanka Professional and Business Women's Association are clear indicators of sustained commitment to enhance women-owned firms' access to project assistance. The women's program has been implemented in two phases to promote project assistance opportunities to women entrepreneurs and engage the highest possible number of qualified clients.

#### **G. Lessons Learned**

AgENT has produced three important lessons on designing and implementing effective enterprise development projects:

1. The use of an advisory board filled mainly with agro-entrepreneurs, rather than a government agency for host country project guidance, has allowed the team to quickly focus on issues that the private sector regards as top priorities.
2. The decision to mount an aggressive promotion campaign at project inception allowed the project to gain implementation momentum in the face of a weak entrepreneurial environment.
3. The decision to concentrate on selecting clients from established, rather than new firms, has allowed the project to identify more productive investment and technology transfer opportunities and avoid the high failure rates usually associated with new businesses.

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## SECTION IV RECOMMENDATIONS

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### A. Market Development Studies

The market development technical reports completed to date provide excellent analyses of the production and marketing issues that entrepreneurs must consider when expanding current sales or entering a new market. However, the reports do not provide a comprehensive and consistent picture of each product's overall competitive position in the industry. It is recommended that the following features be added to the preparation of future reports to give a consistent indication of competitiveness.

#### A1. Industry Flow Diagrams

Each study should summarize the current knowledge about market links along the marketing channel for a particular industry by diagramming the relationship between production and downstream marketing. The diagrams could indicate the volume and sales value at each major market node from the farmgate, through wholesale market intermediaries, to either export or retail markets. These diagrams will set the stage for cultivating a uniform perception of the volume and market structure of the industry.

#### A2. Competition Chains

The market price should be traced along the same channels depicted in the industry flow diagrams to show the margins between each market level. For example, if the farm price for a product is Rs 100, and the import price in the target market is Rs 200, the competition chain should show the successive margins from the farmgate, through domestic markets, to the export market. Then it should show the margin required to land the product in the target country.

If the landed price of Sri Lanka's product exceeds the current competitive price in the targeted market, the competition chain will quickly show how much the price has to be lowered to be competitive and at what market level those cost savings may likely be achieved. For each commodity that AgENT is supporting, a competition chain should be developed for each target market and widely circulated within the industry to inform producers and marketers of the magnitude of cost reductions they must achieve to enter that market.

#### A3. Crop Production Feasibility Studies

The production trial protocols are well designed and managed. The individual enterprise budgets give reasonable estimates of production costs and profitability per unit of land. However, the introduction of new crops requires information on how those crops compete with current crops for land, labor, and water resources, as well as their profitability

in the overall enterprise mix of each grower. It is, therefore, recommended that each new crop feasibility study include a "whole farm" or "whole hectare" comparison of the grower's enterprise mix "with" and "without" the new crop.

This exercise is particularly important in determining whether legumes, potatoes, and pyretherum are competitive on tea estates. The tea estate managers want to know the profitability of one hectare of tea relative to any crop combination other than tea. If the tea plants are removed, pyretherum can be treated as a perennial crop occupying the land for a succession of full calendar years. However, if legumes or potatoes are planted, there may be gaps during the calendar when no crop is in season.

Whole farm or whole hectare budgeting will show how competitive the various rotations are in fully using one hectare of estate land and the complement of labor that is permanently attached to the estate to support that hectare when it was planted in tea.

#### **B. Downstream Market Development Opportunities**

The AgENT team's efforts to develop new enterprises upstream at the producer/grower level are laudable. However, there are tradeoffs between new enterprises and future market innovations that demand more attention in market development studies. Therefore, we recommend that the competition chains be studied for opportunities to reduce market processing, packaging, storage, distribution, transportation, and brokerage costs downstream.

While these initiatives are not as exciting as the prospect of introducing a new enterprise, the cost savings can be far greater than the gains from the new enterprise. Cost savings in existing market functions can also lead to further integration across commodities, as well as indicate where competition for market services can be improved.

#### **C. Emphasis on Improved Financial Market Performance**

The planned World Bank investment fund in the project design raised expectations of a new source of local capital. Unfortunately, the country's history of high non-performance and loan defaults has created a strong belief that these investment funds are a social entitlement. These funds have often been loaned at rates significantly below rates in competitive financial markets.

Subsidy costs must be covered by the government and donors. The most serious problem is the circumvention of existing financial market mechanisms, which must operate efficiently against whatever rate the central bank supports to achieve balance of payments equilibrium.

It is, therefore, recommended that AgENT concentrate its financial services efforts on improving the efficiency of existing local financial markets rather than introducing a new source of outside capital. The proposed new bond guarantee program appears to be an effective means of mobilizing local capital for agro-entrepreneurs.

#### **D. Refinements in Monitoring and Evaluation**

We recommend that the project logframe be modified to include more specific verifiable indicators on purpose level performance goals. Annex L includes a brief discussion of the types of indicators that can be practically measured with existing project resources and applied in effective evaluations of project impacts.

#### **E. Environmental Management**

While the crop production trials do not appear to be producing adverse environmental impacts, the use of pesticides/fungicides by some clients raises potential environmental regulatory problems for the project. Since USAID is obligated to comply with US environmental regulations, the project should assist the mission in determining whether pesticide use is essential for the production trials or any activity with direct AgENT support.

If pesticide usage is essential, the project should assist the mission in preparing documentation according to the requirements of 22 CFR 216.3(b)(2)(iii). These requirements would require periodic testing, as established by US Environmental Protection Agency, UN Food and Agriculture Organization, and UN World Health Organization, to ensure that crops do not contain chemicals that exceed tolerances for human consumption.

If pesticide testing is determined to be necessary for AgENT crop production assistance, the team should collaborate with the mission environmental officer to identify local firms that can provide this environmental management service. Since Sri Lanka intends to expand its export market in horticultural products, more stringent environmental standards will be imposed by importing countries before long. The benefits of early establishment of an environmental testing industry within the country will be congruent with private sector development and cost-effective environmental protection.

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**ANNEX A  
PROJECT DATA SHEET**

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1. Country: Sri Lanka
2. Project Title: Agro-Enterprises Project
3. Project Number: 383-0111
4. Project Dates:
  - a. First Project Agreement: 5/21/92
  - b. Final Obligation Date: FY 98
  - c. Most Recent Project Assistance Completion Date (PACD): 9/30/98
5. Project Funding: (amounts obligated to date in dollars or dollar equivalents from the following sources):
  - a. A.I.D. Bilateral Funding (grant) \$14,000,000
  - A.I.D. Bilateral Funding (loan) N/A
  - b. Other donors N/A
  - c. Host Country Contribution: \$20,500,000
  
  - Total** \$34,500,000
6. Mode of Implementation: A.I.D. Cooperative Agreement—Oregon State University (OSU)
7. Project Designers: USAID/Colombo  
Government of Sri Lanka  
Agricultural Cooperative Development International
8. Responsible Mission Officials: (for full life of project)
  - a. Mission Director(s): David A. Cohen 1993-Present  
Richard M. Brown 1990-1993
  - b. Project Officer(s): Lionel Jayaratne 1992-Present  
Richard Nishihara 1993-Present
9. Previous Evaluation(s): None

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**ANNEX B**  
**EVALUATION SCOPE OF WORK**

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**A. Activity to be Evaluated**

Title : Agro-Enterprises(AgENT) Project No. 383-0111  
AID-LOP Funding: \$14 million  
Host Country Contribution: \$20.5 million  
Date of Project Authorized: 3/13/92  
Date of Project Agreement Signed: 5/21/92  
PACD: 9/30/98  
Implementing Grantee: Oregon State University (OSU)

**B. Purpose of Evaluation**

This will be the first interim evaluation of the Agro-Enterprises (AgENT) project. The primary purpose is to provide USAID/Sri Lanka and the National Policy Planning Department and the Ministry of Agriculture with an in-depth assessment of project implementation and progress and recommend any modifications to improve the likelihood of achieving the project purposes.

The evaluation will assess the delivery of USAID and GSL/Private Sector project inputs, progress toward achieving the project purposes, and the impact of project activities to date. It also provides clear guidance on what future action may be needed to ensure sustainability of AgENT—or an organization that can continue the services provided by AgENT—and the validity of initial design assumptions and strategies.

The evaluation will also examine planned inputs for the remainder of the project and recommend any changes needed to achieve the project purposes. Particular attention should be given to technical assistance. The evaluation will also examine the project's relevance to the Mission's Strategic Framework, and especially its contribution towards the strategic objective of "Increased competitiveness and growth of markets and enterprises."

**C. Project Background and Summary Description**

Research in Sri Lanka has demonstrated the capacity to increase farm income through diversification and commercialization of the agriculture sector. Significant yield improvements are possible, and farmers will readily accept new technologies if rewarding markets are available. Furthermore, an increasingly active private sector is emerging in production, marketing, and processing in the once government dominated agricultural sector.

However, new strategies are necessary to introduce appropriate production technologies, increase the amount of value added processing, expand the commercial outgrower schemes, and develop active marketing and financial linkages. Technical

innovation and support is necessary to help Sri Lankan firms and individuals establish new competitive agro-enterprises. Flexible and creative investment packages are required in all parts of the agricultural production, marketing, and food processing industry.

The AgENT Project addresses the unmet demand for comprehensive, creative, technical, and financial services required to develop Sri Lanka's agro-industrial sector. The project provides assistance to emerging and expanding agro-enterprises through a combination of technical services in production, processing and marketing, research, and training. It supports agro-industrial development and investment packaging to leverage an increased share of the financing available through commercial banks and other financial institutions.

The project mobilizes significant local resources through private investments from participating financial institutions and agro-entrepreneurs. Therefore, the project addresses the principal constraint to development of the sub-sector.

USAID inputs include:

- Short and long-term U.S. and Sri Lankan expertise, including operating costs for an information and service center
- Agro-enterprise development grants
- Agro-enterprises training funds
- Equipment and materials
- Market development and research
- Analysis of policy issues and related environmental issues

Other inputs for the project include:

- In-kind contributions from individuals and institutions involved with research and development in collaboration with agro-enterprise development grants
- Investment funding or owners equity put up by private agro-entrepreneurs and financial institutions

The project feasibility derives from market forces that direct investment and project activities. However, the project also recognizes a link between the resulting economic growth and poverty alleviation through the generation of employment. In addition, the project gives special attention to promotion of investments in women-owned businesses or to businesses where women are primary beneficiaries.

Professional guidance and oversight for the project is provided through an advisory board composed of key GSL officials and representatives from business and participating financial institutions. The Board advises on matters concerning implementation and helps to develop strong links with the agricultural, financial, and agri-business community.

The AgENT project office in Colombo will serve as an informal technical resource center for entrepreneurs. The project technical assistance team advises entrepreneurs on agri-business development and obtains marketing, production, and processing technology information for entrepreneurs as required.

Initially, the project advertised the availability of its services. This approach was used to inform potential clients about the availability of services and promote the idea of agro-enterprise investments. Potential clients include private sector individuals, farm organizations, or businesses that are willing and able to pursue an agro-enterprise investment.

Potential clients request assistance from the project. Requests for information and advice are fulfilled by the project team as much as possible. Requests for more specialized information or assistance for research or development of innovative new businesses are reviewed separately. Assistance is provided if the proposals meet certain criteria, including expected returns from the enterprise, the degree of innovation in the enterprise, the financial commitment and management capabilities of the clients, the environmental safety of the activity, the potential benefit to farmers and unemployed, and the potential benefit to the country.

The project may also provide consultant services, training, marketing assistance, research and development grants, proto-type equipment for processing, and management assistance. Clients are expected to jointly finance the activities. The matching contribution will depend on the cost of the activity, the ability of the client to pay, and the potential benefit from the enterprise development.

The project works with the agricultural enterprises clients propose that meet the criteria for assistance. It may cover a broad range of production and processing activities and may include livestock, plantation crops, horticultural export crops, and crops for the domestic market.

The project adheres to the theory that private investors and the market will seek the most profitable investments. Those are the enterprises that should receive support. Emphasis will go to outgrower production activities and "big investor, small producer" whenever possible.

### **C1. Project Goal**

The project goal for the AgENT Project is to diversify and commercialize agricultural systems. Diversified, commercialized agricultural systems can be expected to generate the increased employment and higher incomes required as a base for rural development and

future economic growth. Agricultural diversification and intensification is most compatible with Sri Lanka's natural resources and cultural traditions.

## **C2. Project Purpose**

The project purpose is to stimulate the development and expansion of private agro-based enterprises. The project builds on existing entrepreneurial firms and individuals with interest in investments in the agricultural sector and on the production base capable of producing a wide range of crops and products at reasonable cost. In the past, few investments other than tea, rubber, and coconut have been made in this sector because government economic controls and policies favored production of subsistence food crops.

## **C3. Project Outputs**

### **C3a. Agro-Enterprise Investments**

The project is expected to generate approximately 50 new agro-enterprises, as well as expansion and improvements in approximately 300 others. These investments will result from technical innovations introduced by the project, new market opportunities, and the financing provided through participating financial institutions. Other firms and entrepreneurs will benefit indirectly by the spread of project introduced technology and the ability to enter new markets pioneered by initial investors.

Substantial investments will also be made with entrepreneurs' own capital or resources from other sources. The project actively promotes joint ventures with U.S. firms wherever possible and is compatible with USAID policies and regulations.

The investments will result from market forces. Private sector entrepreneurs will identify the geographical areas, products, and types of enterprises to be financed. Farms, which also operate as small businesses, will benefit. An estimated 9,700 farmers will supply products for the agro-enterprises established with project assistance and financing.

### **C3b. New Technologies**

Over the life of the project, approximately 100 new technologies are expected to be introduced in the enterprises assisted. These technologies will include germplasm, improved pest and disease control, and harvesting techniques for proper time and size for best quality. Post-harvest handling improvements will include in-field or close-to-field packing, introduction of proper packing crates, proper cooling, improved transport to reduce loss, and improved handling at wholesale markets.

Several processing technologies are expected to be introduced including modern juice plants, fruit drying, improved packaging materials for foods, frozen fruits and vegetables, processing of crop by-products, and processing of livestock products.

### **C3c. Market Development**

The Agro-Enterprises Project will improve market links among producers, intermediaries, and consumers. Project assisted firms and entrepreneurs will develop greater sophistication in assessing consumer requirements and planning to provide products at prices and qualities demanded by consumers. Improved production and post-harvest technology will improve market efficiencies and project-introduced promotional materials will help firms better market their products.

### **C3d. Improved Public Sector Support to Agro-Enterprises**

GSL agencies and training institutions have been oriented to service the government and small farmers as clients, but they have been not directed to service businesses. The Agro-Enterprises Project will draw government agencies, primarily the Department of Agriculture, the Department of Export Agriculture, the Department of Livestock Development and Health, the Ceylon Institute of Scientific and Industrial Research (CISIR) and Universities. Together with commercial firms, these organizations will work to resolve technical problems of economic importance. The project will accomplish this by providing funds, jointly with private companies, for research and development projects undertaken by government agencies. Approximately 25 will be completed under the project.

The project will also complete studies of key policy issues affecting the sector. An estimated twelve studies and reviews conducted during the project will provide input to government policy reform and implementation of procedures to stimulate non-traditional agricultural exports and to seek ways and means of better linking small producers with agro-enterprise markets.

### **C3e. New Agro-Enterprise Financing Mechanisms**

The project will help interested financial institutions to develop new procedures for "packaging" agriculture-related investments. The new financing innovations will increase confidence between the financial system and the private agro-enterprise sector and will increase the debt capacity of entrepreneurs. Confidence will increase through better training and greater experience of financial institution staff with agro-enterprises investments. The project will also attempt to reduce transaction costs and the time required to process loan applications.

### **C4. End of Project Status**

By the Project Assistance Competition Date (PACD), it is expected that the project will have facilitated the establishment or expansion of approximately 350 agro-enterprises with consequent increases in farm incomes and employment. The project is expected to result in generation of approximately 13,000 new jobs, increased production valued at \$8.15 million per year in constant dollars, and increased exports of \$4 million per year.

## **C5. Statement of Work**

The local consultant will work with the expatriate consultant to conduct the evaluation and prepare an evaluation report that addresses the major issues and specific questions listed below. The expatriate consultants will serve as the team leader and will coordinate the inputs of other team members. The report need not be organized according to these issues and questions, but it should address them all.

### **C5a. Relevance**

We must consider if the project approach is consistent with the current development strategies supported by the current AID policy statements and espoused by the GSL. We must also evaluate whether problems of national importance are being addressed by the project. The following questions must be addressed:

- Are the project activities relevant to the USAID's Strategic Framework?
- Is the project assisting in establishing new enterprises and also in expanding already established ones?
- Is the project helping to increase farmer income?

### **C5b. Effectiveness**

To evaluate effectiveness, we must consider if the project is making satisfactory progress towards its stated objectives. At this stage in the project, special focus on outputs may be appropriate, including the following:

- Are outputs being produced as planned or are any major delays evident? Are there any constraints?
- Are inputs being provided on a timely manner and adequate quantity and quality?
- Are work plans appropriate and useful to project implementation?

### **C5c. Efficiency**

To determine the level of efficiency, we must consider whether the effects of the project are produced at an acceptable cost compared with alternate approaches to accomplishing the same objectives. The following issue must be addressed:

- Are cost savings or other economies possible in any part of the project?

#### **C5d. Impact**

The following questions about impact must be considered:

- What positive and negative effects are resulting from the project?
- What, if any, unexpected results are occurring due to the project?
- Are there any discernable impacts on agriculture diversification?
- How have the project activities created new choices, expanded access and increased opportunity for the people?
- Review the project and program indicators and the actual progress. Also to recommend any new indicators if necessary.

#### **C5e. Sustainability**

To evaluate the sustainability of the project, we must consider:

- Will effects of the project continue after AID funding stopped?
- Will private firms be able to continue the activities started under the project?
- Can entrepreneurs obtain the services needed to maintain and/or expand their operations?

#### **C5f. Gender Concerns**

The following gender questions must be addressed:

- To what extent have gender concerns been integrated into the design and implementation of the project?
- Is there evidence that OSU resources are reaching women-owned firms and helping to expand opportunities for women in export oriented companies?

#### **C5g. Specific Questions**

These ten questions about the project must be carefully considered:

1. How does progress on each of the planned outputs compare with initial projections should any of the output targets be changed?
2. Are the assumptions noted during project design in the logical framework still valid? What has been the impact of these assumptions? Is the policy

environment appropriate to allow achievement of project objectives?

3. To what extent do project benefits accrue to men and women? Can project benefits be desegregated and measured by gender?
4. Is the project monitoring system appropriate and useful? Is the MIS is capable of providing the required information to monitor project progress and impact in a timely manner.
5. Are planned inputs for the balance of the project appropriate? Specifically:
  - Has home office support been effective?
  - Has technical assistance been effective?
  - Has training been effective?
  - Have agro-enterprise development grants been effective?
  - Have GSL program support activities been effective?
  - Has the information center been well used and effective?
  - What changes in inputs are desirable for the balance of the project?
6. Are there any unanticipated/adverse environmental impacts of the project? If so, what are the problems and possible remedies?
7. Has there been compliance with all project covenants and conditions precedent?
8. What is the relevance of the project to continue the activities started by other Agric portfolio projects? Once those projects are over, how could AgENT intervene in doing so?
9. What is the nature of commitment of the GSL officials in providing professional guidance and oversight through the advisory board?
10. Do the USAID program outcomes and indicators reflect project activities and contribute toward the mission strategic framework?

In any of these areas or any others identified by the evaluation team, special attention should be focused on identifying any aspect of the project where implementation is substantially behind schedule and suggesting practical means of overcoming implementation problems.

In the evaluation report, the evaluation team will distinguish between their findings (the evidence), their conclusions (interpretations and judgements about the findings), and their recommendations. The team will indicate the agency or unit responsible for implementing recommendations and include the lessons learned and any significant successes achieved through the project.

After completing the evaluation report, the team leader will complete a draft Project Evaluation Summary and abstract for use by USAID/Sri Lanka.

#### **C5h. Methods and Procedures**

In conducting the evaluation, the evaluators will:

- Review all relevant project documents
- Interview as many key project personnel as possible, particularly including those from the Ministry of Policy Planning and Ministry of Agriculture, private sector clients and officers of financial institutions, USAID, and the technical assistance contractors
- Interview randomly selected farmers and other relevant private sector agribusiness firms

All project files will be available to the evaluators in the office of the Project Officer, Agriculture and Natural Resources office USAID/Colombo. A review of the following background documents is essential:

- Project paper
- Project logical framework (Logframe)
- Grant agreements
- Updated L.O.P. work plan
- OSU cooperative agreement and scope of work
- Quarterly and consultation reports
- USAID country development strategy statement

Key persons to be interviewed by the team will include the following: the USAID Project Officers, OSU Chief Of Party, OSU/DAI Team members, farmers, agribusiness firms, Ministry of Agriculture, Department of Policy Planning and the University of Peradeniya Agriculture faculty.

#### **C5i. Logistic Support**

The contractor shall use funds provided in the budget to arrange for domestic and international travel, computer rentals, office materials, report production, secretarial support, office space, communications, and other miscellaneous expenses. USAID/Sri Lanka will provide no logistical support.

#### **C5j. Level of Effort**

The evaluation will be conducted by the contractor's evaluation team, consisting of a Team Leader and a local-hire Evaluation Specialist. The contractor's evaluation team will consist of the following two professionals.

### **Team Leader/Senior Evaluation Specialist**

The primary responsibility of the team leader will be to plan, coordinate, execute and manage the overall evaluation. The team leader will also provide technical expertise related to the evaluation requirements to determine project relevance, efficiency, effectiveness, impact, and sustainability. The team leader will be responsible for supervising the other team member and completing all evaluation documentation.

The team leader should hold a minimum of a MS or equivalent degree in management, an agri-business related field, or Agric.economics with a minimum of ten years demonstrated experience in managing and implementing private sector projects' design and evaluation work, preferably with USAID projects. The team leader should also possess state of the art knowledge of the various modes of assistance for programs aimed at facilitating diversifying and commercializing agriculture. Previous experience in Sri Lanka is highly desirable.

### **Evaluation Specialist**

This local hire specialist will be responsible for gathering data regarding the AgENT project. Representative tasks will include collating and presenting data on AgENT during the period of project implementation, identifying and obtaining useful research documents, and ensuring that all relevant sources of information related to AgEnt are reviewed.

This person should be a resident of Sri Lanka and should hold a minimum of BS degrees or equivalent in management, an agri-business related field, or Agricultural economics. An advanced degree is highly desirable. Previous experience in similar evaluation assignments is also highly desirable. The local specialist will either be selected individually or through a local firm.

In addition to the two-member team described above, all clerical and administrative staff support will be supplied by the contractor.

It is estimated that the two person team will provide a total level of effort of 65 person days. A five-and-half day work is authorized in Sri Lanka.

The level of effort may be adjusted only with the prior written approval of USAID.

### **C5k. Financial Issues**

The evaluation team will address the financial issues listed below:

- Whether the funds allocated are sufficient to achieve the project goals and objectives
- Whether the LOP budget exceeds project needs

- Which project element(s) are concerned and whether a modified budget or a deobligation of funds is appropriate

### **C51. Reports**

The team leader will be responsible for submitting a draft evaluation report no later than 20 working days after the evaluation team begins work. Review comments will be given to the evaluation team within four working days of submission of the draft. Fifty copies of the final printed report shall be submitted to the USAID project officer prior to the departure of the team leader from Sri Lanka. The report shall address all questions contained in the scope of work and shall include but not be limited to the following sections:

1. Title page
2. Table of contents
3. A basic project identification data sheet
4. An executive summary (This section
5. List of acronyms
6. Project evaluation summary
7. The body
8. Conclusions and recommendations

The executive summary will be used for the agency's computerized record of evaluations and must be able to stand alone as a separate document. It is limited to 3 pages, single spaced, and should contain all elements required on page 25 of the ANE Bureau Evaluation Guidelines available in USAID/Sri Lanka.

The body of the report discusses findings will be limited to approximately 30 pages with any especially lengthy analysis or listing of data placed in the Appendices.

All copies of the draft report shall clearly be labeled "draft." The title page of the final report shall include the following disclaimer: "This report presents the independent findings and recommendations of an evaluation team. It does not necessarily represent the official views of the Government of Sri Lanka or the Agency for International Development."

A debriefing will be scheduled at USAID shortly after the submission of the report.

### **C5m. Relationships and Responsibilities**

The evaluation team will report to the USAID AgENT Project Officer and Chief of the USAID office of Agriculture and Natural Resources. The local consultant will report to the team leader and be responsible to him for completion of the evaluation activities and contributions to the evaluation report.

The evaluation team will work closely with the OSU/AgENT team in visiting project activities and understanding constraints, strategies and programs.

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**ANNEX C**  
**LIST OF PERSONS INTERVIEWED**

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Name, Title	Organization	Location
Rohan Fernando, Managing Partner,	Angel Aquarium,	Wellatta
Henricus Fernando, Joint Managing Directors,	Hiram Cordial Co.,	Moratuwa
Mr. K. Gunartnam, Chairman,	Sri Lanka Export Development Board,	Colombo
Dr. S.R. Rajiyah, Managing Director,	Renuka Enterprises,	Colombo
R.M. Nissanka, Proprietor,	Keppetipola Rubber Industries,	Mawanella
R.S.M. De Alwis, Joint Managing Director,	MA's Tropical Food Processing (Pvt) Ltd,	Colombo
Dr. S.D.G. Jayawardena, Director,	Horticulture Research and Development Institute, Department of Agriculture,	Peradeniya
Dr. Jinasiri Fernando, Acting Director of Agr.,	Department of Agriculture	Peradeniya
Dr. Sarath L. Weerasena, Deputy Director,	Seed Certification and Plant Quarantine, Department of Agriculture,	Peradeniya
Dr. Colin N. Perisis, Senior Lecturer in Horticulture,	Faculty of Agriculture, University of Peradeniya,	Peradeniya
Dr. Nimal Ranaweera, Deputy Dir.-Proj. Evaluation,	Department of Agriculture	Peradeniya
Dr. Dilal Kahandawela,	Agriculture Research Station,	Sita Eliya
Dr. D.E.M. Weerakoon, Dep. Director-Policy/Plans	Sri Lanka Export Development Board,	Colombo
Ranjit Fernando, Director/Gen. Mgr,	National Development Bank,	Colombo
Mano Nanayakkara, CEO,	CF Venture Fund, Ltd.,	Colombo
Arne Svinningen, President,	Floriculture Produce Exporters' Association, Green Farms Limited,	Colombo
Chairman and Managing Director,	Chemical Industries (Colombo) Ltd.,	Colombo
W.A. Assiriyange, Sales Manager,	Chemical Industries (Colombo) Ltd.,	Colombo
R.N. Bopearatchy, Director,	Nutrena (Pvt) Ltd.,	Colombo
Ken Fry, Managing Director,	Vanik Inc., Ltd,	Colombo
Ajith Fernando, Assistant Vice President,	CPC International,	Colombo
Peter Smith, Managing Director,	Pussalla Farm,	Thalangama
Philip J. Wevita, Proprietor,	National Planning Department,	Colombo
Faize Mohideen, Director,	Development Finance Corporation of Ceylon (DFCC),	Colombo
L.G. Perera, Assistant General Manager,	Resources Dev. Consultants, Ltd.,	Colombo
S.C. Lecamwasam, Executive Director,	Resources Dev. Consultants, Ltd,	Colombo
Ms. Rohini Abeysuriya, Operations Director,	Lanka Market Research Bureau, Ltd.,	Colombo
Shaheen Cader, Project Director,	Lanka Market Research Bureau, Ltd.,	Colombo
Tissa De Alwis, General Manager,	Agriculture Industry Consultancy and Services (PTE), Ltd.,	Colombo
Dr. C.P. Pillai, Chairman/Managing Director,	Agroskills Ltd.,	Colombo
Ravi Abayagunawardana, Managing Director,	DPL Plantations, Ltd.,	Colombo
G. Kavindra Seneviratne, General Manager,	UVA Western Plantations, (Pvt) Ltd.,	Colombo
Marcel Peries, Director-General Manager,	Singer (Sri Lanka) Ltd.,	Colombo
Hemaka Amarasuriya, Chairman,	Lankem Ceylon Ltd.,	Colombo
A.C. Gunasinghe, Managing Director,	Nestle Lanka Ltd.,	Colombo
L.C.R.deC. Wijetunge, Director/Corp. Affairs Mgr,	Invest Asia (PVT) Ltd.,	Colombo
W. Dennis Grubb, Director,	USAID/Sri Lanka,	New York, NY
Gary E. Alex, Agricultural Project Officer,	USAID/Sri Lanka,	Colombo
Richard Nishihara, Agriculture Development Officer,	USAID/Sri Lanka,	Colombo

Lionel Jayaratne, Agricultural Project Officer,	USAID/Sri Lanka,	Colombo
M. Glen Rutanen-Whaley, Proj. Development Officer,	USAID/Sri Lanka,	Colombo
Richard Hurelbrink, Chief of Party,	AgENT Project,	Colombo
Gamini Kumarage, Deputy Chief of Party,	AgENT Project,	Colombo
Ralph Chaffee, Financial Advisor,	AgENT Project,	Colombo
Anthony Dagleish, Mktg/Agro-Processing Adviser,	AgENT Project,	Colombo
Phillip Mowbray, Production Advisor,	AgENT Project,	Colombo
Gayatri Abeydeera, Manager, Bus. Info. Center,	AgENT Project,	Colombo
Charmarie Maelge, Advisor, Women's Dev. Unit,	AgENT Project,	Colombo

**ANNEX D**  
**AGRO-ENTERPRISES PROJECT LOGICAL FRAMEWORK**

<b>Narrative Summary</b>	<b>Objectively Verifiable Indicator</b>	<b>Means of Verification</b>	<b>Important Assumptions</b>
<b>Project Goal:</b>	<b>Measures of Goal Achievement:</b>	<b>Goal Verification:</b>	<b>Goal Assumptions:</b>
To diversify and commercialize agricultural systems	8 percent annual increase in value of export of non-plantation crops 1992-1999	GSL Reports	<ul style="list-style-type: none"> <li>- Government maintains policies neutral to production of diversified crops viz-a-viz paddy and traditional crops.</li> <li>- High proportion of new production goes into export markets.</li> </ul>
<b>Project Purpose:</b>	<b>Measure of Purpose Achievement:</b>	<b>Purpose Verification:</b>	<b>Purpose Assumptions:</b>
To stimulate the development and expansion of private agro-based enterprises.	<ol style="list-style-type: none"> <li>1. 50 new agro-enterprises established with some project support.</li> <li>2. 300 existing agro-enterprises expand operations and profitability with some Project support.</li> </ol>	<ul style="list-style-type: none"> <li>- Project reports</li> <li>- Evaluation follow-up surveys of firms assisted.</li> </ul>	<ul style="list-style-type: none"> <li>- Estimated numbers of new and improved existing firms are based on assumptions regarding size of investments and high degree of interest in new enterprises.</li> <li>- Investment climate remains such that entrepreneurs will make new investment.</li> <li>- Project assistance identifies viable new production and processing technologies and markets.</li> </ul>
<b>Output:</b>	<b>Magnitude of Outputs:</b>	<b>Output Verification:</b>	<b>Output Assumptions:</b>
<ol style="list-style-type: none"> <li>1. Agro-Enterprise Investments</li> <li>2. Introduction of new production and processing technologies.</li> </ol>	<ol style="list-style-type: none"> <li>1. Investments from Agro-Enterprise Investment Fund for 250 new enterprises or expansions.</li> <li>2. 100 new technologies introduced.</li> </ol>	<ol style="list-style-type: none"> <li>1. Project reports and World Bank Agricultural Support Services (AgSS) Project reports.</li> <li>2. Project reports.</li> </ol>	<ol style="list-style-type: none"> <li>1. World Bank proceeds to implement AgSS Projects or other funding is available.</li> <li>2. Enterprises will co-finance R&amp;D work with Project.</li> </ol>

- |                                     |  |                     |   |
|-------------------------------------|--|---------------------|---|
| 3. Improvements in market linkages. | 3. (a) 20 outgrower/contract grower programs started.<br>(b) 20 marketing initiatives implemented by private entrepreneurs.<br>(c) 20 new products enter export or domestic markets. | 3. Project reports. | 3. Entrepreneurs identify and move to exploit new markets and new products. |
|-------------------------------------|--|---------------------|---|

Output:	Magnitude of Outputs:	Output Verification:	Output Assumptions:
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- |   |   |                     |   |
|---|---|---------------------|---|
| 4. Improves agro-enterprise financing facilities. | 4. (a) Agro-enterprise Investment Fund (AEIF) fully disperses within Life-of-Project<br>(b) At least five financial institutions participate in AEIF.<br>(c) AEIF participating financial institutions adapt new loan appraisal procedures; new procedures for financial structuring; and make at least \$250,000 each in equity investments. | 4. Project reports. | 4. Participating financial institutions are willing to adopt new investment appraisal techniques and new financing methods. |
|---|---|---------------------|---|

- |  |   |  |  |
|--|---|--|--|
| 5. Improved public sector support to agro-enterprises. | 5. (a) GSL agencies and universities undertake at least 25 contract research activities for private sector.<br>(b) 12 Project policy studies and reviews are utilized by GSL in policy formulation. | 5. (a) Project reports.<br><br>(b) A.I.D. dialogue with GSL policy makers. | 5. No major change in current government policies. |
|--|---|--|--|

Inputs:	Magnitude of Inputs:	Inputs Verification:	Input Assumptions:
1. <u>A.I.D.</u>		Cooperative Agreement Reports.	Cooperative Agreement Recipient is able to provide varied assistance contemplated by Project and requested by private sector.
(a) Technical assistance.	(a) Long-Term: Expatriate 17 years. Sri Lankan 24 years. Short-Term: Expatriate 60 months. Sri Lankan 24 months.		
(b) Training.	(b) Overseas observational tours - 60 persons; in-country - 1,400 persons.		
(c) Agro-Enterprise Development Grants.	(c) 125 grants totaling \$3.5 million.		
(d) Commodity Procurement.	(d) \$700,000.		
(e) Evaluation and Audit.	(e) Mid-term and final evaluation and audits.		
2. <u>Host Country</u>			
(a) Investment funds.	AEIF - \$6 million (if WB project approved) private sector - \$19.8 million		

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**ANNEX E**  
**CLIENT SUMMARY**

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Total Number of Clients:		303
Dormant:		24
Closed/Terminated:		10
Percent Active:		89
Clients Who Are Women Owners:		20
Client Who Have Received Grants:		124
Clients Who Have Expanded Existing Businesses:		301
Clients Who Have Started New Businesses:		2
<i>(Note: Highland legume/pyretherum production trials are likely to sharply increase the number of new enterprises/businesses.)</i>		
Size of Enterprise: (as of 6-30-94)		
Sales		
Micro	< Rs 1 million	40
Small	> Rs 1 mill., < Rs 5 million	8
Medium	> Rs 10 million < Rs 50 million	8
Large	> Rs 50 million	3
Employment		
Self Employed	Owner only	9
Micro	2-5 employees	22
Small	6-25 employees	24
Medium	> 25 employees	2
Turnover		
Category 1	< Rs 100,000	23
Category 2	> Rs 100,000 < Rs 500,000	16
Category 3	> Rs 500,000 < Rs 1 million	8
Type of Assistance Provided:		
Production		77
Marketing		109
Agri-Business		92
Total Training Participants:		4,853

**ANNEX F  
OUTPUT SUMMARY**

**Output/Target Summary**

OUTPUT	Yr 1		Yr 2		Yr 3	Yr 4	Yr 5	Total	
	Target	Ach <sup>1</sup>	Target	A/D*	Target	Target	Target	Target	A/D*
<b>I. Agro-Enterprise Activities</b>									
* Consultations on individual Agro-Enterprises (1)	400	429	800	1169	800	620	500	3120	1,598
- Initial client consultations		106	240	231					337
* Special Technical Consultant Reports (2)	8	11	30	11	30	20	12	100	22
* Agro-Enterprise Staff Trained (3)	520	3028	400	1888	400	400	400	2120	4,914
<b>II. Participating Financial Institutions</b>									
* Reports on Updated Baseline Survey	1	1	1	1	1	1	1	5	2
* Reports on New Financing Sources	1	0	1	2	1	1	1	5	2
* Finan. Inst. Staff Trained	50	50	50	50	50	50	50	250	100
<b>III. Agro-enterprise Grants</b>									
* Production Trials (4)	6	5	30	56	30	20	14	100	61
* Postharvest Handling Trials	3	0	5	0	5	4	3	20	0
* Processing Trials	3	0	7	0	7	5	3	25	0
* Marketing Trials	3	14	5	0	5	5	3	20	14
* Outgrower/Contract Grower Initiatives (5)	3	14	5	1	5	5	3	21	15
IV. Envir. & Policy Studies	3	0	1	0	1	1	1	7	0
<b>V. Other Activities (6)</b>									
* Formative Advisory Board	1	1						1	1
* Annual Work plan	1	1	1	1	1	1	1	5	2
* Quarterly Reports	4	4	4	2	4	4	4	20	6

OUTPUT	Yr 1		Yr 2		Yr 3	Yr 4	Yr 5	Total	
	Target	Ach <sup>1</sup>	Target	A/D*	Target	Target	Target	Target	A/D*
* Annual Report	1		1		1	1	1	5	0

\* A/D = Achieved to date

- (1) Includes both initial client consultation and additional consultations with existing clients
- (2) This includes all technical/marketing and sectoral consultancy reports prepared by ST/LT advisors, local firms, etc; both initial as well as follow-up reports.
- (3) All participants trained per AgEnt Training Plan are reported in this category except those in the Financial Institutions who are reported separately.
- (4) Reporting of trials numbers is based on differing varieties, site locations, cultural practices etc.
- (5) There is no distinction between outgrower schemes and contract growers; also number reported is based upon individual outgrower schemes established.
- (6) Sectoral studies are reported as Special Technical Consultant Reports.

### Project Results Summary

OUTPUT	Yr 1		Yr 2		Yr 3	Yr 4	Yr 5	Total	
	Target	Ach <sup>1</sup>	Target	Ach <sup>2</sup>	Target	Target	Target	Target	Ach
New Finance Instruments Introduced	1	1	1	2	1	1	1	5	3
Financial Facilitation Completed	10	3	10	20	10	10	10	50	23
Investments Facilitated (US\$ millions)	2.4	.72	2.4	.94	2.4	2.4	2.4	12	1.7
New Markets/Products Developed	4	47	8	67	10	12	6	40	114
New/Improved Equipment/Technologies <sup>3</sup>	10	19	20	17	30	30	10	100	36
Enterprises Established or Expanded	40	49	80	77	100	100	30	350	126
New Outgrower/Contract Grower Programs Established <sup>4</sup>	3	14	5	1	5	5	2	20	15
Employment Generated from Assisted Enterprises	675	683	1150	796	2225	3875	5000	12925	1,479
- In the Processing and Marketing Sectors	125		125	598	125	100	100	575	598
- In the Production Sector <sup>5</sup>									0
- Direct	75	200	200	198	300	400	325	1500	398
- Outgrower	2	825	825	561	1800	3375	4375	10850	1,386

1. Cumulative 1993 31 March 1994.
2. Achieved to date, beginning 2nd quarter 1994.
3. Includes introduction and adoption of new/improved/upgraded equipment and/or technology which gives competitive edge.
4. There is no distinction being between outgrower schemes and contract growers.
5. No achievements are yet reported in this category. An effective measurement system is currently being designed.

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## ANNEX G TRAINING STATISTICS

Name of Program	Participants	Duration	Days/Hrs	Number	Male	Female	Participant In-Kind Contribution
<b>1st Quarter - 1993</b>							
<b>2nd Quarter - 1993</b>							
Ornamental Fish Seminar				75			
Agricultural Products Quality Workshop (Foreign)	CISIR	9-13 May	5 days	1		1	160
Briefing on SL Tropical Fish Industry	Pvt Sector	3 Jun	2.5 hrs	49	47	2	306
<b>3rd Quarter - 1993</b>							
Onion Storage (Sinhala Medium)	Farmers & 15 Farm Orgn.	26-31 Sep	6 days	2,453	2,108	345	29,436
Commercial Cut Flower Production - Anthurium (Sinhala Medium)	Pvt Sector	23-29 Sep	7 days	26	4	22	2,600
Domestic/Export Processed Fruit & Vegetable Marketing Workshop	Pvt Sector	3 Sep	6 hrs	31	29	2	465
Agriculture Produce Exporters Association Marketing Seminar	Pvt Sector	2 Sep	6 hrs	64	57	7	960
<b>4th Quarter - 1993</b>							
Home Training (Sinhala Medium)	Pvt Sector	(On-going) Commenced 1 Oct		20	16	4	
Country Industry Development Seminar	Pvt Sector	19 Oct	3 hrs	86	78	8	645

Name of Program	Participants	Duration	Days/Hrs	Number	Male	Female	Participant In-Kind Contribution
Women's Agro Enterprise Entrepreneurs Domestic/Export Marketing Seminar	Pvt Sector	1 Dec	1 day	140		140	2,800
Financial Institutions Credit Officer Training	Bank Credit Officers	1-3 Dec 6-8 Dec	3 days 3 days	25 25	23 23	2 2	1,875 1,875
1st Quarter-1994							
Poultry Technology Training Course (Foreign)	Pvt Sector	23-27 Jan	5days	1	1		200
Legume Trial Planting Demonstration	Plantation Sector	24 Mar	3 hrs	20	20		225
Pyrethrum Trial Planting Demonstration	Pvt Sector	4 Mar	3.5 hrs	20	20		262.5
Aromatic Crops Domestic/Export Production and Marketing Workshop	Pvt Sector	7 Mar	4.5 hrs	218	198	20	3,679
Potential "Hill Country"/High Value Export Crops Production Trials and Test Marketing Workshop	Pvt,Plantation Sectors	30 Mar	1 day	160	153	7	4,800
Ramie Training (Sinhala Medium)	Pvt Sector	1 Oct 93 - 31 Mar 94 (completed)	6 months	20	16	4	
2nd Quarter-1994							
Dehydration of Vegetables, Fruits, Value Addition, and Other Problems (Sinhala Medium)	Pvt Sector/ Small Farmers Dev Foundation	16-17 May 26-27 May 1-3 Jun	2 days 2 days 3 days	2 1 5			400
Goat Milk Sterilization (Sinhala Medium)	Small Farmers Dev Foundation	23 May	1 day	4			80

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Name of Program	Participants	Duration	Days/Hrs	Number	Male	Female	Participant In-Kind Contribution
Effective Field Selling Course for Sales Personnel Employed by Small Businesses/Entrepreneurs (Sinhala Medium)	Pvt Sector	9-10 Jun	2 days	24	19	5	960
		15-16 Jun	2 days	19	15	4	760
Principles of Marketing for Small Businesses/ Entrepreneurs (Sinhala Medium)	Pvt Sector	23-24 Jun	2 days	19	13	6	760
		28 Jun	1 day	6	3	3	120
Workshop on Reducing Fruit and Vegetable Postharvest Losses - Kandy (Sinhala Medium)	Market Traders	19 Jun	4 hrs	33	33		495
3rd Quarter - 1994							
Workshop on Reducing Fruit and Vegetable Postharvest Losses - Mawanella (Sinhala Medium)	Farmers	14 July	1 day	40			800
Workshop on Reducing Fruit and Vegetable Postharvest Losses - Warakapola (Sinhala Medium)	Farmers	15 July	1 day	48			960
3rd Onion Cultivation/Storage (Sinhala Medium)	Farmers	15-30 July 5-30 Aug	16 days 26 days	1,000			84,000
Microbusiness Management/Marketing Workshop	Pvt Sector	19-21 July	3 days	28	24	4	2,520
		25-27 July	3 days	23	22	1	2,070
		29-31 Aug	3 days	18	18	3	1,620
		8-10 Aug	3 days	34	31		3,060
Financial Institutions' Credit Officer Training	Banks	8-10 Sep	3 days	26	22	4	4,500
		12-14 Sep	3 days	24			
How to take your business overseas and a woman's "Key to success" - Workshop	Assn of Business/ Professional Women & Invitees	28 Sep	2 hrs	65	5	60	100
TOTAL:				4853	2998	656	153,493.5

Name of Program	Participants	Duration	Days/Hrs	Number	Male	Female	Participant In-Kind Contribution
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**Foreign Training:**

**2nd Quarter- 1993**

Agricultural Products Quality Workshop (Foreign)	CISIR	9-13 May	5 days	1		1	160
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**1st Quarter-1994**

Poultry Technology Training Course (Foreign)	Pvt Sector	23-27 Jan	5 days	1	1		200
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**ANNEX H**  
**PROJECT REPORT SUMMARY**

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- AgENT 1-93      Agro Enterprise Project  
First Quarter Report, January to April, 1993
- Oregon State University with Development Alternatives, Inc. Fintrac  
Management Advisory Services, Inc. Teams
- AgENT 2-93      Agro Enterprise Project  
Second Quarter Report, April to July, 1993
- Oregon State University with Development Alternatives, Inc. Fintrac  
Management Advisory Services, Inc. Teams
- AgENT 3-93      Issue No. 1 from AgENT's business, production, processing, and  
marketing information center. May 1993
- Part 1—report on the visit to the major 1993 Thailand exporters food  
fair in Bangkok by Agent's marketing/Agro processing advisory team
- Prepared by Anthony Dalglish and Anton Wijeratne
- AgENT 4-93      Issue No. 1 from AgENT's business, production, processing, and  
marketing information center, May, 1993
- Part II—selected Thailand /Singapore trade statistics in support of part  
1. Report on the visit to the major 1993 Thailand Exporters food fair in  
Bangkok by Agent's marketing/Agro processing advisory team.
- Prepared by Anthony Dalglish and Anton Wijeratne
- AgENT 5-93      Issue No. 2 from AgENT's business, production, processing and  
marketing information center, June, 1993
- A brief report on possible New Zealand market export opportunities  
and other Australasian market observations.
- Prepared by Anthony Dalglish and Anton Wijeratne



AgENT 11-93 Issue No. 5 from AgENT's business, production, processing and marketing information center. September, 1993

AgENT /Floriculture Produce Exporters Association 2nd September 1993 Marketing Seminar

Part 1 Markets in the Netherlands/ Germany for fresh cut foliage, foliage plant starter material, rooted and unrooted canes and foliage tips, semi-finished plants and potted specimen tropical plants and trees

AgENT 12-93 AgENT /Floriculture Produce Exporters Association 2nd September 1993. Marketing Seminar; listing of various German and Dutch Importers and cultivators of cut flowers cut foliage imported cuttings young and semi finished plants and importing/sales co-operatives

AgENT 13-93 Foliage plants Production Report

Prepared by Dick Lahey  
(AgENT Consultant Report No. 03)

AgENT 14-93 Issue No. 6 from AgENT's business, production, processing and marketing information center. September, 1993

This market research study was specially commissioned by AgENT's "Marketing/Agro-Processing Unit" to assist clients to better understand the marketing dynamics of the product sectors below; representative of similar pro-active market research studies which AgENT has in-hand or plans to implement in the future

Part 1—a survey of the market for chutney pickles and jams in the Greater Colombo area

Agent 15-93 Issue No. 6 from AgENT's business, production, processing and marketing information center. September, 1993

Specially commissioned by AgENT's "Marketing/Agro-Processing Unit" to assist clients to better understand the marketing dynamics of the product sectors below; representative of similar pro-active market research studies which AgENT has in-hand or plans to implement in the future

Part 2—a survey of the market for chutney, pickles and jams in the Greater Colombo Area: strengths and weaknesses of current products

(This is the edited version of the report for public circulation after removal of all brand names. The unedited version is available at AgENT's Business Information Center.)

- AgENT 16-93 (Internal AgENT/USAID distribution only)
- Report on the 1993 Indian IFCON food convention/technology show, Mysore, September 7/12
- Prepared by Anton Wijeratne
- AgENT 17-93 September 22, 1993, BMICH Centre
- Progress and achievements update covering USAID's major project AgENT private sector agro-enterprise initiative
- Presented to Hon.R.M. Dharmadasa Banda, Minister of Agriculture Development and Research and key public sector identities
- AgENT 18-93 Issue No. 7 from AgENT's business, production, processing and marketing information center. October 1993.
- Part 1—competitive marketing data collected at the ANUGA (Cologne,Germany) International food fair (October 9/14, 1993)
- Indian ethnic foods, coconut products Shiitake mushrooms, tropical dried fruits, dehydrated vegetables, Indian cashews; Thai ready to eat/long life Retort pouch meals plus 1992 EC horticultural import performance
- Prepared by Anthony Dagleish
- AgENT 19-93 Issue No. 7 from AgENT's business, production, processing, and marketing information center. October, 1993
- Part 2—competitive marketing data collected at the ANUGA (Cologne,Germany)International food fair (October 9/14)
- Indian spices, oils and oleoresins company/product profile of the Fuchs Group, a large/integrated German spices manufacturer and marketer
- Prepared by Anthony Dagleish

- AgENT 20-93           Ornamental Aquatics Consultancy Follow-up  
September/October 1993
- Prepared by Jonathan K.L.Mee  
**(AgENT Consultant Report No.04)**
- AgENT 21-93           Issue No. 8 from AgENT's business, production, processing and  
marketing information center, October, 1993
- Sri Lanka poultry sector strengths/ weaknesses/opportunities/threats  
assessment
- One of a series of "sector by sector" studies which AgENT has either  
completed or has in hand, designed to determine how the project can  
best assist both a sector and individual companies/ entrepreneurs
- Prepared by Clive Drew, Poultry Sector Specialist  
**(AgENT Consultant Report No.05)**
- AgENT 22-93           Baseline survey on Agro Enterprise sector Lending policies and  
schemes of Sri Lanka's financial institutions
- Prepared by E R A Perera, AgENT Financial Advisor  
**(AgENT Consultant Report No.06)**
- AgENT 23-93           Pyrethrum (*chrysanthemum cinerariaefolium*), a potential high value  
crop selected for high altitude lands in Sri Lanka Report No. 01
- Prepared by T Davies (restricted circulation)  
**(AgENT Consultant Report No.07)**
- AgENT 24-93           Presentation to Blackmores limited on the potential of a range of  
"Ayurvedic" based herbal products
- Prepared by Gregory A Strong, Herbal Products Marketing Specialist  
**(AgENT Consultant Report No.08)**
- AgENT 25-93           Presentation to Healtheries of New Zealand limited on the potential of a  
range of "Ayurvedic" Based herbal products
- Prepared by Gregory A Strong, Herbal Products Marketing Specialist  
**(AgENT Consultant Report No.09)**

- AgENT 26-93      Presentation to Bullivants Natural Health Products on the potential of a range of "Ayurvedic" based herbal products
- Prepared by Gregory A Strong, Herbal Products Marketing Specialist  
**(AgENT Consultant Report No.10)**
- AgENT 27-93      Agent Sector assessment of Sri Lanka onion, potato, and tomato production; background, strengths, weaknesses opportunities, threats, suggestions for research and demonstration activities
- Prepared by George A. Marlowe, Production Specialist  
**(AgENT Consultant Report No.11)**
- AgENT 28-93      Keells Agro Products Limited Shiitake
- Prepared by Daniel J Royse, Plant Pathologist and Mushroom Specialist  
**(AgENT Consultant Report No.12)**
- AgENT 29-93      U.A.E./market survey/ November 15 through 22, 1993
- Prepared by D. Lahey  
**(AgENT Consultant Report No.13)**
- AgENT 30-93      Issue No. 9 from AgENT's business, production, processing and marketing information center, November, 1993
- Women Agro-enterprise domestic and export marketing workshop.Export marketing presentation, selected slides
- Prepared by Anthony Dalglish
- AgENT 31-93      Issue No. 10 from AgENT's business, production, processing, and marketing information center, November, 1993
- Women Agro-enterprise domestic and export marketing workshop; domestic marketing presentation; selected slides
- Prepared by Anton Wijeratne
- AgENT 32-94      Consultancy report on vanilla, December, 1993
- Prepared by Steve Caiger  
**(AgENT Consultant Report No.14)**

- AgENT 33-93 Floriculture consultancy report, December, 1993  
 Prepared by Dick Lahey  
**(AgENT Consultant Report No.15)**
- AgENT 34-94 Issue No. 11 from AgENT's business, production, processing and marketing information center.  
 Stage 2—report on the current resource base of Ayurveda, medical and other herbal products in Sri Lanka and Australasian Export Potential  
 Prepared by: Gregory Strong  
**(AgENT Consultant Report No.16)**
- AgENT 35-94 AgENT Project Co-operative Agreement  
 Document briefly illustrates "AgENT At Work"
- AgENT 36-94 Agro-Enterprise Project 1994 work plan
- AgENT 37-94 Issue No. 12 from AgENT's business, production, processing, and marketing information center  
 A very brief "look at" the domestic/export market potential for ramie among selected Sri Lankan textile industry sectors, January, 1994  
 Prepared by Jeremy Blanchard  
**(AgENT Consultant Report No. 17)**
- AgENT 38-94 Issue No. 13 from AgENT's business, production, processing, and marketing information center.  
 Specially commissioned by AgENT's "Marketing/Agro processing Unit" to assist clients to better understand the marketing dynamics of the product sectors below; representative of similar pro-active market research studies which AgENT has in-hand or plans to implement in the future  
 A survey of the Market for glass & tinsplate containers in the processed fruits & vegetables industry. October, 1993
- AgENT 39-94 Follow up report on ornamental aquatics consultancy  
 Prepared by Jonathan K.L. Mee, Ornamental fish specialist  
**(AgENT Consultant Report No. 18)**

- AgENT 40-94 Issue No. 14 from AgENT's business, production processing, and marketing information center.
- Aromatic Crops domestic/export production and marketing work shop; March 7, 1994, Lanka Oberoi Hotel
- Typical illustrations of Aromatic crops production/marketing publications held in AgENT's Business Information Center which could be of interest to aromatic growers/processors/export marketers
- Prepared by Dr. Tom Davies and Anthony Dalgleish
- AgENT 41-94 Pyrethrum (*Chrysanthemum cinerariaefolium*) Technical Notes, Manual No. 01, February to March 1994
- Prepared by Dr. T. M. Davies  
(For Restricted Distribution)
- AgENT 42-94 Pyrethrum (*Chrysanthemum Cinerariaefolium*)
- A potential high value crop selected for high altitude lands in Sri Lanka Report No. 02
- Prepared by Dr. T.M. Davies  
(For Restricted Circulation)  
**(AgENT Consultant Report No. 19)**
- AgENT 43-94 The Potential for widening the Aromatics Crops Base in Sri Lanka. Strengths/Weaknesses/Opportunities/Threats
- Prepared by Dr. T.M.Davies  
**(AgENT Consultant Report No. 20)**
- AgENT 44-94 Pyrethrum update and Aromatic Crops SWOT
- Prepared by Dr. Tom M. Davies  
(For Restricted Circulation)  
**(AgENT Consultant Report No. 21)**
- AgENT 45-94 Issue no. 15 from AgENT's business, production, processing, and marketing information center
- Potential "Hill Country" high value export crops production trials and test marketing workshop, March 30, 1994, Grand Hotel, Nuwara Eliya

AgENT's marketing/agro-processing division and Business Information Center has prepared this selected range of "up to date" trade magazine articles/price illustrations in support of the above workshop

Prepared by Anthony Dalgleish

AgENT 46-94 Issue No. 16 from AgENT's business, production, processing and marketing information center.

Brief information pertaining to the UAE (United Arab Emirates) imports market for selected fresh and processed food products; plus very brief trade magazine articles covering Saudi Arabian, Singapore and Hong Kong Fresh Produce Imports, April, 1994

Prepared by Anthony Dalgleish

AgENT 47-94 Issue No. 17, from AgENT's business, production, processing, and marketing information center

Very brief overview of the United States Import market for dried pineapple, papaya, and mango

This "low cost" market research exercise was commissioned by AgENT to help Sri Lankan dried tropical fruits exporters better understand the dynamics/opportunities pertaining to the US market for selected product items

For further information contact Anthony Dalgleish, International Marketing/Agro Processing Advisor or Anton Wijeratne, Domestic Marketing/Agro Processing Advisor

AgENT 48-94 Issue No. 18 Floriculture

AgENT 49-94 Issue No. 19 from AgENT's business production, processing, and marketing information center.

This market research study was specially commissioned by AgENT's "Marketing Agro-Processing Unit" to assist clients to better understand the Marketing Dynamics of the Product Sectors; representative of similar pro-active market research studies which AgENT has in hand or plans to implement in the future

A survey of the market for fruit and vegetables in the hotel and restaurant industry

For information contact Anthony Dalgleish, Marketing/Agro Processing

Advisor, Anton Wijeratne, Marketing/Agro Processing Advisor, or  
Gayatri Abeydeera, Business Center Manager

- AgENT 50-94 Issue No. 20 from AgENT's business, production, processing, and  
marketing information center
- AgENT Project—Legume Trial  
Field workshop Thursday, March 24, 1994, at Campion Group,  
Bogowantalawa  
Technical Notes No. 01
- Prepared by K.D. Brandon  
(AgENT Consultant Report No. 22)
- AgENT 51-94 AgENT 4th Quarter Report (October to December, 1993)
- AgENT 52-94 Vanilla Planting Material Survey
- Prepared by B. Ranjith Piyadasa, Vanilla Production and Extension  
Officer  
(AgENT Consultant Report No. 23)
- AgENT 53-94 Preliminary Review of the Marine Segment of the Ornamental Fish  
Industry in Sri Lanka
- Prepared by Dr. Jim Beets, Marine Ecologist  
(AgENT Consultant Report No. 24)
- AgENT 54-94 Vanilla Industry Development in Sri Lanka
- Prepared by Robert C. Flick, International Agricultural Consultant  
(AgENT Consultant Report No. 25)
- AgENT 55-94 High Value Hill Country Vegetables—summary of the first phase of  
development
- Prepared by K.D. Brandon  
(AgENT Consultant Report No. 26)
- AgENT 56-94 Pyrethrum—a potential high value crop selected for high altitude lands  
in Sri Lanka, Report No. 03
- Prepared by Dr. T. D. Davies  
(AgENT Consultant Report No. 27)

- AgENT 57-94            An assessment of the world market for vanilla  
  
Prepared by Steve Caiger, Vanilla Specialist  
**(AgENT Consultant Report No. 28)**
- AgENT 58-94            Hill Country Vegetables: Edible Podded Peas and Beans  
(AgENT Technical Notes No.02)  
  
Prepared by K.D. Brandon  
**(AgENT Consultant Report No. 29)**
- AgENT 59-94  
Procedures            AgENT Management Information System Manual: Explanations and  
  
(AgENT Technical Notes No.03)  
  
Prepared by Jane S. Johnson, Information Consultant
- AgENT 60-94            Vanilla Programme 2nd Visit Report (May 4 to 19, 1994)  
  
Prepared by Steve Caiger, Vanilla Specialist  
**(AgENT Consultant Report No. 30)**
- AgENT 61-94            Agro Enterprise Project First Quarter Report, January to March, 1994
- AgENT 62-94            Issue No. 21 from AgENT's business production, processing, and  
marketing information center  
  
Topical articles covering sectors where AgENT is currently assisting  
clients or where potential clients have made enquiries; vanilla, fruits  
leathers, bars and rolls, organic production standards, aromatherapy  
(pure essential oils), forced air cooling, New Zealand Strawberry  
exports June, 1994  
  
Prepared by Anthony Dalglish
- AgENT 63-94            Issue No. 22. Special Issue, AgENT International Marketing inputs at  
the 3 day Agri-Business/ Marketing Workshop; presented in association  
with University of Mississippi's Agri-Business Institute  
  
Prepared by Anthony Dalglish
- AgENT 64-94            Issue No. 23. Special Issue, AgENT Agri-Business  
Management/Marketing Workshop: key agri-business management  
components  
  
Presented by Travis Phillips

- AgENT 65-94      Issue No. 24. Mississippi State University/AgENT Agri-Business and International Marketing Training Workshops, July and August, 1994
- Illustrations of leading international business/marketing/trade subscription periodicals, which can be freely sighted in AgENT's BIC/Business Information Center
- Prepared by Anthony Dalglish
- AgENT 66-94      Issue No. 25, a pro-active market research study produced by AgENT to assist the Sri Lankan floriculture sector to identify/expand into new export markets
- The export potential for selected Sri Lankan floricultural produce in the Hong Kong Market, August 1994
- AgENT 67-94      Packhouse Quality Assurance Manual: Hill Country Vegetables (AgENT Technical Notes No. 04)
- Prepared by K.D. Brandon
- AgENT 68-94      Issue No 26 from AgENT's business production, processing, and marketing information center
- Article for the "Sri Lanka Exporter, volume 8, September 1994
- Persuading a calibre importer/distributor to take-on and market your product is the first hurdle you must jump!
- Prepared by Anthony Dalglish
- AgENT 69-94      Agro-Enterprise Project Second Quarter Report, April to June, 1994
- AgENT 70-94      Enterprise opportunities associated with improved production technology for onions, potatoes, and tomatoes in Sri Lanka
- Prepared by Dr. George Marlowe  
(AgENT Consultant Report No. 31)

**ANNEX I**  
**PROJECT GRANT SUMMARY**

**SUMMARY OF AGENT/CLIENT SHARED INVESTMENT ACTIVITY**  
through September 30, 1994

<b>Product Sector</b>	<b>AgENT Contribution (US Dollars)</b>	<b>Client Contribution (US Dollars)</b>	<b>Percent of Total Contribution by Product Sector</b>
Aquaculture	205	205	0.04%
Fibre Crops	37541	35916	6.55%
Floriculture	27900	27390	4.93%
Fresh Fruits/Nuts	3650	3650	0.65%
Fresh Vegetables	49343	24702	6.60%
Herbs/spices/ aromatics	100450	67880	15.00%
Livestock	154282	181317	29.91%
Natural insecticides	34366	10128	3.97%
Oil Crops	5811	6738	1.12%
Ornamental Fish	76853	78224	13.82%
Processed Foods	78249	106300	16.45%
Other	6862	3954	.96%
<b>Total</b>	<b>575512</b>	<b>546404</b>	<b>100.0%</b>

	AgENT Grant	Client Cost-Sha re	Total Investme nt
Total Grant/Client Shared Investment	\$575,51 2	\$546,40 4	\$1,121, 916
Share:	51%	49%	100%
Total Grants Awarded: 207			
Average Size of Grant:	\$2,780	\$2,640	\$5,420
Total Clients Receiving Grants: 124			
Average Grant per Client:	\$4,641	\$4,406	\$9,048

**ANNEX J**  
**PROJECT FINANCIAL SUMMARY**

Life of Project Cost and Level of Effort Summary

	----- Current Budget (a) -----				----- Proposed Balance Budget (b) -----			
	Spending to Date			Balance	Spending Per Month			% Change
	Budget	Total	Per Month		Total	Total	% Change	
Salaries	839,158	498,604	27,700	340,554	567,827	66.7	13,520	-51.2
Fringe Benefits	250,386	96,186	5,344	154,200	226,927	47.2	5,403	1.1
Allowances	336,274	96,358	5,353	239,916	139,916	-41.7	3,331	-37.8
Travel/PD/Transportation	1,442,755	244,048	13,558	1,198,707	1,198,707	0.0	28,541	110.5
Supplies/Equipment	760,954	644,452	35,803	116,502	566,502	386.3	13,488	-62.3
Other Direct Costs	707,798	427,130	23,729	280,668	480,668	71.3	11,444	-51.8
Training	820,363	128,032	7,113	692,331	492,330	-28.9	11,722	64.8
Subcontractors	3,758,817	1,134,044	63,002	2,624,773	2,584,774	-1.5	61,542	-2.3
Grant	3,479,882	113,368	6,298	3,366,514	2,737,120	-18.7	65,170	934.7
Indirect Costs	1,303,611	520,517	28,918	783,094	802,490	2.5	19,107	-33.9
Total Cost (c)	\$13,699,999	3,902,739	216,819	9,797,261	9,797,261	0.0	233,268	7.6
Technical Assistance	7,335,189	2,496,370	138,687	4,838,819	5,198,818	7.4	123,781	-10.7
Training	820,363	128,032	7,113	692,331	492,330	-28.9	11,722	64.8
Grants	3,479,882	113,368	6,298	3,366,514	2,737,120	-18.7	65,170	934.7
Commodities	760,954	644,452	35,803	116,502	566,502	386.3	13,488	-62.3
Total Direct Cost (c)	12,396,388	3,382,222	187,901	9,014,166	8,994,770	-0.2	214,161	14.0

Indirect Cost	1,303,611	520,517	28,918	783,094	802,489	2.5	19,107	-33.9
Total Cost (c)	\$13,699,999	3,902,739	216,819	9,797,261	9,797,261	0.0	233,268	7.6

----- Current Budget (a) ----- Proposed Balance Budget (b)  
-----

	Spending to Date				Spending Per Month			
	Budget	Total	Per Month	Balance	Total	% Change	Total	% Change
<b>Level of Effort (Person-Months)</b>								
Expat Person-Months	314	150	8.3	164	196	19.5	4.7	-44.0
Long-Term	204	82	4.6	122	122	0.0	2.9	-36.2
Short-Term	110	68	3.8	42	74	76.2	1.8	-53.4
Local Person-Months	1,190	400	27.7	790	790	0.0	18.8	-15.4
Long-Term	1,092	400	22.2	692	692	0.0	16.5	-25.9
Short-Term	98	0	0.0	98	98	0.0	0.0	0.0
Total Person-Months	1,504	550	36.0	954	986	3.7	23.5	-23.2

- Notes: (a) "Current" budget is for the first 18 months (thru August 1994).  
 (b) "Proposed" budget is the contractor's estimate of resources needed for the remaining 42 project months. The percent change in the total proposed budget is with respect to the balance in the current budget to date. The percent change in spending is with respect to monthly spending in the current budget to date.  
 (c) Total costs may not sum due to rounding errors.

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## ANNEX K

### THE ROLE OF AGRICULTURE IN SRI LANKA'S ECONOMIC DEVELOPMENT

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#### A. Background

During the past decade, Sri Lanka experienced widespread severe civil strife. The unstable political climate has dampened tourism and foreign investment and slowed down implementation of the program of economic liberalization introduced in 1977.

Many important institutional and policy reforms, which should have been implemented by the mid-1980s, were initiated much later. These included privatization (or restructuring) of public enterprises, liberalization of the stock market, abolition of exchange controls on current transactions, elimination of the fertilizer subsidy, and reduction of export duties and *ad valorem* taxes on agriculture. The internal turmoil has also caused a huge loss of human lives and productive assets. Due to these factors, the country was unable to achieve rapid and sustainable economic growth.

Four key indicators of economic progress are provided in Table 1. Between 1984 and 1993, real gross domestic product (GDP) grew by 44.4 percent, investment grew by 222 percent, exports grew by 43.2 percent, and imports grew by 57.5 percent. Meanwhile, real per capita GDP increased by 27.9 percent (from Rs. 6692 to Rs. 8557). Real per capita GDP growth is remarkable, since this was one of the most turbulent periods in Sri Lanka's contemporary history. The ongoing separatist war in the north, which began in 1983 has serious ramifications for the entire nation. Until this problem is solved, the country will find it difficult to achieve political stability and embark on the road to social and economic prosperity.

Sri Lanka is a long way from an economic takeoff. Its goal of becoming an "emerging" newly industrialized country, such as Thailand, by the turn of the century may be an unrealistic one. Thailand's GNP per capita is \$1570, its per capita exports are \$500, and its foreign capital inflows (including portfolio investment) are around \$2 billion.<sup>1</sup> The corresponding figures for Sri Lanka are \$526, \$163, and \$245 million, respectively.

If Sri Lanka can achieve a GDP growth rate of 12 percent in 1994 and sustain it over the next six years, it will be able to double per capita income and per capita exports by the turn of the century. But this will be a difficult target for the country to achieve, given its modest growth record over the past ten years. An average growth rate of 8 percent per annum may be a more realistic target over the remainder part of this decade.

Sri Lanka achieved a significant GDP growth rate of 6.9 percent in 1993. Agriculture grew by 4.9 percent, manufacturing by 10.5 percent, and services by 6.3

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<sup>1</sup> Source: World Development Report 1993 and Economic Review (Sri Lanka), April, 1994.

percent. There was also 17 percent increase in total exports, from SDR 1,747 million to SDR 2,050 million.<sup>2</sup> Agricultural and industrial exports amounted to SDR 469 million and SDR 1,490 million, respectively, in 1993.

Underscoring this overall growth performance was a 24 percent rise in investments financed by a sharp increase in foreign capital inflows and national savings. For Sri Lanka to move rapidly toward industrialization, the investment/current GDP ratio should increase from 26 percent to about 32 percent. The need for increased foreign investment is therefore critical since this gap is unlikely to be filled by domestic savings. Currently the domestic savings and current GDP ratio is about 16 percent.

This country's capital inflows are lower than those of Thailand. The main reason for this is Thailand's more diverse agricultural and industrial export base and a more sophisticated physical infrastructure. To realize quantum jumps in foreign investment, Sri Lanka has to move in a similar direction. These are important strategic issues that must be addressed through appropriate macroeconomic policy initiatives and public investment programs designed to launch the economy into a higher growth trajectory.

## **B. Growth and Structure of GDP in Relation to Agriculture**

### **B1. Growth of GDP**

Since the early 1980s, agricultural growth has lagged far behind industrial growth. Table 2 measures the growth of the five main sectors of the economy in terms of a GDP index (base year 1983). In 1994, manufacturing had a GDP score of 210 and an agriculture score of 120. Mining and quarrying, construction, and services also had higher scores than agriculture. If the agricultural sector fails to generate faster growth, it will not only impede industrialization, but also aggravate the problems of poverty, hunger and underemployment in the rural areas (with adverse consequences for income distribution).

The performance of the various sub-groups within the agricultural sector has been highly uneven. This is the reason for its tardy progress. There appear to be three distinct sub-sectors: "declining," "unstable," and "growing" (see Table 3). The "declining" sub-sectors are rubber and coconut. The "unstable" sub-sectors are tea, paddy, and forestry and fisheries (combined). The only "growing" sub-sector is minor food crops and livestock (combined). Most of the price and income-elastic foods—such as high-value fruits and vegetables, poultry, and dairy products—are produced by the commercial agribusiness sub-sector. With significance resource support for adaptive and applied research, technology transfer, export promotion, and domestic market expansion, this sub-sector should make a substantial contribution to Sri Lanka's economic development in the future.

Paddy is the single largest food crop, occupying more land and employing more labor than any other crop in the island. In 1993, Sri Lanka produced 1.5 million tonnes of rice

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<sup>2</sup> Standard drawing rights (SDR) are calculated on the basis of a weighted exchange rate (SDR 1 = US\$ 1.35 = Rs. 67.50)

and imported another 209,000 tonnes. But the paddy sub-sector has been stagnant during the past ten years, despite massive investments in irrigation, land development, and settlement (more than \$2 billion in foreign aid and local currency since 1977). Since these investments appear to have had a high opportunity cost, there is an urgent need to diversify production on rice lands as much as possible.

The country is almost totally self-reliant in rice production. If farmers increasingly diversify into other crops, the self-sufficiency ratio may drop to about 75 percent. But increased rice imports could be offset by increased minor food crop exports and increased import substitution in crops such as chilies, onions, and pulses. Income and employment multiplier effects will increase substantially if farmers switch from the production of staples to the production of high-value-crops for domestic and export markets.

Since production costs are high, average yields are relatively low for a wide range of crops in Sri Lanka. Consequently, most of the food and feed crops (rice, sugar, soybean, maize, sesame) are produced at a high cost per unit of output. Local food and feed producers cannot become internationally competitive without adopting improved varieties and cultural practices. The role of research and extension is critical in this regard.

The situation in the plantation sub-sector is also disturbing. Available evidence suggests that tea, rubber, and coconut production is no longer profitable. For all three crops, the ratio of cost per unit of output to the FOB price has increased over the past ten years as costs have risen more rapidly than prices. The largest increase in the cost/price ratio has occurred in the tea sector; the smallest increase is in the rubber sector (see Table 4). Due to declining profitability, the extents under tea, rubber, and coconut are also declining.

An environmentally sound and economically viable strategy for reviving the plantation sub-sector through agricultural diversification must be identified. By planting the unproductive lands to high-value crops (in the tea estates) and by introducing crop and stock integration and inter-cropping (in the rubber and coconut estates), the agribusiness potential and income-generating capacity of the plantation sub-sector could be significantly enhanced. Therefore, research and extension have a vital role to play in this sub-sector.

## **B2. Structure of GDP**

During the past ten years, GDP has undergone a significant structural formation. The principal change was an increase in the share of manufacturing from 14.7 percent to 19.1 percent and a corresponding decrease in the share of agriculture share from 25 percent to 20.9 percent. The share of services (the economy's largest sector) increased slightly, while the share of construction decreased slightly. The share of mining and quarrying (the economy's smallest sector) remained more or less unchanged (Table 5).

The manufacturing sector is growing almost twice as quickly as the agricultural sector. If this trend continues, by the end of this decade, manufacturing will account for about 25 percent of GDP, and agriculture for about 15 percent. Clearly, the manufacturing

sector will drive the economy in the future, and agriculture will play a small but important supporting role. The rural areas contain a high proportion of the country's unskilled labor. Since the demand in the urban areas is mainly for skilled and semi-skilled labor, the country will have to rely mainly on the agricultural sector (and related services and industries) to absorb the bulk of the unskilled labor. Broad-based and sustainable agricultural development is, therefore, critical for ensuring growth with equity.

Significant changes have also occurred in the composition of agricultural GDP. The share of minor food crops and livestock has increased from 35.4 percent to 43.4 percent at the expense of the other sectors (Table 6). Only this sub-sector has registered steady growth during the past ten years. If the present trend continues, the commercial agribusiness sub-sector will account for about 50 percent of agricultural GDP by the turn of the century. Clearly, the greatest economic returns to investment in agriculture will be realized by this sub-sector in the future. Given its large employment multiplier effects, its rapid expansion will have a significant equity impact as well. Agro-enterprises should be the focal point of a strategy for the diversification and commercialization of agriculture.

## **C. Growth and Structure of Exports in Relation to Agriculture**

### **C1. Growth of Exports**

Between 1984 and 1993, total exports grew from SDR 1,432 million to SDR 2,050 million. Exports were driven by the industrial sector. There was a threefold increase in industrial exports from SDR 495 million to SDR 1,490 million. The export of textiles and garments grew from SDR 290 million (58.6 percent of industrial exports) to SDR 1 billion (67.8 percent of industrial exports). The garment industry was primarily responsible for the rapid growth of industrial exports. At the same time, the industrial export base underwent significant diversification. The aggregate earnings of "other" industrial goods (tobacco, diamonds, chemical products, leather and rubber products, machinery and mechanical appliances) increased from SDR 79 million (16.0 percent of industrial exports) to SDR 423 million (28.4 percent of industrial exports).

While the industrial sector performed well, the agricultural sector performed poorly over the same time frame. Total agricultural exports fell dramatically from SDR 866 million to SDR 469 million. An index of exports is provided in Table 7 (1983=100) illustrate how the different sectors (agriculture, industry, minerals, etc.) performed during this period,

The plantation sector was chiefly responsible for the precipitous decline in agricultural exports. Tea exports declined from SDR 604 million to SDR 296 million, rubber exports from SDR 127 million to SDR 46 million, and coconut exports from SDR 81 million to SDR 42 million. On the other hand, exports of minor agricultural products increased from SDR 54 million to SDR 86 million. Fruits and vegetables accounted for 8.4 percent of minor agricultural exports (SDR 7.2 million) in 1993. However, this sub-sector, as a whole, has become dynamic only in the past 2 to 3 years.

The export performance of the four agricultural sub-sectors is captured in index form in Table 8. It is clear from trends in agricultural exports that future export potential lies mainly in non-traditional crops. This is a strong case for further diversification and commercialization of the agricultural export base.

## **C2. Structure of Exports**

Due to the contrasting performances of the agricultural and industrial sectors during the past ten years, the structure of exports underwent a major transformation (Table 9). The share of agriculture in total exports fell from 60.5 percent to 22.9 percent, while industry's share grew from 34.6 percent to 72.7 percent. This is strong evidence that the country has embarked on the path of export-led industrial growth, with agriculture playing a secondary role in economic development. It is likely, given current trends, that industry's share will increase to about 80 percent of total exports, while agriculture's share will decrease to about 15 percent by the end of this decade.

The structure of agricultural exports is shown in Table 10. Tea continues to be Sri Lanka's leading export crop, although its share in agricultural exports (in terms of value) has decreased from 69.7 percent to 63.1 percent. Rubber and coconut have also declined in relative importance and are contributing less than 10 percent each to agricultural exports. The share of non-traditional exports (minor agricultural products) has increased threefold from 6.2 percent to 18.3 percent of total agricultural exports. The items in this category include unmanufactured tobacco, cinnamon, pepper, cashew nuts, essential oils, and fruits and vegetables. The last group's contribution to minor agricultural exports in 1993 was 8.4 percent. This proportion could easily double within a few years through greater exploitation of the island's rich horticultural potential.

Since export earnings from the plantation sector appear to be following a distinct downward trend, the need for a rapid and sustained increase in the export earnings of non-traditional crops has become crucial.

## **D. Conclusions**

During the past ten years, the agricultural sector, as a whole, has fared poorly in terms of real GDP growth and export performance. In contrast, the industrial sector has rapidly expanded its growth potential and export base. Although the relative importance of agriculture has sharply declined, it still has a critical role to play in Sri Lanka's economic development. Around 75 percent of the population lives in the rural areas, and more than 50 percent of the labor force is employed in agriculture and related industries and services. The bulk of the unskilled labor resides in the countryside and is unable to find productive employment. Poverty and malnutrition are also widespread in the rural areas. To solve these problems, the agriculture sector must renew its capacity for enhanced growth and sustained income and employment creation.

Industrial development can be facilitated through increased food production and reduced post-harvest losses, the cumulative effect of which will be a decline in food prices.

Consumers would then have more money to spend on other items (clothes, shoes, radios, bicycles, building materials, furniture, etc.), and domestic production would expand accordingly to accommodate this increased demand for manufactured goods. Food prices and consumer demand for industrial goods are inversely related.

Food prices are generally much higher in Sri Lanka than in other countries at a similar stage of development, such as India and Pakistan. Prices will decline in Sri Lanka if more efficient techniques are employed in the production, storage, and handling of perishable food items. The demand for fruits, vegetables, and other high-value farm products generally tends to be price elastic—that is to say, if production increases, the percentage increase in demand will be greater than the percentage decrease in price. Hence farmers will earn more revenue after the price change than before. Both consumers and producers will, therefore, benefit if the supply of food increases and prices decline.

The demand for food grains, however, is generally price-inelastic—producers earn less profits when prices fall. However, by diversifying into products with high income and price elasticities of demand, producers will be able to earn a significant increase in revenue. The demand for agricultural labor will also increase substantially if producers switch from basic staples to the production of high-value food and feed crops, industrial crops, and livestock products. The country's export earnings can also be significantly enhanced through the commercialization of agriculture and the realization of opportunities for agro-enterprise development. Agriculture can therefore play a vital role in Sri Lanka's economic development in accordance with a strategy for enhanced growth with maximum distributive equity.

Over the past ten years, only one agricultural sub-sector (minor food crops, including fruits and vegetables, spices and condiments, and industrial crops) has made a significant contribution to GDP and export earnings. The growth performance of the other sub-sectors (paddy, plantation crops, and forestry and fishing) has been exceedingly disappointing. The main source of future growth within the agricultural sector is the minor food crops and livestock sub-sector. It is critical to increase the efficiency and growth potential of this sub-sector through broad-based agribusiness expansion.

Private entrepreneurs need to be internationally competitive to survive and realize profits in agribusiness. Agro-enterprise development will lead to lower food prices through increased production and marketing efficiency. A fall in food prices will cause the demand for consumer goods to increase. The demand for investment goods (machinery and equipment) will also grow as improved methods of food processing and packaging are adopted by progressive entrepreneurs. Agro-industries will create additional demand for high-value food and feed crops, industrial crops, and livestock products. They are a powerful instrument of agricultural diversification and commercialization.

The agricultural sector has a vital role to play in transforming rural incomes, facilitating industrialization, and reducing poverty and underemployment in this country. During the past ten years, the agricultural sector has been driven mainly by the minor food crops and livestock sub-sector. All the other sub-sectors have contributed poorly to GDP and

export earnings. The need to diversify and commercialize agriculture is imperative. Accordingly, high priority should be given to agro-industrial development in Sri Lanka. The sub-sectors with high agribusiness potential include fruits and vegetables, poultry, and industrial crops. What is urgently required at this time is an environmentally sound and economically viable strategy for supporting and facilitating agro-industrial expansion in Sri Lanka.

**Table 1: Selected Indicators of Economic Growth**

Year	Real GDP (Rs. Mn.)	Investment (Rs. Mn.)	Imports (SDR Mn.)	Exports (SDR Mn.)
1984	104395	39708	1824	1432
1985	109570	38682	1956	1310
1986	114261	42463	1660	1036
1987	115922	45900	1590	1079
1988	119050	50562	1662	1097
1989	121729	54722	1737	1216
1990	129244	71455	1981	1461
1991	135204	85156	2237	1452
1992	140990	103239	2487	1747
1993	150783	127870	2872	2050

**Table 2: Index of GDP by Sector**

Year	Agriculture	Manufacturing	Mining and Quarrying	Construction	Services
1983	100	100	100	100	100
1984	99.6	112.3	101.5	99.9	107.8
1985	108.2	118.1	103.0	100.4	111.1
1986	111.0	128.1	108.4	101.9	115.9
1987	104.6	136.7	129.0	103.7	119.0
1988	106.8	143.1	140.6	105.3	121.6
1989	105.5	149.4	148.2	105.9	125.5
1990	114.9	163.6	161.7	109.0	130.9
1991	116.6	174.7	145.5	112.4	139.1
1992	114.8	190.1	136.8	121.5	146.5
1993	120.4	210.1	153.0	129.4	155.8

**Table 3: Index of Agricultural GDP by Sub-sector**

Year	Tea	Rubber	Coconut	Paddy	Other crops & Livestock	Forest. & Fishing
1983	100	100	100	100	100	100
1984	116.1	101.5	84.0	97.6	107.2	87.8
1985	119.5	98.4	127.9	107.4	109.6	88.9
1986	117.9	99.0	131.5	104.7	116.3	93.7
1987	119.1	88.4	99.2	85.8	118.3	101.4
1988	126.7	89.0	83.6	99.9	119.9	97.2
1989	115.5	80.6	107.3	83.2	122.3	100.3
1990	130.1	83.0	109.0	100.9	131.8	98.6
1991	134.3	75.7	94.5	95.0	142.3	106.6
1992	99.7	77.3	99.3	93.1	143.8	109.9
1993	129.3	78.7	93.5	102.0	145.8	114.2

**Table 4: Index of Cost/Price Ratio Per Unit of Output for Plantation Crops**

Year	Tea	Rubber	Coconut
1983	100	100	100
1984	88.1	107.2	53.9
1985	115.5	149.0	100.4
1986	n.a.	133.7	180.8
1987	n.a.	117.4	110.6
1988	157.2	83.5	81.0
1989	148.6	96.8	101.2
1990	131.9	117.4	122.3
1991	144.3	128.6	141.4
1992	177.5	126.6	121.8
1993	166.3	120.6	128.7

**Table 5: Composition of GDP (%)\***

Year	Agriculture	Manufacturing	Mining & Quarrying	Construction	Services
1984	25.0	14.7	2.3	7.7	50.2
1985	25.9	14.8	2.3	7.4	49.7
1986	25.5	15.4	2.3	7.2	49.7
1987	23.6	16.2	2.7	7.2	50.3
1988	23.5	16.5	2.8	7.1	50.1
1989	22.7	16.8	2.9	7.0	50.5
1990	23.3	17.4	3.0	6.8	49.6
1991	22.6	17.7	2.6	6.7	50.4
1992	21.3	18.5	2.3	6.9	50.9
1993	20.9	19.1	2.4	6.9	50.6

\* Due to rounding off of ratios to one decimal, the rows may not sum up to exactly 100.

**Table 6: Composition of Agricultural GDP (%)\***

Year	Tea	Rubber	Coconut	Paddy	Other Crops & Livestock	Forests & Fishing
1984	10.3	3.4	9.6	23.6	38.5	14.6
1985	9.7	3.0	13.5	23.9	36.3	13.6
1986	9.4	2.9	13.5	22.7	37.5	14.0
1987	10.0	2.8	10.8	19.8	40.5	16.1
1988	10.5	2.8	8.9	22.6	40.2	15.1
1989	9.6	2.5	11.6	19.0	41.5	15.7
1990	10.0	2.4	10.8	21.2	41.1	14.2
1991	10.1	2.1	9.2	19.6	43.7	15.1
1992	7.7	2.2	9.9	19.5	44.8	15.9
1993	9.5	2.2	8.9	20.4	43.4	15.7

\* Due to rounding off of ratios to one decimal, the rows may not sum up to exactly 100.

**Table 7: Index of Export Value by Sector**

Year	Agriculture	Industry	Minerals	Other
1983	100	100	100	100
1984	149.6	141.0	71.1	169.6
1985	119.0	147.3	68.9	317.4
1986	82.7	137.6	80.0	165.2
1987	79.1	149.6	104.4	213.0
1988	81.2	151.0	135.6	156.5
1989	82.4	175.5	131.1	278.3
1990	91.7	217.4	142.2	447.8
1991	81.0	255.3	100.0	182.6
1992	74.1	353.8	100.0	134.8
1993	81.0	424.5	120.0	160.9

**Table 8: Index of Agricultural Export Value by Sub-sector**

Year	Tea	Rubber	Coconut	Minor Products
1983	100	100	100	100
1984	183.0	112.4	106.6	90.0
1985	131.5	82.3	147.4	83.3
1986	85.2	70.8	96.1	75.0
1987	84.8	68.1	73.7	75.0
1988	87.3	77.0	47.4	98.3
1989	89.7	59.3	81.6	86.7
1990	110.3	50.4	67.1	98.3
1991	95.8	41.6	60.5	100.0
1992	73.0	42.5	78.9	133.3
1993	89.7	40.7	55.3	143.3

**Table 9: Composition of Total Export Value (%)\***

Year	Agriculture	Industry	Minerals	Other
1984	60.5	34.6	2.2	2.7
1985	52.6	39.5	2.4	5.6
1986	46.2	46.6	3.5	3.7
1987	42.4	48.7	4.4	4.5
1988	42.8	48.3	5.6	3.3
1989	39.2	50.7	4.9	5.3
1990	36.3	52.2	4.4	7.0
1991	32.3	61.7	3.1	2.9
1992	24.6	71.1	2.6	1.8
1993	22.9	72.7	2.6	1.8

\* Due to rounding off of ratios to one decimal, the rows may not sum up to exactly 100.

**Table 10: Composition of Agricultural Export Value (%)\***

Year	Tea	Rubber	Coconut	Minor agric. Products
1984	69.7	14.7	9.4	6.2
1985	63.0	13.5	16.3	7.3
1986	58.7	16.7	15.2	9.4
1987	61.1	16.8	12.2	9.8
1988	61.3	18.5	7.7	12.6
1989	62.1	14.0	13.0	10.9
1990	68.5	10.7	9.6	11.1
1991	67.4	10.0	9.8	12.8
1992	56.2	11.2	14.0	18.6
1993	63.1	9.8	9.0	18.3

\* Due to rounding off of ratios to one decimal, the rows may not sum up to exactly 100.

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## ANNEX L

### THE BENEFITS OF AGRICULTURAL ENTERPRISE DEVELOPMENT

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The AgENT Project objective is to diversify and commercialize Sri Lanka's agricultural systems through the development and expansion of private agro-based enterprises. The project will strengthen these enterprises by employing technical assistance, training, and technology cost-sharing inputs to generate new agro-enterprise investments, introduce new technologies, develop markets, improve public sector support to agro-enterprises, and introduce new agro-enterprise financing mechanisms.

The ultimate measure of project success will be a direct and sustained increase in agro-industrial sales, particularly in exports of non-plantation products. Increased sales will be associated with direct employment and income effects across the sector, with indirect employment and income effects across the whole economy. These benefits will not be uniformly distributed by commodity, firm, or market level within the sector. And, to the extent that the sector develops and lowers the cost of food in the average household budget, consumers will benefit (at the expense of some sector producers).

This annex describes the nature of project benefits by reviewing the structure of agro-industrial markets and describing the market development process. The effects of the development process are initially described in terms of price-quantity changes, which reflect initial changes in sector-level income and employment, and later changes in non-sector income and employment and consumer food costs. To appreciate how the project will generate benefits, it is useful to review the role of agro-industrial investment in stimulating innovation and value-added.

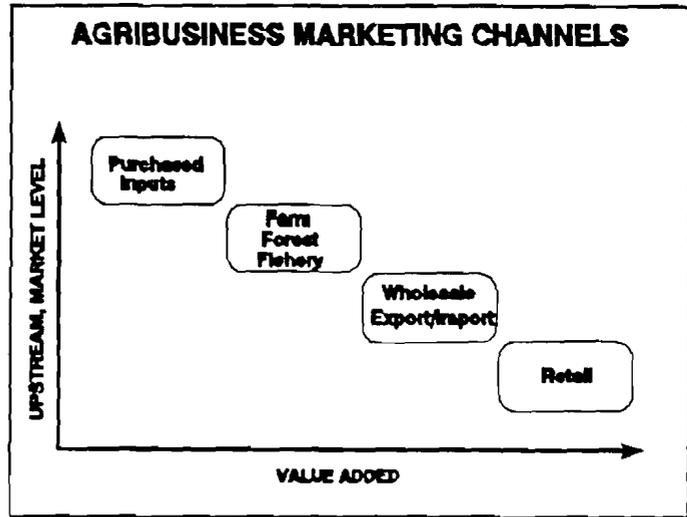
#### **A. Value Added Downstream**

At the national level, aggregate agricultural production, marketing, and trade data and national income accounting statistics provide general indicators of the competitive advantages of major agricultural commodity sectors. Commodity analyses must be divided into subsectors according to locally appropriate classifications of marketing channels. Analysis along a marketing channel for a major commodity will identify the potential for strengthening linkages across markets (upstream and downstream) as value is added at each successive downstream market level.

Sri Lanka's agro-industrial market channels range across a wide array of commodities from purchased inputs, through farm-, plantation-, and garden-based production, to intermediate wholesale markets, including export and import activities, and finally, retail markets (Exhibit 1). Moving downstream, the successive markets for a particular commodity add value to the national economy by producing services that add time, location, and form utility to the commodity.

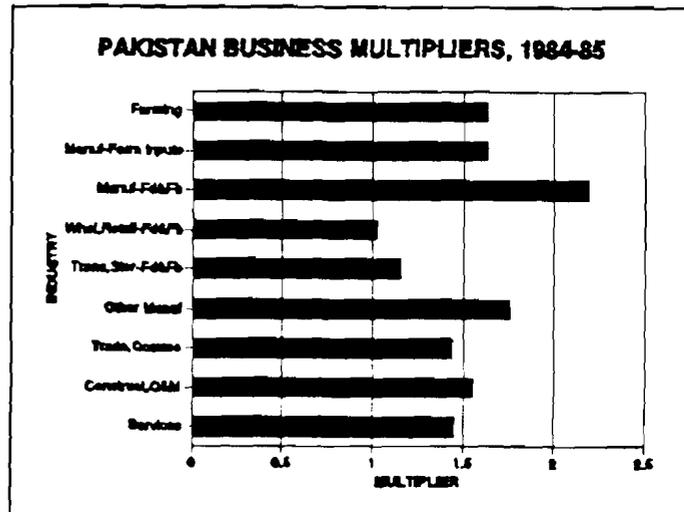
Exhibit 1. Agribusiness Marketing Channels

Agriculture's high inter-industry multipliers and forward and backward linkages make it the prime sector to nurture Sri Lanka's structural transformation into a "developed" economy. Analyses of available national input-output models can be used to assess the relative magnitudes of agribusiness on-farm production and off-farm marketing subsector employment, and output, as well as trade (import and export) multipliers, forward and backward linkages, (column-wise) input requirements, and (row-wise) sales coefficients. For example, a comparison of input-output models across developing countries usually demonstrates that the post-harvest, "food and feed processing" sector ranks at or near the top in business and employment multipliers and indices of backward and forward linkages.



The Philippines and Pakistan illustrate how important agriculture is in creating the foundations for the transformation. Exhibit 2 demonstrated the business or output multipliers are summarized for a nine-sector aggregation of the Pakistan economy.<sup>1</sup> The first five sectors or industries are the "agribusiness" subsector. The subsector with the highest multiplier is "manufacturing-food and fiber," where each rupee of additional output or final demand in that subsector leads to a total output of Rs. 2.28 in the total economy. This is the subsector immediately downstream from farm-level production to process raw food and fiber produce for export or distribution to the retail market. This subsector is the "engine" of Pakistan's agribusiness sector and the catalyst for developing the industrial and service sectors.

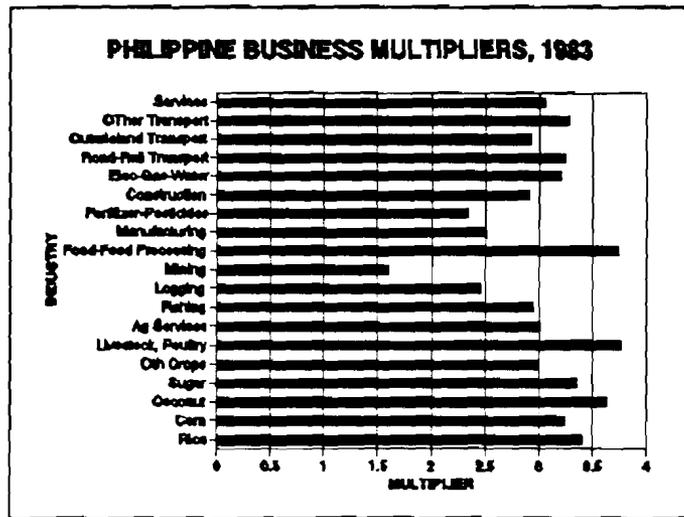
Exhibit 2. Pakistan Business Multipliers, 1984-85



<sup>1</sup> Business or output multipliers measure the change in economy-wide output per unit change in final demand in the sector in question. The multipliers reported here are "Type 1" for an "open" I-O model, with the household sector excluded.

Exhibit 3. Philippine Business Multipliers, 1983

In the Philippines, a 19-sector aggregation of the economy shows a similar pattern of business multipliers (Exhibit 3).<sup>2</sup> The Philippine model benefits from having 11 subsectors devoted to the agribusiness sector. It should be evident that the "food-feed processing" subsector is also the "engine" of the Philippine agribusiness sector, with a business multiplier of 3.75. The livestock-poultry subsector also has strong inter-industry linkages with a business multiplier of 3.77.

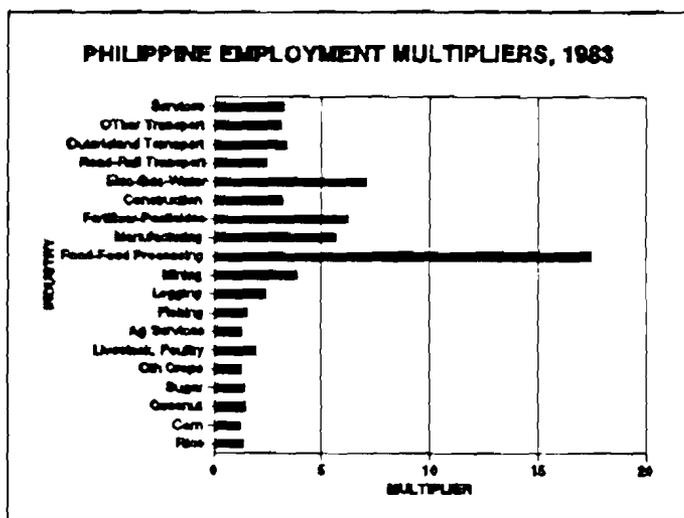


In both Pakistan and the Philippines, the "manufacturing-food and fiber" and "food-feed processing" subsectors have high forward and backward linkage indices. This means that the subsector buys a large amount of goods (crops and livestock) upstream and sells a large amount of finished food and fiber products downstream in export and retail markets. The magnitude of the Philippines' "food-feed processing" subsector can be appreciated by comparing its employment multiplier with the rest of the economy (Exhibit 4).

The multiplier of 17.51 indicates that for every additional worker employed in the food-feed processing subsector, 17.51 extra workers will be employed throughout the economy. While the multiplier is large, it is more than three times larger than the other multipliers. This simply indicates that food-feed processing is a very "narrow" industry, with little promise of leading to a massive economic expansion by sharply expanding its employment. Out of a labor force of 19 million in 1983, only 693 thousand workers were employed in the food-feed processing industry. However, the industry has great potential for marginal impacts on output and employment.

Exhibit 4. Philippine Employment Multipliers, 1983

The locus of capital-intensive manufacturing equipment and advanced technologies in food and feed processing make the industry a catalyst for concentrating and spinning off new technologies and manufacturing processes throughout the rest of the non-agribusiness manufacturing sector. The



<sup>2</sup> The Philippine multipliers are "Type II" for a "closed" model, including the household sector. Inclusion of the household sector causes Type II multipliers to be always be larger than Type I multipliers. However, the relative magnitudes of multipliers are generally consistent across open and closed models.

food-feed processing industry is an important source of foreign investment in domestic agribusiness exports. In many cases, foreign agribusiness investments allow domestic producers and processors to benefit from contract farming to supply ample stock for food-feed processing plants (Tabor and Morgan).

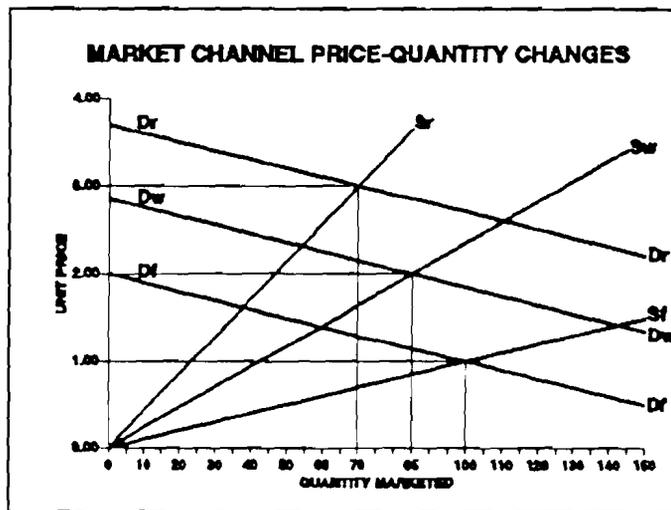
AgENT conducts firm-level competition analyses to assess domestic market performance and the implications for expanding domestic and export value added, as well as the concurrent market infrastructure requirements. Those commodity-based sub-sectors with the greatest aggregate potential for market development are then assigned the highest priority in agro-industrial strategic plans. High value horticultural commodities are prominent in the project's list of priority sub-sectors. Client business plans are designed and implemented to address specific entrepreneur market development constraints and opportunities against these priorities.

### B. The Price-Quantity Mechanism

Within priority commodity subsectors, AgENT conducts simple market evaluations to identify the highest potential net market development gains. The price-quantity relationships, shown at three market levels in Exhibit 5, demonstrate the approach.

In this hypothetical example, the farmgate market yields a marketed quantity of 100 for a price of 1.0 (where  $D_f = S_f$ ). However, when the commodity moves downstream to the wholesale market, the marketed quantity has fallen to 85 units and the price has doubled to 2.0 (where  $D_w = S_w$ ). Finally, when the commodity arrives further downstream at the retail level, the marketed quantity has fallen to 70 units while the price has increased by 50 percent to 3.0 (where  $D_r = S_r$ ). The analysis yields three immediate results: value added, postharvest losses, market margins.

Exhibit 5. Market Channel Price-Quantity Changes



**Value added.** The price-quantity relationships clearly show the relative importance of points along the market channel according to the market value added that is currently produced. They suggest the stake of the respective agribusiness interest groups (through their trade associations) and the market level where a given improvement in market efficiency (lowering prices) will have the greatest contribution to total value added and competitive advantage. The value added by market level is:

<u>Market Level</u>	<u>Value Added</u>
Farm	$1 \times 100 = 100$
Wholesale	$(2-1) \times 85 = 85$
<u>Retail</u>	<u><math>(3-2) \times 70 = 70</math></u>
Total	255

**Postharvest losses.** In this example, 15 percent of the original quantity of goods shipped from the farmgate is lost prior to arriving at the wholesale market. Another 15 percent is lost between the wholesale and retail markets. These loss rates indicate both the magnitude of the problem, but the relative potential gains in value added at a given market level for each percent decrease in post harvest losses (gain in marketable goods).

**Market margins.** The margins between the three markets show the unit cost (compensating for post-harvest losses) of moving the commodity to the next market downstream: provide goals for reducing inter-market service costs; and demonstrate the potential for improving the commodity's competitive advantage in both domestic and export markets. At each market level, a simple partial equilibrium analysis can quickly estimate the aggregate value of any market development intervention that lowers post-harvest losses, reduces marketing margins, or increases the supply of purchased production inputs by increasing the supply of the marketed good at each market level.

At each market level, the only information needed is the assumed (market equilibrium) price and quantity and the relevant price elasticities of supply and demand. Local commodity specialists will have some knowledge of the post-harvest loss rates to calibrate downstream quantities with farmgate levels. The farmgate level will also be adjusted to reflect the deduction of household consumption (which can be substantial) from total farm production.

Table 1 shows a small example of retail-farmgate price linkages in the Colombo market. The price linkages between Colombo outlying growers is affected by produce that arrives in Colombo from other districts. However, the price relationships are consistent over all markets, and makes it plausible to assume that substantial transportation and perishability costs are incurred in moving goods from the farmgate through local and regional collection markets to a large terminal wholesale market. It is reasonable to assume that farmgate-wholesale prices increase by at least 20 percent, and wholesale-retail prices can increase by at least 62 percent. In India, Maharashtra State Marketing Board statistics for selected fruits in the Pune market over the period 1990-91 to 1992-93 show a farmgate-wholesale price increase of 37 percent, and a wholesale-retail price increase of 79 percent.

At the subsector level, market channel analysis should also concentrate on identifying the commonality and complementary nature of marketing services across closely related commodities. For example, within the horticulture processing subsector, storage, grading, sorting, and preserving services can often be horizontally coordinated and integrated across a wide range of fruits because they share many common handling characteristics.

**Table 1. Colombo Retail-Farmgate Price Linkages for Selected Vegetables, Late August 1994**

	Retail (a)	Wholesale (b)	Farmgate	Producer District
	----- Rs/kg -----			
Dried Chillies, grade I	125.18	89.05	79.00	Metale
Big Onions	25.75	15.00	13.85	Metale
Ladies Fingers	23.91	10.00	5.91	Metale
Green Beans	29.31	21.09	17.60	N'Eliya
Carrots	24.94	11.55	10.00	N'Eliya
Tomatoes	22.58	9.36	3.30	Metale
Ave price (unweighted)	41.95	26.01	21.61	
Ratio to Retail Price	1.00	0.62	0.52	
Ratio to Farm Price	1.94	1.20	1.00	

SOURCE: Agrarian Research and Training Institute, *Food Commodities Bulletin*. Ministry of Agriculture, Lands and Forests, Vol. 16, Nos. 35, 38

(a) Colombo

(b) Petta

Within vegetable subsectors, fresh vegetable production and post-harvest marketing can be vertically coordinated and integrated to increase use of specific market functions, such as storage, preservation, packaging, transportation and distribution, brokerage, and merchandising. If a strong competitive environment is enforced by the government, the combined effects of these coordination and integration actions will be to reduce unit marketing costs throughout the marketing channel and thus expand domestic and export value added through the resulting lower market prices.

By following the framework of Exhibit 1 and to examining the general price-quantity mechanism at successive downstream markets in a particular horticultural channel, it is possible to understand how market development interventions can be directed overcome the constraints that yield the highest net development benefit. It is also important to monitor the results of country-level market development analyses and subsequent interventions that donors have undertaken over the past decade and that now serve as the main foundation the a new agribusiness focus in development strategies. Sri Lanka is well positioned to benefit from the lessons learned in successful horticulture development programs in a diverse range of countries, including Thailand, Chile, Kenya, Costa Rica, Ivory Coast, Guatemala, Israel, Honduras, and China.

## **B1. Purchased Input Level**

At the purchased production input level, cost savings generally come from policy and market organization reforms to lower the sourced prices of chemicals, seed, and equipment; the suppliers' direct distribution costs, and investments in input supply-to-farm communication and transportation infrastructure. Market reforms that promote competition among input suppliers, expand domestic access to imported inputs at border prices, and equalize tax coverage for inputs relative to the rest of the economy represent the first step in establishing the conditions for a competitive horticulture sector.

Private sector input suppliers are forced by a strong competitive policy environment to use new input merchandising and distribution methods, such as vertical and horizontal integration, to achieve economies of size in minimizing the cost of sales. Under a strong competitive policy environment, public sector transportation and communications infrastructure investments will be quickly complemented by private sector investments in larger, low unit cost transport carriers, as well as the associated transportation and electronic data transmission equipment and software. These combined efforts can easily reduce the farmgate CIF costs of horticulture inputs by one-fourth. In the more remote parts of the country, these cost savings will simply assure that purchased inputs are finally available to farmers.

## **B2. Farmgate Level**

Farm production responds to the prevailing input and product price mix and selects those enterprises that offer the highest returns to farm resources. Both declining input prices and rising product prices will stimulate increased production along current farm supply schedules. Sharp short-term price changes will only result in direct production changes within the existing technology setting. Longer term price changes will, in conjunction with a strong competitive economy, stimulate shifts in individual farm supply schedules to exploit new capital and technology mixes.

In the short-run, horticultural price elasticities of supply vary from highly inelastic responses for tree crops (elasticities may range from 0.1 to 0.3) to slightly inelastic responses for short season annual vegetable crops (elasticities may range from 0.7 to 1.1). Typical long-run horticultural supply responses are 50 to 200 percent greater than the respective short-run elasticities.

The agricultural technology transfer process is largely driven by private sector technology suppliers in the short-run. Chemical, seed, and equipment offer farmers the physical material inputs, but bundles of complementary services improve on-farm production management. In five to ten years, public sector research and development services drift through input supply markets to the farmer. In the case of the Sri Lankan horticulture sector, the level of public sector research resources is so small that it is not expected to make a difference in overall production over the next two decades. One of the most effective crop technology transfer mechanisms is liberal international seed trade, in accordance with internationally recognized phyto-sanitary standards.

### **B3. Wholesale Level**

Much of the performance of wholesale horticultural markets is tied to the market environment for purchased inputs, particularly transportation infrastructure and services. Evidence on post-harvest horticultural losses is not well documented, but it is reasonable to assume from industry specialists' anecdotal perspectives that losses of 20 to 40 percent are normal. This means that the wholesale price would have to increase by about 45 percent simply to break even on the farmgate price if there is a 30 percent perishability rate.

Aggregate evidence, such as input-output models suggest that most horticulture value added reaches consumers in fresh form. Thus, the long-term experience with mainly fresh horticultural products has supported a consumer taste formation process that is very narrow and weakening consumer preferences for new processed and preserved foods. Cold storage services offer important opportunities for preserving certain crops for alternative and new household uses as well as extending the farmgate-retail shelf life. Unfortunately, fixed and mobile elements of an effective cold chain cannot succeed without the prerequisites of adequate surface, air, and sea transport services. So, it is likely that Sri Lanka's derived demand for cold storage services is stimulated by large post-harvest losses but constrained by inadequate transportation infrastructure and services.

### **B4. Retail Level**

Wholesale-retail markups can easily double, particularly if western-style supermarkets are considered. Horticultural merchandising is largely devoted to arranging produce on the ground or on open stands in public markets. Small, high-quality retail markets exist in most cities and large towns, but they support only the high income consumers. Brand names have succeeded in export markets, but the retail market has great potential for this approach to quality standards and market segmentation.

## **C. Market Development Potential**

The prime objective of developing the horticultural sector is to expand total value added to the extent that production, consumption, and export of these crops initially increases per capita value added. Then Sri Lanka's agricultural resources are priced according to their international opportunity costs. This means that the development strategy will have to reduce marketing costs in basic, established crops, while responding to niche market opportunities with crops that do not require heavy market infrastructure support from the country's existing weak transportation and communication system. To identify and exploit market development opportunities, AgENT must study the key sources of horticulture value added and the key elements of options to realize these expanded markets.

### **C1. Key Sources of Value Added**

Increased value added results, in the short run, from increased price and/or quantity. However, long-range development policies should place most of the emphasis on expanding quantity, since significant price increases will fuel consumer price inflation and slow or

reduce low-income consumers' access to the horticulture sector's superior supply of nutrients. But the experience of the last decade suggests that fruit and vegetable prices have increased without a commensurate increase in production. It would therefore be useful to review the sector's recent price-quantity changes to better understand (1) which market forces have dominated and (2) which interventions are most likely to overcome the key constraints.

First, it is important to apply some basic econometric analysis to the sector. Observed price-quantity changes over time can be rationalized used to determine the relative effects of supply and demand forces. For example, a relative price increase and quantity increase over time suggests that demand has increased more quickly than supply. However, a combination of a relative price decrease and a relative quantity increase would suggest that supply has outpaced demand.

This approach to identifying fundamental changes in supply and demand activities would be useful in interpreting the changes in farmgate crop price and production changes over the last decade. It is assumed that horticultural demand elasticities are within the range of -0.9 to 1.4, while supply elasticities are in the range of 0.5 to 1.0. Therefore, when the identified arc price elasticity falls within (or near) these respective elasticity ranges, either demand or supply factors are assumed to be responsible for the major observed shift in price and quantity. But when the arc elasticity falls outside these ranges, the most plausible explanation is a combination of supply and demand shifts.

For example, if a horticultural crop has a positive, inelastic arc price elasticity, this suggests that supply has been relatively fixed over the past decade. At the same time, demand has increased (shifted to the right), causing the real price to rise at a faster rate than quantity. But since horticultural crops are assumed to have elastic demands, strong increases in supply would not only open markets by lowering prices, but also cause total revenue or value added to increase sharply and offset the popular perception that falling prices are a sign of a weak market.

## **C2. Value Added Option**

Value added can be increased through four key options: expand farm production; reduce the physical cost of post harvest losses; reduce the other costs of transporting, processing, storing, and brokering produce; and expand exports. Each of these options has to overcome a different set of constraints, but all point to the need for a coordinated effort to exploit the current base market for established crops, while identifying and exploiting niche markets for short-term gains.

### **C2a. Expanding Farm Production**

The potential for expanding farm production is tied to availability and price of inputs, availability of improved technology and incentives for its adoption, and the role of marketing infrastructure in influencing the derived demand for horticultural goods. The availability and price of inputs is a critical issue. Availability of improved seeds is also important. There is little current research devoted to measuring horticultural seed productivity and its role in the

national supply situation. Horticultural specialists believe improved seeds could increase production by 50 percent. Reduced fertilizer costs, as well as lower input delivery costs from improved rural roads, would provide another sharp boost to aggregate horticultural supply.

While available data are not sufficient for estimating well-behaved horticultural supply models that are tied to key seed and fertilizer inputs, a generalized, partial equilibrium analysis could be performed on decade-long changes in farmgate price and production of the major horticultural crops. If the analysis assumed that farmgate production could be improved by 10 percent due to improved technology and lower input prices, the increase in value added would easily exceed 10 percent because of the common structure of horticultural markets (elastic demand and inelastic supply). From an opportunity cost standpoint, it is that this net benefit could be realized with a far smaller industry-wide annual investment.

### **C2b. Reducing Post-Harvest Losses**

Data on current post-harvest losses are not well documented, but 20 to 40 percent of farm sales could well be lost. If the supply shifts are increased by one-fourth to two-thirds in downstream markets (and adjusted for home consumption), the net annual gain in net economic welfare could easily reach one-third of the present value added. The investment and operating costs required to realize these gains would have to be compared with the gains as an opportunity cost.

### **C2c. Reducing Market Service Costs**

Savings in transportation, storage, packaging, and processing costs in existing horticultural markets will have a greater economic impact than the initial development of new niche markets. Packaging represents 30 to 80 percent of the retail price for processed foods. And tariffs on imported packaging materials (glass) have been blamed for high costs in the processed food industry. If accurate price and production data can be assembled, an analysis of tax effects on processing costs can be quickly performed.

For example, if particular processed horticultural product is assumed to have a current market price of Rs 35 per kg for a total annual production of 100 thousand tons, and a ten percent reduction in costs is realized by a saving on packaging, tariffs, or other processing costs, the effects of the price change, assuming a demand elasticity of -1.2 and a supply elasticity of 0.8, are the following:

- The equilibrium market price would fall 2.0 percent, to Rs 34.3 per kg
- The equilibrium market quantity (production) would rise 2.4 percent to 102.4 thousand tons
- Annual net economic welfare would increase by Rs 139 million, with consumers receiving Rs 79 million of this amount
- Market value, or sales, (PxQ) would increase by Rs 12 million

## **C2d. Exploiting Export Demand**

AgENT has identified 10 commodity subsectors with high market development potential. Much of the market demand is assumed to be in the export sector. To the extent that farmers and produce brokers can organize efficient production and downstream wholesale-export market channels without requiring extraordinary market infrastructure, these crops can serve as important islands of innovation to demonstrate international standards for grading, quality control, and post-harvest preservation and handling technology.

Horticulture trade associations will also gain important organizational development experience that can be applied to strengthen existing base markets in traditional crops. However, the total value added from niche markets will have to be considered against start-up marketing and production costs and the associated diseconomies of initial small scale, disaggregated production, and marketing functions.

### **D. Critical Program Objectives for AgENT**

The above assessment suggests three major conclusions about the elements of an effective agro-enterprise development strategy.

#### **D1. The Importance of Reducing Costs**

Horticulture market trends clearly show that market prices have to be reduced if domestic and export markets are to be expanded. Farm production efficiency gains will require major improvements in rural transportation and communication and lower sourced input prices, particularly for seed and equipment. Most of the opportunities for reducing costs can be expedited by government policies that promote a strong competitive environment.

#### **D2. Setting Development Priorities: Entrepreneurial Insights Versus Industry Trends**

Agribusiness entrepreneurs represent a crucial guide to identification of market development opportunities. Aggregate market statistics demonstrate important industry trends, but they are always late in identifying new opportunities in the near future. The degree of isolation of the Sri Lankan agro-enterprise community requires that regional market study tours be required to calibrate aggregate market statistics and collect institutional and operational information that does not exist in market research organizations, trade publications, or government agribusiness development agencies. Most of the past market development efforts by government agencies have taken a paternalistic attitude toward the private sector.

If government horticultural development agencies are to be truly effective partners with the private sector, they have to realize that their most important roles are in expanding access to relevant market decision information, coordinating government efforts to provide effective transportation and communications infrastructure, and removing policies that restrict

competition. For all other aspects of the market development process, entrepreneurs are the best guides to setting priorities and allocating responsibilities between the private and public sectors.

### **D3. Critical Constraints**

The current high-cost nature of the Sri Lankan horticulture sector suggests five critical constraints that AgENT should target.

#### **D3a. Farm Production**

Despite the collaborative efforts of international agricultural research centers and national agricultural systems over the last two decades, most developing countries still do not have adequate agricultural technology transfer mechanisms. Sri Lanka, while endowed with one of the most literate populations among the developing countries, does not have effective political and administrative mechanisms for linking the substantial research and development capability of its public sector agricultural research system with the basic technology needs of its farmers.

DARP responded to this constraint, and AgENT quickly discovered that it will have to mount substantial farm production trials if farmers are expected to adopt new technologies. Inadequate genetic materials constitute one of the sector's most serious constraints. Production specialists uniformly report that crop yields should be increased at least 25 percent if improved seeds and planting materials are fully adopted.

#### **D3b. Post-Harvest Technology**

AgENT has a mandate to encourage agro-enterprise innovations. While on-farm innovations are important, particularly where new enterprises are being introduced, innovations that can be introduced downstream, beyond the farmgate, have to be appreciated for their potential to reduce marketing costs, and expand value added.

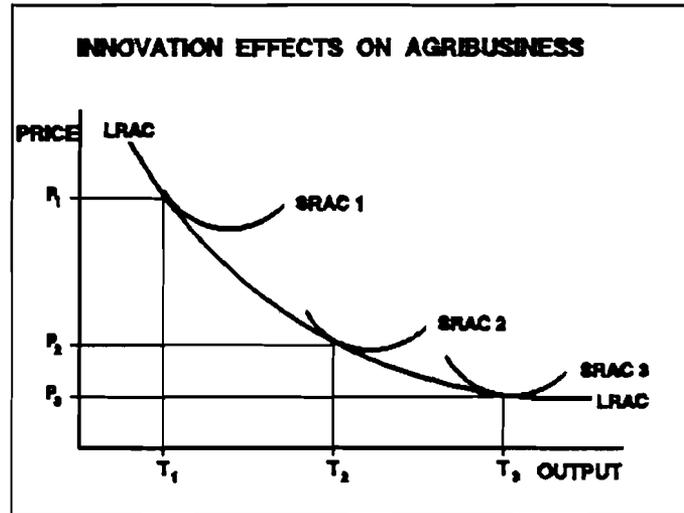
The post-harvest market does not enjoy strong competitive advantage in export markets because of low labor productivity, excessive losses from spoilage and inefficient brokerage practices. Many of these inefficiencies can be reduced by the introduction of improved technologies for cold chains, packaging, grading, transportation coordination, communications, and testing for compliance with export phyto-sanitary standards. The AgENT cost-sharing program for introducing new technologies is serving as a catalyst for introducing the "seeds" of new post-harvest technologies.

Exhibit 6 shows how the initial AgENT grant investments and later complementary investments by other entrepreneurs seeking to capture the demonstration effect of the initial AgENT investment—lead to successively lower waves of short-run average costs (SRAC).

As AgENT makes grants in the first technology wave ( $T_1$ ), for example, in cold chains, the industry SRAC-1 initially declines as additional investment rushes in to catch the

Exhibit 6. Innovation Effects on Agribusiness

early benefits of cold chains' cost savings and quality improvement. Unlimited expansion in this technology would ultimately cause the SARC-1 to rise.



However, innovative entrepreneurs, aided by well managed AgENT grants, can trigger a second technology wave ( $T_2$ ) by introducing new technologies in packaging, for example. These seed investments, plus complementary investments by other entrepreneurs again anxious to benefit from early adoption of the new technology, cause industry prices to fall from  $P_1$  to  $P_2$ , while industry output increases from  $T_1$  to  $T_2$ . A third wave of investment would push costs further down to  $P_3$  while output expanded to  $T_3$ . The post-harvest innovation process thus has two long-term effects on the horticulture industry (1) the average cost of production, and therefore market prices of horticultural products decline and (2) aggregate horticulture output increases. These effects expand domestic markets by expanding consumption among families who purchased goods at the former higher prices and among lower-income families who were unable to purchase goods at the former higher prices. Export markets are expanded by the increasing competitiveness of Sri Lanka's lower prices in those markets.

### D3c. Market Infrastructure

The last three decades have been a lost period with respect to public investment in transportation and communications infrastructure. The lack of public investment has levered a concurrent lack of complementary market infrastructure investments by the private sector. The horticulture sub-sector is one of the last sectors to be affected in the development process. The failure to build an adequate market infrastructure in the past means the horticulture sector will not become a world class competitor by the end of the next decade.

### D3d. Market Information

The government pronouncements of support for horticulture development are contradicted by a long term failure to strengthen market data collection and dissemination. It is not necessary to emulate developed countries' agricultural data systems in scope and magnitude of information. In most cases, a small amount of market data will be much more valuable than a large statistical program if the data are collected accurately and quickly and disseminated in like manner.

Unfortunately, market development decisions are based on much more than government-collected price and production data. The pervasive lack of a centralized one-stop center for information on all aspects of horticulture market development presents a strong

opportunity for AgENT's Business Information Center to provide an innovative intervention in this area.

### **D3e. Agribusiness Trade Associations**

Sri Lankan agribusiness trade associations represent the most important catalyst for linking private and public sector interests and responsibilities for diversification and agro-enterprise development. Unfortunately, most of the country's experience with trade associations yields little experience in building competitive markets. Still, these institutions have the communication and advocacy foundations to link the government's policy obligations with the full range of agribusiness production and market service interests. Trade associations represent a potentially important technology transfer vehicle because of their unique access to all market levels within an industry's market channel.

## **E. Measurement of AgENT Project Benefits**

### **E1. General Indicators of Project Performance**

AgENT project inputs (technical assistance, training, and investment cost-sharing) are being programmed to diversify Sri Lanka's agricultural enterprise mix and expand sector contributions to the national economy. In general, changes in at least eight major market development indicators can be tracked to determine the differential impact of AgENT on the sector. Those indicators are:

- Investment
- Types of new technologies being adopted
- Sales
- Enterprise numbers (and sizes)
- Employment
- Personal or household income
- Land use
- Food costs

With the exception of food costs, the market development indicators have to measure three different aspects of change:

- Changes directly due to project technical assistance and cost-sharing arrangements. This is presumed to be the major stimulus to enterprise development.
- Changes made by project clients without technical assistance and cost-sharing assistance. This is presumed to be the induced effect of cost-sharing and other project assistance to strengthen entrepreneurial innovation. It is also the fundamental firm-level demonstration of project sustainability.

- Changes made by other client entrepreneurs in the subsector. Trend effects and other unusual effects have to be discounted to measure the sub-sector effects that "would not have occurred without the existence of AgENT."

## E2. Specific Purpose-Level Indicators

The project logical framework (Annex D) presents a consistent cause-and-effect chain of performance:

- **Inputs** in the form of technical assistance, training, agro-enterprise development grants, commodity procurement and host country investment funds, produce **outputs** in the form of agro-enterprise investments, introduction of new technologies, improvements in market linkages, improved agro-enterprise financing facilities, and improved public sector support to agro-enterprises.
- **Outputs** lead to broad **purpose level** changes in sector-level entrepreneurial behavior, as revealed by improvement in agro-entrepreneurial capacity, through the establishment of new enterprises and expansion of existing enterprises.
- Improved entrepreneurial capacity directly supports the **GSL goal** of a diversified, commercial agricultural sector that fully employs available land and labor resources at rents and wages that are competitive with the country's links to the international economy.

The inputs and outputs are specified well enough to be verified with the existing AgENT management information system. However, the purpose level indicators need to be refined. Establishment of new enterprises and expansion of existing enterprises suggest improved entrepreneurial capacity, but practical measures of those changes are needed. Of the eight indicators mentioned above in section E1, the most direct measures are employment, investment, output, and sales. The AgENT client business profiles generally cover these business indicators for the last three years of established enterprises.

Capital is the most difficult indicator to measure at the project level. Equity and asset value are often misstated by entrepreneurs to avoid taxes or accounting methods do not accurately reflect their productive value. AgENT is tracking its grants and the client's cost-sharing contributions toward each grant. Beyond the cost-sharing investments that AgENT can easily track, collection of additional client investments (without AgENT cost-sharing grants) will be difficult and should not be pursued if the monitoring effort becomes unduly expensive. Furthermore, monitoring employment, output, and sales should capture all investment effects, regardless of whether the investments can be fully measured.

The AgENT team faces a major confidentiality problem in collecting business performance information from clients. The degree of business distrust continues to be one of the major constraints to effective entrepreneurial development. Distrust encourages restrictions on dissemination of business decision information and protectionism. The AgENT team has developed strong professional bonds with each client to ensure

confidentiality of client business information. The team therefore has to ensure that each client relationship remains stable, with a minimum of turnovers among project staff, and that no sensitive business information—such as profits and taxes—is shared with other clients.

### E3. Monitoring Methods

Business indicators are being monitored through the client business profiles "before" and regular AgENT contacts with each client "after" project assistance begins. While these data indicate general business performance, they do not show how firms actually practice effective entrepreneurial methods.

It is therefore necessary to conduct a small number of narrowly focused case studies on selected subsectors/industries to gain a more detailed description of how the clients adopt new technologies, conduct market research and development, assess risk, manage financial resources, and initiate new businesses or business expansions. The project would also benefit from case studies on the women's program and the business information center.

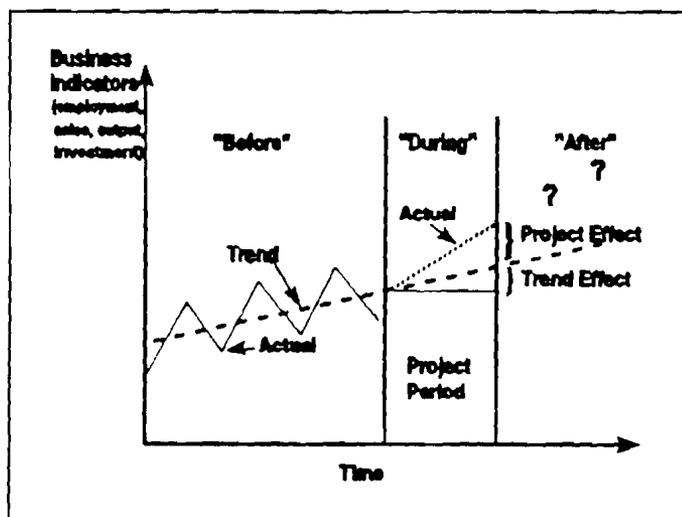
These special programs should be monitored by conducting a small survey of representative clients to understand how they use the service and how the service can be improved. At least two case studies should be conducted per project year. Each case study should be conducted quickly (within 6 weeks) and should follow a standard format so effective comparisons can be made across studies about similarities and differences within subsectors/industries or services (women's program and business information center).

### E4. Evaluation Methods

AgENT must evaluate its impact at both the firm level and the sector level. Firm level impacts can be estimated according to the framework described in Exhibit 7. Employment, sales, and output data are generally collected for the last three years before established clients are accepted by the project. Since the project has focused on assisting established firms with expansions, the client business profiles are a particularly valuable source of evaluation data.

The business indicators for the period "before" the project was implemented have to be normalized to establish the relevant evaluation benchmark. This is typically done by developing a trend line with linear regression methods by pooling all clients within similar subsectors/industries and regressing the indicators (employment, output, sales) on a time index. For example, -1 would represent one year before project assistance

Exhibit 7. Measurement of Firm Level Project Effects



and -2 would represent two years before project assistance, through the earliest year of available data before receiving project assistance. The trend line is then used to predict the pooled clients' average level of each indicator at a time index of 0.

Business indicators monitored "during" the period of project assistance must be averaged over the pool of clients within similar subsectors/industries and compared with the trend value for the appropriate time period. This exercise divides changes in business performance "during" project assistance into two components: (1) change that would have occurred without project assistance (the vertical distance between the trend line and the horizontal line below the trend line) and (2) change that is presumed to be directly attributable to project assistance (the vertical distance between the trend line and the "actual" results line shown above the trend line)<sup>3</sup>. These estimates of project effects are then compared to project performance goals, which may be adjusted in successive evaluations and internal assessments.

The impact information generated from the framework described in Exhibit 7 is needed to assess the project's performance in meeting end of project status indicators (EOPS). However, these results must be supplemented with various qualitative data that can be most effectively collected through case studies. Data collected in representative samples of clients should be analyzed to assess the overall effectiveness of the project in changing entrepreneurial behavior. All case studies should use a common methodology to simplify data analysis standardize the evaluation tools; and minimize evaluation costs.

Finally, sector-level impacts should be estimated by applying input-output multipliers or ratios of macroeconomic performance to client-based estimates of business impact.

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<sup>3</sup> The "actual" curve "during" project assistance can either be estimated with regression methods or represented by mean values. Because the project life is a relatively short period of time, this curve is likely to have a high degree of variability. If regression methods are used, observed indicators (employment, output, sales) should be regressed on LOP time indices, with the intercept set equal to the trend line where the time index is 0 (beginning of the project).

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**ANNEX M  
REFERENCES**

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Ali, Mubarik, Forrest E. Walters, and Rao Shafiq-Ur-Rehman. *The Relative Contribution and Interlinkages of the Food and Fiber System in Pakistan's Economy*. Published by the Directorate of Agricultural Policy and Chemonics International Consulting Division, for the Economic Analysis Network Project, in collaboration with the Ministry of Food, Agriculture and Cooperatives, Government of Pakistan, and USAID/Pakistan. Washington, D.C.: U.S. Agency for International Development, Center for Development Information and Evaluation. 1989.

AgENT Technical Reports

Beets, Jim. *Preliminary Review of the Marine Segment of the Ornamental Fish Industry in Sri Lanka*. Draft. April 1994.

Davies, T.M. *The Potential for Widening the Aromatics Crops Base in Sri Lanka*. May 1994.

Drew, Clive. *Sri Lanka Poultry Sector "Strengths/Weaknesses/Opportunities/Threats" Assessment*. October 1993.

*Export Floriculture Production Report*. September 1993.

Management Advisory Services. *USAID/AgENT Agro Enterprise Financial Training for Financial Institutions* (training manual). Undated.

Mee, Jonathan K.L. *An Overview of the Ornamental Aquatics Sector in Sri Lanka*. December 1993.

Survey Research Lanka (Pvt.) Ltd. *A Survey of the Market for Glass and Tinsplate Containers in the Process Fruits and Vegetables Industry*. October 1993.

AgENT Quarterly Progress Reports.

AgENT Annual Work Plans.

Agrarian Research and Training Institute. *Food Commodities Bulletin*. Vol. 16, Nos. 35, 38. Colombo: Ministry of Agriculture, Lands and Forests. 1994.

Central Bank of Sri Lanka. *Annual Report, 1993*. Colombo: Ministry of Finance. 1994.

- Hettiage, S.T., and S.M.P. Senanayake. *Highland Vegetable Production and Marketing Systems*. Report Prepared for USAID/Sri Lanka Under the Commercial Small Farm Development Project by Agricultural Cooperative Development International (ACDI). Washington, D.C.: U.S. Agency for International Development, Center for Development Information and Evaluation.
- Holt, David H., and Saman Kelegama. *The Interim Evaluation of the Technology Initiative for the Private Sector (TIPS) Project*. Report Prepared by Checchi and Company Consulting, Inc. for USAID/Sri Lanka. Washington, D.C.: U.S. Agency for International Development, Center for Development Information and Evaluation. 1993.
- \_\_\_\_\_. "Redesign of the Technology Initiative for the Private Sector (TIPS) Project." Report Prepared for USAID/Sri Lanka. Colombo: U.S. Agency for International Development. 1994.
- Kumar, Krishna, Joe Lieberson, and Eugene Miller. "An Assessment of Sri Lanka's Agribusiness Program." Draft Report. Washington, D.C.: U.S. Agency for International Development, Center for Development Information and Evaluation. 1994.
- Mannion, Harold, Franklin W. Martin, Andrew A. Duncan. *Horticulture Assessment Commodity and Program Recommendations*. Report Prepared for USAID/Sri Lanka Under the Diversified Agriculture Research Project by Development Alternatives Inc. Washington, D.C.: U.S. Agency for International Development, Center for Development Information and Evaluation. 1992.
- Morgan, Larry C. "The Role of the Agriculture and Natural Resources Sector in the National Economy: An Interindustry Analysis." Annex C, "The Philippines Agriculture and Natural Resources Sector: A Proposed Strategy." Report Prepared by Chemonics International Consulting Division for USAID/Philippines. Washington, D.C.: U.S. Agency for International Development, Center for Development Information and Evaluation. 1990.
- Nanayakkara, Upali. *Final Report on Vegetable and Fruit Handling at the Colombo Manning Market*. Report Prepared for USAID/Sri Lanka. Colombo: U.S. Agency for International Development. 1991.
- Ratnapala, Nadasena. *Rural Poverty in Sri Lanka*. Nuredoda: Deepanee. 1989.
- Steinberg, David I., and Kay J. Freeman. Sri Lanka Agricultural Planning and Analysis Project (383-0083) Final Evaluation. Report Prepared by Datex, Inc. for USAID/Sri Lanka. Washington, D.C.: U.S. Agency for International Development, Center for Development Information and Evaluation. 1993.
- Tabor, Steven R., and Larry C. Morgan. "Agricultural Production Contracting in Pakistan: A Case Study in Agribusiness Innovation." in U.S. Department of Agriculture, Office of International Cooperation and Development. *Pakistan's Edible Oilseeds Industry*. Washington, D.C.: USDA/OICD. 1984.

USAID/Sri Lanka. *USAID/Sri Lanka Strategic Framework, FY 1992-1996.*

\_\_\_\_\_. March 13, 1992. *Project Paper, Agro-Enterprises (383-0111).* April 1991.